
CHAPTER 11: HAZARDOUS MATERIALS

A. INTRODUCTION

This chapter assesses the potential presence of subsurface contamination (soil, soil gas, groundwater and bedrock) and the potential presence of hazardous materials in surface structures for all projected and potential development sites identified in the Reasonable Worst-Case Development Scenario (RWCDS).

An assessment of potential hazardous materials impacts was performed for a number of reasons. For example, rezoning of manufacturing lots to a residential use can lead to exposure of future residents to hazardous materials. Therefore, as part of the process of rezoning a manufacturing zone to allow commercial or residential uses or development adjacent to a manufacturing zone, a hazardous materials assessment is appropriate.

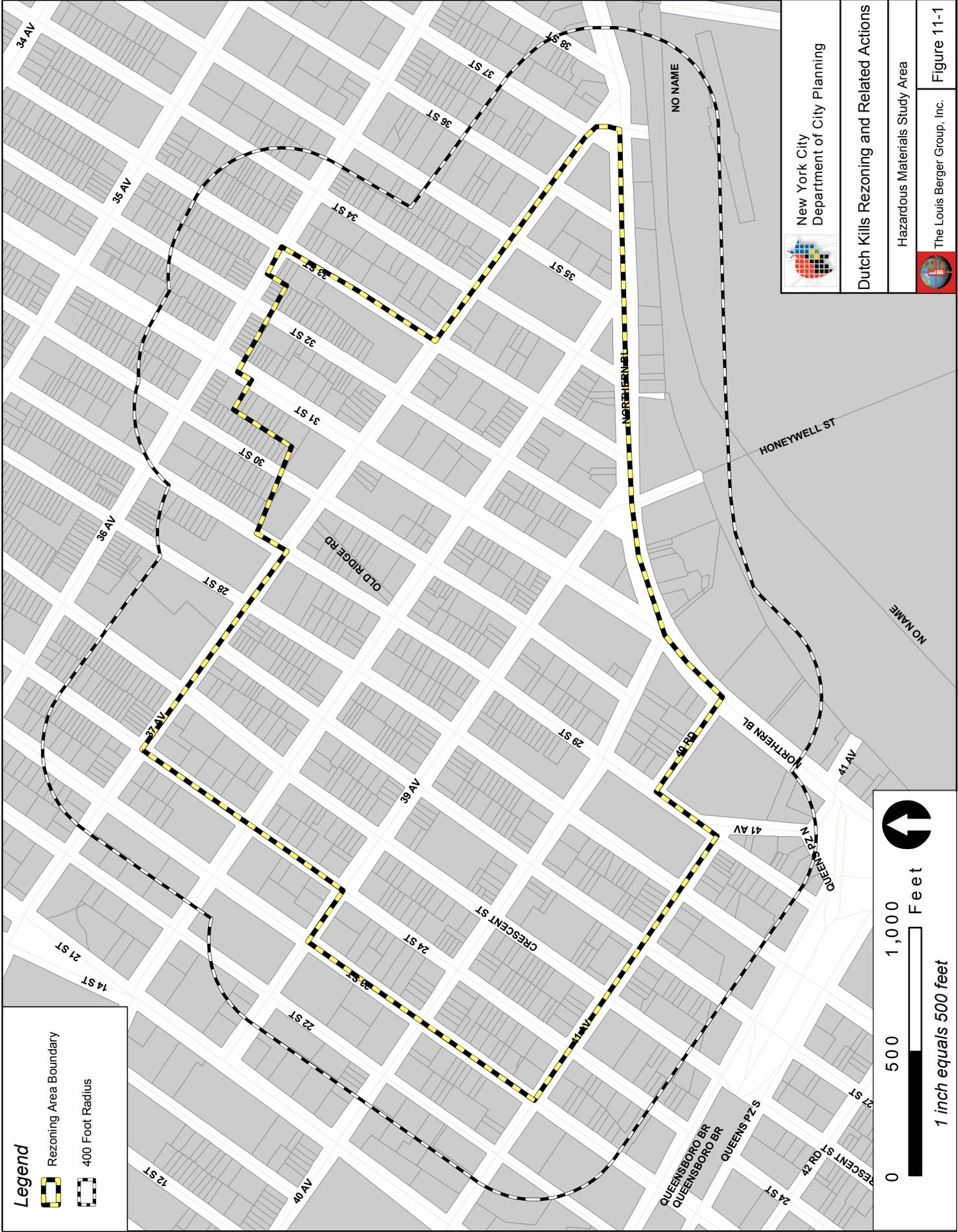
As described in the *CEQR Technical Manual*, a hazardous material is defined as any substance that poses a threat to human health or to the environment. Such substances include, but are not limited to: metals, volatile organic compounds (VOCs), commonly found in petroleum products and solvents; semi-volatile organic compounds (SVOCs), typically associated with fuel oil, coal and ash; and polychlorinated biphenyls (PCBs), usually associated with transformers and utilities. Hazardous materials also include substances used in building materials and fixtures, such as asbestos-containing material (ACM), lead-based paint (LBP), and mercury.

The presence of hazardous material does not necessarily indicate a threat to human health or the environment: a means of an exposure pathway, the presence of a receptor, and an unacceptable dose must also be present to cause a threat. During construction on development sites, hazardous materials could be disturbed through excavation of soil and bedrock, extraction of groundwater, or the demolition or renovation of existing structures. The most likely routes of human exposure from the hazardous materials evaluated are the inhalation of VOCs, the ingestion of particulate matter containing SVOCs or metals, or dermal (skin) contact with hazardous materials that can be released during soil-disturbing activities.

The goal of a hazardous materials assessment is to determine whether a proposed action could lead to potential increased human exposure to hazardous materials and whether the increased exposure could lead to significant public health impacts or environmental impacts. The objective of this analysis is to determine which, if any, of the projected and potential development sites identified as part of the reasonable worst case development scenario (RWCDS) may have been adversely affected by current or historical uses on-site, adjacent to, or within 400 feet of the sites, such that the property may be adversely impacted by hazardous materials and thus require an (E) designation.

STUDY AREA

Contamination from off-site sources can migrate to a subject parcel via groundwater, surface water or other mechanisms. In accordance with the *CEQR Technical Manual*, a study area was developed to account for the possible migration of contamination from one site to another. The hazardous materials study area, therefore, includes the area within the rezoning area boundary in addition to the area within 400 feet of the rezoning area (see Figure 1-1).



Legend

- Rezoning Area Boundary
- 400 Foot Radius

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Dutch Kills Rezoning and Related Actions

Hazardous Materials Study Area

The Louis Berger Group, Inc.

Figure 11-1

0 500 1,000 Feet

1 inch equals 500 feet

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B. OVERVIEW

Analysis of available land use data, including governmental databases, historical documentation and visual reconnaissance, revealed numerous instances where land uses throughout the hazardous materials study area were, or presently are, consistent with land uses that trigger the placement of an (E) designation on development parcels, as identified in the *CEQR Technical Manual*. Such land uses throughout the hazardous materials study area consist predominantly of automobile repair and service, metal manufacture and fabrication shops, printing shops, dry cleaners and electric supply manufacture.

All projected and potential development sites, as identified in the RWCDs, are potentially affected by contamination because they (1) currently comprise uses consistent with *Appendix A, List of Facilities, Activities or Conditions Requiring Assessment (CEQR Technical Manual)*, (2) are adjacent to such land uses, or (3) within 400 feet of two or more such land uses. It is therefore recommended that all projected and potential development sites are assigned an (E) designation¹. (See the Hazardous Materials Technical Appendix D for a description of development parcels with respect to their spatial relationship with potentially contaminated sites.)

C. METHODOLOGY

The goal of a hazardous materials screening is to evaluate the potential for contamination on development sites. If contamination on a site is suspected, an (E) designation is assigned to the parcel. The (E) designation is used in connection with the environmental review pursuant to CEQR of any zoning map amendment, subject to review and approval pursuant to Section 197-c and 197-d of the New York City Charter, where one or more tax lots within the rezoning area have been identified by the lead agency as likely to be developed as a consequence of the action. The (E) designation is a mechanism to ensure that a zoning map amendment would not introduce new pathways for contamination to be released to the environment and would ensure that the public, and construction workers involved in developing these sites, would not be exposed to contamination.

A screening methodology has been implemented to evaluate the applicability of placing the (E) designation on projected and potential development parcels associated with the Dutch Kill Rezoning. The screening methodology was used to assess the potential for the presence of contamination within the rezoning area. On sites to be rezoned that have a potential to contain contamination, the regulations stipulate that (E) designations be assigned to assure that the appropriate level of site investigation and clean-up occur before the site is redeveloped.

The screening effort involved a visual inspection of the hazardous materials study area and a review of documentation of past or current uses to determine if land use of the parcels is consistent with those identified in § 24-04, a. (1) through (10), including Appendix A, *List of Facilities, Activities or Conditions Requiring Assessment*, of the *CEQR Technical Manual Appendices* (2001). Historical sources included, but were not limited to, Sanborn Fire Insurance Maps, business atlases and United States Geological Survey (USGS) topographic maps. If projected and potential development parcels were not (E) designated after this initial screening, adjacent parcels or nearby parcels (within 400 feet) that may have or may be affecting development parcels were assessed using the same sources. If land use, as

¹ Prior to publication of the FEIS, DCP learned that certain development sites within the rezoning area are being developed for hotel use (see footnote on page 1-15). Therefore, these sites have been removed from the list of sites receiving E-designations (see Appendix D, "Hazardous Materials E-Designations*").

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determined through visual inspection and/or review of historical documentation, was consistent with those uses identified in the *CEQR Technical Manual*, affected parcels were recommended to receive an (E) designation. The visual component of the assessment involved inspection of the parcels from the public right of way to determine current land use.

For parcels not (E) designated as a result of historical or visual data, an environmental database search of readily-available public records was reviewed. Environmental databases searched included: the U.S. Environmental Protection Agency's National Priority List for Federal Superfund Cleanup (NPL), updated November 28th, 2007; The Resource Conservation and Recovery Act (RCRA) database, which includes information regarding sites where hazardous materials is generated, stored, treated or otherwise handled; the New York State Department of Environmental Conservation (NYSDEC), State Superfund Program (updated January 2008), which provides information regarding hazardous waste sites in New York State; and the NYSDEC Spills Incident Database (updated February 2008), which provides information regarding chemical and petroleum spills. Where necessary, a database search was also conducted on the New York City Department of Buildings website in order to identify the number of DOB violations, complaints, Environmental Control Board (ECB) violations, and oil burner applications, including the date of the application.

D. HISTORICAL DEVELOPMENT

The first European settlements along the Dutch Kills began in 1643, however, the area retained a primarily rural character into the nineteenth century, and the proposed rezoning area was mostly undeveloped as of 1829. The village of Long Island City was founded in 1834 and over the next thirty years the villages of Hunter's Point, Dutch Kills, Laurel Hills, and Blissville sprang up in the area of Newtown Creek and Dutch Kills, with the population of the area surging to over 15,000 inhabitants by 1869. By March 1909, the Queensboro Bridge was open to pedestrian and vehicular traffic. Long Island City, and the Dutch Kills area in particular, experienced dramatic change as a result of the bridge construction. With the construction, Jane Street, the southern border of the Dutch Kills neighborhood, was changed from a 60-foot residential street to a 150-foot wide Queens Bridge Plaza. The creation of this broad street required the demolition of many small wooden frame buildings and the raising of the ground surface 10 feet. The huge amount of fill used was taken from hills and from contractors' refuse.

Coincident with the bridge construction were other transportation developments, including railroad infrastructure associated with the Long Island Railroad, Interborough Rapid Transit Company, and the Pennsylvania Railroad Company. Sunnyside Yard, the first industrial park-style development in New York City, began shortly after construction of the bridge, and was built on landfill dumped into the marshes surrounding the Dutch Kills waterway, encompassing over thirty blocks of the eastern portion of the original Dutch Kills neighborhood. With the increased transportation facilities and developing infrastructure throughout Dutch Kills and its environs, light manufacturing companies soon located operations in the area, taking advantage of inexpensive land, access to waterways, and cheap transport rates. As a result, a more industrial and commercial character began to take root within the once-residential community. By 1900, several large food manufacturers such as Sunshine Biscuits, New York Terra Cotta Works and other industrial companies located operations in the area. Throughout World War I and World War II demand for manufacturing capacity brought economic prosperity and increasing numbers of industrial workers to the area.

E. EXISTING CONDITIONS

Existing land uses in the hazardous materials study area comprise a mix of land uses including manufacturing, residential, commercial, community facility, and transportation. Sunnyside Yard borders the rezoning area to the southeast, transportation infrastructure associated with the Queensboro Bridge lies south of the rezoning area and elevated subway lines are located within the area, and south and east of the area. Manufacturing, industrial and residential uses are mixed in the hazardous materials study area and numerous automobile repair shops are distributed throughout the area.

The Dutch Kills rezoning area is situated on level to slightly rolling topography, with the lowest elevations of approximately 20 feet above mean sea level (amsl) located along the western edge of the area, at 23rd Street. Land level rises to approximately 40 feet amsl along 27th Street and then falls slightly moving to the east. At the eastern edge of the rezoning area land elevation is approximately 25 feet amsl. Long Island, in general, is located in the Embayed Section of the Coastal Plain Physiographic Province. The bedrock surface in the area was deeply dissected by erosion before and during Pleistocene glaciation. The receding ice from at least two glacial periods left the deposits that comprise Long Island, resulting in a cover of glacial debris moderating the relief of this dissected erosional bedrock surface. The result is a rolling to flat topography found in the hazardous materials study area. Quaternary glacial deposits (primarily outwash sand and gravel) cover the Coastal Plain sediments on Long Island to depths of as much as 600 feet.

Two major water-bearing aquifers comprise the Northern Atlantic Coastal Plain aquifer system, which underlies Long Island. The major water-yielding units are the Magothy Formation and the Lloyd Sand Member of the Raritan Formation. Ground water is not used as a source of drinking water in the rezoning area.

GOVERNMENTAL RECORDS

HAZARDOUS WASTE SITES

The Inactive Hazardous Waste Disposal Site (IHWDS) Program is the State's program for identifying, investigating and cleaning up sites where consequential amounts of hazardous waste may exist. Hazardous Waste is identified as any waste listed or regulated as a hazardous waste pursuant to the Resource Conservation and Recovery Act (RCRA), 42 U.S.C.A. §6912 (1995), or pursuant to *Identification and Listing of Hazardous Wastes*, 6 NYCRR Part 371, *et seq.* These sites go through a process of investigation, evaluation, cleanup and monitoring.

Two Inactive Hazardous Waste Sites are adjacent to the rezoning area: Amtrak Sunnyside Yard, located adjacent to and south of Northern Boulevard and west of Honeywell Street; and the Standard Motor Products, Inc. site located at intersection of 37th Avenue and Northern Boulevard. Both sites are designated Class 2 sites: Significant threat to the public health or environment - action required.

The Amtrak Sunnyside Yard site is an active maintenance and storage yard for train locomotives and passenger cars. Several investigations conducted prior to 1986 had found that PCBs were present in soils and a PCBs laden separate phase plume was also present near the former Engine Shop. A remedial investigation was later conducted in multiple phases under NYSDEC oversight pursuant to a consent order. Seventeen specific areas of concern were identified. PCBs, petroleum hydrocarbons, and lead are the main site-related contaminants of concern. Onsite soils, groundwater, and sewer sediments are contaminated with one or more of these contaminants. Chlorinated solvents are also present in on-site groundwater, but are believed to have originated off site. The sources of the PCBs are believed to be leaks

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from stationary transformers and locomotive-mounted transformers. The main sources of petroleum hydrocarbons are believed to be the diesel USTs and the various leaks and disposals during many years of yard activities.

The Standard Motor Products site is located on the southern side of Northern Boulevard, between 37th and 39th streets. Standard Motor Products produces automobile parts and components. Current manufacturing operations include metal fabrication and machining, plastic injection molding, and assembly. The building on site has been occupied by Standard Motor Products since the mid 1900s. An investigation in 1990 was initiated after an oily sheen was observed in a puddled area on the southeast side of the property. Soil samples from this area revealed elevated levels of petroleum hydrocarbons and volatile organic compounds (VOCs), primarily 1,1,1-trichloroethane. This site has also been declared a Toxic Release Site NYSDEC

The entire Dutch Kills hazardous materials study area lies within one-half mile of the Amtrak Sunnyside Yard site and approximately 60 percent of the hazardous materials study area lies within one-half mile of the Standard Motor Products site. The *CEQR Technical Manual* uses the American Society for Testing and Materials, Standard Practice for Environmental Site Assessment (ASTM E-1527) guidance to identify areas of recognized environmental concern (REC), and according to ASTM, sites within ½ mile of a Hazardous Waste Site are considered RECs.

STATE SPILLS INCIDENTS DATABASE

Under State law, petroleum and hazardous chemical spills that can impact the waters of the state must be reported by the spiller (and, in some cases, by anyone who has knowledge of the spills). This NYSDEC-maintained database, which contains records of chemical and petroleum spill incidents, was searched to identify potential RECs in the hazardous materials study area.

Three spills were identified that could affect the rezoning area: a fuel oil spill on April 18, 2007, located at 25-12 41st Avenue; a gasoline spill on July 18, 2007, located on 29th Street between 39th Avenue and 40th Avenue; and a spill of hydraulic oil on March 3, 2007, at 39-29 Honeywell Street at Northern Boulevard.

U.S. CENSUS

U.S. Census (2000) statistics for the three census tracts (tracts 29, 31, and 51) were also evaluated for the likelihood of petroleum as a source for heating fuel and the presence of storage tanks for such fuel. According to the Census data, approximately 42.5 percent of the occupied housing units within the three tracts used fuel oil for heating. Consequently, the presence of fuel storage tanks is likely throughout the hazardous materials study area.

NEW YORK CITY DEPARTMENT OF BUILDINGS

New York City Department of Building (DOB) records were consulted for information regarding fuel storage tanks. In most cases, a query for boiler information returned a page stating that no boiler records for the property were identified. However, two USTs were identified, one on Block 396, Lot 10, and one on Block 387, Lot 12.

FIELD SURVEY

The visual inspection of the hazardous materials study area was conducted on January 23, 2008 and included an inspection of the entire area from sidewalks and other areas accessible to the public. Information on site conditions was obtained from such vantage points. Site conditions observed were noted. Land uses consistent with those indicated in Chapter 25 of Title 15 of the Rules of the City of New York, Hazardous Materials Appendix 5 (*CEQR Technical Manual*) were noted. Parcels comprising such land uses were then plotted on a map of the rezoning area. A 400-foot buffer was placed around each parcel identified. Building lots where DOB has records of fuel storage tanks, the locations of state hazardous waste sites, and the locations of petroleum or chemical spills as reported by NYSDEC, were also plotted on a map for review.

POTENTIAL ABOVE-GROUND CONTAMINATION

Lead has been used as a pigment and drying agent in "alkyd" oil based paint. According to the U.S. Consumer Product Safety Commission, about two-thirds of the homes built before 1940 and one-half of the homes built from 1940 to 1960 contain heavily-leaded paint. Some homes built after 1960 also contain heavily-leaded paint. The rezoning area boundaries are roughly consistent with the boundaries of three U.S. Census tracts: Census Tract 29, Census Tract 31, and Census Tract 51, and housing statistics were evaluated to gauge the likelihood of lead-based paint to be present in structures located within the three census tracts. According to 2000 Census data, approximately 53.5 percent of the housing units within these three census tracts were built before 1940 and approximately 30.6 percent were built between 1940 and 1959.

F. FUTURE CONDITION WITHOUT THE PROPOSED ACTIONS

In the future without the proposed actions, new building construction is ongoing at several sites throughout the rezoning area, including multi-story hotels, and other commercial and residential construction. These sites are described in Chapter 1, "Project Description."

G. FUTURE CONDITION WITH THE PROPOSED ACTIONS

DCP has identified 40 projected development sites and approximately 192 potential development sites distributed throughout the rezoning area. As illustrated on Figure 11-2, all projected and potential development sites could reasonably be expected to be affected by hazardous materials due to historical and/or contemporary land use. For the projected and potential development sites, the predominant source of potential contamination stems from automobile repair facilities. Other potential sources of contamination include machine shops and metal fabrication shops, petroleum storage tanks, dry cleaning establishments and printing shops. Consequently, with the exception of city-owned sites (for which other mechanisms are in place to ensure that hazardous materials are not released to the environment), the proposed project should include (E) designations² for all projected and potential development sites. Development of a site with an (E) designation would require that a Phase I Environmental Site Assessment be conducted, and if necessary, a sampling and remediation protocol be developed and implemented to the satisfaction of NYCDEP prior to issuance of a building permit. Such designation would eliminate the potential for significant adverse impacts from hazardous materials due to implementation of the proposed project.

² See footnote 1 on page 11-2.



Legend

- Rezoning Area Boundary
- State Spill
- State Hazardous Waste Site
- Parcels Potentially Affected by Hazardous Materials



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Development Sites and Potential Contamination

The Louis Berger Group, Inc. **Figure 11-2**

Sources: MapPluto, NYCDCP; The Louis Berger Group, Inc. 2008.

H. CONCLUSION

All potential and projected development sites in the rezoning area have the potential to be affected by contamination as a result of either historical and/or current industrial activity, the presence of fuel storage tanks, or some other land use identified in the *CEQR Technical Manual*. As such, it is recommended that all appropriate (i.e., not city-owned) projected and potential development sites receive an (E) designation pursuant to the proposed project.