Attachment A: Waterfront Revitalization Program

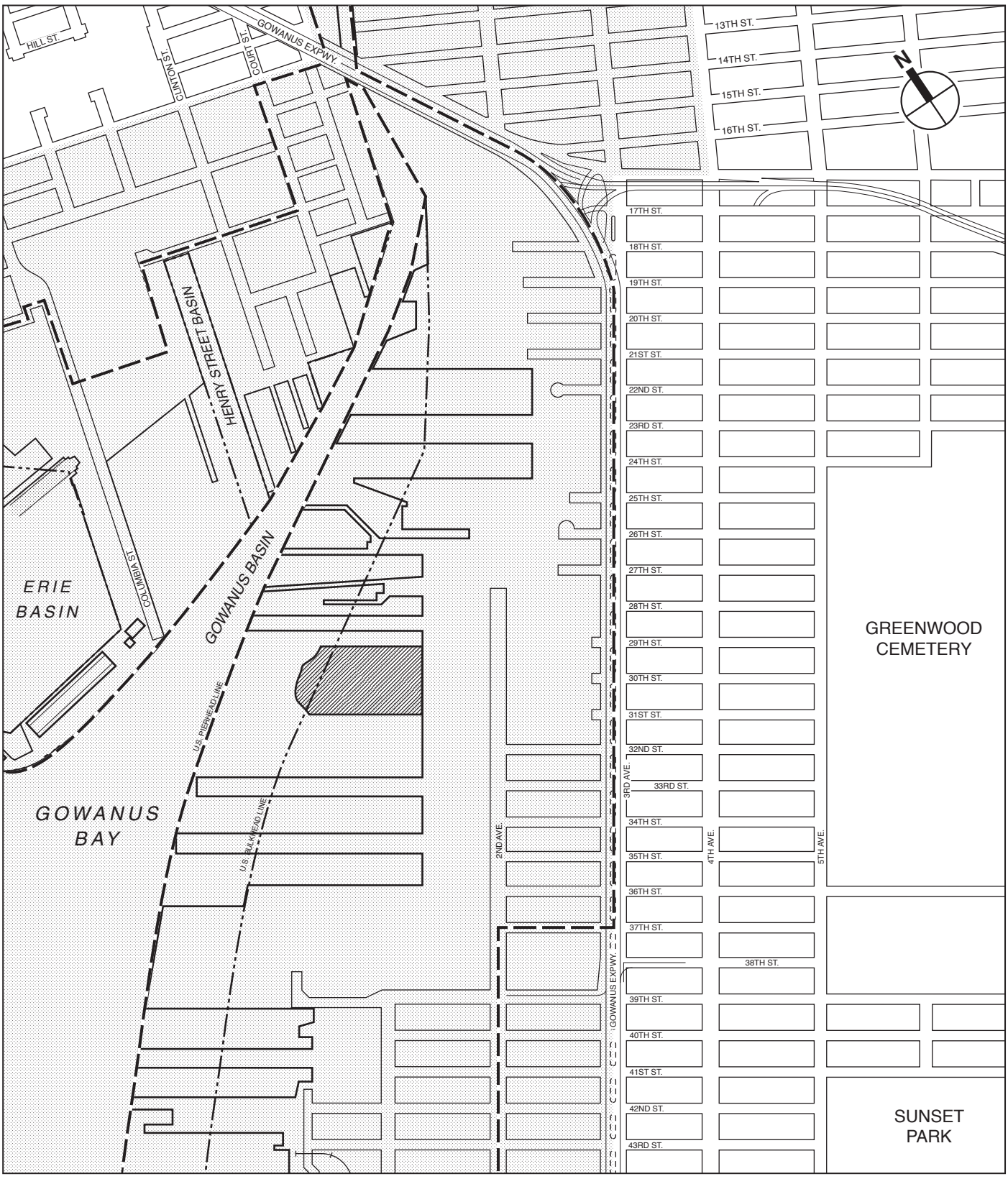
A. INTRODUCTION

The proposed project is subject to a waterfront consistency determination because the project site is located within the designated boundaries of New York City's Coastal Zone (see Figure A-1). The New York City Waterfront Revitalization Program (WRP) is the City's principal coastal zone management tool. Originally adopted in 1982, it establishes the City's policies for development and use of the waterfront and provides the framework for evaluating the consistency of all discretionary actions in the coastal zone with those policies. The guiding principle of the WRP is to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among these objectives.

The program may involve overlapping jurisdictions when a proposed project is located within the coastal zone and therefore may require interaction with other local, state, or federal agencies. For example, the New York State Department of Environmental Conservation (DEC) is responsible for the management and protection of natural resources and environmental quality. DEC regulates activities that may have a negative impact on wetlands and water quality. The U.S. Army Corps of Engineers (USACE) is responsible for the protection and management of the nation's waterways and wetlands. Like DEC, USACE reviews and issues permits for activities occurring in navigable waters and in tidal or freshwater wetlands that meet the national designation criteria.

The Federal Coastal Zone Management Act of 1972 sets forth standard policies for reviewing proposed projects along coastlines. The New York State Department of State (DOS) administers the program at the state level, and the New York City Department of City Planning (DCP) administers it for the City of New York. The WRP originally included 44 State policies and 12 City policies. It established the City's policies for development and use of the waterfront and provided a framework for evaluating discretionary actions in the coastal zone. A revised WRP, which simplified and clarified the review process, was approved by the City Council in October 1999. In August 2002, DOS and federal authorities (i.e., USACE and the U.S. Fish and Wildlife Service [USFWS]) adopted the City's 10 WRP policies for most of the properties located within its boundaries. The 10 new WRP policies have been approved by New York State and are used as the basis for City permitting or Uniform Land Use Review Procedures (ULURP) and City Environmental Quality Review (CEQR).

This section reviews the 10 New York City coastal zone policies, which constitute the new WRP, and assesses, where applicable, the general consistency of the proposed project with the new policies. The following concludes that the proposed project would be consistent with the 10 coastal zone policies and is not expected to have any significant adverse impacts on the coastal zone.



Coastal Zone and Significant Maritime Industrial Area

Sunset Park Materials Recovery Facility

Figure A-1

B. CONSISTENCY DETERMINATION

New York City's WRP includes 10 policies designed to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among those objectives. Each policy is presented below, followed by a discussion of the proposed project's applicability to and consistency with the policies.

Policy 1: Support and facilitate commercial and residential redevelopment in appropriate coastal zone areas.

Policy 1.1: Encourage commercial and residential redevelopment in appropriate coastal zone areas.

The project site is currently used as a vehicle impoundment lot by the New York City Police Department (NYPD). The proposed project would convert the site to an active industrial use—a material recovery facility (MRF) that would accept and process source-separated metal, glass, and plastic (MGP), paper, and certain scrap metal. The project site is zoned M3-1 for heavy manufacturing and the most appropriate reuse would, thus, be industrial. Therefore, the proposed project is consistent with this policy.

Policy 1.2: Encourage non-industrial development that enlivens the waterfront and attracts the public.

The project site and its surrounding area are zoned for manufacturing uses, and have existing industrial uses (See Figure 2 of the EAS). The proposed facility would be consistent with surrounding uses and zoning. The proposed project would also not interfere with or adversely affect the planning for the potential development of a greenway proposed along Second Avenue that would provide waterfront access for surrounding neighborhoods. The proposed project would also support the goal of redeveloping the South Brooklyn Marine Terminal (SBMT) as set forth in the New York City Economic Development Corporation's (EDC's) *Strategic Plan for the Redevelopment of the Port of New York* (Strategic Port Plan). In addition, the proposed project contains a visitor/education center in a separate building along the west end of the pier, allowing for views of the harbor. The visitor/education center and greenway would be appropriate public uses for the waterfront in this area. Therefore, the proposed project would be consistent with this policy.

Policy 1.3: Encourage redevelopment in the coastal area where public facilities and infrastructure are adequate or will be developed.

The proposed project would result in negligible demands on public infrastructure and utilities. The existing stormwater lines and catch basins, which are in disrepair, will be replaced as part of the EDC's upgrades to SBMT prior to construction of the proposed project. New storm drain lines and catch basins will be installed and connected to existing trunk lines, or through a new trunk line system should the existing pipes prove be inadequate. All stormwater at the project site will be treated through underground filtration units prior to discharge. Connections to the existing combined sewer system that runs below Second Avenue would be made to handle sanitary waste from the proposed project. Water and electric demands would be met through available hookups and capacity. Therefore, public facilities and infrastructure are adequate, and the proposed project would be consistent with this policy.

Policy 2: Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.

Policy 2.1: Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.

The project site is located in a Significant Maritime and Industrial Area (see Figure A-1). The proposed project would utilize barges to bring materials to the site as well as transport post-processed materials away from the site. The proposed MRF facility would include two enclosed barge slips in a proposed Enclosed Barge Unloading Facility (EBUF) and 850 linear feet of dock/relieving platform with space for an additional two barges. In addition, the site would include a mooring pier to the west of the EBUF for staging barges.

As currently envisioned, dredging would be required to make the pier accessible for barges. Piling remnants and other underwater debris, from previous demolition of finger piers that abutted the project site, would also be removed. The proposed project would also improve the existing shorefront by constructing a new bulkhead and fendering system to support the barge slips, EBUF, and relieving platform. These in-water activities would support the proposed MRF—a working waterfront use.

This industrial area is well-suited for a MRF facility. Development of the proposed project would help to restore and revitalize industrial waterfront property and would be compatible with existing and neighboring heavy industrial uses. The proposed project would also support the goal of redeveloping the SBMT as set forth in EDC's Strategic Port Plan. The project site is well suited for marine transport, has the capacity for future rail linkages, and is located in an area buffered from residences and designated for heavy industry under zoning.

The proposed project would develop a new industrial, working waterfront use that would support and maintain water-dependent industrial uses in a designated Significant Maritime and Industrial Area. Therefore, the proposed project would be consistent with this policy.

Policy 2.2: Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas.

The project site is located in a Significant Maritime and Industrial Area. Therefore, this policy does not apply.

Policy 2.3: Provide infrastructure improvements necessary to support working waterfront uses.

The proposed project would reuse the existing pier. Modification to the existing pier would involve the construction of the EBUF, dock/relieving platform, mooring pier, and a new bulkhead and fendering system to support the use of barge transports for the MRF. Dredging would be required to make the pier accessible for barges. Piling remnants and other underwater debris, from previous demolition of finger piers that abutted the project site, would also be removed. All required dredging would be conducted in compliance with applicable federal, state, and local regulations and required permits would be acquired prior to any proposed in-water activities. Therefore, the proposed project would provide the infrastructure improvements to support the working waterfront use and would be consistent with this policy.

Policy 3: Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers.

Policy 3.1: Support and encourage recreational and commercial boating in New York City's maritime centers.

The proposed project would utilize barges, as well as trucks, to deliver MGP to the site (inbound transport). Barges would also be used to transport post-processed paper, glass, and metals from the site (outbound transport). By encouraging commercial use of the waterways, the proposed project would be consistent with this policy.

Policy 3.2: Minimize conflicts between recreational, commercial, and ocean-going freight vessels.

Transport barges would deliver MGP to the project site approximately two to three times per day. Barges would also deliver post-processed paper, glass, and metals from the site approximately two to three times per day. The barges would adhere to all applicable rules and regulations regarding travel on Gowanus Bay inlet and New York Harbor. No conflicts are expected between the transport barge and other recreational, commercial, or ocean-going freight vessels using these waterways. Therefore, the proposed project would be consistent with this policy.

Policy 3.3: Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.

The project site would be redeveloped as an MRF facility where recyclables would be brought to the facility by barge and truck and processed in an enclosed building prior to transport. All unloading and processing would be conducted in enclosed areas and, therefore, would be protective of the aquatic environmental and surrounding land and water uses.

In addition, the proposed project would contain litter control measures. A mechanical sweeper would used to sweep the site on a regular basis. Trash and recycling receptacles would be placed at areas where foot traffic and indoor or outdoor seating is expected (e.g., visitor center, employee break rooms). All areas where delivery vehicles unload materials would be fully enclosed. Paper and other materials on barges would be secured with netting as needed during transit to and from New Jersey. Unloading of MGP barges and loading of paper barges would occur in the enclosed EBUF. The placement of booms around the barges and the use of a dip net, as needed, would be implemented to capture any floatables entering surface waters. The pier would also be equipped with a small boat to recover floatables that escape the boom. In addition, on-site storage of petroleum products related to the operation of the MRF would be done in accordance with applicable federal, state, and local regulations. Thus, it is expected that project activities would not adversely impact the aquatic environment or surrounding land and water uses, and the proposed project would be consistent with this policy.

Policy 4: Protect and restore the quality and function of ecological systems within the New York City coastal area.

Policy 4.1: Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas, Recognized Ecological Complexes, and Significant Coastal Fish and Wildlife Habitats.

The project site is not located within a Special Natural Waterfront Area, Recognized Ecological Complex, or Significant Coastal Fish and Wildlife Habitat. Therefore, this policy is not applicable.

Policy 4.2: Protect and restore tidal and freshwater wetlands.

No freshwater wetlands are located on the project site. The proposed bulkhead and fendering system to support the MRF facility would require filling within a DEC-designated littoral zone tidal wetland area. The proposed EBUF would also cover portions of the tidal wetlands resulting in unavoidable adverse impacts on approximately 1.76 acres of littoral zone wetlands. Habitat enhancement measures proposed as part of the project will offset adverse impacts on these wetlands and their potential use as fish habitat.

Dredging would be required to make the pier accessible for barges. Piling remnants and other underwater debris, from previous demolition of finger piers that abutted the project site, would also be removed. Potential impacts due to dredging and the removal of underwater debris, however, are not expected to have significant adverse impacts on the natural environment, and all activities would be conducted in compliance with applicable federal, state, and local regulations; and required permits would be acquired prior to any proposed in-water activities. Therefore, the proposed project would be consistent with this policy.

Policy 4.3: Protect vulnerable plant, fish, and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.

Requests for information on rare, threatened, or endangered species within the immediate vicinity of project site were submitted to USFWS, the DEC Natural Heritage Program (NYNHP), and National Marine Fisheries Service (NMFS). There are no federally listed or proposed endangered or threatened species under the authority of the USFWS known to exist in the vicinity of the project site.

The proposed MRF would be largely situated on an existing pier with additional activities within Gowanus Bay. Dredging and removal of existing underwater debris would be required prior to the operation of the facility. Dredging would result in limited impacts on water quality, which would be of short-term duration and highly localized.

The proposed bulkhead and fendering system to support the MRF would require filling within tidal wetlands, and the proposed EBUF would cover portions of the tidal wetlands.

New York Harbor is a heavily traveled waterway. The addition of approximately two, up to a maximum of six, barge trips per day is not expected to have significant adverse effects on any vulnerable plant, fish, and wildlife species, or rare ecological communities that may exist in the project site vicinity.

There would be no direct water intake or discharge, with the exception of stormwater, to Gowanus Bay for the facility. The stormwater discharge associated with the proposed project would be an improvement over conditions currently occurring at the project site. The existing stormwater lines and catch basins, which are in disrepair, will be replaced as part of the EDC's upgrades to the SBMT prior to construction of the proposed project. New storm drain lines and catch basins will be installed and connected to existing trunk lines, or through a new trunk line system should the existing pipes prove be inadequate. All stormwater at the project site will be treated through underground filtration units prior to discharge.

The proposed MRF would not introduce hazardous waste or other pollutants into the environment that could adversely impact fish and wildlife resources within the coastal zone.

As stated above, habitat enhancement measures proposed as part of the project will offset adverse impacts on these wetlands and their potential use as fish habitat.

Therefore, the proposed project would be compatible with the existing ecological community and consistent with this policy.

Policy 4.4: Maintain and protect living aquatic resources.

Dredging and in-water construction of the low-level platform, EBUF finger pier and mooring pier, and temporary increases in suspended sediment are expected to be localized to the vicinity of the dredging and pile driving, and are not expected to result in significant adverse impacts on aquatic biota. The temporary loss of benthic macroinvertebrates due to dredging, while it would result in the loss of some individual macroinvertebrates, is not expected to result in significant adverse impacts on populations of these species within the Harbor Estuary. Additionally, the newly exposed sediments would be expected to be quickly recolonized by these same species. Similarly, the permanent loss of a small amount of bottom habitat and water column habitat for each pile installed, and the benthic macroinvertebrates associated with these pile footprints, would not be expected to result in significant adverse impacts on populations of aquatic species using Gowanus Bay.

Operation of the MRF on the 30th Street Pier would not result in significant adverse impacts on water quality or to aquatic biota. The proposed coverage of approximately 0.59 acres of water column and bottom habitat by overwater platforms wider than 15 feet associated with the MRF, would result in unavoidable adverse impacts on fish habitat due to shading. However, habitat enhancement measures proposed as part of the project will offset adverse impacts on lands of potential use as fish habitat.

The development of approximately 0.59 acre of overwater coverage as part of the construction of the MRF at the 30th Street Pier would result in unavoidable adverse impacts on the suitability of some of the underwater portion of these expanded piers as EFH for some of the fish species identified by NMFS as having Essential Fish Habitat EFH in Gowanus Bay and the Upper Bay. These adverse impacts will be offset by the habitat enhancement measures proposed as part of the project. EFH species that are sight feeders, or have a high potential to occur in the vicinity of the 30th Street Pier, would have the greatest potential to be adversely affected by the proposed project. EFH species most likely to be adversely affected by the increased shading include: winter flounder, windowpane, bluefish, butterfish, summer flounder, and black sea bass. Nevertheless, the aquatic habitat in the vicinity of 30th Street Pier comprises a small portion of the EFH for the species identified as having EFH in the Upper Bay. With the implementation of the proposed habitat enhancement measures, adverse impacts on EFH will be offset.

Policy 5: Protect and improve water quality in the New York City coastal area.

Policy 5.1: Manage direct or indirect discharges to waterbodies.

There would be no direct water intake or discharge, with the exception of stormwater, to Gowanus Bay for the facility. In the future, stormwater discharge would be an improvement over conditions currently occurring at the project site. The existing stormwater lines and catch basins, which are in disrepair, will be replaced as part of the EDC's upgrades to the SBMT prior to construction of the proposed project. New storm drain lines and catch basins will be installed and connected to existing trunk lines, or through a new trunk line system should the existing pipes prove be inadequate. All stormwater at the project site will be

treated through underground filtration units prior to discharge. The project site falls within the service area of the Owl's Head Water Pollution Control Plant (WPCP). Connections to the existing combined sewer system that runs below Second Avenue would be made to handle sanitary waste from the proposed project. Therefore, the proposed project would manage discharges to the Gowanus Bay and be consistent with this policy.

Policy 5.2: Protect the quality of New York City's waters by managing activities that generate non-point source pollution.

The addition of approximately two, up to a maximum of six, barge trips per day is not expected to have significant adverse effects on water quality in the New York City coastal area. Construction, operation, and maintenance of the proposed MRF facility would implement best management practices, including a Stormwater Pollution Prevention Plan, to prevent non-point discharges to coastal waters. In addition, the proposed project would contain litter control measures such as a mechanical sweeper, the placement of booms around the barges, the use of a dip net, and a small boat to recover floatables that escape the boom. On-site storage of petroleum products related to the operation of the proposed MRF would be done in accordance with applicable federal, state, and local regulations. As described above, stormwater would be appropriately handled before discharge. Thus, it is expected that project activities would not adversely impact water quality, and the proposed project would be consistent with this policy.

Policy 5.3: Protect water quality when excavating or placing fill in navigable waters and in, or near, marshes, estuaries, tidal marshes or wetlands.

Dredging would be required to improve existing water depths at and in the vicinity of the project site and to allow for the unimpeded operation of barges once the MRF facility is operational. In addition, removal of existing underwater debris and existing piling remnants from the previous demolition of finger piers that abutted the project site would be required prior to operation of the proposed facility. As further discussed in Attachment F, "Natural Resources," of this EAS, all dredging activities would be conducted in compliance with applicable federal, state and local regulations, and required permits would be acquired prior to any in-water activities. Dredging and the subsequent development of the proposed facility would not be expected to result in any long-term impacts on water quality.

The proposed bulkhead and fendering system to support the MRF facility would require filling within the tidal wetlands adjacent area; the proposed EBUF would cover portions of the tidal wetlands, resulting in unavoidable adverse shading impacts on approximately 1.76 acres of littoral zone wetlands. Habitat enhancement measures proposed as part of the project will offset adverse impacts to these wetlands and their potential use as fish habitat. Therefore, the proposed project would be consistent with this policy.

Policy 5.4: Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.

Because of the project's location on a pier, the proposed project would not affect any groundwater, streams, or the source of water for wetlands. No surface or groundwaters in the vicinity of the project site constitute a primary or sole source aquifer or water supply.

The stormwater discharge associated with the project site would be an improvement over conditions currently occurring at the project site. The existing stormwater lines and catch basins, which are in disrepair, will be replaced as part of the EDC's upgrades to the SBMT

prior to construction of the proposed project. New storm drain lines and catch basins will be installed and connected to existing trunk lines, or through a new trunk line system should the existing pipes prove be inadequate. All stormwater at the project site will be treated through underground filtration units prior to discharge. The project site falls within the service area of the Owl's Head WPCP. Connections to the existing combined sewer system that runs below Second Avenue would be made to handle sanitary waste from the proposed project. Therefore, the proposed project would be consistent with this policy.

Policy 6: Minimize the loss of life, structures, and natural resources caused by flooding and erosion.

Policy 6.1: Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the condition and use of the property to be protected and the surrounding area.

As the project site is a pier with an impermeable surface, erosion would not be expected to occur. The project site is located in the 100-year floodplain (see Figure A-2). The pier would be equipped with a new bulkhead and fendering system to alleviate conditions that might lead to erosion. Construction, operations, and maintenance of the proposed MRF facility would implement best management practices to prevent potential impacts from flooding or erosion. No structural or non-structural measures would be needed to control flooding, and the proposed project would be consistent with this policy.

Policy 6.2: Direct public funding for flood prevention or erosion control measures in those locations where the investment will yield significant public benefit.

This project does not involve public funding for flood prevention or erosion control measures, and therefore this policy is not applicable.

Policy 6.3: Protect and preserve non-renewable sources of sand for beach nourishment.

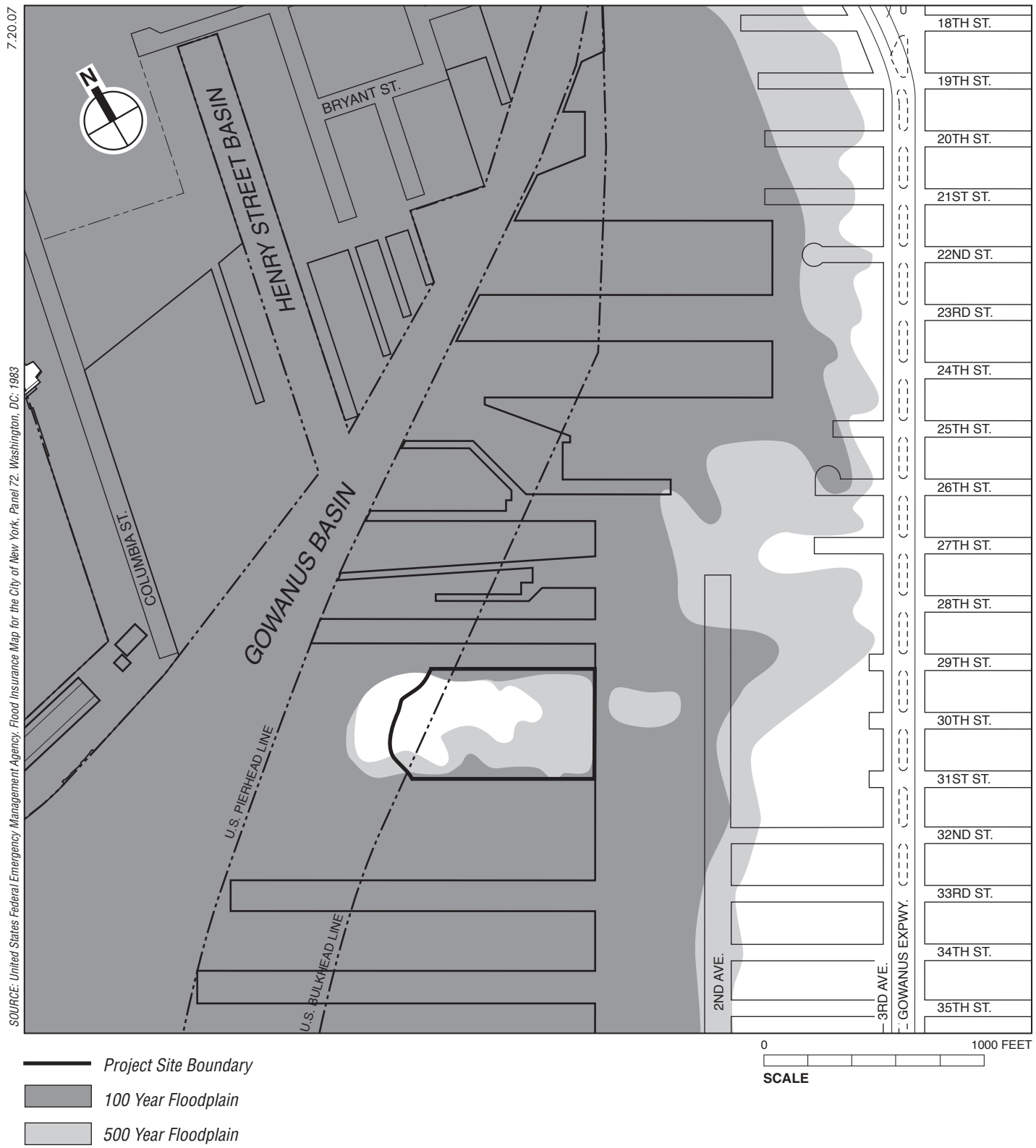
The project site and surrounding area do not contain public or private beaches and have no non-renewable sources of sand. Therefore, this policy does not apply.

Policy 7: Minimize environmental degradation from solid waste and hazardous substances.

Policy 7.1: Manage solid waste material, hazardous wastes, toxic pollutants, and substances hazardous to the environment to protect public health, control pollution, and prevent degradation of coastal ecosystems.

The proposed project would contain litter control measures such as a mechanical sweeper, the placement of booms around the barges, the use of a dip net, and a small boat to recover floatables that escape the boom. Paper and other materials on barges transiting to and from New Jersey would be secured with netting to prevent any material from being blown away. In addition, on-site storage of petroleum products related to the operation of the proposed MRF would be done in accordance with applicable federal, state, and local regulations. Any hazardous materials generated during construction would be handled and disposed of in accordance with all applicable regulations. If necessary, implementation of a health and safety plan would protect workers during the construction period. Therefore, the proposed project would be consistent with this policy.

Policy 7.2: Prevent and remediate discharge of petroleum products.



Sunset Park Materials Recovery Facility

Floodplain Map
Figure A-2

The proposed project would not generate petroleum products. Use of petroleum products would be nominal and for routine use of on-site machinery. Any waste oil from these activities would be removed and disposed of by a licensed carter. Therefore, the proposed project would be consistent with this policy.

Policy 7.3: Transport solid waste and hazardous substances and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.

The proposed facility would not require the transport, storage, treatment, and disposal of hazardous waste on site. The proposed project would contain litter control measures such as a mechanical sweeper, the placement of booms around the barges, the use of a dip net, and a small boat to recover floatables that escape the boom. Thus, it is expected that project activities would not result in degradation of coastal resources, and the proposed project would be consistent with this policy.

Policy 8: Provide public access to and along New York City's coastal waters.

Policy 8.1: Preserve, protect, and maintain existing physical, visual, and recreational access to the waterfront.

Currently, there is no existing physical or recreational access to the waterfront at the project site. The proposed project would not interfere with or adversely affect the planning for the potential development of a greenway proposed along Second Avenue that would provide waterfront access for surrounding neighborhoods. The proposed facility would also contain a visitor/education center in a separate building along the west end of the pier, allowing for views of the harbor. The visitor/education center and greenway would be appropriate public uses for the waterfront in this area. The project site is located in a heavy industrial area and is not adjacent to a shoreline where recreational use is appropriate. Therefore, the proposed project would be consistent with this policy.

Policy 8.2: Incorporate public access into new public and private development where compatible with proposed land use and coastal location.

The proposed project would also not interfere with or adversely affect the planning for the potential development of a greenway proposed along Second Avenue that would provide waterfront access for surrounding neighborhoods. The proposed facility would also contain a visitor/education center in a separate building along the west end of the pier, allowing for views of the harbor. Therefore, the proposed project would be consistent with this policy.

Policy 8.3: Provide visual access to coastal lands, waters, and open space where physically practical.

The proposed project would not have an adverse impact on visual quality. The largest enclosed structure on the project site would be approximately 60 feet high and would be similar to many of the structures found along Brooklyn's working waterfront in terms of scale, design, arrangement, and size. The proposed project would not have substantially different bulk or setbacks from those that exist in the neighborhood. The proposed facility would contain a visitor/education center in a separate building along the west end of the pier, allowing for views of the harbor. The proposed project would not be anticipated to impair existing visual access to coastal lands, waters, or open space, and therefore would be consistent with this policy.

Policy 8.4: Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.

The project site is not adjacent to a shoreline where recreational use is appropriate. The proposed project would not interfere with or adversely affect the planning for the potential development of a greenway proposed along Second Avenue. Therefore, the proposed project would be consistent with this policy.

Policy 8.5: Preserve the public interest in and use of lands and waters held in public trust by the State and City.

The project site is under the jurisdiction of the New York City Department of Small Business Services (SBS). Under the proposed project, the project site would remain City property. As described in greater detail in the Environmental Assessment Statement (EAS), the public benefits of the proposed project are clear in that it would:

- Realize a central component of the City's recycling initiative as set forth in the City's Solid Waste Management Plan.
- Expand the City's marine-based recycling infrastructure through intra-city movement of materials.
- Minimize area-wide truck trips by utilizing barge transport and allowing for potential rail transport.
- Create a new tipping location for DSNY collection trucks that is strategically located for certain Brooklyn districts and will dramatically reduce DSNY collection truck vehicle miles traveled (VMTs) (estimated in excess of 200,000 VMT per year).
- Result in the development of state-of-the-art recycling infrastructure to support the City's recycling program within the City. This would, provide an important element of control over this essential infrastructure and retain the jobs and related economic development associated with this facility.
- Support the goal of redeveloping SBMT as set forth in the EDC's Strategic Plan for the Redevelopment of the Port of New York (Strategic Port Plan). The project site is well suited for marine transport, has the capacity for future rail linkages, and is located in an area buffered from residences and designated for heavy industry under zoning.

Therefore, the proposed project would yield significant public benefit and would be consistent with this policy.

Policy 9: Protect scenic resources that contribute to the visual quality of the New York City coastal area.

Policy 9.1: Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.

The proposed project would not impair scenic resources. The proposed facility would be situated adjacent to other industrial uses and would be a part of the working waterfront. The proposed facility would be similar in scale, design, arrangement, and size as many of the structures found along Brooklyn's working waterfront and would be compatible with the existing urban context and visual conditions of this part of the Gowanus Bay waterfront. The proposed project would not have substantially different bulk or setbacks from those that exist in the neighborhood. The construction would not occur in an area that has important

views, natural resources, or landmark structures. The proposed facility would rebuild a dilapidated industrial waterfront pier and create a visitor's center from which the visual quality of the working waterfront may be viewed and appreciated. Therefore, the proposed project would be consistent with this policy.

Policy 9.2: Protect scenic values associated with natural resources.

The proposed facility would be located on a developed pier that is adjacent to industrial uses, which do not provide scenic views associated with natural resources. Therefore, the proposed project would be consistent with this policy.

Policy 10: Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.

Policy 10.1 Retain and preserve designated historic resources and enhance resources significant to the coastal culture of New York City.

There are no sensitive historic resources in the immediate vicinity of the project site. The proposed project would not have any indirect significant adverse impacts on any sites listed on the State and National Registers of Historic Places. Therefore, the proposed project would be consistent with this policy.

Policy 10.2: Protect and preserve archaeological resources and artifacts.

There are no sensitive archaeological resources in the vicinity of the project site. Therefore this policy is not applicable.

C. CONCLUSION

Overall, the proposed project is not expected to result in any significant adverse impacts on the coastal zone. ✷

For Internal Use Only:	WRP no.
Date Received:	DOS no.

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM
Consistency Assessment Form

Proposed actions that are subject to CEQR, ULURP or other local, state or federal discretionary review procedures, and that are within New York City's designated coastal zone, must be reviewed and assessed for their consistency with the *New York City Waterfront Revitalization Program (WRP)*. The WRP was adopted as a 197-a Plan by the Council of the City of New York on October 13, 1999, and subsequently approved by the New York State Department of State with the concurrence of the United States Department of Commerce pursuant to applicable state and federal law, including the Waterfront Revitalization of Coastal Areas and Inland Waterways Act. As a result of these approvals, state and federal discretionary actions within the city's coastal zone must be consistent to the maximum extent practicable with the WRP policies and the city must be given the opportunity to comment on all state and federal projects within its coastal zone.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, other state agencies or the New York City Department of City Planning in their review of the applicant's certification of consistency.

A. APPLICANT

1. Name: NYC Department of Sanitation (DSNY); NYC Department of Small Business Services (SBS)
2. Address: 125 Worth Street, Room 708, New York, NY 10013; 110 William Street, 7th Floor, New York, NY 10038
3. Telephone: 646-885-4993; 212-513-6428 Fax: 212-442-9090; 212-618-8991 E-mail: abraimah@dsny.nyc.gov; ASCHWARTZ@sbs.nyc.gov
4. Project site owner: City of New York

B. PROPOSED ACTIVITY

1. Brief description of activity:

   The applicant, Simsmetal East LLC (Sims), is seeking a lease from SBS for the use of the 30th Street Pier located within the South Brooklyn Marine Terminal (SBMT) in Sunset Park, Brooklyn to construct and operate a material recycling facility. Sims also proposes to enter into a long-term contract with DSNY to process and market source-separated recyclables delivered by DSNY. The lease and contract term are both 20 years, with 10-year renewal options. Materials to be handled at the proposed facility would include New York City-designated recyclables consisting of metal, glass, plastic (MGP), various kinds of paper and cardboard, and certain scrap metal, and would be transported to and from the facility by barge and/or truck. Construction of the proposed facility would require dredging of accumulated sediment at the South Face of the 29th Street Pier, construction of a relieving platform, mooring pier, and enclosed barge unloading facility (EBUF). The proposed action would require permits and approvals from DSNY, SBS, U.S. Army Corps of Engineers, New York State Department of Environmental Conservation, New York State Office of General Services, and New York State Department of State. Please see attachment.

2. Purpose of activity:

   The proposed actions are needed to implement recycling elements of the City's new Solid Waste Management Plan, develop a state-of-the-art materials recycling facility to maximize recycling efficiency and reduce processing and marketing costs to the City, while expanding the City's marine-based movement of goods and reducing DSNY and area-wide truck trips. These proposals would involve dredging of accumulated sediment at the 30th Street Pier to provide water depths and berths necessary for safe mooring and maneuvering of vessels in support of the economic development of SBMT. Please see attachment.

3. Location of activity: (street address/borough or site description):

   30th Street Pier, SBMT, Brooklyn, NY

Proposed Activity Cont'd

4. If a federal or state permit or license was issued or is required for the proposed activity, identify the permit type(s), the authorizing agency and provide the application or permit number(s), if known:

   New York State Department of Environmental Conservation permits for Material Recycling Facility (MRF), Protection of Waters, Tidal Wetlands; New York State Office Office of General Services Easement for Use of Underwater Lands; New York State Department of State's certification of consistency with the Waterfront Revitalization Program policies; U.S. Army Corps of Engineers Section 10 and Section 404 permits for dredge and waterfront construction.

5. Is federal or state funding being used to finance the project? If so, please identify the funding source(s).

   No

6. Will the proposed project require the preparation of an environmental impact statement?
   Yes _____ No ✓ If yes, identify Lead Agency:

7. Identify **city** discretionary actions, such as a zoning amendment or adoption of an urban renewal plan, required for the proposed project.

   Contract with Simsmetal East LLC (Sims) for processing of recyclables; SBS lease with Sims of City pier; Funding by DSNY for pier improvements.

C. COASTAL ASSESSMENT

Location Questions:	**Yes**	**No**
1. Is the project site on the waterfront or at the water's edge?	✓	
2. Does the proposed project require a waterfront site?	✓	
3. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land underwater, or coastal waters?	✓	

Policy Questions	**Yes**	**No**

The following questions represent, in a broad sense, the policies of the WRP. Numbers in parentheses after each question indicate the policy or policies addressed by the question. The new Waterfront Revitalization Program offers detailed explanations of the policies, including criteria for consistency determinations.

Check either "Yes" or "No" for each of the following questions. For all "yes" responses, provide an attachment assessing the effects of the proposed activity on the relevant policies or standards. Explain how the action would be consistent with the goals of those policies and standards.

4. Will the proposed project result in revitalization or redevelopment of a deteriorated or under-used waterfront site? (1)	✓	
5. Is the project site appropriate for residential or commercial redevelopment? (1.1)	✓	
6. Will the action result in a change in scale or character of a neighborhood? (1.2)		✓

Policy Questions cont'd	Yes	No
7. Will the proposed activity require provision of new public services or infrastructure in undeveloped or sparsely populated sections of the coastal area? (1.3)		✓
8. Is the action located in one of the designated Significant Maritime and Industrial Areas (SMIA): South Bronx, Newtown Creek, Brooklyn Navy Yard, Red Hook, Sunset Park, or Staten Island? (2)	✓	
9. Are there any waterfront structures, such as piers, docks, bulkheads or wharves, located on the project sites? (2)	✓	
10. Would the action involve the siting or construction of a facility essential to the generation or transmission of energy, or a natural gas facility, or would it develop new energy resources? (2.1)		✓
11. Does the action involve the siting of a working waterfront use outside of a SMIA? (2.2)		✓
12. Does the proposed project involve infrastructure improvement, such as construction or repair of piers, docks, or bulkheads? (2.3, 3.2)	✓	
13. Would the action involve mining, dredging, or dredge disposal, or placement of dredged or fill materials in coastal waters? (2.3, 3.1, 4, 5.3, 6.3)	✓	
14. Would the action be located in a commercial or recreational boating center, such as City Island, Sheepshead Bay or Great Kills or an area devoted to water-dependent transportation? (3)		✓
15. Would the proposed project have an adverse effect upon the land or water uses within a commercial or recreation boating center or water-dependent transportation center? (3.1)		✓
16. Would the proposed project create any conflicts between commercial and recreational boating? (3.2)		✓
17. Does the proposed project involve any boating activity that would have an impact on the aquatic environment or surrounding land and water uses? (3.3)		✓
18. Is the action located in one of the designated Special Natural Waterfront Areas (SNWA): Long Island Sound- East River, Jamaica Bay, or Northwest Staten Island? (4 and 9.2)		✓
19. Is the project site in or adjacent to a Significant Coastal Fish and Wildlife Habitat? (4.1)		✓
20. Is the site located within or adjacent to a Recognized Ecological Complex: South Shore of Staten Island or Riverdale Natural Area District? (4.1and 9.2)		✓
21. Would the action involve any activity in or near a tidal or freshwater wetland? (4.2)	✓	
22. Does the project site contain a rare ecological community or would the proposed project affect a vulnerable plant, fish, or wildlife species? (4.3)		✓
23. Would the action have any effects on commercial or recreational use of fish resources? (4.4)		✓
24. Would the proposed project in any way affect the water quality classification of nearby waters or be unable to be consistent with that classification? (5)		✓
25. Would the action result in any direct or indirect discharges, including toxins, hazardous substances, or other pollutants, effluent, or waste, into any waterbody? (5.1)		✓
26. Would the action result in the draining of stormwater runoff or sewer overflows into coastal waters? (5.1)		✓
27. Will any activity associated with the project generate nonpoint source pollution? (5.2)	✓	
28. Would the action cause violations of the National or State air quality standards? (5.2)		✓

Policy Questions cont'd	Yes	No
29. Would the action result in significant amounts of acid rain precursors (nitrates and sulfates)? (5.2C)		✓
30. Will the project involve the excavation or placing of fill in or near navigable waters, marshes, estuaries, tidal marshes or other wetlands? (5.3)	✓	
31. Would the proposed action have any effects on surface or ground water supplies? (5.4)		✓
32. Would the action result in any activities within a federally designated flood hazard area or state-designated erosion hazards area? (6)	✓	
33. Would the action result in any construction activities that would lead to erosion? (6)		✓
34. Would the action involve construction or reconstruction of a flood or erosion control structure? (6.1)	✓	
35. Would the action involve any new or increased activity on or near any beach, dune, barrier island, or bluff? (6.1)		✓
36. Does the proposed project involve use of public funds for flood prevention or erosion control? (6.2)		✓
37. Would the proposed project affect a non-renewable source of sand ? (6.3)		✓
38. Would the action result in shipping, handling, or storing of solid wastes, hazardous materials, or other pollutants? (7)	✓	
39. Would the action affect any sites that have been used as landfills? (7.1)	✓	
40. Would the action result in development of a site that may contain contamination or that has a history of underground fuel tanks, oil spills, or other form or petroleum product use or storage? (7.2)	✓	
41. Will the proposed activity result in any transport, storage, treatment, or disposal of solid wastes or hazardous materials, or the siting of a solid or hazardous waste facility? (7.3)	✓	
42. Would the action result in a reduction of existing or required access to or along coastal waters, public access areas, or public parks or open spaces? (8)		✓
43. Will the proposed project affect or be located in, on, or adjacent to any federal, state, or city park or other land in public ownership protected for open space preservation? (8)		✓
44. Would the action result in the provision of open space without provision for its maintenance? (8.1)		✓
45. Would the action result in any development along the shoreline but NOT include new water-enhanced or water-dependent recreational space? (8.2)	✓	
46. Will the proposed project impede visual access to coastal lands, waters and open space? (8.3)		✓
47. Does the proposed project involve publicly owned or acquired land that could accommodate waterfront open space or recreation? (8.4)		✓
48. Does the project site involve lands or waters held in public trust by the state or city? (8.5)	✓	
49. Would the action affect natural or built resources that contribute to the scenic quality of a coastal area? (9)		✓
50. Does the site currently include elements that degrade the area's scenic quality or block views to the water? (9.1)	✓	

Policy Questions cont'd	Yes	No
51. Would the proposed action have a significant adverse impact on historic, archeological, or cultural resources? (10)		✓
52. Will the proposed activity affect or be located in, on, or adjacent to an historic resource listed on the National or State Register of Historic Places, or designated as a landmark by the City of New York? (10)		✓

D. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's Waterfront Revitalization Program, pursuant to the New York State Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If the certification can be made, complete this section.

"The proposed activity complies with New York State's Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent Name: DSNY/Abas Braimah; SBS/Andrew Schwartz

Address: 125 Worth Street, Room 708, New York, NY 10013; 110 William Street, 7th Floor, New York, NY 10038

Telephone 646-885-4993; 212-513-6428

Applicant/Agent Signature: Abas Andrew Schwartz Date: 3/26/08

A. INTRODUCTION

This attachment presents the traffic and parking analysis for the proposed Sims Municipal Recycling of New York, LLC ("Sims") Sunset Park Materials Recovery Facility (MRF) to be located in Sunset Park, Brooklyn. The site is located at the 30th Street Pier near 2nd Avenue. Vehicular access to the site would be provided via 29th Street as outlined in the Axis lease.

Based on the methodologies of the *City Environmental Quality Review (CEQR) Technical Manual*, this analysis examines the potential impact of project-generated vehicle trips by comparing future conditions with the proposed project to those without the project. The following sections describe the traffic study area in terms of the current roadway network and traffic operations at key intersections where project-generated vehicles are likely to increase traffic volumes (the study area intersections), major projects with expected completion dates between now and the 2009 project build year, project-generated trips and their potential effect on traffic operations at study area intersections, and project-related intersection improvements developed to ensure that the proposed project would not result in significant adverse impacts.

For the purposes of this analysis, the traffic study area is bounded by 20th Street, 39th Street, 2nd Avenue, and 4th Avenue. Because the origin and destination points of site-generated trips are dispersed throughout the region, the impact of project-generated vehicles beyond the traffic study area would be minimal. As detailed below, with some changes in signal timing, the proposed project would not result in any significant adverse traffic impacts.

With designated areas available on-site for loading and unloading trucks and for employee parking, there would not be a demand for off-site parking from the proposed project. Therefore, the proposed project would not result in a significant adverse impact on parking supply in the area and no further analysis is required.

B. EXISTING CONDITIONS

EXISTING ROADWAY NETWORK

One interstate highway, several arterial roadways, and numerous local streets serve the area. The Gowanus Expressway (I-278) is the sole highway in the study area. As such, it is a through truck route. It runs in a north-south direction on an elevated structure above 3rd Avenue. Northbound and southbound exits are located at 4th Avenue and 38th Street and 2nd Avenue and 39th Street, respectively. Northbound and southbound highway entrance ramps are located further south near the intersection of 3rd Avenue and 60th Street.

Arterial roadways serving the study area are 3rd Avenue, 4th Avenue, and 39th Street.

- 3rd Avenue is a major arterial connecting Bay Ridge to downtown Brooklyn. It is also a local truck route serving northbound and southbound traffic. The Gowanus Expressway

operates on an elevated platform in the center of the avenue. The area underneath the elevated highway forms a median approximately 50 feet in width. Due to the presence of this median, each 3rd Avenue intersection with the cross-streets forms two adjacent intersections. Traffic signals at each intersection pair operate with the same phasing and timing plan. 3rd Avenue typically has three travel lanes in each direction with the right lane also accommodating on-street parking. Land uses along 3rd Avenue are industrial and commercial. The side streets also contain some residential uses.

- 4th Avenue is another major north-south arterial roadway in the area. Within the study area, the segment between 20th Street and 39th Street is also a local truck route. It generally has three or four travel lanes in each direction, although the exact lane configuration varies at different intersections. A median (approximately 10 feet wide) separates northbound and southbound vehicles. Generally, on-street parking is permitted along 4th Avenue's curb lanes. Land use along 4th Avenue is primarily commercial.
- 39th Street is a minor arterial roadway. Within the study area, it also serves as a local truck route. It runs in the east-west direction, usually with one or two lanes per direction. The exact lane configuration and the presence or lack of on-street parking varies depending upon the intersection. Land uses along 39th Street include industrial, commercial, and residential depending upon the location.

Other local streets that would serve project-related traffic include:

- 2nd Avenue is a north-south roadway just east of the project site. It provides access to industrial parcels along the waterfront.
- 20th Street is a local street running in the east-west direction. The portion within the study area has been designated a local truck route. On street parking is not permitted at either the eastbound or the westbound approach to 3rd Avenue.
- 29th Street is a local roadway serving eastbound traffic. On-street parking is permitted.
- 32nd Street serves eastbound and westbound traffic. On-street parking is permitted.

Based on the assignment of project-generated trips, a study area of six intersections was determined for analysis, including the following (see Figure B-1):

Signalized Intersections:

- 3rd Avenue and 20th Street;
- 3rd Avenue and 29th Street;
- 3rd Avenue and 32nd Street;
- 3rd Avenue and 39th Street;
- 2nd Avenue and 39th Street/Gowanus Expressway southbound exit ramp;
- 4th Avenue and 39th Street;

TRAFFIC VOLUMES

Manual turning movement traffic counts were conducted at the study area intersections on Thursday, June 22, 2006. Sample vehicle classification counts were conducted at 2nd Avenue and 39th Street and at 3rd Avenue and 39th Street. Additionally, automatic traffic recorder (ATR) counts were conducted along the 3rd Avenue approaches to the intersection with 39th Street from Sunday, June 18, through Friday, June 23, 2006.

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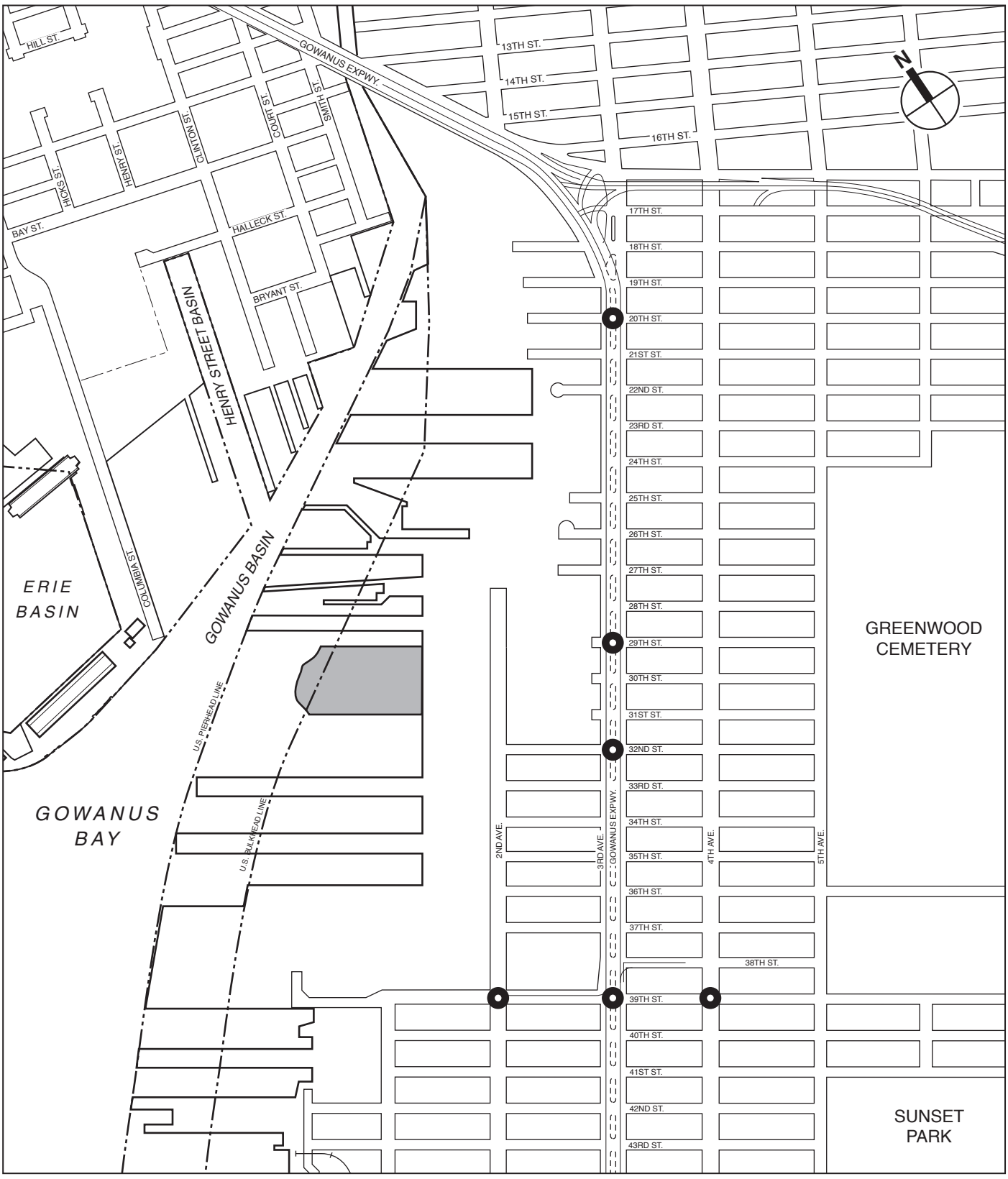

Traffic Study Area
Figure B-1

Existing traffic volumes were greatest during the typical commuter peak hours (8-9 AM and 5-6 PM). The traffic volume data also revealed a lesser late morning travel peak between 10 and 11 AM. As detailed in Section D, "Probable Impacts of the Proposed Action," project trip generation exceeding the CEQR threshold of 50 vehicle trips per hour is expected to occur during the AM peak hour of 8 to 9 AM, during the early midday hour of 11 AM to 12 PM, and during the late afternoon hour of 3 to 4 PM. For the AM peak hour analysis, the 8-9 AM project trip generation was superimposed on the 8-9 AM background traffic. For the midday peak hour analysis, projected trips from the 11 AM -12 PM peak hour were superimposed onto the 10 to 11 AM background traffic network for a conservative analysis. Because the proposed project's trip generation during the PM commuter peak hour is expected to be negligible, the late afternoon 3-4 PM time period was analyzed instead. For the late afternoon analysis, the 3-4 PM project trip generation was superimposed on the 3-4 PM background traffic. Hereafter, this is referred to as the PM peak hour analysis.

For all analysis periods, existing approach volumes at study area intersections are heaviest along the north-south through corridors of 3rd and 4th Avenues. Approach volumes are much smaller along local streets such as 2nd Avenue and the cross streets intersecting the avenues. Figures B-2, B-3, and B-4 show existing AM, midday, and PM peak hour traffic volumes at the study intersections.

ANALYSIS METHODOLOGY FOR SIGNALIZED INTERSECTIONS

The operation of signalized intersections within the study area was analyzed in accordance with CEQR guidelines by applying the methodologies presented in the 2000 *Highway Capacity Manual* (HCM) using Highway Capacity Software (HCS) 2000 Version 4.1f. This procedure evaluates signalized intersections for average delay per vehicle and level of service (LOS). LOS for signalized intersections are based on the average stopped delay per vehicle for the various lane group movements within the intersection. This delay is the basis for an LOS determination for individual lane groups (grouping of movements in one or more travel lanes), the approaches, and the overall intersection. The LOS criteria for signalized intersections are defined in the table below:

Level of Service Criteria

Level of Service	Delay Range (seconds)
A	≤10.0
B	>10.0 and ≤20.0
C	>20.0 and ≤35.0
D	>35.0 and ≤55.0
E	>55.0 and ≤80.0
F	>80.0
Sources: Transportation Research Board; Highway Capacity Manual, 2000.	

Although the HCM methodology calculates a volume-to-capacity (v/c) ratio, there is no strict relationship between v/c ratios and LOS as defined in the HCM. A high v/c ratio indicates substantial traffic passing through an intersection, but a high v/c ratio combined with low average delay actually represents the most efficient condition in terms of traffic engineering standards, where an approach or the whole intersection processes traffic close to its theoretical maximum with minimal delay. However, very high v/c ratios—especially those approaching or greater than 1.0—are often correlated with a deteriorated LOS. Other important variables affecting delay include cycle length, progression, and green time. LOS A and B indicate good

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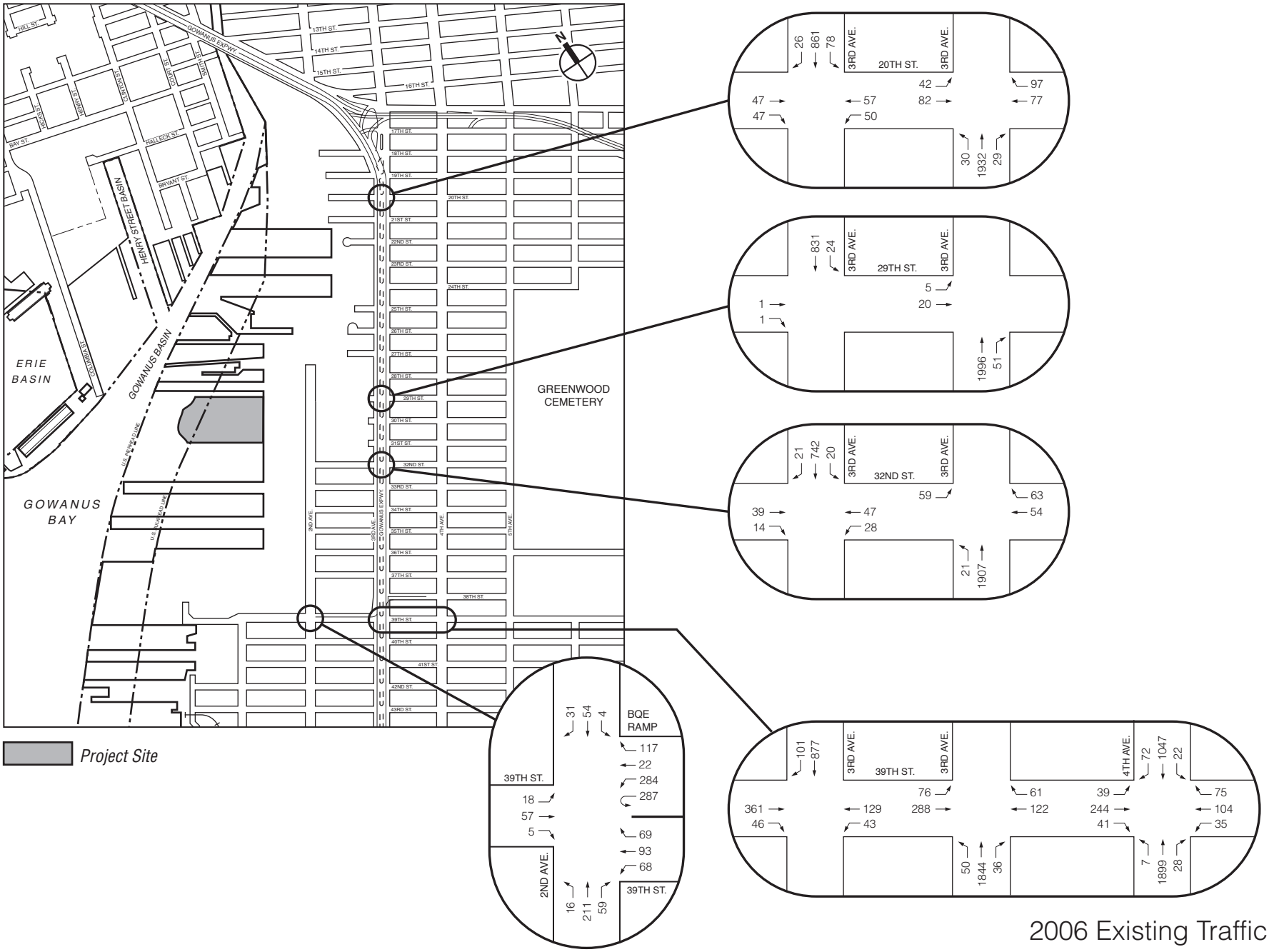

2006 Existing Traffic Volumes
AM Peak Hour
Figure B-2

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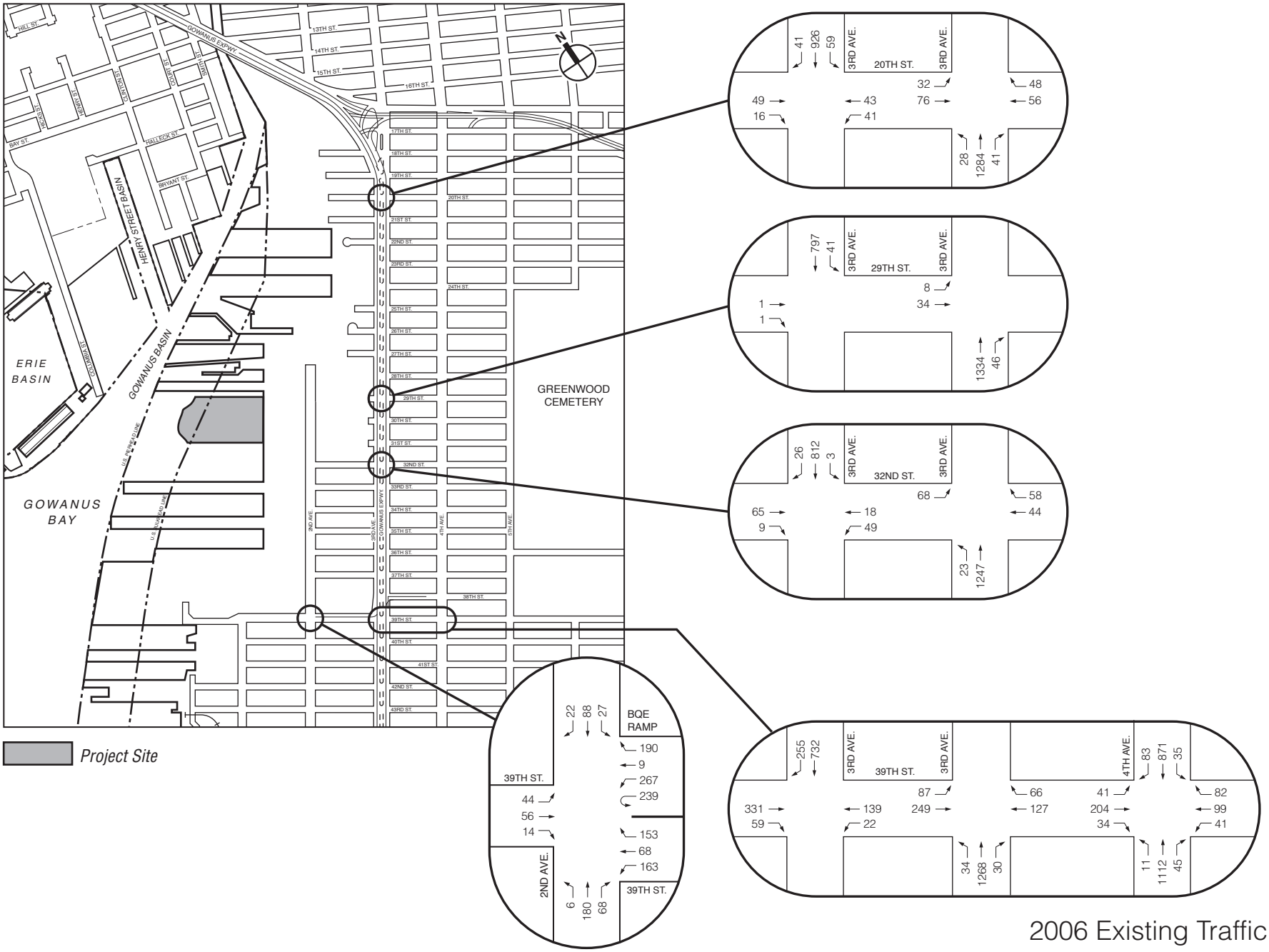

2006 Existing Traffic Volumes
Midday Peak Hour

Figure B-3

Sunset Park Materials Recovery Facility

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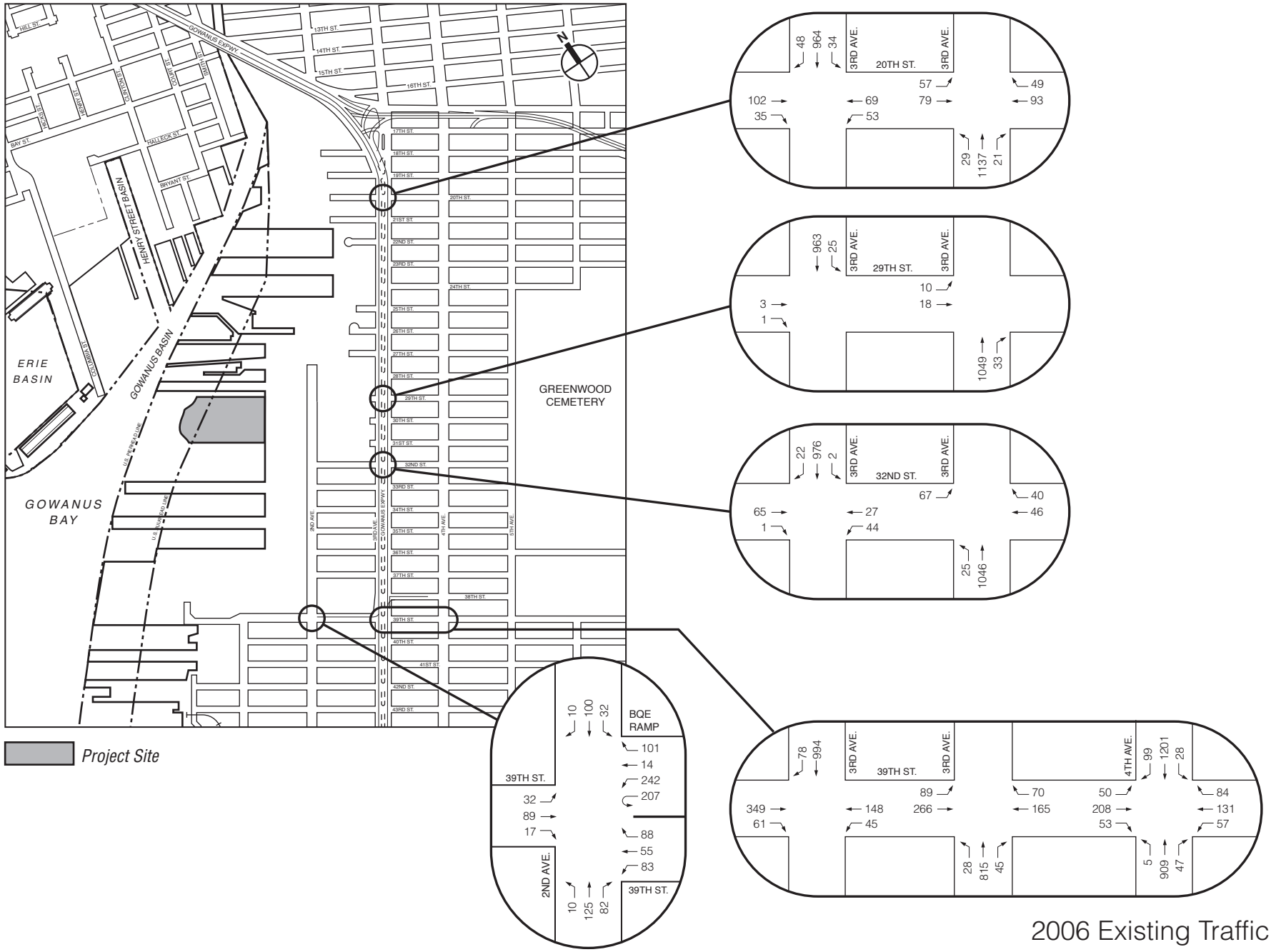

Project Site

2006 Existing Traffic Volumes
PM Peak Hour
Figure B-4

operating conditions with minimal delay. At LOS C, the number of vehicles stopping is higher, but congestion is still fairly light. LOS D describes a condition where congestion levels are more noticeable and individual cycle failures (a condition where motorists may have to wait for more than one green phase to clear the intersection) can occur. The mid-point of this service level (45 seconds of delay) is considered the threshold of acceptable operating conditions. Conditions at LOS E and F reflect poor service levels, and cycle failures are frequent. The HCM methodology provides for a summary of the total intersection operating conditions, by identifying the two critical movements (the worst-case from each roadway) and calculating a summary of critical v/c ratio, delay, and LOS.

According to the criteria presented in the *CEQR Technical Manual*, impacts are considered significant and require examination of mitigation if they result in an increase in the Build condition of 5 or more seconds of delay in a lane group over No Build levels beyond mid-LOS D. For No Build LOS E, a 4-second increase in delay is considered significant. For No Build LOS F, a 3-second increase in delay is considered significant. Also, if the No Build LOS F condition already corresponds with a delay in excess of 120 seconds, an increase of 1.0 or more seconds of delay is considered significant. In addition, impacts are considered significant if levels of service deteriorate from acceptable A, B or C in the No Build conditions to marginally unacceptable LOS D (a delay in excess of 45 seconds, the midpoint of LOS D), or unacceptable LOS E or F in the future Build conditions. The above sliding scale is applicable only if the proposed action is projected to generate five or more vehicle trips through the analysis intersection in the peak hour.

INTERSECTION CAPACITY ANALYSIS

The signalized intersections included in the traffic study area were analyzed to ascertain their ability to accommodate existing traffic volumes and their resulting LOS. Because there would be notable differences between the background and project-generated vehicle mix, heavy vehicles were converted to passenger car equivalents (PCEs) for input into the HCS analysis. In accordance with CEQR guidelines, large trucks in the existing traffic stream were analyzed as 2.0 PCEs.

Table B-1 summarizes the analysis results while the text below highlights intersection movements operating at LOS D or worse, or at v/c ratios greater than 0.90.

- *3rd Avenue Southbound and 20th Street*—The eastbound approach operates at LOS D, with a delay of 38.8 seconds and a v/c ratio of 0.34 and the westbound approach operates at LOS D, with a delay of 43.6 seconds and a v/c ratio of 0.49 in the PM peak period.
- *3rd Avenue Northbound and 20th Street*—The eastbound approach operates at LOS D, with a delay of 46.3 seconds and a v/c ratio of 0.56 and the westbound approach operates at LOS D, with a delay of 39.0 seconds and a v/c ratio of 0.36 in the PM peak period.
- *3rd Avenue Northbound and 29th Street*—The northbound approach operates at LOS F, with a delay of 101.7 seconds and a v/c ratio of 1.03 in the AM peak period.
- *3rd Avenue Southbound and 32nd Street*—The eastbound approach operates at LOS D, with a delay of35.3 seconds and a v/c ratio of 0.16 and the westbound approach operates at LOS D, with a delay of 36.3 seconds and a v/c ratio of 0.25 in the PM peak period.
- *3rd Avenue Northbound and 32nd Street*—The northbound approach operates at LOS D, with a delay of 36.6 seconds and a v/c ratio of 0.96 in the AM peak period. The eastbound approach operates at LOS D, with a delay of 37.2 seconds and a v/c ratio of 0.31 and the westbound approach operates at LOS D, with a delay of 37.6 seconds and a v/c ratio of 0.35 in the PM peak period.

Table B-1
2006 Existing Conditions LOS Analysis

Intersection	AM Peak Hour				MD Peak Hour				PM Peak Hour			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
3rd Avenue SB & 20th Street												
Eastbound	TR	0.25	30.0	C	TR	0.14	28.3	C	TR	0.34	38.8	D
Westbound	LT	0.29	30.9	C	LT	0.18	29.0	C	LT	0.49	43.6	D
Southbound	LTR	0.41	14.2	B	LTR	0.44	14.5	B	LTR	0.40	9.4	A
	Intersection		17.5	B	Intersection		16.4	B	Intersection		15.7	B
3rd Avenue NB & 20th Street												
Eastbound	LT	0.45	34.4	C	LT	0.24	29.9	C	LT	0.56	46.3	D
Westbound	TR	0.37	32.1	C	TR	0.20	29.2	C	TR	0.36	39.0	D
Northbound	LTR	0.89	26.6	C	LTR	0.63	17.6	B	LTR	0.44	9.9	A
	Intersection		27.6	C	Intersection		19.3	B	Intersection		16.4	B
3rd Avenue SB & 29th Street												
Eastbound	TR	0.00	26.7	C	TR	0.01	26.8	C	TR	0.01	33.9	C
Southbound	LT	0.39	13.9	B	LT	0.40	14.0	B	LT	0.37	9.1	A
	Intersection		13.9	B	Intersection		14.1	B	Intersection		9.3	A
3rd Avenue NB & 29th Street												
Eastbound	LT	0.05	27.2	C	LT	0.10	27.7	C	LT	0.08	34.5	C
Northbound	TR	1.03	101.7	F	TR	0.61	17.1	B	TR	0.41	9.5	A
	Intersection		100.8	F	Intersection		17.5	B	Intersection		10.3	B
3rd Avenue SB & 32nd Street												
Eastbound	TR	0.11	27.7	C	TR	0.15	28.2	C	TR	0.16	35.3	D
Westbound	LT	0.18	28.5	C	LT	0.18	28.5	C	LT	0.25	36.3	D
Southbound	LTR	0.37	13.7	B	LTR	0.36	13.5	B	LTR	0.40	9.5	A
	Intersection		15.8	B	Intersection		15.9	B	Intersection		12.7	B
3rd Avenue NB & 32nd Street												
Eastbound	L	0.21	29.0	C	L	0.24	29.3	C	L	0.31	37.2	D
Westbound	TR	0.34	30.4	C	TR	0.27	29.6	C	TR	0.35	37.6	D
Northbound	LT	0.96	36.6	D	LT	0.59	16.8	B	LT	0.40	9.5	A
	Intersection		36.1	D	Intersection		18.4	B	Intersection		13.6	B
3rd Avenue SB & 39th Street												
Eastbound	TR	0.47	32.0	C	TR	0.53	32.9	C	TR	0.69	43.0	D
Westbound	LT	0.23	29.1	C	LT	0.23	29.0	C	LT	0.53	39.9	D
Southbound	T	0.41	14.1	B	T	0.39	13.9	B	T	0.36	9.0	A
	Intersection		20.9	C	Intersection		21.6	C	Intersection		23.2	C
3rd Avenue NB & 39th Street												
Eastbound	LT	0.69	37.3	D	LT	0.75	39.9	D	LT	1.05	179.4	F
Westbound	TR	0.46	32.0	C	TR	0.52	33.2	C	TR	0.79	52.7	D
Northbound	LTR	0.98	46.8	D	LTR	0.68	18.7	B	LTR	0.36	9.1	A
	Intersection		44.3	D	Intersection		24.5	C	Intersection		61.9	E
2nd Avenue & 39th Street												
Eastbound	LTR	0.27	34.0	C	DefL	1.04	290.0	F	LTR	0.37	35.6	D
					TR	0.34	35.9	D				
Westbound	LTR	0.76	47.4	D	LTR	1.05	175.3	F	LTR	0.69	44.3	D
WB BQE Ramp	LTR	0.65	25.2	C	LTR	0.69	26.2	C	LTR	0.54	22.9	C
Northbound	LTR	0.66	41.4	D	LTR	0.56	38.6	D	LTR	0.42	36.1	D
Southbound	LTR	0.23	33.5	C	LTR	0.37	35.5	D	LTR	0.33	34.8	C
	Intersection		33.5	C	Intersection		74.1	E	Intersection		31.6	C
4th Avenue & 39th Street												
Eastbound	L	0.33	40.9	D	L	0.33	40.8	D	L	0.54	54.2	D
	TR	0.97	105.0	F	TR	0.78	54.7	D	TR	0.82	59.3	E
Westbound	L	0.87	169.9	F	L	0.52	56.1	E	L	0.90	153.3	F
	TR	0.59	45.1	D	TR	0.59	45.3	D	TR	0.77	55.6	E
Northbound	L	0.06	8.1	A	L	0.06	7.8	A	L	0.05	7.9	A
	TR	0.95	28.6	C	TR	0.52	11.3	B	TR	0.43	10.3	B
Southbound	L	0.47	35.7	D	L	0.29	13.4	B	L	0.17	9.6	A
	TR	0.50	11.0	B	TR	0.40	9.9	A	TR	0.54	11.5	B
	Intersection		32.8	C	Intersection		19.1	B	Intersection		23.9	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service.

- *3rd Avenue Southbound and 39th Street*—The eastbound approach operates at LOS D, with a delay of 43.0 seconds and a v/c ratio of 0.69; the westbound approach operates at LOS D with a delay of 39.9 seconds and a v/c ratio of 0.53 during the PM peak period.
- *3rd Avenue Northbound and 39th Street*—The northbound approach operates at LOS D, with a delay of 46.8 seconds and a v/c ratio of 0.98 in the AM peak period. The eastbound approach also operates at LOS D, with delays of 37.3, 39.9, and 179.4 seconds during the AM, midday, and PM peak periods, respectively. The corresponding v/c ratios are 0.69 during the AM peak period, 0.75 during the midday peak period, and 1.05 during the PM peak period. The westbound approach operates at LOS D with a delay of 52.7 seconds and a v/c ratio of 0.79 during the PM peak period.
- *2nd Avenue and 39th Street*—During the AM peak period, the westbound approach operates at LOS D, with a delay of 47.4 seconds and a v/c ratio of 0.76 while the northbound approach operates at LOS D, with a delay of 41.4 seconds and a v/c ratio of 0.66.

  During the midday peak period, the eastbound defacto left-turn movement operates at LOS F, with a delay of 290.0 seconds and a v/c ratio of 1.04 while the through-right turn movement operates at LOS D with a delay of 35.9 seconds and a v/c ratio of 0.34. During the midday peak, the westbound approach operates at LOS F, with a delay of 175.3 seconds and a v/c ratio of 1.05 while the northbound and southbound approaches both operate at LOS D, with delays of 38.6 and 35.5 seconds and v/c ratios of 0.56 and 0.37, respectively.

  During the PM peak period, the eastbound approach operates at LOS D, with a delay of 35.6 seconds and a v/c ratio of 0.37 while the westbound approach operates at LOS D with a delay of 44.3 seconds and a v/c ratio of 0.69. The northbound approach operates at LOS D, with a delay of 36.1 seconds and a v/c ratio of 0.42.
- *4th Avenue and 39th Street*—During the AM peak period, the eastbound left-turn movement operates at LOS D, with a delay of 40.9 seconds and a v/c ratio of 0.33 while the through-right movement operates at LOS F, with a delay of 105.0 seconds and a v/c ratio of 0.97. For the westbound approach, the left-turn movement operates at LOS F, with a delay of 169.9 seconds and a v/c ratio of 0.87 while the through-right movement operates at LOS D, with a delay of 45.1 seconds and a v/c ratio of 0.59. The northbound through-right turn movement operates at LOS C with a delay of 28.6 seconds and a v/c ratio of 0.95 and the southbound left-turn movement operates at LOS D, with a delay of 35.7 seconds and a v/c ratio of 0.47.

  During the midday peak period, the eastbound left-turn movement operates at LOS D, with a delay of 40.8 seconds and a v/c ratio of 0.33 while the through-right movement operates at LOS D, with a delay of 54.7 seconds and a v/c ratio of 0.78. At the westbound approach, the left-turn movement operates at LOS E, with a delay of 56.1 seconds and a v/c ratio of 0.52 while the through-right movement operates at LOS D, with a delay of 45.3 seconds and a v/c ratio of 0.59.

  During the PM peak period, the eastbound left-turn movement operates at LOS D, with a delay of 54.2 seconds and a v/c ratio of 0.54 while the through-right movement operates at LOS E, with a delay of 59.3 seconds and a v/c ratio of 0.82. At the westbound approach, the left-turn movement operates at LOS F, with a delay of 153.3 seconds and a v/c ratio of 0.90 while the through-right movement operates at LOS E, with a delay of 55.6 seconds and a v/c ratio of 0.77.

C. FUTURE WITHOUT THE PROPOSED ACTION

Traffic conditions in the future without the proposed action, the No Build condition, were assessed to establish a baseline from which the potential impacts of the proposed project could be evaluated. As recommended in the *CEQR Technical Manual*, a 1.0 percent annual growth rate was applied to the existing traffic volumes to estimate 2009 background traffic volumes. Then, traffic associated with projects planned for completion by 2009 was added to these volumes to yield the 2009 No Build traffic volumes. The following projects were considered to determine if they would generate trips in the traffic study area.

- South Brooklyn Marine Terminal Infrastructure Project;
- South Brooklyn Rail Re-alignment and Improvements;
- Axis Group Auto Storage Facility;
- Lafarge Cement Distribution Terminal;
- 65th Street Pier Intermodal Rail Facility;
- Waterfront Park at Bush Terminal - Piers 1-5;
- South Brooklyn Marine Terminal Greenway; and,
- Hamilton Avenue Marine Transfer Site.

Based on reviews of these projects, it was determined that most of projects listed above would not affect traffic within the study area or had a completion date beyond the build year for the proposed project. The two exceptions were the Axis Group Auto Storage Facility and the Hamilton Avenue Marine Transfer Site. Due to their geographic locations and trip generation characteristics, trips associated with the Axis Group Auto Storage Facility and the Hamilton Avenue Marine Transfer Site would traverse the study area traffic network in the future 2009 analysis year. These trips were added to the study area intersections to generate the No Build AM, midday, and PM traffic volumes as depicted in Figures B-5, B-6, and B-7.

INTERSECTION CAPACITY ANALYSIS

The same intersections analyzed under the assessment of existing conditions were evaluated for the No Build condition. Traffic signal timing modifications at the intersection of 3rd Avenue and 39th Street recommended as part of the Axis-South Brooklyn Marine Terminal study were incorporated into the No Build analysis. The modified signal timing involves transferring one second of green time from the northbound-southbound phase to the eastbound-westbound phase. None of the other intersections would undergo signal timing modifications. Table B-2 summarizes the analysis results while the text below presents the key findings.

Traffic conditions at the study area intersections would not change dramatically between existing conditions and the projected No Build condition. For many lane movements and approaches, the increased traffic volumes would result in increased delay and v/c ratios. In most instances, however, the increases would not result in a decline from acceptable to unacceptable level of service. The exceptions are discussed below.

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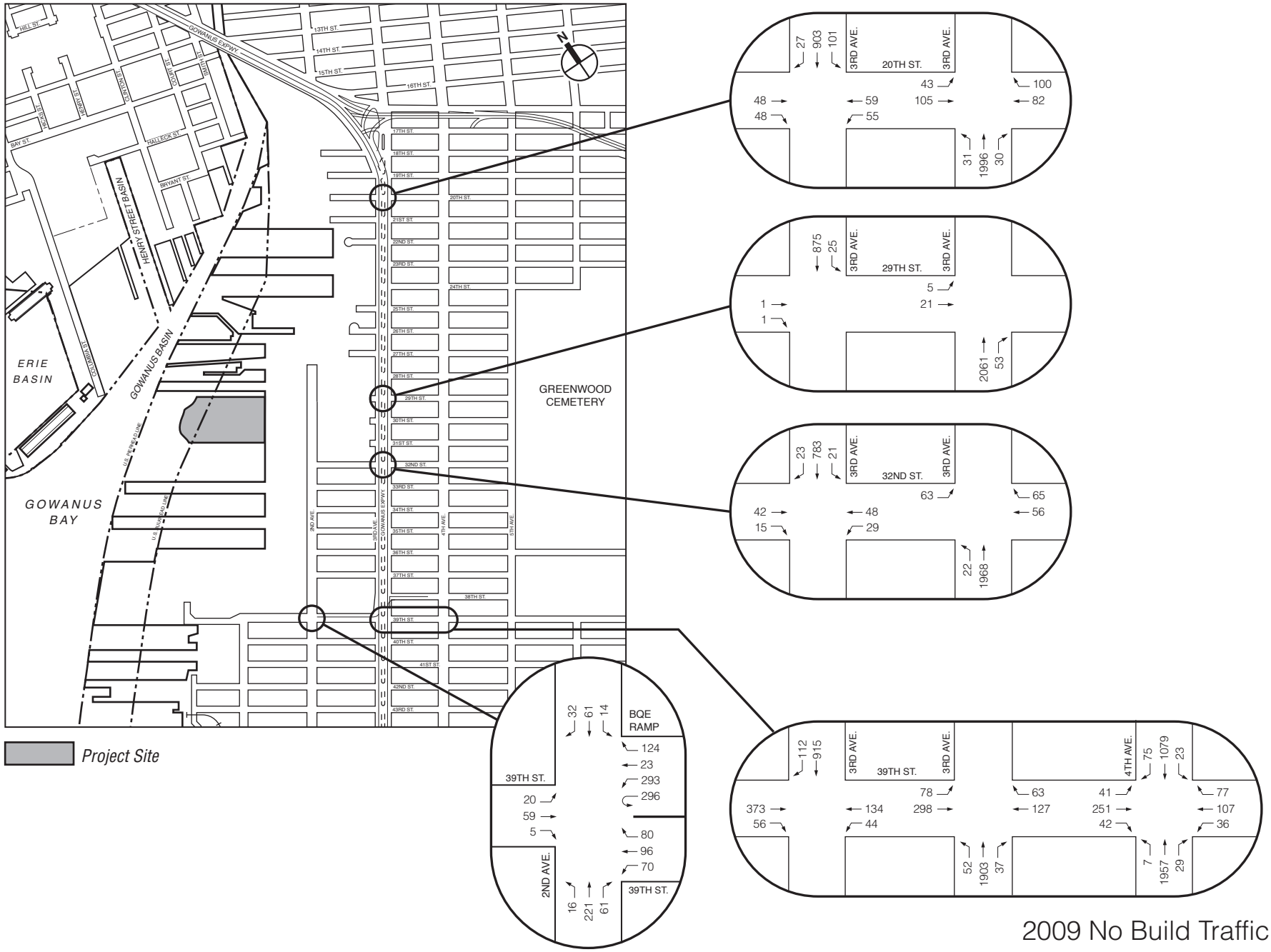

2009 No Build Traffic Volumes
AM Peak Hour
Figure B-5

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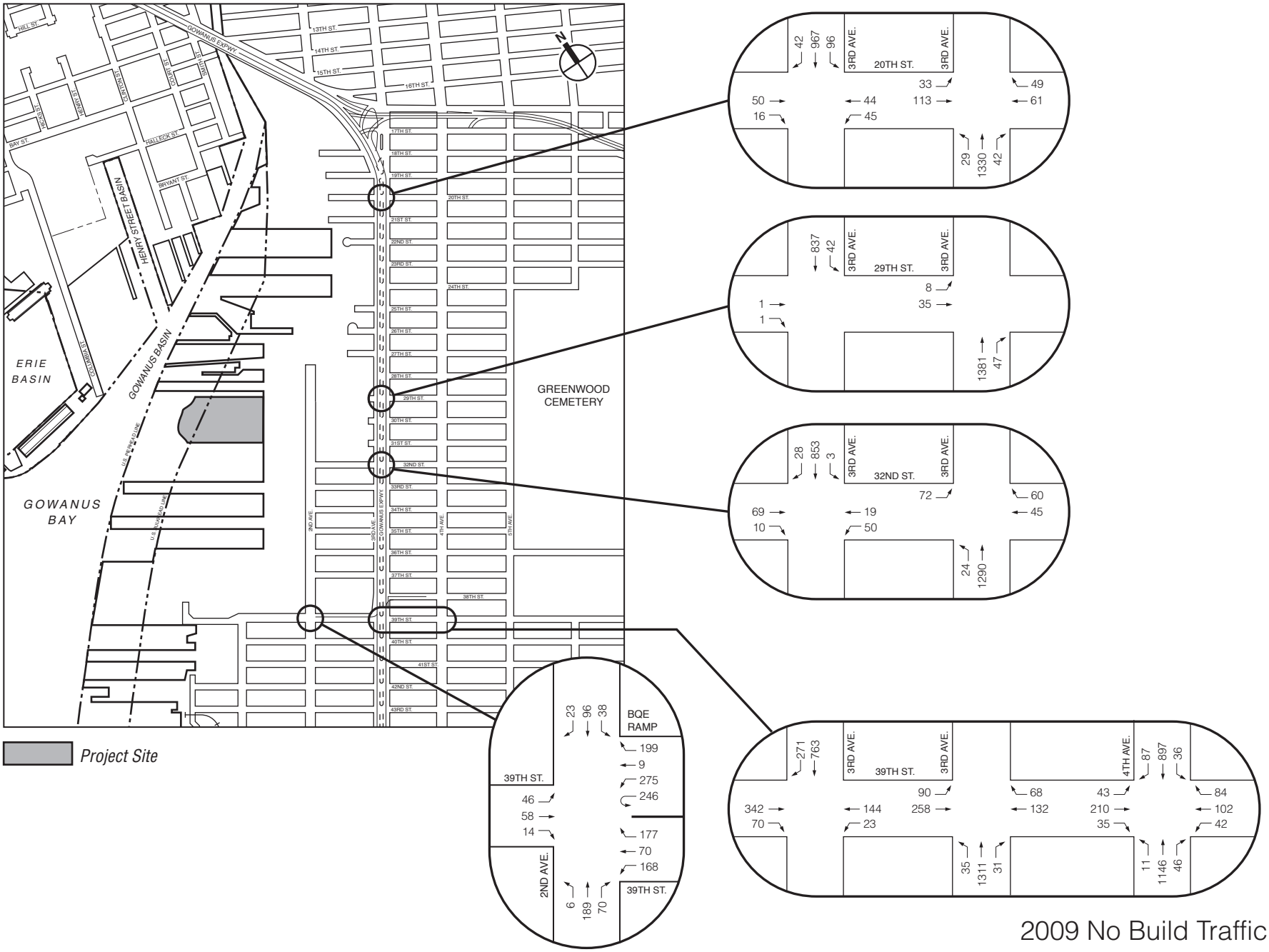

2009 No Build Traffic Volumes
Midday Peak Hour

Figure B-6

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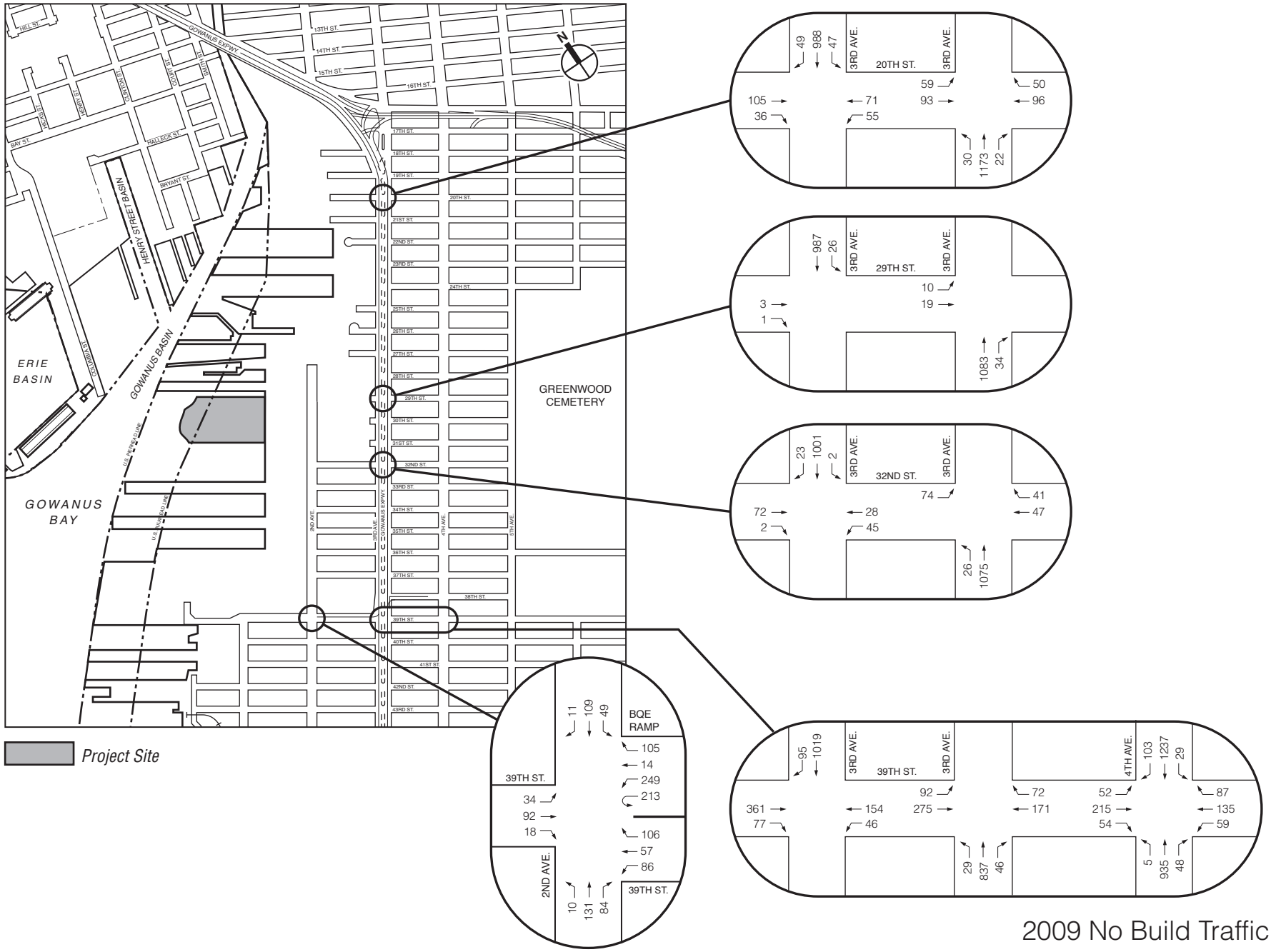

2009 No Build Traffic Volumes
PM Peak Hour
Figure B-7

Table B-2
2009 No Build Condition LOS Analysis

Intersection	AM Peak Hour				MD Peak Hour				PM Peak Hour			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
3rd Avenue SB & 20th Street												
Eastbound	TR	0.26	30.2	C	TR	0.14	28.4	C	TR	0.35	39.0	D
Westbound	LT	0.32	31.5	C	LT	0.19	29.2	C	LT	0.51	44.6	D
Southbound	LTR	0.44	14.5	B	LTR	0.47	14.9	B	LTR	0.41	9.6	A
	Intersection		17.8	B	Intersection		16.7	B	Intersection		15.9	B
3rd Avenue NB & 20th Street												
Eastbound	LT	0.53	36.5	D	LT	0.31	31.0	C	LT	0.63	49.5	D
Westbound	TR	0.39	32.4	C	TR	0.21	29.4	C	TR	0.37	39.2	D
Northbound	LTR	0.92	29.3	C	LTR	0.66	18.1	B	LTR	0.46	10.1	B
	Intersection		30.1	C	Intersection		20.0-	B	Intersection		17.1	B
3rd Avenue SB & 29th Street												
Eastbound	TR	0.00	26.7	C	TR	0.01	26.8	C	TR	0.01	33.9	C
Southbound	LT	0.41	14.1	B	LT	0.42	14.2	B	LT	0.38	9.2	A
	Intersection		14.1	B	Intersection		14.3	B	Intersection		9.3	A
3rd Avenue NB & 29th Street												
Eastbound	LT	0.06	27.2	C	LT	0.10	27.7	C	LT	0.08	34.5	C
Northbound	TR	1.07	155.7	F	TR	0.63	17.5	B	TR	0.42	9.7	A
	Intersection		154.1	F	Intersection		17.9	B	Intersection		10.4	B
3rd Avenue SB & 32nd Street												
Eastbound	TR	0.11	27.8	C	TR	0.16	28.3	C	TR	0.17	35.4	D
Westbound	LT	0.19	28.6	C	LT	0.18	28.6	C	LT	0.27	36.5	D
Southbound	LTR	0.39	13.9	B	LTR	0.38	13.7	B	LTR	0.41	9.6	A
	Intersection		16.0	B	Intersection		16.1	B	Intersection		12.9	B
3rd Avenue NB & 32nd Street												
Eastbound	L	0.23	29.2	C	L	0.26	29.5	C	L	0.33	37.6	D
Westbound	TR	0.35	30.6	C	TR	0.28	29.7	C	TR	0.36	37.7	D
Northbound	LT	0.99	50.9	D	LT	0.61	17.2	B	LT	0.41	9.6	A
	Intersection		49.1	D	Intersection		18.7	B	Intersection		13.7	B
3rd Avenue SB & 39th Street												
Eastbound	TR	0.50	32.3	C	TR	0.56	33.4	C	TR	0.73	44.6	D
Westbound	LT	0.25	29.2	C	LT	0.25	29.2	C	LT	0.57	40.7	D
Southbound	T	0.42	14.3	B	T	0.41	14.1	B	T	0.37	9.1	A
	Intersection		21.1	C	Intersection		21.9	C	Intersection		24.0	C
3rd Avenue NB & 39th Street												
Eastbound	LT	0.72	38.4	D	LT	0.78	41.6	D	LT	1.10	252.6	F
Westbound	TR	0.47	32.2	C	TR	0.54	33.6	C	TR	0.82	55.6	E
Northbound	LTR	1.02	76.1	E	LTR	0.71	19.3	B	LTR	0.37	9.2	A
	Intersection		67.2	E	Intersection		25.3	C	Intersection		82.3	F
2nd Avenue & 39th Street												
Eastbound	LTR	0.29	34.3	C	DefL	1.09	356.0	F	LTR	0.40	36.1	D
					TR	0.35	36.1	D				
Westbound	LTR	0.81	51.1	D	LTR	1.11	259.6	F	LTR	0.75	47.1	D
WB BQE Ramp	LTR	0.68	25.7	C	LTR	0.72	26.9	C	LTR	0.56	23.2	C
Northbound	LTR	0.70	42.5	D	LTR	0.59	39.2	D	LTR	0.44	36.3	D
Southbound	LTR	0.31	34.6	C	LTR	0.46	37.2	D	LTR	0.42	36.4	D
	Intersection		34.8	C	Intersection		97.9	F	Intersection		32.6	C
4th Avenue & 39th Street												
Eastbound	L	0.36	41.9	D	L	0.36	41.7	D	L	0.59	59.0	E
	TR	1.00	130.1	F	TR	0.80	56.7	E	TR	0.85	63.2	E
Westbound	L	0.90	191.1	F	L	0.58	62.7	E	L	1.04	277.4	F
	TR	0.61	45.8	D	TR	0.61	46.0	D	TR	0.79	57.4	E
Northbound	L	0.07	8.2	A	L	0.06	7.8	A	L	0.05	8.1	A
	TR	0.97	37.1	D	TR	0.54	11.5	B	TR	0.45	10.4	B
Southbound	L	0.50	39.5	D	L	0.31	14.5	B	L	0.18	9.9	A
	TR	0.51	11.2	B	TR	0.41	10.0+	B	TR	0.55	11.8	B
	Intersection		40.0	D	Intersection		19.7	B	Intersection		27.6	C

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service.

- *3rd Avenue Northbound and 20th Street* – During the AM peak period, the eastbound approach would deteriorate from LOS C to LOS D, with delay increasing from 34.4 to 36.5 seconds and v/c ratio increasing from 0.45 to 0.53.
- *3rd Avenue Northbound and 39th Street* – During the AM peak period, the northbound approach would deteriorate from LOS D to LOS E, with delay increasing from 46.8 to 76.1 seconds and v/c ratio increasing from 0.98 to 1.02. During the PM peak, the westbound approach would deteriorate from LOS D to LOS E, with delay increasing from 52.7 to 55.6 seconds and v/c ratio increasing from 0.79 to 0.82.
- *2nd Avenue and 39th Street* – During the PM peak, the southbound approach would deteriorate from LOS C to LOS D, with delay increasing from 34.8 to 36.4 seconds and v/c ratio increasing from 0.33 to 0.42.
- *4th Avenue and 39th Street* – During the AM peak period, the northbound through-right movement would deteriorate from LOS C to LOS D, with delay increasing from 28.6 to 37.1 seconds and v/c ratio increasing from 0.95 to 0.97. During the midday peak period, the eastbound through-right movement would deteriorate from LOS D to LOS E, with delay increasing from 54.7 to 56.7 seconds and v/c ratio increasing from 0.78 to 0.80. During the PM peak period, the eastbound left-turn movement would deteriorate from LOS D to LOS E, with delay increasing from 54.2 to 59.0 seconds and v/c ratio increasing from 0.54 to 0.59.

D. PROBABLE IMPACTS OF THE PROPOSED ACTION

Site-generated traffic is expected to be greatest between 11 AM and 12 PM. Since background traffic volumes are slightly higher during the hour prior to this peak site trip generation hour, projected traffic volumes from the proposed project were superimposed onto the earlier peak hour for a conservative "midday" peak hour analysis. For the AM and PM analysis periods, comparatively lower site trip generations are expected. The estimated trips for this these time periods were superimposed onto the 8 to 9 AM and 3 to 4 PM peak hour No Build traffic volumes for the AM and PM peak hour analyses, respectively.

TRIP GENERATION

The proposed recycling facility would serve four different types of vehicle trips on a regular basis: 1) New York City Department of Sanitation (DSNY) trucks unloading recyclables from select Brooklyn districts (see EAS Figure 5); 2) Sims Hugo Neu trucks with recovered recycled products for delivery off-site; 3) privately owned trucks delivering scrap metal from local businesses; and, 4) employees commuting to and from the site. The DSNY and scrap metal trucks would enter the site, unload cargo, and leave the site in less than an hour. Likewise, the Hugo Neu trucks would arrive, receive recycled materials, and exit the site in approximately one hour. Therefore, these vehicles, when projected to occur during the analysis peak periods, would represent two peak hour trips each. Trips by employees would be either inbound or outbound rather than round-trips.

Due to the presence of an Education Center, the recycling facility also would experience occasional visitor trips. On most days, there would be no visitor trips. When visitor trips do occur, a maximum of 2 buses per day are expected to arrive between 9:00 AM and 10:00 AM and depart between 12:00 PM and 12:30 PM.

Because these trips would not be part of a typical day at the recycling facility and would not occur during the AM, midday, or PM analysis hours, visitor trips were excluded from the analysis.

Sims estimated the number of DSNY trucks, Sims trucks, and scrap metal trucks entering and exiting the site during each of its three daily shifts on the peak weekday (Friday). Sims provided hourly estimates of the DSNY and Sims truck volumes. For the scrap metal trucks, hourly truck volumes were estimated using likely delivery patterns from the neighborhood. The number of employee vehicle trips was based on Sims' estimate of the number of employees working each shift and mode split and vehicle occupancy information obtained from the 2000 *US Census* reverse journey-to-work data. Appendix B summarizes hourly trip generation.

The proposed recycling facility would operate 24 hours a day, six days a week. During the AM peak period, scrap metal trucks would enter and exit the facility and employees on the overnight shift would exit the facility. There would be no trips by Sims or DSNY trucks during this time period. During the midday facility peak period, DSNY trucks, Sims trucks, and scrap metal trucks would comprise the site-generated traffic. The number of employee vehicle trips would be negligible. During the PM peak period, all trip-making would be by scrap metal trucks and employee vehicles; there would be no trips by DSNY or Sims trucks.

Projections provided by Sims indicate that truck volumes would increase by 10 percent during the 20-year contract between Sims and DSNY. It was assumed that the additional trips would occur during the midday facility peak. To accommodate the possibility of higher than expected use of the facility in the opening year, peak day 2029 estimates of site-generated traffic were used for the 2009 Build condition analysis. Plant operation characteristics and site-generated vehicle trips are summarized in Tables B-3 and B-4, respectively.

Table B-3
Number of Employees by Day and Shift

Work Shift	Time of Shift	Weekday	Saturday
Shift 1	8AM – 4PM	65	17
Shift 2	4PM – 12AM	56	9
Shift 3	12AM – 8AM	13	9

Source: Sims

Table B-4
2009 Peak Hour Trip Generation

	AM (8–9 AM)			Midday (11 AM–Noon)			PM (3-4 PM)		
	Vehicles	PCEs	In & Outs	Vehicles	PCEs	In & Outs	Vehicles	PCEs	In & Outs
Sims	0	0	0	3	6	12	0	0	0
DSNY	0	0	0	30	45	90	0	0	0
Small Scrap Metal Trucks	21	21	42	7	7	14	21	21	42
Large Scrap Metal Trucks	4	8	16	1	2	4	4	8	16
Employees	5	5	5	0	0	0	20	20	20
Total Trip Generation	**30**	**34**	**63**	**41**	**60**	**120**	**45**	**49**	**78**

Notes: Each Sims or large scrap metal truck is considered to be equivalent to 2 passenger vehicles. Each DSNY truck is considered equivalent to 1.5 passenger vehicles. Each truck would enter and exit the site during the same hour. Therefore, the total "in and outs" for each type of truck reflects adjustments made to account for PCEs and for the fact that each truck makes 2 trips per hour. The 2009 peak hour trip generation reflects anticipated activities in 2029.

Sources: Sims

Although the exact location of the security booth has not been determined, the most probable location is near the property boundary at 1st Avenue. Based on anticipated truck volumes during the mid-day peak hour (41 trucks) and an average processing time of 20 seconds per vehicle at the facility security booth, there would be no queuing of trucks onto 2nd Avenue or any public thoroughfare. In the unlikely event that Pier 30 could not accommodate all queued vehicles, the 400-foot stretch of marginal wharf/place adjacent to the facility and west of 2nd Avenue fully within the South Brooklyn Marine Terminal would be available and sufficient for additional queuing. See Figures 3 and 7.

TRIP DISTRIBUTION AND ASSIGNMENT

Once the number of vehicles traveling to and from the project site was determined, the vehicle trips were distributed to the study area intersections. The trip distribution for DSNY trucks was based on routing information provided by DSNY while the trip distributions for Sims trucks, scrap metal delivery trucks, and employee vehicles were based on likely travel patterns, origins and destinations, and the area's highway and local street traffic networks. Currently, 29th Street between 2nd Avenue and 3rd Avenue is closed to traffic. Opening this section of 29th Street to vehicular traffic would provide an alternate route to the site other than 2nd Avenue. In the absence of any evidence to the contrary, it was assumed that this portion of 29th Street would remain closed in the future.

Therefore, all vehicles traveling to and from the project site would access the site via 2nd Avenue. However, travel routes to 2nd Avenue would vary. DSNY trucks would travel from Brooklyn neighborhoods located to the north, south, and east. Inbound DSNY trucks would utilize 3rd Avenue, 20th Street, and 39th Street. Outbound DSNY trucks also would use 32nd Street. Sims trucks would use the Gowanus Expressway to travel to the site. Northbound trucks would traverse 38th Street, 4th Avenue, and 39th Street to access the site. Southbound trucks would exit the Gowanus Expressway at the intersection of 2nd Avenue, the Gowanus Expressway off-ramp and 39th Street. Based on the fact that scrap metal trucks would travel to/from nearby locations, scrap metal trucks were assumed to use 3rd Avenue, 32nd Street, and 39th Street to travel to/from the site.

It was assumed that half would use local streets (33rd, 35th, and 37th) to exit the area for points to the north. The remainder would use the intersection of 2nd Ave and 39th Street to travel to the south. Outside of the traffic study area, truck trips would be dispersed along designated truck routes. Based on the trip generation and route assignments, it is anticipated that the proposed project would not result in traffic impacts at intersections outside the study area.

The collective traffic assignments show that most trips associated with the proposed project would orientate to the north and to the east. The project-generated traffic volumes were assigned to individual study area intersections and movements. Figures B-8, B-9, and B-10 present the project-generated vehicle trip assignments for the weekday AM, midday, and PM peak hours.

PROJECT-RELATED INTERSECTION IMPROVEMENTS

The proposed project would incorporate changes in signal timing at several study area intersections, as described below.

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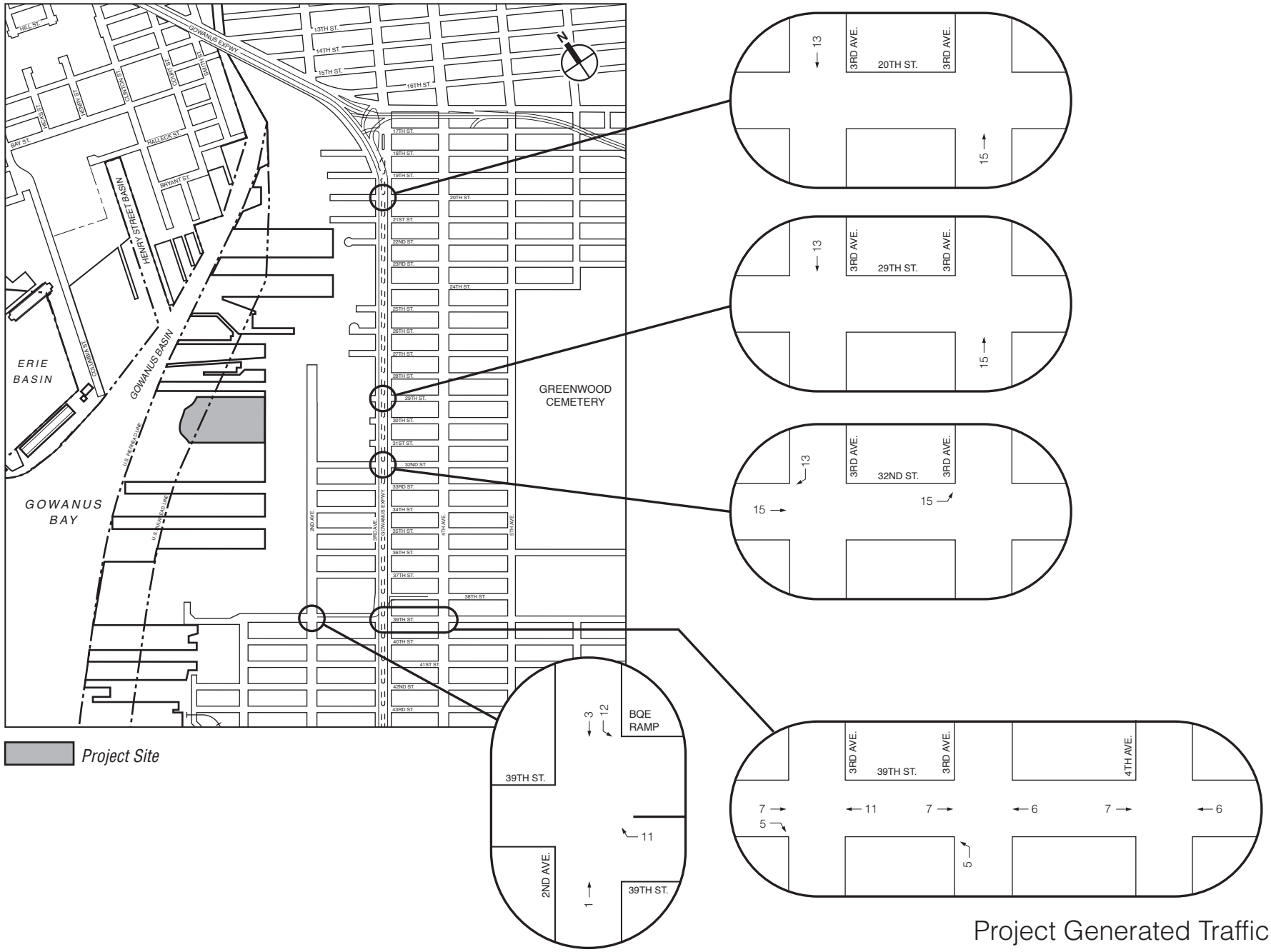
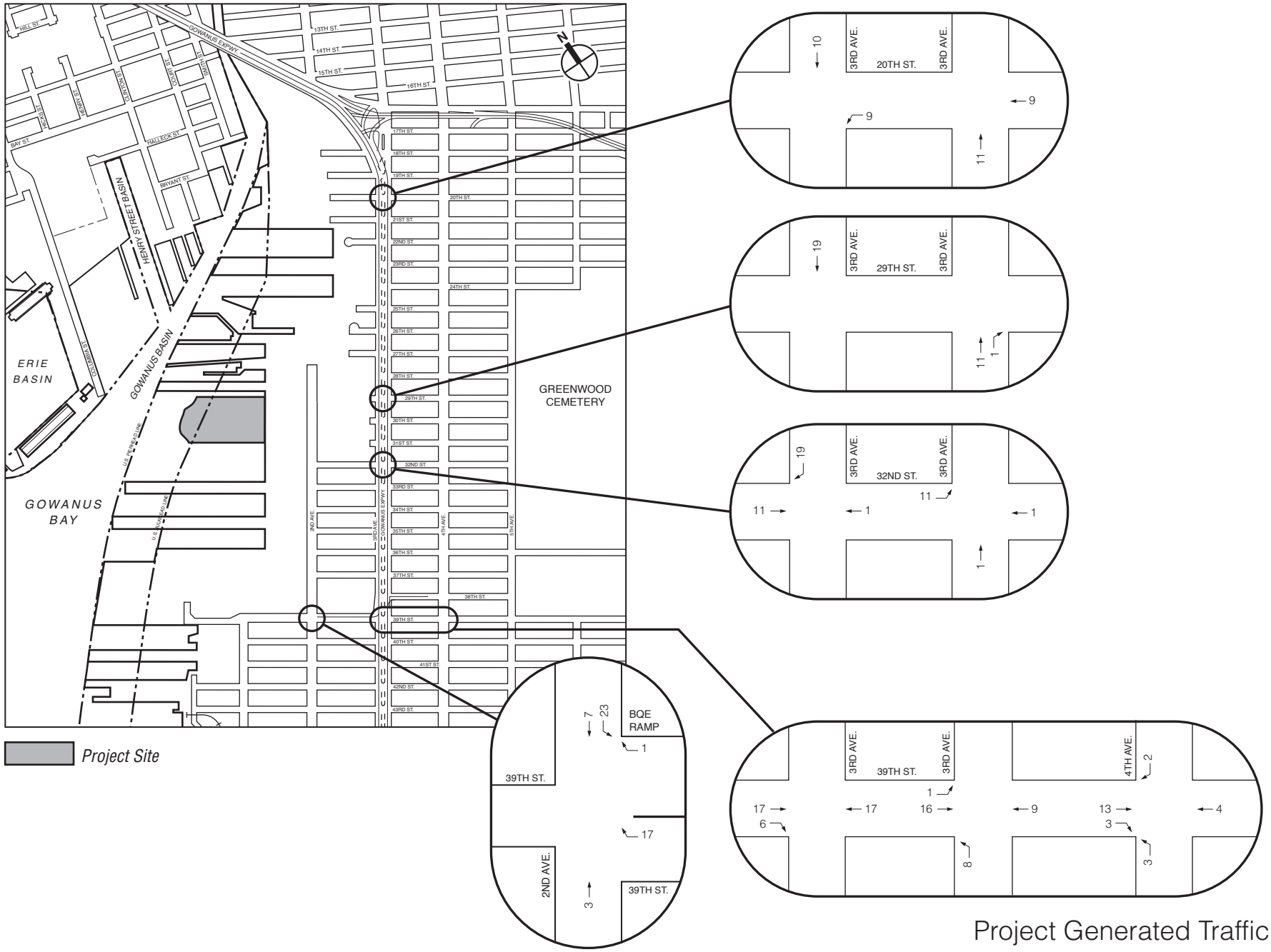


Project Generated Traffic Volumes
AM Peak Hour

Figure B-8

Sunset Park Materials Recovery Facility

11.30.07

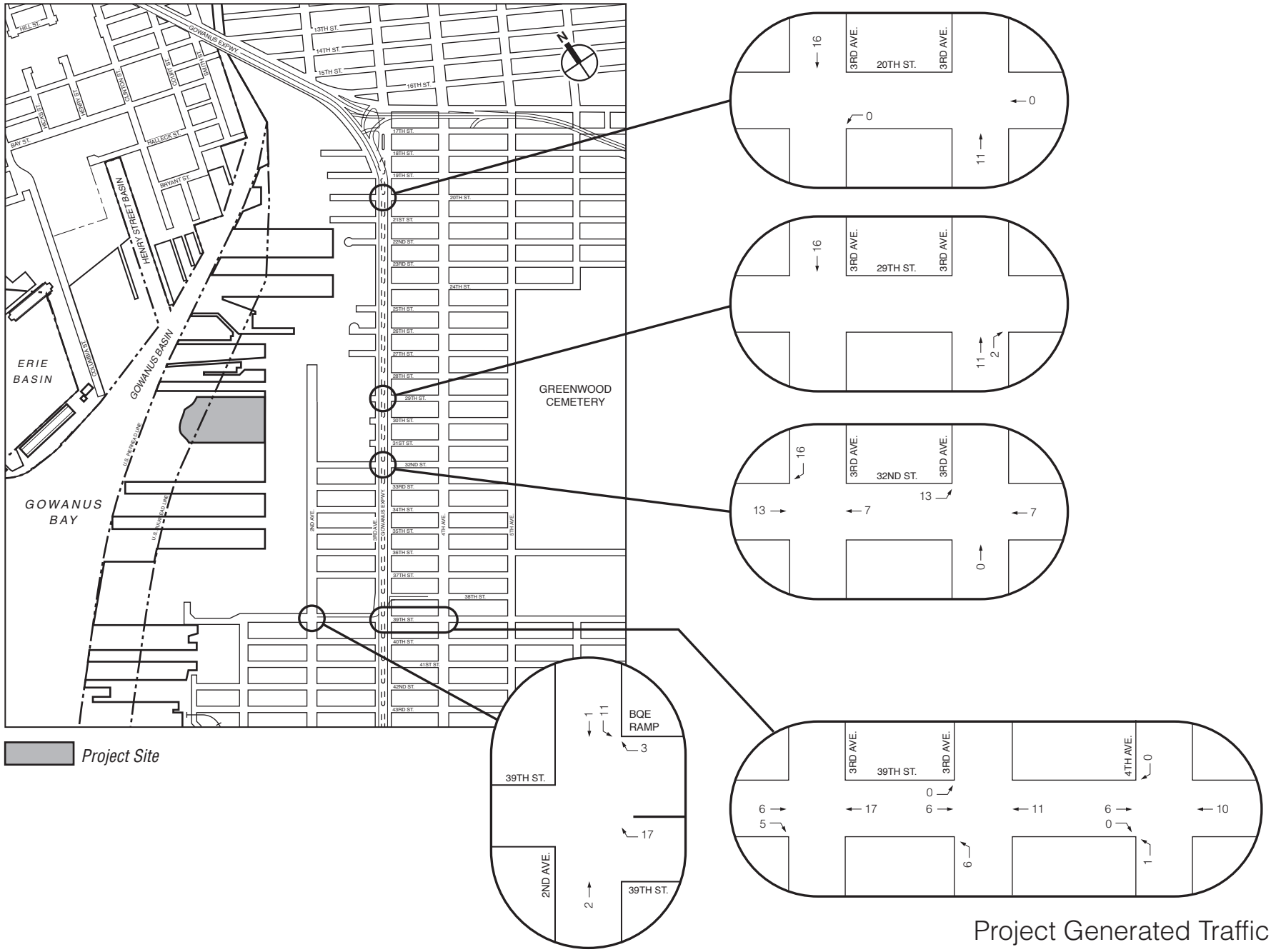


Project Generated Traffic Volumes
Midday Peak Hour

Sunset Park Materials Recovery Facility

Figure B-9

11.30.07



Project Site

Project Generated Traffic Volumes
PM Peak Hour
Figure B-10

3RD AVENUE AND 29TH STREET

During the AM peak period, it is proposed that one second of green time would be transferred from the east-west phase to the north-south phase.

3RD AVENUE AND 39TH STREET

During the PM peak period, it is proposed that one second of green time would be transferred from the north-south phase to the east-west phase.

2ND AVENUE AND 39TH STREET AND THE BQE EXIT RAMP

During the midday peak period, it is proposed that one second of green time would be transferred from the BQE exit ramp phase to the east-west phase.

4TH AVENUE AND 39TH STREET

During the AM peak period, it is proposed that one second of green time would be transferred from the north-south phase to the east-west phase. During the midday peak period, it is proposed that two seconds of green time would be transferred from the north-south phase to the east-west phase. During the PM peak period, it is proposed that one second of green time would be transferred from the north-south phase to the east-west phase.

The applicant would submit the proposed signal timing alterations to NYCDOT for evaluation, approval, and implementation. NYCDOT would be responsible for maintaining the proposed changes in the future.

INTERSECTION CAPACITY ANALYSIS

The study area intersections were analyzed with the projected Build traffic volumes and the proposed signal timing alterations. Figures B-11, B-12, and B-13 show the Build condition volumes for the weekday AM, midday, and PM peak hours, respectively. Table B-5 summarizes the No Build and Build level of service analysis. As shown in the analysis results, with the above project-related improvements, the proposed project would not result in any significant adverse traffic impacts.

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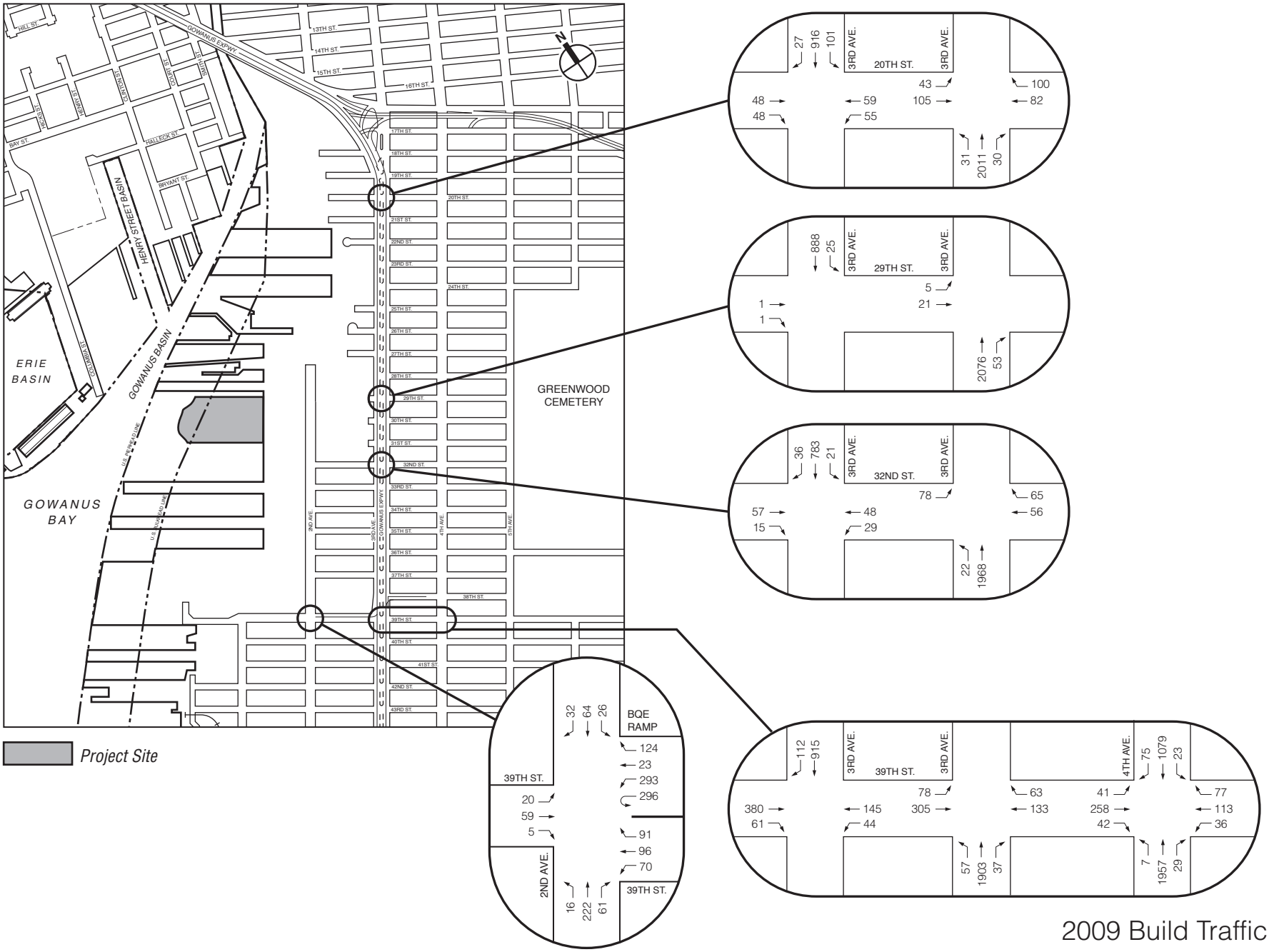
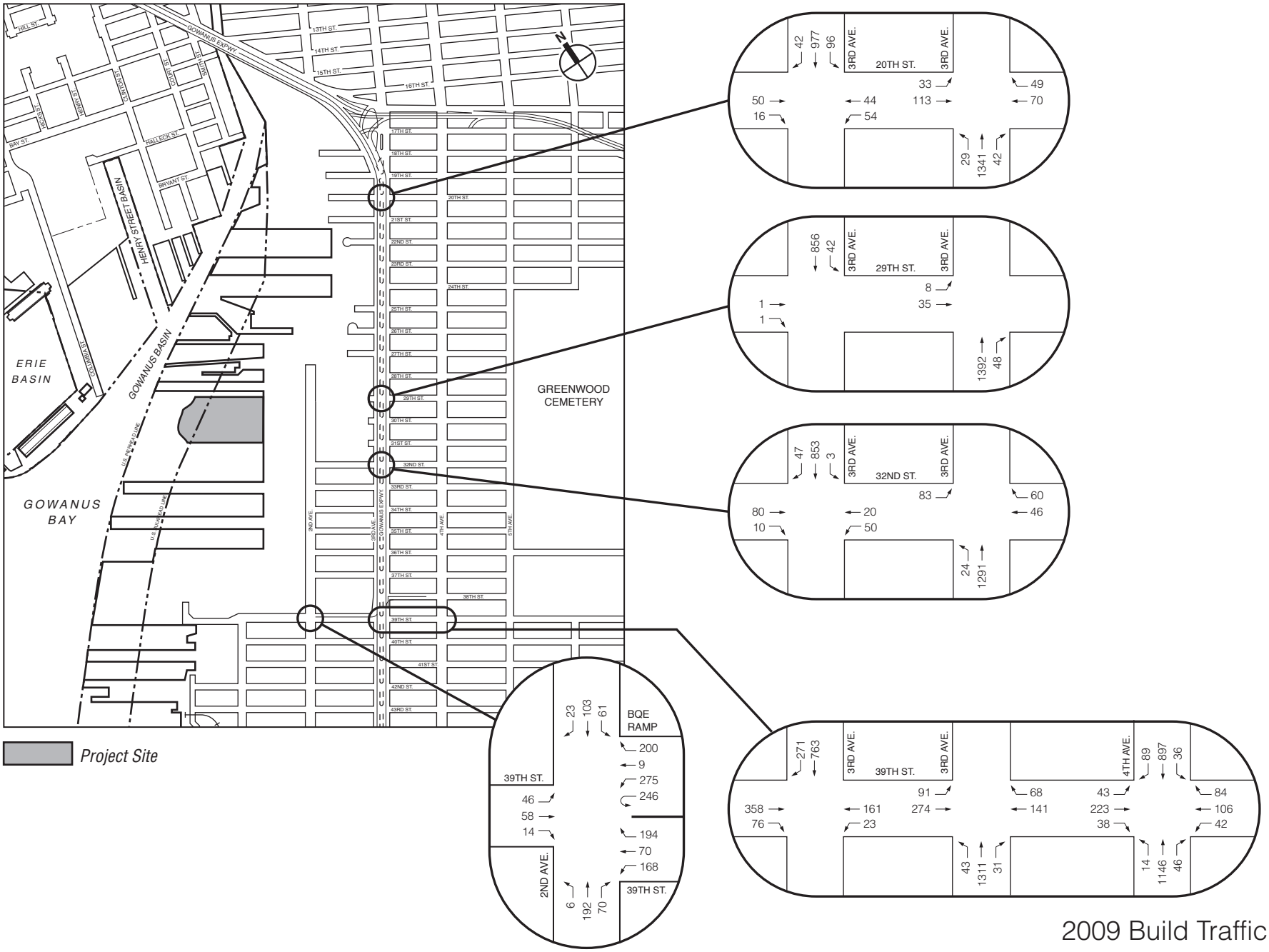


2009 Build Traffic Volumes
AM Peak Hour
Figure B-11

Sunset Park Materials Recovery Facility

11.30.07



2009 Build Traffic Volumes
Midday Peak Hour
Figure B-12

Sunset Park Materials Recovery Facility

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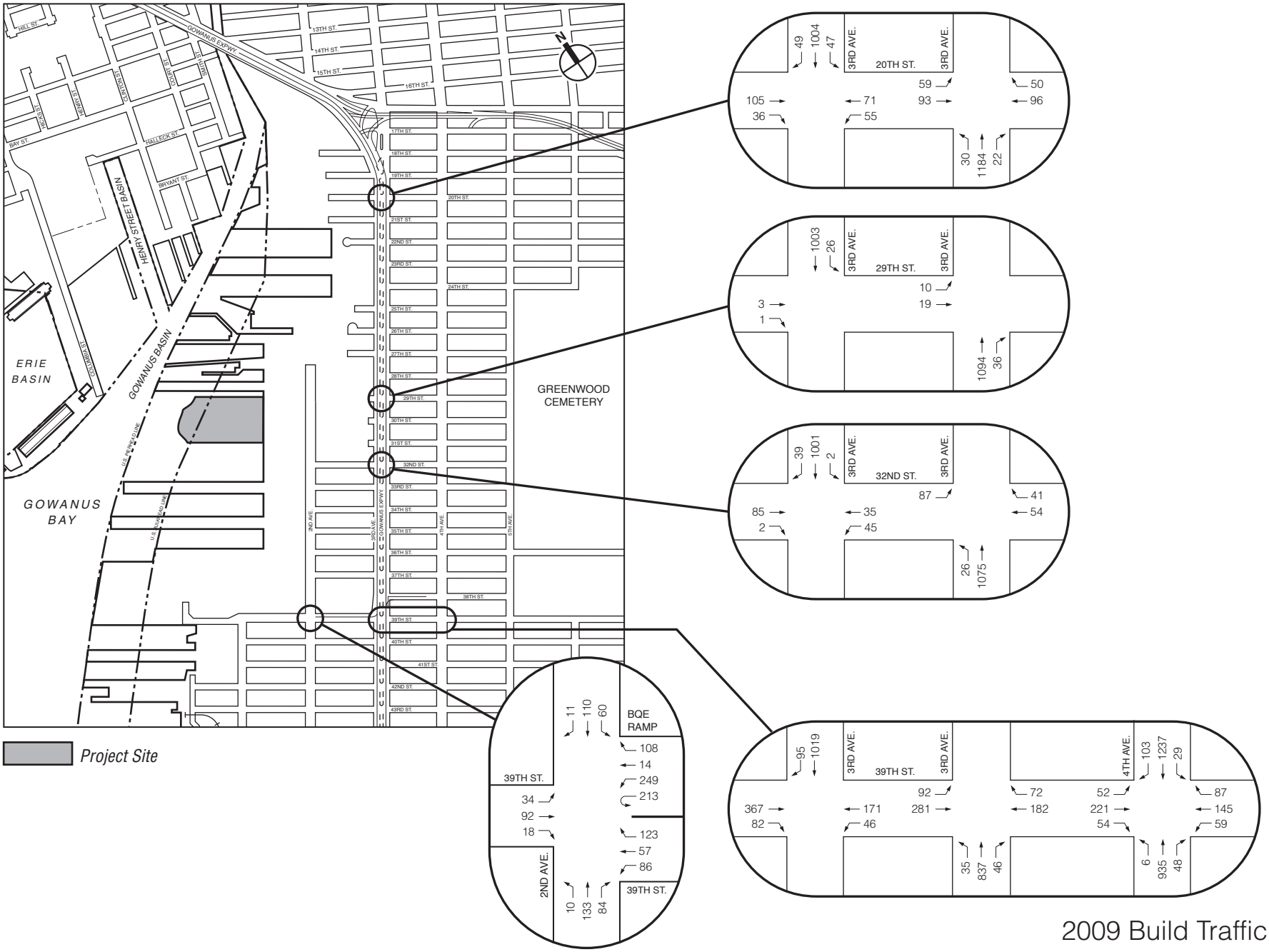

2009 Build Traffic Volumes
PM Peak Hour
Figure B-13

Sunset Park Materials Recovery Facility

Table B-5
Comparison of 2009 No Build and Build Condition LOS Analysis

	AM Peak Hour								MD Peak Hour								PM Peak Hour							
	No Build				Build				No Build				Build				No Build				Build			
Intersection	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
3rd Avenue SB & 20th Street																								
Eastbound	TR	0.26	30.2	C	TR	0.26	30.2	C	TR	0.14	28.4	C	TR	0.14	28.4	C	TR	0.35	39.0	D	TR	0.35	39.0	D
Westbound	LT	0.32	31.5	C	LT	0.32	31.5	C	LT	0.19	29.2	C	LT	0.23	29.8	C	LT	0.51	44.6	D	LT	0.51	44.6	D
Southbound	LTR	0.44	14.5	B	LTR	0.45	14.6	B	LTR	0.47	14.9	B	LTR	0.48	15.0	B	LTR	0.41	9.6	A	LTR	0.42	9.6	A
	Intersection		17.8	B	Intersection		17.8	B	Intersection		16.7	B	Intersection		16.9	B	Intersection		15.9	B	Intersection		15.9	B
3rd Avenue NB & 20th Street																								
Eastbound	LT	0.53	36.5	D	LT	0.53	36.5	D	LT	0.31	31.0	C	LT	0.31	31.0	C	LT	0.63	49.5	D	LT	0.63	49.5	D
Westbound	TR	0.39	32.4	C	TR	0.39	32.4	C	TR	0.21	29.4	C	TR	0.23	29.7	C	TR	0.37	39.2	D	TR	0.37	39.2	D
Northbound	LTR	0.92	29.3	C	LTR	0.93	30.0	C	LTR	0.66	18.1	B	LTR	0.66	18.2	B	LTR	0.46	10.1	B	LTR	0.46	10.1	B
	Intersection		30.1	C	Intersection		30.7	C	Intersection		20.0-	B	Intersection		20.2	C	Intersection		17.1	B	Intersection		17.1	B
3rd Avenue SB & 29th Street																								
Eastbound	TR	0.00	26.7	C	TR	0.00	27.4	C	TR	0.01	26.8	C	TR	0.01	26.8	C	TR	0.01	33.9	C	TR	0.01	33.9	C
Southbound	LT	0.41	14.1	B	LT	0.41	13.6	B	LT	0.42	14.2	B	LT	0.43	14.4	B	LT	0.38	9.2	A	LT	0.38	9.3	A
	Intersection		14.1	B	Intersection		13.7	B	Intersection		14.3	B	Intersection		14.5	B	Intersection		9.3	A	Intersection		9.4	A
3rd Avenue NB & 29th Street																								
Eastbound	LT	0.06	27.2	C	LT	0.06	27.9	C	LT	0.10	27.7	C	LT	0.10	27.7	C	LT	0.08	34.5	C	LT	0.08	34.5	C
Northbound	TR	1.07	155.7	F	TR	1.06	142.4	F	TR	0.63	17.5	B	TR	0.63	17.6	B	TR	0.42	9.7	A	TR	0.43	9.7	A
	Intersection		154.1	F	Intersection		141.0	F	Intersection		17.9	B	Intersection		18.0	B	Intersection		10.4	B	Intersection		10.5	B
3rd Avenue SB & 32nd Street																								
Eastbound	TR	0.11	27.8	C	TR	0.14	28.1	C	TR	0.16	28.3	C	TR	0.19	28.6	C	TR	0.17	35.4	D	TR	0.20	35.8	D
Westbound	LT	0.19	28.6	C	LT	0.19	28.6	C	LT	0.18	28.6	C	LT	0.19	28.7	C	LT	0.27	36.5	D	LT	0.30	37.0	D
Southbound	LTR	0.39	13.9	B	LTR	0.40	14.0	B	LTR	0.38	13.7	B	LTR	0.39	13.9	B	LTR	0.41	9.6	A	LTR	0.42	9.7	A
	Intersection		16.0	B	Intersection		16.3	B	Intersection		16.1	B	Intersection		16.4	B	Intersection		12.9	B	Intersection		13.4	B
3rd Avenue NB & 32nd Street																								
Eastbound	L	0.23	29.2	C	L	0.28	29.9	C	L	0.26	29.5	C	L	0.31	30.2	C	L	0.33	37.6	D	L	0.41	38.7	D
Westbound	TR	0.35	30.6	C	TR	0.35	30.6	C	TR	0.28	29.7	C	TR	0.29	29.8	C	TR	0.36	37.7	D	TR	0.39	38.0	D
Northbound	LT	0.99	50.9	D	LT	0.99	50.9	D	LT	0.61	17.2	B	LT	0.61	17.2	B	LT	0.41	9.6	A	LT	0.41	9.6	A
	Intersection		49.1	D	Intersection		49.0	D	Intersection		18.7	B	Intersection		18.9	B	Intersection		13.7	B	Intersection		14.3	B
3rd Avenue SB & 39th Street																								
Eastbound	TR	0.50	32.3	C	TR	0.51	32.5	C	TR	0.56	33.4	C	TR	0.60	34.1	C	TR	0.73	44.6	D	TR	0.73	43.6	D
Westbound	LT	0.25	29.2	C	LT	0.26	29.4	C	LT	0.25	29.2	C	LT	0.28	29.6	C	LT	0.57	40.7	D	LT	0.58	40.3	D
Southbound	T	0.42	14.3	B	T	0.42	14.3	B	T	0.41	14.1	B	T	0.41	14.1	B	T	0.37	9.1	A	T	0.37	9.6	A
	Intersection		21.1	C	Intersection		21.3	C	Intersection		21.9	C	Intersection		22.5	C	Intersection		24.0	C	Intersection		24.2	C
3rd Avenue NB & 39th Street																								
Eastbound	LT	0.72	38.4	D	LT	0.74	39.0	D	LT	0.78	41.6	D	LT	0.84	45.8	D	LT	1.10	252.6	F	LT	1.07	211.0	F
Westbound	TR	0.47	32.2	C	TR	0.48	32.4	C	TR	0.54	33.6	C	TR	0.57	34.4	C	TR	0.82	55.6	E	TR	0.82	54.8	D
Northbound	LTR	1.02	76.1	E	LTR	1.02	78.8	E	LTR	0.71	19.3	B	LTR	0.71	19.4	B	LTR	0.37	9.2	A	LTR	0.38	9.6	A
	Intersection		67.2	E	Intersection		69.3	E	Intersection		25.3	C	Intersection		26.5	C	Intersection		82.3	F	Intersection		71.5	E
2nd Avenue & 39th Street																								
Eastbound	LTR	0.29	34.3	C	LTR	0.29	34.4	C	DefL	1.09	356.0	F	DefL	1.09	355.5	F	LTR	0.40	36.1	D	LTR	0.41	36.3	D
									TR	0.35	36.1	D	TR	0.33	34.9	C								
Westbound	LTR	0.81	51.1	D	LTR	0.84	54.5	D	LTR	1.11	259.6	F	LTR	1.11	257.8	F	LTR	0.75	47.1	D	LTR	0.79	49.9	D
WB BQE Ramp	LTR	0.68	25.7	C	LTR	0.68	25.7	C	LTR	0.72	26.9	C	LTR	0.74	28.1	C	LTR	0.56	23.2	C	LTR	0.56	23.3	C
Northbound	LTR	0.70	42.5	D	LTR	0.70	42.8	D	LTR	0.59	39.2	D	LTR	0.60	39.4	D	LTR	0.44	36.3	D	LTR	0.45	36.4	D
Southbound	LTR	0.31	34.6	C	LTR	0.38	36.0	D	LTR	0.46	37.2	D	LTR	0.63	42.2	D	LTR	0.42	36.4	D	LTR	0.47	37.3	D
	Intersection		34.8	C	Intersection		35.7	D	Intersection		97.9	F	Intersection		98.8	F	Intersection		32.6	C	Intersection		33.5	C
4th Avenue & 39th Street																								
Eastbound	L	0.36	41.9	D	L	0.35	40.8	D	L	0.36	41.7	D	L	0.33	39.1	D	L	0.59	59.0	E	L	0.59	57.8	E
	TR	1.00	130.1	F	TR	0.99	116.8	F	TR	0.80	56.7	E	TR	0.81	55.4	E	TR	0.85	63.2	E	TR	0.84	60.6	E
Westbound	L	0.90	191.1	F	L	0.90	190.6	F	L	0.58	62.7	E	L	0.58	61.4	E	L	1.04	277.4	F	L	0.99	223.7	F
	TR	0.61	45.8	D	TR	0.61	44.9	D	TR	0.61	46.0	D	TR	0.59	43.4	D	TR	0.79	57.4	E	TR	0.80	56.6	E
Northbound	L	0.07	8.2	A	L	0.07	8.6	A	L	0.06	7.8	A	L	0.09	9.1	A	L	0.05	8.1	A	L	0.06	8.6	A
	TR	0.97	37.1	D	TR	0.99	44.6	D	TR	0.54	11.5	B	TR	0.55	12.7	B	TR	0.45	10.4	B	TR	0.45	11.0	B
Southbound	L	0.50	39.5	D	L	0.50	40.0	D	L	0.31	14.5	B	L	0.33	16.2	B	L	0.18	9.9	A	L	0.18	10.4	B
	TR	0.51	11.2	B	TR	0.52	11.8	B	TR	0.41	10.0+	B	TR	0.42	11.0	B	TR	0.55	11.8	B	TR	0.56	12.3	B
	Intersection		40.0	D	Intersection		43.0	D	Intersection		19.7	B	Intersection		20.4	C	Intersection		27.6	C	Intersection		26.5	C

R = Right Turn, DefL = Defacto

A. INTRODUCTION

The potential for air quality impacts from the proposed project is examined in this attachment. Air quality impacts can be either direct or indirect. Direct impacts could stem from emissions generated by stationary sources at a development site, such as diesel engine emissions on site, or emissions from ventilation systems. Indirect impacts could be caused by emissions from on-road vehicle trips generated by the proposed operations or other changes to future traffic conditions due to proposed operations.

It should be noted that the proposed project is expected to reduce the total miles traveled by the New York City Department of Sanitation (DSNY) truck fleet by more than 200,000 miles per year.[1] This reduction would result in a substantial reduction of directly associated air pollutant emissions, including greenhouse gasses, as well as an additional benefit due to reduced congestion and the ensuing emissions related to congestion. This is in step with the stated objectives of PlaNYC to improve air quality and reduce the impact of New York City on global climate change.

The direct impact of on-site sources was analyzed to determine the potential for significant adverse impacts on air quality. The analysis included all predicted emissions from towboats, trucks, and nonroad engines expected to operate on site.

The operation of the proposed facility is not expected to significantly alter traffic conditions. The maximum hourly incremental traffic from the proposed facility would not exceed the *City Environmental Quality Review (CEQR) Technical Manual* air quality screening threshold of 100 peak hour trips for the analysis of carbon monoxide (CO).

The proposed operations, at peak predicted activity levels, would result in up to 43 truck trips at peak hour at some nearby intersections. Of these, 37 would be DSNY trucks. According to local law 39 of 2005, all city owned or operated trucks must either meet the federal emissions standard for 2007 model years, or be retrofit with best available control technology to reduce particulate matter by July 1, 2012.[2] Such controlled trucks emit approximately 10% or less of the amount of diesel particulate matter emitted from trucks which are not fitted with control devices. The combined emissions increment of the two truck types (controlled and uncontrolled) would be 1.7 grams of fine particulate matter ($PM_{2.5}$) per mile (Appendix B.1).[3] The level below which

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[1] Based on preliminary data provided by DSNY for CMAQ application.

[2] Local law 39 of 2005 requires the retrofit of 30 percent, 50 percent, and 70 percent of city fleets by 2009, 2010, and 2011, respectively. DSNY is ahead of that schedule, and expects 70 percent of the dual bin trucks and 45 percent of the single bin trucks to be in compliance by the end of 2009.

[3] Based on emissions from the EPA emissions model MOBILE6.2 (see more information on the model below in this chapter), the emission factors for controlled trucks is 0.02986 g/mile. The fleet-wide average emissions from other trucks in 2012 would be 0.0963 g/mile. Therefore—

impacts on particulate matter (PM) concentrations from trucks are screened out is 5.1 grams of $PM_{2.5}$ per mile.[1] Therefore, a quantified assessment of on-street mobile source emissions is not warranted. However, on-road emissions adjacent to the facility were included with the on-site emissions analysis in order to address all local project-related emissions cumulatively.

As discussed below, the direct and indirect impact from the operation of the proposed facility would be lower than the corresponding significance criteria. Therefore, the proposed action would not have a significant adverse impact on air quality.

B. POLLUTANTS FOR ANALYSIS

Ambient air quality is affected by air pollutants produced by both motor vehicles and stationary sources. Emissions from motor vehicles are referred to as mobile source emissions, while emissions from fixed facilities are referred to as stationary source emissions. Ambient concentrations of CO are predominantly influenced by mobile source emissions. PM, volatile organic compounds (VOCs), and nitrogen oxides (NO and NO_2, collectively referred to as NO_x) are emitted from both mobile and stationary sources. Fine PM is also formed when emissions of NO_x, sulfur oxides (SO_x), ammonia, organic compounds, and other gases react or condense in the atmosphere. Emissions of sulfur dioxide (SO_2) are associated mainly with stationary sources, and sources utilizing nonroad diesel such as diesel trains, marine engines, and nonroad vehicles (e.g., construction engines). On-road diesel vehicles currently contribute very little to SO_2 emissions, since the sulfur content of on-road diesel fuel, which is federally regulated, is extremely low. Ozone is formed in the atmosphere by complex photochemical processes that include NO_x and VOCs, emitted mainly from industrial processes and mobile sources.

CARBON MONOXIDE

CO, a colorless and odorless gas, is produced in the urban environment primarily by the incomplete combustion of gasoline and other fossil fuels. In urban areas, approximately 80 to 90 percent of CO emissions are from motor vehicles. Since CO is a reactive gas which does not persist in the atmosphere, CO concentrations can vary greatly over relatively short distances; elevated concentrations are usually limited to locations near crowded intersections, heavily traveled and congested roadways, parking lots, and garages. Consequently, CO concentrations must be predicted on a local, or microscale, basis.

The proposed project is not expected to significantly alter traffic conditions. Since the proposed action would result in fewer new peak hour vehicle trips than the *CEQR Technical Manual* screening threshold of 100 trips at nearby intersections in the study area, a quantified assessment of on-street CO emissions is not warranted.

(6 x 0.0963 g/mile) + (37 x 0.0299 g/mile) = 1.7 g/mile

[1] The level was set at 21 trucks at peak hour, based on an emission factor of 0.611 g/mile of $PM_{2.5}$ from 2002 year trucks according to the previous EPA emissions model, PART5, therefore—

0.611 g/truck-mile x 21 trucks = 12.8 g/mile.

This level was aimed at maintaining increments lower than the 24-hour average threshold of 5 $\mu g/m^3$. DEP has since changed the threshold to 2 $\mu g/m^3$, so the screening level was scaled back by the same ratio, therefore—

12.8 g/mile x 2 / 5 = 5.1 g/mile.

NITROGEN OXIDES, VOCS, AND OZONE

NO_x are of principal concern because of their role, together with VOCs, as precursors in the formation of ozone. Ozone is formed through a series of reactions that take place in the atmosphere in the presence of sunlight. Because the reactions are slow, and occur as the pollutants are advected downwind, elevated ozone levels are often found many miles from sources of the precursor pollutants. The effects of NO_x and VOC emissions from all sources are therefore generally examined on a regional basis. The contribution of any action or project to regional emissions of these pollutants would include any added stationary or mobile source emissions; the change in regional mobile source emissions of these pollutants would be related to the total vehicle miles traveled added or subtracted on various roadway types throughout the New York metropolitan area, which is designated as a moderate non-attainment area for ozone by the U.S. Environmental Protection Agency (EPA).

The proposed project would not significantly increase the overall volume of vehicular travel or nonroad engine activity in the metropolitan area. In fact, the proposed project is expected to reduce DSNY collection truck travel by more than 200,000 vehicle miles traveled (VMTs) per year.[1] Therefore, no measurable impact on regional NO_x emissions or on ozone levels is predicted. An analysis of project related emissions of these pollutants from mobile sources was therefore not warranted.

In addition, there is a standard for average annual NO_2 concentrations. Potential impacts from the proposed project's on-site nonroad and truck engine emissions were evaluated.

LEAD

Airborne lead emissions are principally associated with industrial sources and motor vehicles that use gasoline containing lead additives. Most U.S. vehicles produced since 1975, and all produced after 1980, are designed to use unleaded fuel. As these newer vehicles have replaced the older ones, motor vehicle-related lead emissions have decreased. As a result, ambient concentrations of lead have declined significantly. Nationally, the average measured atmospheric lead level in 1985 was only about one-quarter the level in 1975.

In 1985, EPA announced new rules that drastically reduced the amount of lead permitted in leaded gasoline. The maximum allowable lead level in leaded gasoline was reduced from the previous limit of 1.1 to 0.5 grams per gallon effective July 1, 1985, and to 0.1 grams per gallon effective January 1, 1986. Monitoring results indicate that this action has been effective in significantly reducing atmospheric lead concentrations. Effective January 1, 1996, the Clean Air Act (CAA) banned the sale of the small amount of leaded fuel that was still available in some parts of the country for use in on-road vehicles, concluding the 25-year effort to phase out lead in gasoline. Even at locations in the New York City area where traffic volumes are very high, atmospheric lead concentrations are far below the 3-month average national standard of 1.5 micrograms per cubic meter ($\mu g/m^3$).

No significant sources of airborne lead are associated with the proposed project and, therefore, analysis was not warranted.

[1] Based on preliminary data provided by DSNY for CMAQ application.

RESPIRABLE PARTICULATE MATTER—PM_{10} AND $PM_{2.5}$

PM is a broad class of air pollutants that includes discrete particles of a wide range of sizes and chemical compositions, as either liquid droplets (aerosols) or solids suspended in the atmosphere. The constituents of PM are both numerous and varied, and they are emitted from a wide variety of sources (both natural and anthropogenic). Natural sources include the condensed and reacted forms of naturally occurring VOC; salt particles resulting from the evaporation of sea spray; wind-borne pollen, fungi, molds, algae, yeasts, rusts, bacteria, and material from live and decaying plant and animal life; particles eroded from beaches, soil, and rock; and particles emitted from volcanic and geothermal eruptions and from forest fires. Naturally occurring PM is generally greater than 2.5 micrometers in diameter. Major anthropogenic sources include the combustion of fossil fuels (e.g., vehicular exhaust, power generation, boilers, engines, and home heating), chemical and manufacturing processes, all types of construction, agricultural activities, as well as wood-burning stoves and fireplaces. PM also acts as a substrate for the adsorption of other pollutants, often toxic and some likely carcinogenic compounds.

As described below, PM is regulated in two size categories: particles with an aerodynamic diameter of less than or equal to 2.5 micrometers, or $PM_{2.5}$, and particles with an aerodynamic diameter of less than or equal to 10 micrometers, or PM_{10}, which includes the smaller $PM_{2.5}$. $PM_{2.5}$ has the ability to reach the lower regions of the respiratory tract, delivering with it other compounds that adsorb to the surfaces of the particles, and is also extremely persistent in the atmosphere. $PM_{2.5}$ is mainly derived from combustion material that has volatilized and then condensed to form primary PM (often soon after the release from an exhaust pipe or stack) or from precursor gases reacting in the atmosphere to form secondary PM.

Diesel-powered vehicles, especially heavy duty trucks and buses, are a significant source of respirable PM, most of which is $PM_{2.5}$; PM concentrations may, consequently, be locally elevated near roadways with high volumes of heavy diesel powered vehicles. The proposed project would not result in any significant increases in truck traffic near the project site or in the region, and therefore, an analysis of potential mobile-source impacts from PM was not warranted. However, on-road PM emissions were evaluated as part of the on-site analysis, by including the in-bound and out-bound trucks on the roadway adjacent to the facility.

SULFUR DIOXIDE

SO_2 emissions are primarily associated with the combustion of sulfur-containing fuels: oil and coal. Monitored SO_2 concentrations in New York City are below the national standards. Due to the federal restrictions on the sulfur content in diesel fuel for on-road vehicles, all on-road diesel is currently ultra low sulfur diesel (ULSD) with less than 15 parts per million (ppm) sulfur content, and therefore no significant quantities of SO_2 are emitted from vehicular sources. Furthermore, the nonroad engines at the facility will also use ULSD. Therefore, an analysis of SO_2 was not warranted.

C. AIR QUALITY REGULATIONS, STANDARDS, AND BENCHMARKS

NATIONAL AND STATE AIR QUALITY STANDARDS

As required by the CAA, primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, NO_2, ozone, respirable PM (both $PM_{2.5}$ and PM_{10}), SO_2, and lead. The primary standards represent levels that are requisite to

protect the public health, allowing an adequate margin of safety. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. The primary and secondary standards are the same for NO_2, ozone, lead, and PM, and there is no secondary standard for CO. The NAAQS are presented in Table C-1. The NAAQS for CO, NO_2, and SO_2 have also been adopted as the ambient air quality standards for New York State, but are defined on a running 12-month basis rather than for calendar years only. New York State also has standards for total suspended particulate matter (TSP), settleable particles, NMHC, and ozone which correspond to federal standards that have since been revoked or replaced, and for beryllium, fluoride, and hydrogen sulfide (H_2S).

Table C-1
National Ambient Air Quality Standards (NAAQS)

Pollutant	Primary		Secondary	
	ppm	µg/m^3	ppm	µg/m^3
Carbon Monoxide (CO)				
8-Hour Average [(1)]	9	10,000	None	
1-Hour Average [(1)]	35	40,000		
Lead				
3-Month Average	NA	1.5	NA	1.5
Nitrogen Dioxide (NO_2)				
Annual Average	0.053	100	0.053	100
Ozone (O_3)				
8-Hour Average [(2)]	0.08	160	0.08	160
Respirable Particulate Matter (PM_{10})				
24-Hour Average [(1)]	NA	150	NA	150
Fine Respirable Particulate Matter ($PM_{2.5}$)				
Average of 3 Consecutive Annual Means	NA	15	NA	15
24-Hour Average [(3)]	NA	35	NA	35
Sulfur Dioxide (SO_2)				
Annual Arithmetic Mean	0.03	80	NA	NA
Maximum 24-Hour Average [(1)]	0.14	365	NA	NA
Maximum 3-Hour Average [(1)]	NA	NA	0.50	1,300

Notes: ppm – parts per million
µg/m^3 – micrograms per cubic meter
NA – not applicable
All annual periods refer to calendar year.
PM concentrations (including lead) are in µg/m^3 since ppm is a measure for gas concentrations. Concentrations of all gaseous pollutants are defined in ppm and approximately equivalent concentrations in µg/m^3 are presented.
(1) Not to be exceeded more than once a year.
(2) 3-year average of the annual fourth highest daily maximum 8-hr average concentration.
(3) Not to be exceeded by the annual 98th percentile when averaged over 3 years. EPA has reduced these standards down from 65 µg/m^3, effective December 18, 2006.
Source: 40 CFR Part 50: National Primary and Secondary Ambient Air Quality Standards.

EPA has revised the NAAQS for PM, effective December 18, 2006. The revision included lowering the level of the 24-hour $PM_{2.5}$ standard from the current level of 65 $\mu g/m^3$ to 35 $\mu g/m^3$ and retaining the level of the annual standard at 15 $\mu g/m^3$. The PM_{10} 24-hour average standard was retained and the annual average PM_{10} standard was revoked.

NAAQS ATTAINMENT STATUS AND STATE IMPLEMENTATION PLANS

The CAA, as amended in 1990, defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by EPA, the state is required to develop and implement a State Implementation Plan (SIP), which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the CAA.

EPA has re-designated New York City as in attainment for CO. The CAA requires that a maintenance plan ensure continued compliance with the CO NAAQS for former non-attainment areas. New York City is also committed to implementing site-specific control measures throughout the City to reduce CO levels, should unanticipated localized growth result in elevated CO levels during the maintenance period.

Manhattan has been designated as a moderate NAA for PM_{10}. On December 17, 2004, EPA took final action designating the five New York City counties and Nassau, Suffolk, Rockland, Westchester, and Orange counties as a $PM_{2.5}$ non-attainment area under the CAA. State and local governments are required to develop SIPs by early 2008, which will be designed to meet the standards by 2010. As described above, EPA has revised the PM standards. Attainment designations for the new 24-hour $PM_{2.5}$ standard would be effective by April 2010, $PM_{2.5}$ SIPs would be due by April 2013, and would be designed to meet the 24-hour $PM_{2.5}$ standards by April 2015, although this may be extended in some cases up to April 2020.

Nassau, Rockland, Suffolk, Westchester, Lower Orange County Metropolitan Area (LOCMA), and the five New York City counties had been designated as a severe non-attainment area for ozone 1-hour standard. In November 1998, New York State submitted its *Phase II Alternative Attainment Demonstration for Ozone*, which was finalized and approved by EPA effective March 6, 2002, addressing attainment of the 1-hour ozone NAAQS by 2007. New York State has recently submitted revisions to the SIP, which included additional emission reductions that EPA requested to demonstrate attainment of the standard, and an update of the SIP estimates using two new EPA models (the mobile source emissions model MOBILE6, and the nonroad emissions model NONROAD). The models were updated to reflect current knowledge of engine emissions and the latest mobile and nonroad engine emission regulations. On April 15, 2004, EPA designated these same counties as moderate non-attainment for the new 8-hour ozone standard which became effective as of June 15, 2004 (LOCMA was moved to the Poughkeepsie moderate non-attainment area for 8-hour ozone). EPA revoked the 1-hour standard on June 15, 2005; however, the specific control measures for the 1-hour standard included in the SIP are required to stay in place until the 8-hour standard is attained. The discretionary emissions reductions in the SIP would also remain but could be revised or dropped based on modeling. The State is currently formulating a new SIP for ozone, which is expected to be adopted in the near future. The SIP will have a target attainment deadline of June 15, 2010.

DETERMINING THE SIGNIFICANCE OF AIR QUALITY IMPACTS

The State Environmental Quality Review Act (SEQRA) regulations and the *CEQR Technical Manual* state that the significance of a likely consequence (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. In terms of the magnitude of air quality impacts, any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the concentrations defined by the NAAQS (see Table C-1) would be deemed to have a potential significant adverse impact. In addition, in order to maintain concentrations lower than the NAAQS in attainment areas, or to ensure that concentrations will not be significantly increased in non-attainment areas, threshold levels have been defined for certain pollutants; any action predicted to increase the concentrations of these pollutants above the thresholds would be deemed to have a potential significant adverse impact, even in cases where violations of the NAAQS are not predicted.

DEP is currently recommending interim guidance criteria for evaluating potential $PM_{2.5}$ impacts from projects subject to CEQR. The latest interim guidance criteria currently employed by DEP for determination of potential significant adverse impacts from $PM_{2.5}$ are as follows:

- 24-hour average $PM_{2.5}$ concentration increments which are predicted to be greater than 5 $\mu g/m^3$ at a discrete receptor location would be considered a significant adverse impact on air quality under operational conditions (i.e., a permanent condition predicted to exist for many years regardless of the frequency of occurrence);
- 24-hour average $PM_{2.5}$ concentration increments which are predicted to be greater than 2 $\mu g/m^3$ but no greater than 5 $\mu g/m^3$ would be considered a significant adverse impact on air quality based on the magnitude, frequency, duration, location, and size of the area of the predicted concentrations;
- Predicted annual average $PM_{2.5}$ concentration increments greater than 0.1 $\mu g/m^3$ at ground level on a neighborhood scale (i.e., the annual increase in concentration representing the average over an area of approximately 1 square kilometer, centered on the location where the maximum ground-level impact is predicted for stationary sources; or at a distance from a roadway corridor similar to the minimum distance defined for locating neighborhood scale monitoring stations); or
- Predicted annual average $PM_{2.5}$ concentration increments greater than 0.3 $\mu g/m^3$ at a discrete receptor location (elevated or ground level).

In addition, the New York State Department of Environmental Conservation (NYSDEC) has published a policy to provide interim direction for evaluating $PM_{2.5}$ impacts. This draft policy would apply only to facilities applying for permits or major permit modification under the SEQRA that emit 15 tons of PM_{10} or more annually. The policy states that such a project will be deemed to have a potentially significant adverse impact if the project's maximum impacts are predicted to increase $PM_{2.5}$ concentrations by more than 0.3 $\mu g/m^3$ averaged annually or more than 5 $\mu g/m^3$ on a 24-hour basis.

Actions under CEQR predicted to increase $PM_{2.5}$ concentrations more than the DEP or NYSDEC interim guidance criteria above will be considered to have potential significant adverse impacts. DEP recommends that actions subject to CEQR that fail the interim guidance criteria prepare an Environmental Impact Statement (EIS) and examine potential measures to reduce or eliminate such potential significant adverse impacts.

The above DEP and NYSDEC draft interim guidance criteria have been used to evaluate the significance of predicted impacts of the proposed project on $PM_{2.5}$ concentrations and determine the need to minimize particulate matter emissions from the proposed project.

D. METHODOLOGY FOR PREDICTING POLLUTANT CONCENTRATIONS

In order to assess the potential impact of the operation of the proposed facility on air quality in the study area, pollutant emissions and their dispersion from the proposed facility were analyzed. Emission sources included trucks and towboats arriving and departing the facility, nonroad engines operating on-site, and the ventilation of indoor-engine emissions via rooftop outlets. The following section describes the data, means, and methods used in the analysis.

The prediction of emissions and their dispersion in an urban environment incorporates meteorological phenomena, source activity information, and physical configuration. Air pollutant dispersion models mathematically simulate how source activity, meteorology, and physical configuration combine to affect pollutant concentrations. The mathematical expressions and formulations contained in the various models attempt to describe an extremely complex physical phenomenon as closely as possible. However, because all models contain simplifications and approximations of actual conditions and interactions, and since it is necessary to predict the reasonable worst-case condition, most dispersion analyses predict conservatively high concentrations of pollutants, particularly under adverse meteorological conditions.

EMISSION ESTIMATES AND PARAMETERS

VEHICLE EMISSIONS

On-road vehicular engine emission factors were computed using the EPA mobile source emissions model, MOBILE6.2[1]. This emissions model is capable of calculating engine emission factors for various vehicle types, based on the fuel type (gasoline, diesel, or natural gas), meteorological conditions, vehicle speeds, vehicle age, roadway types, number of starts per day, engine soak time, and various other factors that influence emissions, such as inspection maintenance programs. The inputs and use of MOBILE6.2 incorporate the most current guidance available from NYSDEC and DEP.

Appropriate credits were used to accurately reflect the inspection and maintenance program. The inspection and maintenance programs require inspections of automobiles and light trucks to determine if pollutant emissions from the vehicles exhaust systems are lower than emission standards. Vehicles failing the emissions test must undergo maintenance and pass a repeat test to be registered in New York State.

Four types of on-road vehicles will arrive at and depart from the facility: employee vehicles, DSNY recycling trucks, large trucks carrying sorted bales and residual material, and private trucks delivering recyclable metal. Since relatively few employee vehicles would be expected, would consist mostly of light duty gasoline vehicles, and would be limited to shift start and end

[1] EPA, User's Guide to MOBILE6.1 and MOBILE6.2: Mobile Source Emission Factor Model, EPA420-R-03-010, August 2003.

hours, these vehicles are expected to have a negligible contribution to emissions and were not included in the analysis. DSNY trucks would all be heavy duty diesel vehicles of the heaviest emissions category, with a gross vehicle weight rating greater than 60,000 pounds (HDDV8b) and are all mandated to be equipped with diesel particle filters (DPF) by 2012. With the resulting clean diesel emission factors, it would take more than 180 DSNY collection trucks in an hour to exceed the City's significance threshold for $PM_{2.5}$ impacts from mobile sources. Therefore, emission factors for the HDDV8b category reduced by 90 percent were applied for the DSNY trucks. The recycled product trucks were all assumed to be of the HDDV8b category, without any additional emissions controls. Recyclable metal trucks are expected in two categories: light duty trucks such as pickup trucks or vans, and heavy duty trucks. Since MOBILE6.2 produces emission factors for a more detailed breakdown by weight and fuel type, those general truck categories were further categorized into subcategories based on their relative breakdown within the general fleet in New York State.[1]

An ambient temperature of 43.0° Fahrenheit was used. Since ambient temperature mostly affects CO emissions, this temperature, calculated based on the latest guidance from EPA and NYSDEC, represents the average temperature measured during the 10 highest 8-hour CO events measured at NYSDEC monitoring stations.

The predicted number of trucks by type and hour of the day are presented in Attachment B, "Traffic and Parking." In addition to cruise emissions along the access road and to approaches to the various areas within the facility, idling trucks would also emit pollutants while tipping recyclable materials, while being weighed, and a limited amount at startup before departing the various loading docks. Estimated distances and idle times for each truck are presented in Appendix B.2.

NONROAD ENGINE EMISSIONS

Emission factors for on-site nonroad engines were developed using EPA's NONROAD2005 Emission Model (NONROAD). The model is based on source inventory data accumulated for specific categories of nonroad equipment. The emission factors for each type of equipment were extracted from the NONROAD output files for model year 2009 engines operating in 2009. This includes wheel loaders, material handlers, forklifts, a skid steer loader, and a sweeper. All equipment other than the forklifts would run on ULSD. The forklifts are expected to run on compressed natural gas (CNG). All other processing engines would be electric and would have no associated air pollutant emissions.

TOWBOAT EMISSIONS

Emission factors for the towboats which would deliver and pick up barges at the facility were taken from the Port Authority New York New Jersey (PANYNJ) marine vessel inventory[2]. Emissions for the average test cycle were used. These emissions represent average operating conditions. The docking activities would occur at lower power levels and, therefore, lower

[1] The MOBILE6.2 emissions model utilizes 28 vehicle categories by size and fuel. Traffic counts and predictions are based on broader size categories, and then broken down according to the fleet-wide distribution of subcategories and fuel types in New York State (diesel, gasoline, or alternative).

[2] PANYNJ, The New York, Northern New Jersey, Long Island Nonattainment Area Commercial Marine Vessel Emissions Inventory, Table 6.1, April 2003.

emission factors would be associated with the towboat activity adjacent to the facility than those used in the analysis. All towboat emissions were based on the largest of the three types of towboats that would be used for the facility—the Sea Bull, equipped with two Caterpillar engines with a combined power output of 2,400 horsepower (hp). Docking an inbound barge and tying up an outbound barge were estimated to take 30 minutes for each towboat trip.

It should be noted that these emissions are conservatively high, because in addition to using average emission rates as described above, the analysis also does not account for the improved fuel quality which is expected. Federal regulations will limit the sulfur content of marine diesel to 500 ppm as of June 2007, and 15 ppm (ULSD) as of June 2012. EPA has also announced its intent to regulate marine engine emissions[1], following the fuel regulations, in a similar manner to the regulation imposed on on-road engines. EPA estimates that such regulations would reduce NO_x and PM emissions by approximately 90 percent.

FUGITIVE DUST EMISSIONS

Resuspended dust from vehicles (nonroad and on-road) moving on paved surfaces both on-site and on the adjacent roadway were calculated based on EPA's AP-42 13.2.1 (November 2006). For the on-site sources, since a speed limit of 5 mph would be enforced on site, $PM_{2.5}$ dust would be negligible and the calculation was applied with a 50 percent reduction for PM_{10}. No other sources of dust would be present within the facility since there are no loose materials or processes which would produce or resuspend dust. The facility would include a tire-washing system and periodic use of a mechanical broom to maintain good housekeeping, suppress dust and prevent the off-site tracking of dust or other material as trucks exit the facility. A minimum of 40 feet would be maintained debris-free between the unloading area and the exit.

DISPERSION MODEL FOR MICROSCALE ANALYSES

The potential impact of emissions from the facility on air quality was evaluated using the EPA/AMS AERMOD dispersion model. The AERMOD model was designed as a replacement to the EPA Industrial Source Complex (ISC3) model and was recently approved for use by EPA. AERMOD is a state-of-the-art dispersion model, applicable to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources (including point, area, and volume sources). AERMOD is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain, including updated treatments of the boundary layer theory, understanding of turbulence and dispersion, and includes handling of terrain interactions.

The AERMOD model calculates pollutant concentrations from one or more points (e.g., exhaust stacks) based on hourly meteorological data, and has the capability of calculating pollutant concentrations at locations when the plume from the exhaust stack is affected by the aerodynamic wakes and eddies (downwash) produced by nearby structures. The analyses of potential impacts from exhaust stacks were made assuming stack tip downwash, urban dispersion and surface roughness length, with and without building downwash, and elimination of calms.

[1] EPA, *Control of Emissions of Air Pollution From New Locomotive Engines and New Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder*, Federal Register, Volume 69, Number 124, June 29, 2004.

All parameters for the model input are presented in detail in Appendix B.2. The locations of the sources and receptors are shown in Figure C-1.

METEOROLOGY

The meteorological data set consisted of five consecutive years of meteorological data: surface data collected at LaGuardia Airport (2000–2004) and concurrent upper air data collected at Brookhaven, New York. The meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevation over the 5-year period. These data were processed using the EPA AERMET program to develop data in a format which can be readily processed by the AERMOD model. The land uses around the site where meteorological surface data were available were classified using categories defined in digital United States Geological Survey (USGS) maps to determine surface parameters used by the AERMET program.

ANALYSIS YEAR

The microscale analysis was performed for 2009, the year by which the proposed facility is likely to be completed, and assuming full expected operations. This is a conservative assumption since engine emission factors are expected to decrease over the years due to improvements in engine technology mandated by federal emissions regulations.

BACKGROUND CONCENTRATIONS

Background concentrations are those pollutant concentrations originating from distant sources not directly included in the modeling analysis, which directly accounts for all on-site emissions and vehicular emissions on the adjacent street within 1,000 feet of the nearest intersection. To estimate the maximum expected total pollutant concentrations, the predicted levels were added to corresponding background concentrations.

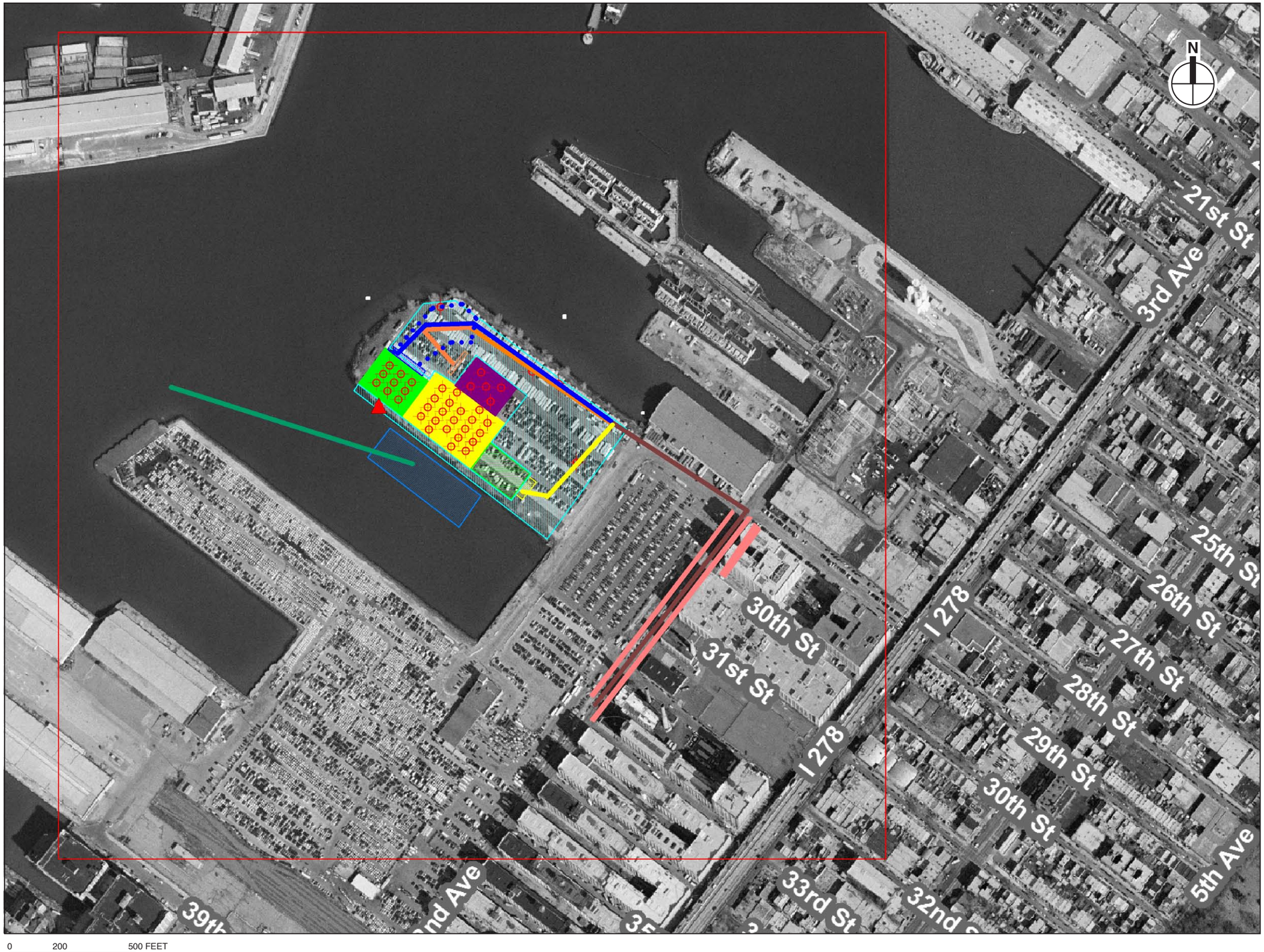
Background concentrations for relevant pollutants in the area of the proposed facility are presented in Table C-2. PM backgrounds are the highest measured concentrations from the latest available three years of monitored data (2004–2006), consistent with the NAAQS. All other pollutants are based on the latest five years of monitored data (2002–2006). Consistent with the NAAQS for each pollutant, for averaging periods shorter than a year the second highest value is used, aside from $PM_{2.5}$ which is the 98th percentile. These values were used as the background concentrations for all analyses, including mobile-source analyses. It was conservatively assumed that the maximum background concentrations occur on all days.

Table C-2
Maximum Background Pollutant Concentrations (µg/m^3)

Pollutant	Average Period	Location	Concentration	NAAQS
NO_2	Annual	P.S. 59	69.5	100
CO	1-hour	P.S. 59	4.0 ppm	35 ppm
	8-hour		2.5 ppm	9 ppm
PM_{10}	24-hour	J.H.S. 126	60	150
$PM_{2.5}$	24-hour	J.H.S. 126	40.8	65
	Annual		15.3	15

Note: Consistent with the NAAQS, PM values are the highest of the latest available 3 years; all other pollutants are the highest of the latest 5 years. Consistent with the NAAQS for each pollutant, for averaging periods shorter than a year the second highest value is used, aside from $PM_{2.5}$ which is the 98th percentile. $PM_{2.5}$ background values are presented for information only, and are not used for evaluating total concentrations; $PM_{2.5}$ impacts are evaluated only based on increments.
Source: New York State Air Quality Report Ambient Air Monitoring System, NYSDEC, 2002–2006.

7 20.07



0 200 500 FEET

SCALE

LEGEND

Receptors:

- sensitive receptors
- receptor grid

Line Sources as Volume Sources:

- towboat
- all trucks
- metal trucks
- bale trucks
- DSNY trucks
- DSNY dual-bin

Point Sources:

- tipping rooftop vents (9 points)
- proccesing rooftop vents (21 points)
- bale storage rooftop vents (5 points)
- truck scales (4 points)
- MGP handler

Area Sources:

- towboat docking
- truck tipping
- bale dock idle
- metal truck idle
- metal shed operations
- sweeper, tractor, roll-off truck

Sunset Park Materials Recovery Facility

Location of Sources and Receptors in Air Quality Model

Figure C-1

RECEPTOR PLACEMENT

Multiple receptors (i.e. precise locations at which concentrations are predicted) in the vicinity of the proposed facility were modeled; receptors were placed along the approach and departure routes at spaced intervals on sidewalk or roadside locations with continuous public access and at elevated operable windows and intake vents, including the nearby Federal Bureau of Prisons' Metropolitan Detention Center (MDC). Receptors in the analysis model for predicting annual average neighborhood-scale $PM_{2.5}$ concentrations were placed throughout a 1-kilometer by 1-kilometer grid with a spacing of 25 meters, based on the DEP procedure for neighborhood-scale $PM_{2.5}$ modeling. The nearest receptors in publicly accessible space were placed along Second Avenue at 29th Street, where the access road from the site emerges from the marine terminal at a distance of approximately 470 feet from the facility gate. The nearest sensitive receptors were placed at the windows of MDC at a distance of approximately 615 feet from the facility gate, at elevations ranging from 40 to 70 feet above street level. The model included a total of 1,580 receptors, mostly ground level grid receptors.

E. FUTURE CONDITIONS WITH THE PROPOSED FACILITY

The maximum pollutant concentration increments and total concentrations predicted in publicly accessible or residential locations in the study area in the future condition with the proposed facility are presented in Table C-3. The annual neighborhood-scale average $PM_{2.5}$ concentration increment was predicted to be 0.07 $\mu g/m^3$. It should be noted that the annual numbers are conservatively high, since they are based on peak daily activity. If refined analyses was to be performed for annual average activity, the annual average concentration increments would be much lower since the number of towboat trips—a major contributor—on average is much lower than the daily peak.

Table C-3
Maximum Predicted Pollutant Concentrations ($\mu g/m^3$)

Pollutant	Average Period	Concentration		Increment Threshold	NAAQS
		Increment	Total		
NO_2	Annual	3.0	72.5	N/A	100
CO	1-hour	0.3 ppm	4.3 ppm	N/A	35 ppm
	8-hour	0.1 ppm	2.6 ppm	N/A	9 ppm
PM_{10}	24-hour	1.3 (1)	61.3	N/A	150
$PM_{2.5}$	24-hour	2.07 (1)	N/A	2 / 5	35
	Annual	0.11 (1)	N/A	0.3	15

Note: $PM_{2.5}$ concentrations were predicted in detail for all averaging periods. Maximum potential concentrations of other pollutants were conservatively estimated based on the highest ratio of $PM_{2.5}$ emission rates to the other pollutant emissions rates from all diesel engine emission rates used.

NA — Not Applicable. $PM_{2.5}$ impacts are only evaluated based on increments and there is no applicable incremental threshold for other pollutants.

1. The PM_{10} emissions calculation took into account the engine emissions reduction measures legally required for the facility (both nonroad and on-road), and therefore the PM_{10} results are lower than the $PM_{2.5}$ results. The $PM_{2.5}$ emissions did not account for this reduction since that estimate was a conservative estimate used as the basis for a unitary comparison with other pollutants. The $PM_{2.5}$ results presented are therefore conservatively high.

The $PM_{2.5}$ and PM_{10} concentrations were the result of explicit dispersion analysis. Concentrations of CO and NO_2 were conservatively estimated based on the predicted $PM_{2.5}$ concentration increments and highest ratio between the predicted emissions for each pollutant and the $PM_{2.5}$ emissions. $PM_{2.5}$ was selected for explicit analysis since it has the lowest benchmark (relative to the emissions levels) and therefore a more refined analysis was appropriate. This procedure produces a conservatively high estimate for those pollutants, since the highest emissions ratio was often from sources which had very low emissions and would therefore not be dominant in the overall predicted concentrations. Furthermore, all NO_x emitted was assumed to be NO_2, even though the transformation of the NO_x (most of which is emitted as NO) to NO_2 takes time and would not occur at the nearest receptors where the highest increments were predicted. PM_{10} was also run explicitly due to the dust component.

The maximum 24-hour average increment in $PM_{2.5}$ concentrations was predicted to be lower than the not-to-exceed threshold of 5 $\mu g/m^3$, but there is a low probability that it could exceed the intermediate threshold of 2 $\mu g/m^3$ along a segment of sidewalk adjacent to the eastern perimeter of the site, a location where 24-hour-long exposure would not be expected. Since this slight exceedance of the threshold, at 2.07 $\mu g/m^3$, was predicted on only a single day of the 5-year meteorological dataset which was used in the dispersion modeling, it could occur once per year, if at all. Given the low probability of occurrence, the short duration, the low level of exceedance and exposure, and the small potential area affected, this potential increment would not be considered a significant adverse impact.

All other pollutant concentrations were predicted to be lower than the NAAQS. Total $PM_{2.5}$ concentrations would be higher than the NAAQS because the background concentrations exceed the NAAQS in the current condition, which is the reason that the significance of $PM_{2.5}$ impacts is determined based on comparing the increments with the interim guidance threshold levels.

The facility is not expected to generate any significant odors, since the facility would receive and process source-separated recyclables, not putrescible solid waste. All receipt and processing of materials would occur inside a building. Materials are processed as they are delivered, so that materials do not remain on site for extended periods. As a result, materials are generally received, processed and shipped off site within 24 to 48 hours. Nevertheless, an odor control system that will include air ventilation system that achieves at least six air exchanges per hour, as well as odor and dust controlling misters, will be installed in areas where there is the greatest potential for odors, such as the tipping floor, and employed as needed to prevent odors and dust from leaving the facility. A back-up system for odor control will also be available for use in the event of a breakdown of equipment or loss of power.

Since pollutant concentrations were predicted to be lower than all applicable significance criteria in the worst-case analysis, and since total concentrations and increments would be lower under any other circumstances and in future years, the proposed facility would not have any significant adverse impact on air quality. ✷

A. INTRODUCTION

Noise pollution in an urban area comes from many sources. Some sources are activities essential to the health, safety, and welfare of a city's inhabitants, such as noise from emergency vehicle sirens, garbage collection operations, and construction and maintenance equipment. Other sources, such as traffic, are essential to the viability of a city as a place to live and do business. Although these and other noise-producing activities are necessary to a city, the noise they produce is undesirable. Urban noise detracts from the quality of the living environment, and there is increasing evidence that excessive noise represents a threat to public health.

The noise analysis for the proposed project consists of three parts:

- A detailed analysis to determine whether the on-site processing operations of the proposed project would have the potential to cause significant noise impacts;
- A screening analysis to determine whether there are any locations where traffic generated by the proposed project would have the potential to cause significant noise impacts; and
- A detailed analysis at any location where traffic generated by the proposed project would have the potential to result in significant adverse noise impacts, and to determine the magnitude of the increase in noise level.

In summary, the analysis concludes that the combination of on-site operations and project-generated traffic would not be expected to produce significant increases in noise levels at any location in or near the study area that would exceed criteria set forth in the New York City Zoning Resolution Performance Standards for Manufacturing Districts, the New York City Noise Control Code, or the *City Environmental Quality Review (CEQR) Technical Manual*. Therefore, the proposed project would not result in any significant adverse noise impacts.

B. NOISE FUNDAMENTALS

Quantitative information on the effects of airborne noise on people is well-documented. If sufficiently loud, noise may interfere with human activities such as sleep, speech communication, and tasks requiring concentration or coordination. It may also cause annoyance, hearing damage, and other physiological problems. Several noise scales and rating methods are used to quantify the effects of noise on people, taking into consideration such factors as loudness, duration, time of occurrence, and changes in noise level with time. However, it must be noted that all the stated effects of noise on people vary greatly with each individual.

"A"-WEIGHTED SOUND LEVEL (dBA)

Noise is typically measured in units called decibels (dB), which are 10 times the logarithm of the ratio of the sound pressure squared to a standard reference presence squared. Because loudness is important in the assessment of the effects of noise on people, the dependence of loudness on

frequency must be taken into account in the noise scale used in environmental assessments. One of the simplified scales that accounts for the dependence of perceived loudness on frequency is the use of a weighting network, known as "A"-weighting, in the measurement system to simulate the response of the human ear. For most noise assessments, the A-weighted sound pressure level in units of dBA is used in view of its widespread recognition and its close correlation with perception. In the current study, all measured noise levels are reported in A-weighted decibels (dBA). Common noise levels in dBA are shown in Table D-1.

Table D-1
Common Noise Levels

Sound Source	(dBA)
Military jet, air raid siren	130
Amplified rock music	110
Jet takeoff at 500 meters	100
Freight train at 30 meters	95
Train horn at 30 meters	90
Heavy truck at 15 meters	80–90
Busy city street, loud shout	80
Busy traffic intersection	70–80
Highway traffic at 15 meters, train	70
Predominantly industrial area	60
Light car traffic at 15 meters, city or commercial areas, or residential areas close to industry	50–60
Background noise in an office	50
Suburban areas with medium-density transportation	40–50
Public library	40
Soft whisper at 5 meters	30
Threshold of hearing	0

Note: A 10 dBA increase in level appears to double the loudness, and a 10 dBA decrease halves the apparent loudness.
Sources: Cowan, James P. *Handbook of Environmental Acoustics,* Van Nostrand Reinhold, New York, 1994. Egan, M. David, Architectural Acoustics. McGraw-Hill Book Company, 1988.

ABILITY TO PERCEIVE CHANGES IN NOISE LEVELS

The average ability of an individual to perceive changes in noise levels is well-documented (see Table D-2). Generally, changes in noise levels of less than 3 dBA are barely perceptible to most listeners, whereas changes in noise levels of 10 dBA are normally perceived as doubling (or halving) of noise loudness. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

Table D-2
Average Ability to Perceive Changes in Noise Levels

Change (dBA)	Human Perception of Sound
2–3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A "dramatic change"
40	Difference between a faintly audible sound and a very loud sound

Source: Bolt Beranek and Neuman, Inc., *Fundamentals and Abatement of Highway Traffic Noise*, Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.

NOISE DESCRIPTORS USED IN IMPACT ASSESSMENT

Because the sound pressure level unit of dBA describes a noise level at just one moment, and because very few noises are constant, other ways of describing noise over more extended periods have been developed. One way is to describe the fluctuating noise heard over a specific period as if it had been a steady, unchanging sound. For this condition, a descriptor called the "equivalent sound level," L_{eq}, can be computed. L_{eq} is the constant sound level that, in a given situation and period (e.g., 1 hour, denoted by $L_{eq(1)}$, or 24 hours, denoted by $L_{eq(24)}$), conveys the same sound energy as the actual time-varying sound. Statistical sound level descriptors, such as L_1, L_{10}, L_{50}, L_{90}, and L_x, are sometimes used to indicate noise levels that are exceeded 1, 10, 50, 90, and X percent of the time, respectively. Discrete event peak levels are given as L_{01} levels.

For purposes of the proposed project, the maximum 1-hour equivalent sound level ($L_{eq(1)}$), L_1, and L_{10} has been selected as the noise descriptors to be used in this noise impact evaluation. $L_{eq(1)}$ is the noise descriptor recommended for use in the *CEQR Technical Manual* for vehicular traffic, and is used to provide an indication of highest expected sound levels. The L_1 is the noise descriptor used for evaluation of the noise due to on-site processing operations regarding the New York City Zoning Resolution Performance Standards for Manufacturing Districts and the New York City Noise Control, and is used to provide an indication of highest expected sound levels. The 1-hour L_{10} is the noise descriptor used in the *CEQR Technical Manual* noise exposure guidelines for City environmental impact review classification.

C. NOISE STANDARDS AND CRITERIA

Noise levels associated with the construction and operation of the proposed project would be subject to the emission source provisions of the New York City Zoning Resolution Performance Standards for Manufacturing Districts, New York City Noise Control Code, and to noise criteria set forth in the *CEQR Technical Manual.* Other standards and guidelines promulgated by federal agencies do not apply to project noise control, but are useful to review in that they establish measures of impacts.

PERFORMANCE STANDARDS FOR MANUFACTURING DISTRICTS

The City of New York's Zoning Resolution Section 42-213 states that in all manufacturing districts, the sound pressure level resulting from any activity, whether open or enclosed, shall not exceed, at any point on or beyond any lot line, the maximum permitted sound level for the designated octave band indicated in Table D-3 for an M3 zone.

The Performance Standards are specified in "old" octave bands. These bands have not been used in almost 40 years, and instrumentation is no longer available to measure per these specifications. The American National Standards Institute (ANSI) has promulgated a standard on the conversion of old octave bands to the current preferred values (and vice versa), to allow measurement and assessment. This conversion was done and the converted criteria are provided in Table D-3.

Table D-3
City of New York Noise Performance Standards for M3 Manufacturing District

Old Octave Bands		Current Octave Bands	
Octave Band (Hz)	**M3 District (dB)**	**Octave Band (Hz)**	**M3 District (dB)**
20 to 75	80	63	79
75 to 150	75	125	74
150 to 300	70	250	69
300 to 600	64	500	63
600 to 1200	58	1000	57
1200 to 2400	53	2000	52
2400 to 4800	49	4000	48
Above 4800	46	8000	45

Source: City of New York Performance Standards for Manufacturing Districts

NEW YORK CITY NOISE CONTROL CODE

The New York City Noise Control Code, amended in December 2005, contains prohibitions regarding unreasonable noise, requirements for noise due to construction activities, and specific noise standards, including plainly audible criteria for specific noise sources. In addition, the amended code specifies that no sound source operating in connection with any commercial or business enterprise may exceed the decibel levels in the designated octave bands shown in Table D-4 at the specified receiving properties.

Table D-4
New York City Noise Code

Octave Band Frequency (Hz)	Maximum Sound Pressure Levels (dB) as Measured Within a Receiving Property as Specified Below	
	Residential receiving property for mixed-use building and residential buildings (as measured within any room of the residential portion of the building with windows open, if possible)	*Commercial receiving property (as measured within any room containing offices within the building with windows open, if possible)*
31.5	70	74
63	61	64
125	53	56
250	46	50
500	40	45
1000	36	41
2000	34	39
4000	33	38
8000	32	37

Source: Section 24-232 of the Administrative Code of the City of New York, as amended December 2005.

NEW YORK CEQR NOISE CRITERIA

The *CEQR Technical Manual* contains noise exposure guidelines for use in City environmental impact review and required attenuation values to achieve acceptable interior noise levels. These values are shown in Tables D-5 and D-6. Noise exposure is classified into four categories: "acceptable," "marginally acceptable," "marginally unacceptable," and "clearly unacceptable." The *CEQR Technical Manual* criteria are based on maintaining an interior noise level for the worst-case hour L_{10} or less than or equal to 45 A-weighted decibels (dBA).

Table D-5
Noise Exposure Guidelines For Use in City Environmental Impact Review[1]

Receptor Type	Time Period	Acceptable General External Exposure	Airport[3] Exposure	Marginally Acceptable General External Exposure	Airport[3] Exposure	Marginally Unacceptable General External Exposure	Airport[3] Exposure	Clearly Unacceptable General External Exposure	Airport[3] Exposure
Outdoor area requiring serenity and quiet[2]		$L_{10} \leq 55$ dBA	---------- Ldn ≤ 60 dBA ----------	**NA**	**NA**	**NA**	(i) 65 < Ldn ≤ 70 dBA, (II) 70 ≤ Ldn	**NA**	---------- Ldn ≤ 75 dBA ----------
Hospital, nursing home		$L_{10} \leq 55$ dBA		55 < L_{10} ≤ 65 dBA	---------- 60 < Ldn ≤ 65 dBA ----------	65 < L_{10} ≤ 80 dBA		L_{10} > 80 dBA	
Residence, residential hotel, or motel	7 AM to 10 PM	$L_{10} \leq 65$ dBA		65 < L_{10} ≤ 70 dBA		70 < L_{10} ≤ 80 dBA		L_{10} > 80 dBA	
	10 PM to 7 AM	$L_{10} \leq 55$ dBA		55 < L_{10} ≤ 70 dBA		70 < L_{10} ≤ 80 dBA		L_{10} > 80 dBA	
School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, outpatient public health facility		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)	
Commercial or office		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)	
Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Notes:

(i) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more; (ii) *CEQR Technical Manual* noise criteria for train noise are similar to the above aircraft noise standards: the noise category for train noise is found by taking the L_{dn} value for such train noise to be an L^{y}_{dn} (L_{dn} contour) value.

Table Notes:

[1] Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.

[2] Tracts of land where serenity and quiet are extraordinarily important and serve an important public need, and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and nursing homes.

[3] One may use the FAA-approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved INM Computer Model using flight data supplied by the Port Authority of New York and New Jersey.

[4] External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).

Source: New York City Department of Environmental Protection (adopted policy 1983).

Table D-6
Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Acceptable	Marginally Unacceptable		Clearly Unacceptable		
Noise level with proposed action	65<L_{10}≤70	70<L_{10}≤75	75<L_{10}≤80	80<L_{10}≤85	85<L_{10}≤90	90<L_{10}≤95
Attenuation[1]	25 dB(A)	30dB(A)	35 dB(A)	40 dB(A)	45 dB(A)	50 dB(A)

Note: [1] The above composite window-wall attenuation values are for residential dwellings. Commercial office spaces and meeting rooms would be 5 dB(A) less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.

Source: New York City Department of Environmental Protection (DEP)

ANALYSIS YEAR

The future analysis year for purposes of determining operational noise impacts is 2009. This is the year construction would be completed at the site and the proposed project would be fully

operational. The proposed project would reach maximum operating conditions in 2029. For a conservative mobile source analysis, project-generated traffic volumes associated with the maximum operating conditions in 2029 were assumed to occur in 2009. This creates an analysis that would produce the maximum potential for significant noise impacts due to operations of the proposed project.

D. IMPACT DEFINITION

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

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

Additionally, the proposed project will have a significant adverse noise impact if noise levels due to plant operation (i.e., the total noise generated by all mechanical equipment and operations) exceed either the octave band noise levels specified in the Performance Standards for Manufacturing Districts contained in the New York City Zoning Resolution, or the City of New York Noise Control Code.

E. NOISE PREDICTION METHODOLOGY

INTRODUCTION

At locations near the project site, noise levels would increase due to noise generated by a combination of on-site processing operations and project-generated vehicular traffic. At locations away from the project site, the potential for significant noise impacts from the project would be due to project-generated vehicular noise sources. As described below, noise due to on-site processing operations was determined based principally upon field measurements performed at comparable facilities and detailed modeling using the Cadna A model. Noise due to vehicular sources was determined using proportional modeling and detailed modeling using the TNM model (the Federal Highway Administration's [FHWA] *Traffic Noise Model* version 2.5).

ON-SITE PROCESSING OPERATIONS NOISE MODELING

Noise generated by on-site processing operations is variable and dependent upon the characteristics of particular operations taking place. To provide a conservative assessment of potential impacts of the proposed facility, the L_1 noise descriptor for specific processing

operations was used for the assessment of compliance with both the New York City Zoning Resolution Performance Standards for Manufacturing Districts and the New York City Noise Control Code, and the $L_{eq(1)}$ noise descriptor for overall processing operations was used for assessment of compliance with CEQR impact criteria.

To obtain data for this analysis, noise measurements were made at two facilities that have on-site processing operations that are comparable to those that would take place at the proposed Sims Sunset Park MRF. On October 25, 2006, and May 10, 2007, measurements were made at two SHN facilities in Claremont, New Jersey, and the Bronx, New York. This consisted of measuring octave band noise levels for specific on-site processing operations that would occur as part of the proposed project. Noise measurement data pertaining to the metal handling operations was gathered in the Bronx, and noise measurement data pertaining to all other operations, including metal/glass/plastic (MGP) handling, was gathered in Claremont.

A review of the noise measurement data shows that the metal handling operations would be the dominant noise source at the proposed facility. This is not surprising, since during tipping operations as well as transfer operations, impact noises are substantially higher when metal is handled than MGP. In addition, the metal storage shed is closest to the property line and the nearest upland sensitive receptor (a federal correctional facility), and is open on the north and south (the eastern wall of the metal storage shed that faces the property line adjacent to the federal correctional facility will be a solid wall with no openings). In contrast, the MGP operations and sorting operations are in a partially enclosed shed, substantially farther from the property line, and shielded in part by the other operations. An analysis of the MGP and processing operations, based upon the measured operations and estimates of the building attenuation of the MGP building, indicate that they are typically 20 dB below the criteria and the levels of the metal operations.

A stationary source noise analysis was performed in Cadna A. The Cadna A model is a computerized model developed by DataKustik for noise prediction and assessment. The model can be used for the analysis of a wide variety of noise sources, including stationary sources (e.g., construction equipment, industrial equipment, power generation equipment, etc.), transportation sources (e.g., roads, highways, railroad lines, busways, airports, etc.), and other specialized sources (e.g., sporting facilities, etc.) The model takes into account the noise power levels of the noise sources, attenuation with distance, ground contours, reflections from barriers and structures, attenuation due to shielding, etc. The Cadna A model is based on the acoustic propagation standards promulgated in International Standard ISO 9613-2. This standard is currently under review for adoption by ANSI as an American standard. The Cadna A model is a state-of-the-art tool for noise analysis.

The analysis of the New York City Zoning Resolution Performance Standards for Manufacturing Districts is presented for L_1 octave band sound pressure levels for the various on-site handling operations. These are individually compared with the New York City Zoning Resolution Performance Standards for Manufacturing Districts, since the events represented by these statistical levels occur isolated from one another. Similarly, the L_1 octave band sound pressure levels were used for the New York City Noise Control Code comparison. Attenuation due to the structure of the correctional facility (brick/concrete walls, small fixed laminated glass window in the cells) was used to estimate interior sound levels.

To evaluate with respect to the CEQR standards, hourly L_{eq} values for the operations were calculated, and to be conservative it was assumed that the operations occurred 24 hours each day.

Details of the measurement program and of the calculations for specific on-site waste processing operations are contained in Appendix C.

MOBILE SOURCE NOISE MODELING

PROPORTIONAL MODELING

Proportional modeling was used to determine locations with the potential for having significant noise impacts. Proportional modeling is one of the techniques recommended in the *CEQR Technical Manual* for mobile source analysis.

Using this technique, the prediction of future noise levels, where traffic is the dominant noise source, is based on a calculation using measured existing noise levels and predicted changes in traffic volumes to determine No Build and Build levels. Vehicular traffic volumes are converted into Passenger Car Equivalent (PCE) values, for which one medium-duty truck (having a gross weight between 9,900 and 26,400 pounds) is assumed to generate the noise equivalent of 13 cars, and one heavy-duty truck (having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars, and one bus (vehicles designed to carry more than nine passengers) is assumed to generate the noise equivalent of 18 cars. Future noise levels are calculated using the following equation:

$$F\ NL - E\ NL = 10 * \log_{10} (F\ PCE / E\ PCE)$$

where:

F NL = Future Noise Level

E NL = Existing Noise Level

F PCE = Future PCEs

E PCE = Existing PCEs

Sound levels are measured in decibels and therefore increase logarithmically with sound source strength. In this case, the sound source is traffic volumes measured in PCEs. For example, assume that traffic is the dominant noise source at a particular location. If the existing traffic volume on a street is 100 PCE and if the future traffic volume were increased by 50 PCE to a total of 150 PCE, the noise level would increase by 1.8 dBA. Similarly, if the future traffic were increased by 100 PCE, or doubled to a total of 200 PCE, the noise level would increase by 3.0 dBA.

At locations where substantial increases in PCEs are expected to occur, a more detailed analysis was performed using the Traffic Noise Model (TNM).

Based on the traffic analysis, two locations were identified as having the potential for a significant noise impact. These locations are Site 1, on Second Avenue between 29th and 30th Streets; and Site 2, on 39th Street between Third and Fourth Avenues. Using proportional modeling, a screening analysis was performed to examine the potential for significant impacts at Sites 1 and 2. That analysis showed that project-generated traffic would not be sufficiently large enough to result in significant noise impacts at Site 2 on 39th Street between Third and Fourth Avenues (see Appendix C). At Site 1 a detailed analysis was performed using the TNM as described below.

TRAFFIC NOISE MODEL

TNM is a computerized model developed for the Federal Highway Administration (FHWA) that takes into account various factors due to traffic flow, including traffic volumes, speed, vehicle mix (i.e., percentage of autos, light duty trucks, heavy duty trucks, buses, etc.), sources/receptor geometry, and shielding (including barriers and terrain, ground attenuation, etc.). It is the current state-of-the-art model for traffic noise analysis.

Since the proposed facility would operate 24 hours a day, six days a week, the detailed analysis involved using the TNM to model the existing, No Build, and Build scenarios during each hour of a typical workday. This model can be used to more precisely determine the magnitude of noise level increases due to on- and off-site project-generated vehicular traffic and to determine whether there would be a significant adverse noise impact at Site 1.

F. EXISTING CONDITIONS

SITE DESCRIPTION

The project site is located in Brooklyn in an area bordered by the Gowanus Creek Inlet to the West, 29th Street to the North, 31st Street to the South, and by Second Avenue to the East. The area is predominantly industrial, comprising mostly manufacturing, parking, warehouses/storage facilities, and a federal correctional facility. The site is zoned M3-1. While the ambient noise levels are primarily a function of traffic on the adjacent streets and nearby manufacturing activities, traffic is the dominant noise source.

SELECTION OF NOISE RECEPTOR LOCATIONS

A noise receptor site in the project area was selected for project impact assessment purposes (see Figure D-1). Table D-7 lists the location of the noise receptor site and its associated surrounding land use.

Table D-7
Noise Receptor Locations

Receptor	Location	Associated Land Use
1	Second Avenue between 29th and 30th Streets	Residential (federal correctional facility)

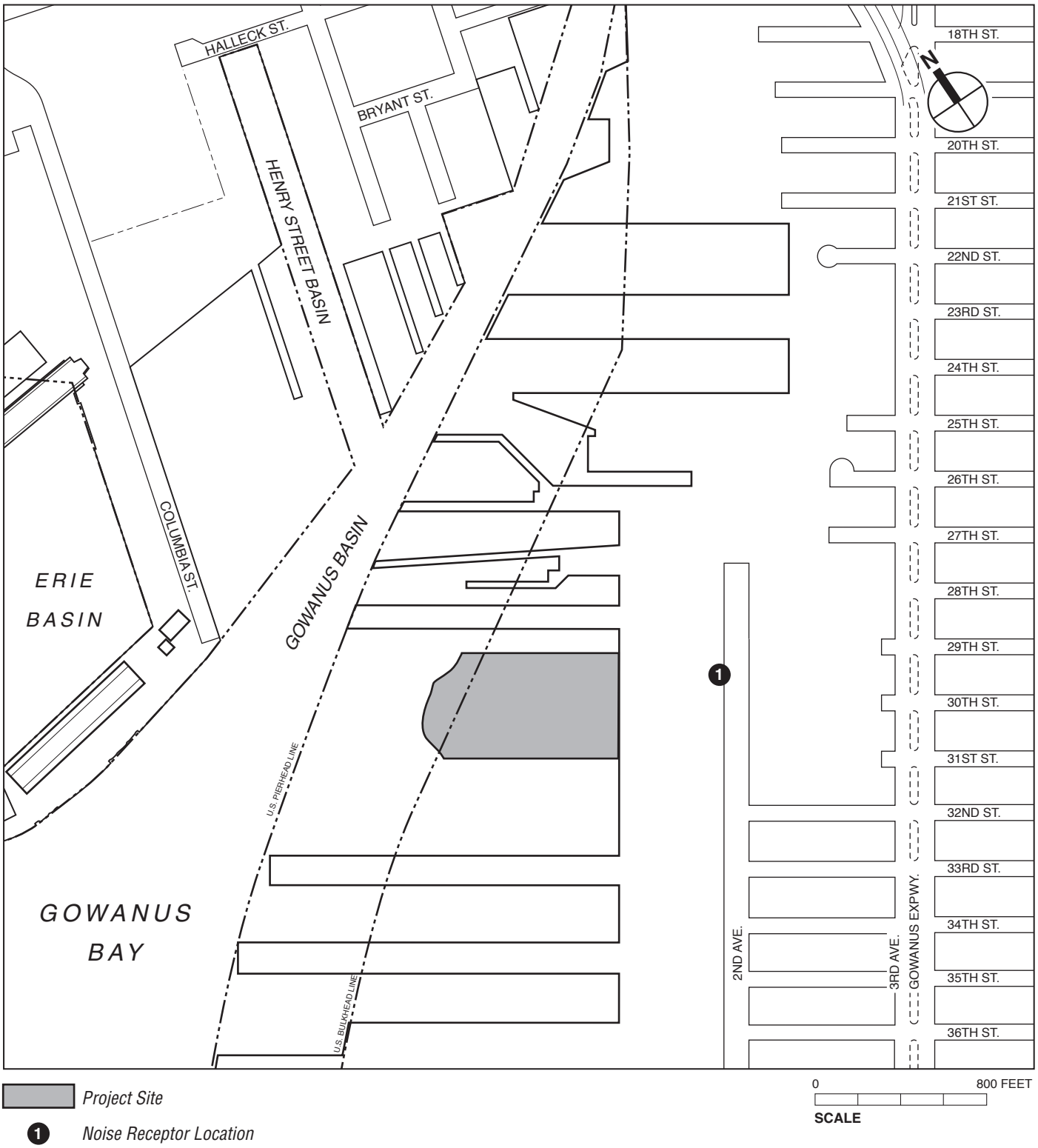
This location is adjacent to a federal correctional facility and is the only sensitive receptor location where the proposed project has the potential for causing a significant noise impact. At other locations, particularly locations outside the project area, project-generated traffic would be less and/or would constitute a small portion of the existing and/or No Build traffic volume, and consequently would not have the potential for causing a significant increase in noise levels.

NOISE MONITORING

At the receptor location, a 24-hour continuous noise measurement was performed to determine existing noise levels. This measurement was taken on November 20 and 21, 2006.

EQUIPMENT USED DURING NOISE MONITORING

Measurements were performed using Brüel & Kjær Noise Level Meters Type 2260, Brüel & Kjær Sound Level Calibrators Type 4231, and Brüel & Kjær ½-inch microphones Type 4189.



Noise Receptor Location
Figure D-1

The Brüel & Kjær meters are Type 1 noise meters. The instruments were mounted on a tripod at a height of 5 feet above the ground. The meters were calibrated before and after readings using Brüel & Kjær Type 4231 sound level calibrators with the appropriate adaptors. The data were digitally recorded by the sound meters and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, and L_{90}. Windscreens were used during all sound measurements except for calibration. All measurement procedures conformed to the requirements of ANSI Standard S1.13-1971 (R1976).

RESULTS OF BASELINE MEASUREMENTS

Table D-8 summarizes the results of the baseline measurements at Site 1. Values are shown for the specific monitored weekday time period. In general, noise levels are directly related to the volume of traffic on the immediately adjacent streets and activities occurring at the surrounding manufacturing buildings located in the industrial area. Traffic noise levels on Second Avenue are low to moderate during most hours, but truck volumes can reach substantial levels during peak hours of manufacturing activity.

Table D-8
Receptor 1—Continuous Measurement Results (in dBA)

Start Time	Leq	L_1	L_{10}	L_{50}	L_{90}	Lmin	Lmax
6 PM	60.1	67.3	61.5	58.8	57.8	56.7	74.4
7 PM	63.1	70.5	64.3	62.3	60.6	58.0	76.4
8 PM	61.4	66.6	64.1	59.9	58.4	57.1	74.5
9 PM	58.6	64.8	59.5	57.8	57.1	56.2	73.1
10 PM	58.4	65.6	59.6	57.2	56.6	55.8	71.5
11 PM	58.1	63.1	58.9	57.7	56.9	56.0	68.0
Midnight	57.1	60.2	57.8	56.8	56.1	55.0	68.5
1 AM	60.0	67.1	60.3	59.4	57.5	55.4	76.0
2 AM	59.6	60.9	60.0	59.5	59.0	58.4	64.8
3 AM	59.7	61.7	60.2	59.6	59.1	58.2	67.2
4 AM	65.1	71.8	70.1	60.7	59.3	58.5	74.2
5 AM	62.5	71.3	63.4	60.6	59.3	58.6	80.6
6 AM	64.5	72.8	66.5	61.7	60.3	58.6	78.6
7 AM	70.5	74.3	72.5	71.3	63.6	59.3	77.8
8 AM	64.8	71.5	67.4	63.1	61.2	59.3	81.5
9 AM	67.0	74.8	70.4	64.6	61.9	59.1	81.2
10 AM	63.7	72.9	65.9	61.4	60.0	58.8	78.2
11 AM	62.9	69.4	64.2	62.0	60.7	59.6	79.2
Noon	62.1	69.5	64.2	60.7	58.9	57.7	78.0
1 PM	62.4	70.4	64.6	60.6	59.2	57.9	78.8
2 PM	63.1	73.0	65.0	60.3	58.8	56.8	79.5
3 PM	62.5	70.3	64.3	60.4	59.1	58.1	80.9
4 PM	65.0	75.1	67.0	61.7	59.0	57.8	83.5
5 PM	63.3	73.4	64.6	60.2	59.1	58.0	82.0

Notes: Field measurements were performed by AKRF, Inc. on November 20 and 21, 2006.

Due to site access and parking restrictions, the noise monitoring was performed across the street from the correctional facility. Although the noise monitoring location was located on the west side of Second Avenue between 29th and 30th Streets, and the correctional facility is located on the east side of Second Avenue between 29th and 30th Streets, the noise levels would be comparable at both locations.

In terms of CEQR noise exposure guidelines, during the hour with the highest measured noise levels (7 to 8 AM), existing noise levels at the receptor are in the "marginally unacceptable" category. These values are based on the measured L_{10} values.

G. 2009 FUTURE CONDITIONS WITHOUT THE PROPOSED PROJECT

Using the methodology previously described, future noise levels without the proposed project were calculated for the receptor site in the 2009 analysis year. These No Build values are shown in Table D-9.

Table D-9
2009 No Build Noise Levels at Receptor 1 (in dBA)

Start Time	Existing $L_{eq(1)}$	No Build $L_{eq(1)}$	Increase
6 PM	60.1	60.5	0.4
7 PM	63.1	63.4	0.3
8 PM	61.4	61.8	0.4
9 PM	58.6	59.0	0.4
10 PM	58.4	58.5	0.1
11 PM	58.1	58.5	0.4
Midnight	57.1	57.5	0.4
1 AM	60.0	60.4	0.4
2 AM	59.6	61.0	1.4
3 AM	59.7	59.9	0.2
4 AM	65.1	66.3	1.2
5 AM	62.5	62.6	0.1
6 AM	64.5	65.0	0.5
7 AM	70.5	71.0	0.5
8 AM	64.8	65.2	0.4
9 AM	67.0	67.5	0.5
10 AM	63.7	64.1	0.4
11 AM	62.9	63.2	0.3
Noon	62.1	62.3	0.2
1 PM	62.4	62.8	0.4
2 PM	63.1	63.5	0.4
3 PM	62.5	62.9	0.4
4 PM	65.0	65.4	0.4
5 PM	63.3	63.7	0.4

In 2009, at most locations, the increase in $L_{eq(1)}$ noise levels would be less than 1.0 dBA, an imperceptible change. The maximum increase in $L_{eq(1)}$ noise levels, comparing 2009 No Build noise levels with existing noise levels, would be 1.4 dBA. This would occur at the noise receptor location from 2–3 AM. A change of this magnitude would be barely perceptible.

In terms of CEQR noise exposure guidelines, during the hour with the highest measured noise levels, future 2009 noise levels without the Proposed Actions at the receptor location would remain in the "marginally unacceptable" category. This value is based on the calculated L_{10} values.

H. 2009 FUTURE CONDITIONS WITH THE PROPOSED PROJECT

CEQR CRITERIA

Using the methodology previously described, future noise levels with the proposed project were calculated for the receptor site in the 2009 analysis. As stated in the EAS, the metal processing facility operation will be phased in. However, for the purposes of this analysis, it is assumed that the metal processing facility will be in operation at the commencement of project operations, or between the hours of 7:00 AM to 4:00 PM. These Build values are shown in Table D-10. The results represent noise levels from a combination of both on-site processing operations and project-generated vehicular traffic levels. To be conservative, the analysis assumed that the hour with the highest noise levels due to on-site non-metal operations may occur during each hour over the 24-hour analysis period.

Table D-10
2009 Build Noise Levels At Receptor 1 (in dBA)

Start Time	No Build	Build			Increase (Build Total vs. No Build)
		On Site $L_{eq(1)}$	Mobile $L_{eq(1)}$	Total $L_{eq(1)}$	
6 PM	60.5	54.0	60.7	61.5	1.0
7 PM	63.4	54.0	63.7	64.1	0.7
8 PM	61.8	54.0	62.5	63.1	1.3
9 PM	59.0	54.0	60.4	61.3	2.3
10 PM	58.5	54.0	58.9	60.1	1.6
11 PM	58.5	54.0	58.7	60.0	1.5
Midnight	57.5	54.0	57.5	59.1	1.6
1 AM	60.4	54.0	60.4	61.3	0.9
2 AM	61.0	54.0	61.0	61.8	0.8
3 AM	59.9	54.0	59.9	60.9	1.0
4 AM	66.3	54.0	66.3	66.5	0.2
5 AM	62.6	54.0	62.6	63.2	0.6
6 AM	65.0	54.0	65.0	65.3	0.3
7 AM	71.0	54.0	71.3	71.4	0.4
8 AM	65.2	54.0	65.4	65.7	0.5
9 AM	67.5	54.0	67.6	67.8	0.3
10 AM	64.1	54.0	65.5	65.8	1.7
11 AM	63.2	54.0	64.9	65.2	2.0
Noon	62.3	54.0	64.2	64.6	2.3
1 PM	62.8	54.0	63.7	64.1	1.3
2 PM	63.5	54.0	64.4	64.8	1.3
3 PM	62.9	54.0	63.3	63.8	0.9
4 PM	65.4	54.0	65.6	65.9	0.5
5 PM	63.7	54.0	63.9	64.3	0.6

In 2009, during most hours and at most locations, the increase in $L_{eq(1)}$ noise levels would be less than 1.5 dBA, an imperceptible change. The maximum increase in $L_{eq(1)}$ noise levels, comparing 2009 Build noise levels with 2009 No Build noise levels, would be 2.3 dBA. This would occur at the noise receptor location during the Noon—1:00 PM and 9:00 PM—10:00 PM analysis periods. This is due to the fact that the Noon—1:00 PM hour has the most project generated

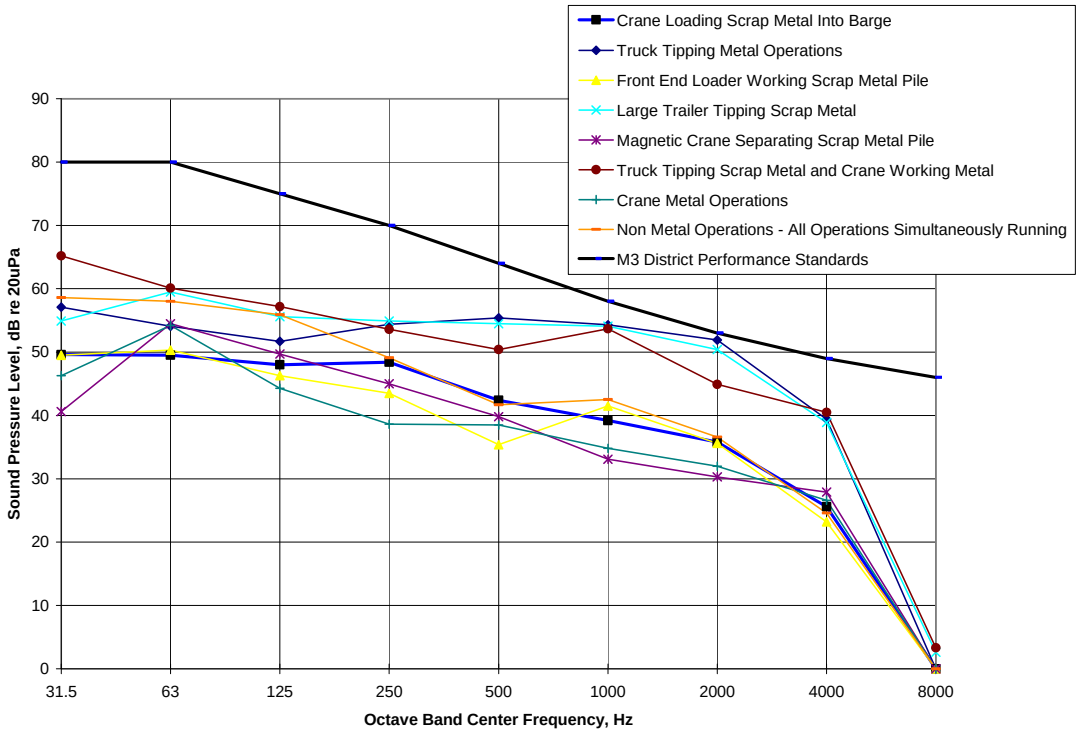
vehicles out of any hour during a 24-hour period, and the 9:00 PM—10:00 PM hour has a low ambient noise level. A change of this magnitude would be barely perceptible. In addition, based upon CEQR impact criteria, the increase in noise due to operation of the proposed facility would not result in a significant increase in noise levels.

In terms of CEQR noise exposure guidelines, during the hour with the highest measured noise levels, future 2009 noise levels with the Proposed Actions at the receptor location would remain in the "marginally unacceptable" category. This value is based on the calculated L_{10} values.

NEW YORK CITY ZONING RESOLUTION PERFORMANCE STANDARDS FOR MANUFACTURING DISTRICTS

Using the methodology previously described, future noise levels with the proposed project were calculated at the property line along Second Avenue for the 2009 analysis year to determine compliance with the New York City Zoning Resolution Performance Standards for Manufacturing Districts. Figure D-2 shows the L_1 levels of the loudest on-site processing operations in comparison with the New York City Zoning Resolution Performance Standards for Manufacturing Districts. The results in Figure D-2 represent noise levels at the property line due to the on-site waste processing operations.

Figure D-2: Octave Band Sound Pressure Level Spectra at Property Line, Based Upon L_1 Statistical Octave Band Spectra Measured for On-Site Processing Operations at Proposed Facility

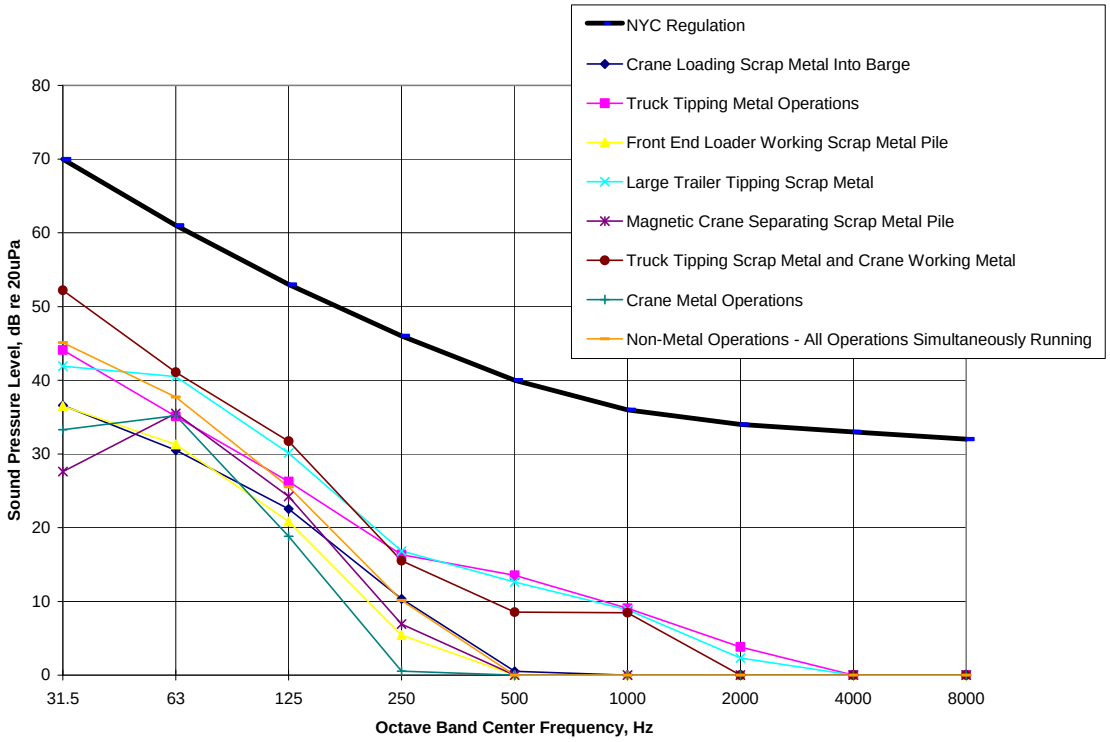


Noise levels due to on-site operations along the SBMT property line would not exceed the New York City Zoning Resolution Performance Standards for Manufacturing Districts in any of the listed octave bands. As a result, the proposed project would not result in a significant impact based on the New York City Zoning Resolution Performance Standards for Manufacturing Districts.

NEW YORK CITY NOISE CODE

Using the methodology previously described, future noise levels with the proposed project were calculated in the 2009 analysis year for the interior of a cell located at the westernmost part of the correctional facility that would have a direct line of site to the proposed project to determine compliance with the New York City Noise Control Code. Figure D-3 shows the interior L_1 levels of the loudest on-site processing operations in comparison with the New York City Noise Control, with attenuation based on the structure of the correctional facility (brick/concrete walls, small fixed laminated glass window in the cells) taken into account.

Figure D-3: Octave Band Sound Pressure Level Spectra Inside Correctional Facility, based upon L_1 Statistical Octave Band Spectra Measured for On-Site Processing Operations at Proposed Facility



The proposed project would not result in a significant impact based on the New York City Noise Control.

I. CONCLUSIONS

The proposed project would not exceed the noise impact evaluation criteria set forth in the New York City Zoning Resolution Performance Standards for Manufacturing Districts, the New York City Noise Control Code, or the *CEQR Technical Manual*. Therefore, the proposed project would not result in any significant adverse noise impacts. ✷