APPENDIX K
ALTERNATIVE SITES ANALYSIS

Albany Landfill Eastern Expansion

Landfill Site Selection Study

Albany Co., New York

CHA Project Number: 12206.4005.1106

Prepared for:

City of Albany
Department of General Services
1 Connors Boulevard
Albany, New York 12204

Prepared by:

III Winners Circle
Albany, New York 12205
(518) 453-4500

July 30, 2007

TABLE OF CONTENTS

LIST OF FIGURES:

SITE PHOTOGRAPHS

1.0 INTRODUCTION

The purpose of this report is to provide a current site selection study associated with the proposed Eastern Expansion of the Rapp Road Landfill. The existing facility is located east of Interstate 90 and northwest of Rapp Road (Figure 1- Site Location Map). This site selection study has been prepared to be in conformance with the landfill siting requirements of 6NYCRR Part 360 regulations, solid Waste Management Facilities, effective October 9, 1993 and the State Environmental Quality Review (SEQR) alternatives assessment.

Previous site selection studies have identified and evaluated a number of sites within the City of Albany for their viability as a landfill site in accordance with 6 NYCRR Part 360-2.12(b) and 6 NYCRR Part 617.14(f)(5). This study updates these evaluations by reviewing any changes in land use patterns on or adjacent to the previously evaluated sites.

Sections 2.0 and 3.0 below provide the purpose of the project and a summary of the previous landfill studies conducted by the ANSWERS Planning Unit. Information and data reviewed for the previous landfill siting studies associated with both the original permit proceedings for the Albany Interim Landfill (AIL) and the long-term siting process are presented in Section 3.0. All of the previous site selection studies were used as a basis for this update. The previous studies were used in part, as a basis for Section 4.0 which describes the selection and evaluation of potential landfill sites within the corporate boundaries of the City including the proposed Rapp Road Solid Landfill property.

2.0 PROJECT PURPOSE

The purpose of this 2007 site selection study is to re-evaluate the alternative sites identified in the 1999 “Landfill Site Selection Study” prepared by C.T. Male Associates, P.C. and determine if any of these sites are suitable for further consideration as an alternative to the proposed Eastern Expansion.

3.0 PREVIOUS LANDFILL STUDIES

The City of Albany has conducted numerous landfill studies for the ANSWERS Solid Waste Management Planning Unit. These past studies include a series of reports prepared in relation to siting a long-term landfill facility (Site C-2), two others associated with the original permitting process for the AIL (1988 and 1989), a fourth study was completed in 1996 during the first expansion of the AIL. The most recent study was completed in 1999 with the goal of identifying the most viable interim alternative landfill site located within the city of Albany corporate boundaries. These studies are summarized below.

City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York

CLOUGH HARBOUR & ASSOCIATES LLP

1 inch equals 500 feet

N
W E
S

Legend

- Site Outline
- 100-year Flood Zones
- State Wetlands
- Federal Wetlands

Figure 1

Eastern Expansion

Site Location Map

Date: 6/13/07

K:\12206\GIS\Map\Siting Maps

3.1 1989-1994 Long Range Landfill Siting Study

The siting process for a long range landfill solution for the ANSWERS Planning Unit began in 1989. Fifteen sites were evaluated within the Capital District and included in the *Potential Landfill Sites Identification Report, 1991*. The Report Recommending Sites for Preliminary Investigation, 1992, recommended three of the fifteen sites for more detailed on-site evaluation. Based on the site investigations, a long term landfill facility was chosen (Site C-2, the Town of Coeymans) as the preferred site and included in the ANSWERS Final Site Selection Report (August 1994). The siting process for a long range facility was delayed by numerous factors including the lack of condemnation power by ANSWERS, lawsuits against the City, and more recently the potential for a very long permitting process relative to wetland impacts.

3.2 1988 Siting Study

The City of Albany evaluated Frisbie Avenue, Erie Boulevard, Normans Kill Farm, and the Albany Interim Landfill (AIL) site as potential alternative landfill sites as part of the Draft Environmental Impact Statement for the Rapp Road Sanitary Landfill Expansion (Malcolm Pirnie, 1988). Criteria used to review each site included existing land use, adjacent land use, timing and construction, traffic and access related conditions, and environmental issues. As a result of the evaluations in the Draft Environmental Impact Statement, the AIL was identified as the preferred site within the City's corporation limits. Alternative landfill configurations and sizes were also evaluated.

3.3 1989 Siting Study

The 1989 Siting Study evaluated ten alternative sites for the AIL as part of a document entitled "Response to Public Comments and Commissioner's Request for Additional Information" (including the AIL and those sites previously presented in the 1988 DEIS). Sites were evaluated by the City of Albany using the following criteria:

(1) Sites should be approximately 20 to 25 acres to accommodate cell construction, access roads, drainage structures, leachate management facilities, scale house and buffer areas,
(2) Sites should be located within corporate boundaries of the City,
(3) Sites should be located on non-developed land,
(4) Sites should not be located within the Pine Bush.

Secondary screening criteria used for this study included site acquisition, unstable areas, and unmonitorable or unremediable areas. The following table provides a summary of the ten sites evaluated by the City:

Site Identification Number	Location
1	Erie Boulevard
2	Frisbie Avenue
3	Normanskill Farm
4	Graceland Cemetery
5	Kenwood/Mt. Hope
6	Corporate Woods
7	Krumkill Road
8	Fuller East
9	Fuller West
10	Rapp Road Facility

3.4 1996 Siting Study

In the 1996 site selection study, alternative sites were evaluated based on the following attributes:
(1) Sites should be Approximately 15 to 20 acres in size to accommodate landfill cells and associated structures
(2) Sites should be located within the corporate boundaries of the City
(3) Sites should consist of undeveloped lands (other than for solid waste management facilities)
(4) Proposed landfill use should be compatible with existing zoning of the site.

The site size criterion was reduced from the criterion listed in the 1989 siting study because the City of Albany's needs for landfill capacity and ancillary facilities changed since that time. In the 1989 Study, the anticipated need was for a site that could accommodate a 14-acre landfill. In the 1996 study the need for an 8 acre landfill was identified. Due to on-going development and other factors, the number of available sites within the City had been reduced since the 1988 and 1989 studies were conducted. However, all potential sites within the City of Albany, in addition to the original ten, were re-evaluated as part of the 1996 siting process.

3.5 1999 Siting Study

The 1999 Siting Study (C.T. Male Associates, P.C., 1999) was based in large part on the three previous studies associated with the Rapp Road facility primarily because the study area for those reports was limited to properties within the City Limits. Due to the immediate need for landfill space, this was considered an important criterion for potential landfill sites.

The evaluation criteria used in this study was as follows:
(1) The site should be approximately 25 to 30 acres to accommodate landfill cells and associated structures.
(2) Sites should be located within the City limits
(3) Sites should consist of land that is undeveloped
(4) Zoning of site should be compatible with the proposed use (light industrial or heavy manufacturing).

These criteria are similar to those used in previous siting studies, except that the area needed for the P-4 project was determined to be 25 to 30 acres (see above).

The original ten sites evaluated in 1989, were re-evaluated in the 1999 study. In addition sites displaying the characteristics outlined above not situated in prohibited or restricted areas as determined by the Part 360 regulations were also reviewed.

Prohibited siting areas as outlined in 6 NYCRR Part 360-1.7(a)(2) regulations include the following: agricultural land, floodplains, threatened and endangered species or their critical habitat, and state regulated wetlands and reservoirs located in watersheds managed pursuant to the Safe Drinking Water Act. Restricted areas according to Part 360-2.12(c)(1)-(8) include: primary water supply and principal aquifers, floodplains, aircraft safety, unstable areas, unmonitorable or unremediable areas, fault areas, seismic impact zones and federally regulated wetlands. The evaluation of prohibited and restricted areas indicated that nearly two-thirds of the available land within the City can be included within one or more of these areas. The remaining lands were evaluated in terms of the four criteria listed above. This in combination with the requirements of Part 360 resulted in no sites meeting the criteria within the City of Albany.

3.6 Current Siting Study

The current siting study has employed the siting criteria used in the previous landfill siting studies. The primary criteria for choosing a site for evaluation was that it be located within the City of Albany corporate boundaries. Secondarily the site evaluation must demonstrate that there will be no significant adverse impacts related to the development and operation of a landfill. In

order to evaluate a reasonable range of alternatives the original sites evaluated in the 1989 study were re-evaluated for the current siting study. In addition, to identify potential alternative sites (in addition to the original ten alternative sites presented in the 1989 site selection study) sites with the four characteristics listed in Section 4.1 below, not situated within the prohibited or restricted siting areas stipulated in the Part 360 regulations were reviewed.

4.0 ALTERNATIVE SITES EVALUATION

4.1 Selection of Alternative Sites

This site selection study has evaluated the nine sites within the City of Albany that were originally considered to be potentially viable alternatives landfill sites. The tenth site, the Eastern Expansion of the Rapp Road Landfill is the subject of the Supplemental Draft Environmental Impact Statement and is evaluated in that document. These sites which originally were identified in 1989 are the most viable potential landfill sites in the City of Albany. Sites within the City of Albany have been evaluated based on four characteristics:

(1) Sites should be approximately 25 to 30 acres in size to accommodate landfill cells and associated structures,
(2) Within the corporate boundaries of the City,
(3) Sites should be located on non-developed land, and
(4) Proposed landfill use should be compatible with existing zoning.

Since no site has been identified within the City which meets the siting criteria, the focus of the current alternative sites evaluation will be on the nine sites previously presented in 1996 and again in 1999. Specifically each site is re-evaluated on the basis of changes in land use both on and adjacent to each site.

Site visits were conducted to each of the potential areas and photographs were taken to document current conditions (photographs are contained in Appendix A). Discussions of each site includes the following information: approximate size, location, current land use on the site and land use adjacent to the site, topography, slopes, mapped potential geologic hazards, access to the site, mapped surficial and bedrock geology, proximity to water supply sources, mapped unconfined aquifers, 100-year floodplain information, and threatened and endangered species information.

The first process in selecting alternative sites for a siting study involves the application of prohibited and restricted siting areas as set forth in the Part 360 regulations (effective October 9, 1993) and avoidance of these areas. Prohibited siting areas, according to 360-1.7(a)(2), include

the following: agricultural land, floodplains, threatened or endangered species or their critical habitat, regulated wetlands, and reservoirs located in watersheds managed pursuant to the Safe Drinking Water Act. Landfill siting restrictions according to 360-2.12(c)(1)-(8) involve the following areas: primary water supply and principal aquifers, floodplains, aircraft safety, unstable areas, unmonitorable or unremediable areas (lateral expansions excluded if the proposed expansion area can be constructed to demonstrate compliance with regulations), fault areas, seismic impact zones, and federally regulated wetlands.

Based on the above, sites with the four aforementioned characteristics not situated within the prohibited or restricted siting areas stipulated in the Part 360 regulations were reviewed. This approach is consistent with the NYSDEC's Solid Waste Management Facility Siting guidance (DEC, 1990) as applied to the expansion of an existing landfill.

4.2 Site Evaluation Criteria

The identified sites have been evaluated based upon the following criteria: unconsolidated deposits, proximity to water supply sources, natural topography, surface water resources, local land use (including incompatible structures and zoning), site acquisition, and site access. Other evaluation criteria set forth in 360-2.12(b)(2)(i)(b)(1) through (6) are bedrock subject to rapid or unpredictable groundwater flow and the site's relationship to mines, caves or other unusual hydrogeologic features that might alter groundwater flow. These latter two criteria do not apply to sites within the corporate boundaries of the City because most areas within the City have a thick deposit of overburden material overlying bedrock (the Normans Kill Formation is not subject to rapid or unpredictable groundwater flow) and no mines, caves or other unusual hydrogeologic features are known to exist within the City. The evaluation criteria pertaining to siting a landfill in an area where containment failure would do the least environmental damage and would be easiest to correct (360-2.12(b)(2)(i)(b)(3) is evaluated under the unconsolidated deposits criterion.

For each criterion a numerical value is assigned to a site based on the guidelines described below; values of 1 (unfavorable), 2 (acceptable), or 3 (favorable) were used for all criteria. Section 4.3, Site Specific Evaluations, provides tables for each site with numerical values assigned to each criterion.

Unconsolidated Deposits

Each alternative site was evaluated based on the unconsolidated deposits mapped for the site. The following guidelines were applied to each site:

- Favorable (3): Entire site and surrounding area are mapped by the NYSGS as a relatively impermeable deposit (i.e., clay).
- Acceptable (2): Only a portion of the site is mapped by the NYSGS as clay.
- Unfavorable (1): The NYSGS has mapped the site as sand or gravel.

Proximity to Water Supply Sources

Each area was evaluated with respect to its proximity to water supply sources. The following guidelines were applied to evaluating each area:

- Favorable (3): No water supply sources within a 1 mile radius.
- Acceptable (2): No water supply sources within a 0.5 mile radius.
- Unfavorable (1): A water supply source situated less than 0.5 miles from the site.

Based on a review of the NYSDOH New York State Atlas of Water System Sources (1982), no water supply sources are situated within the City of Albany boundaries or one mile of the alternative sites; therefore, all sites are favorable.

Natural Topography

Each area was evaluated with respect to its natural topography and slopes. The following guidelines were applied to evaluating each area:

- Favorable (3): At least 75% of the site's natural topography is moderately level terrain (slopes 0-10%).
- Acceptable (2): At least 50% of the site's natural topography is moderately level terrain with slopes ranging from 0 to 10%; steep slopes are present but soils are not unstable (i.e., clay).
- Unfavorable (1): Significantly less than 50% of the site's natural topography has moderately level terrain (slopes 0-10%) and steep slopes and clay soils predominate.

Wetlands and Other Aquatic Resources

Each area was evaluated with respect to its proximity to state and federal wetlands, and surface water resources. A site review was performed for each site to qualitatively ascertain the relative magnitude of wetlands on the alternative landfill sites. The following guidelines were applied to evaluating each area with respect to proximity to wetlands and surface waters:

- Favorable (3): No class C or higher waterbodies on or adjacent to the site. Total wetlands on the site are less than one (1) acre.

- Acceptable (2): No class C or higher water bodies on or adjacent to, but class D waterbodies and isolated federal wetlands exist on or adjacent to site (1 to 5 acres of wetlands exist on the site). Wetlands can be avoided.
- Unfavorable (1): State-regulated or federal wetlands (>5 acres of wetlands exist) and or class C or higher water bodies on or adjacent to site.

New York State regulates wetlands that are 12.4 acres or greater in size; no state regulated wetlands are mapped on any of the alternative landfill sites. To determine the full extent of federal wetlands on each site, a more detailed on-site review would have to be performed. National Wetland Inventory maps were reviewed for the presence of mapped wetlands; no NWI wetlands were mapped on any of the sites.

Local Land Use

This criterion examines the compatibility of a landfill with existing land use as well as planned use as reflected by current zoning for each area considered. Zoning was considered as a planning tool, not a legal impediment to development. Open space, cultural, historical, and recreational resources are considered under this criterion. The following guidelines were used to evaluate existing/future land use:

- Favorable (3): Area currently associated with industrial/heavy commercial use or zoned for same. No incompatible structures (schools, houses of worship, nursing homes or hospitals) adjacent to area or major access roads.
- Acceptable (2): Area not entirely industrial/heavy commercial but not residential in nature.
- Unfavorable (1): Area currently residential in nature or an area in or adjacent to open space, cultural, historical or recreational resources, or incompatible structures on or adjacent to site.

Site Acquisition

The focus of this criterion is to evaluate the ease of acquiring a site by examining present ownership, number of separately owned parcels comprising the area and rights-of-way through the area. Site acquisition was evaluated according to the following guidelines:

- Favorable (3): Site encompasses one parcel, there are no rights-of-way, it is City owned, and not "park land".
- Acceptable (2): Site encompasses one or more privately owned parcels and no known deed restrictions exist.

- Unfavorable (1): Site encompasses one or more privately owned parcels, there are one or more rights-of-way, site is an established park, deed restrictions exist, site is state or federally owned.

Site Access

This criterion evaluates the current accessibility of an area. Preferred sites are those where little change in functional use of surrounding roads would occur. Site access was evaluated according to the following criteria:

- Favorable (3): Infrastructure already exists at the site. No improvements necessary.
- Acceptable (2): Minor improvements to existing infrastructure would be required.
- Unfavorable (1): Major improvements would be necessary to create access to the site.

Area Available for Landfilling

This criterion evaluates the current amount of land available on the site appropriate for landfilling. Preferred sites are those with sufficient area, an appropriate configuration (i.e., not elongated or discontinuous) and level topography. Area available for landfilling was evaluated according to the following criteria:

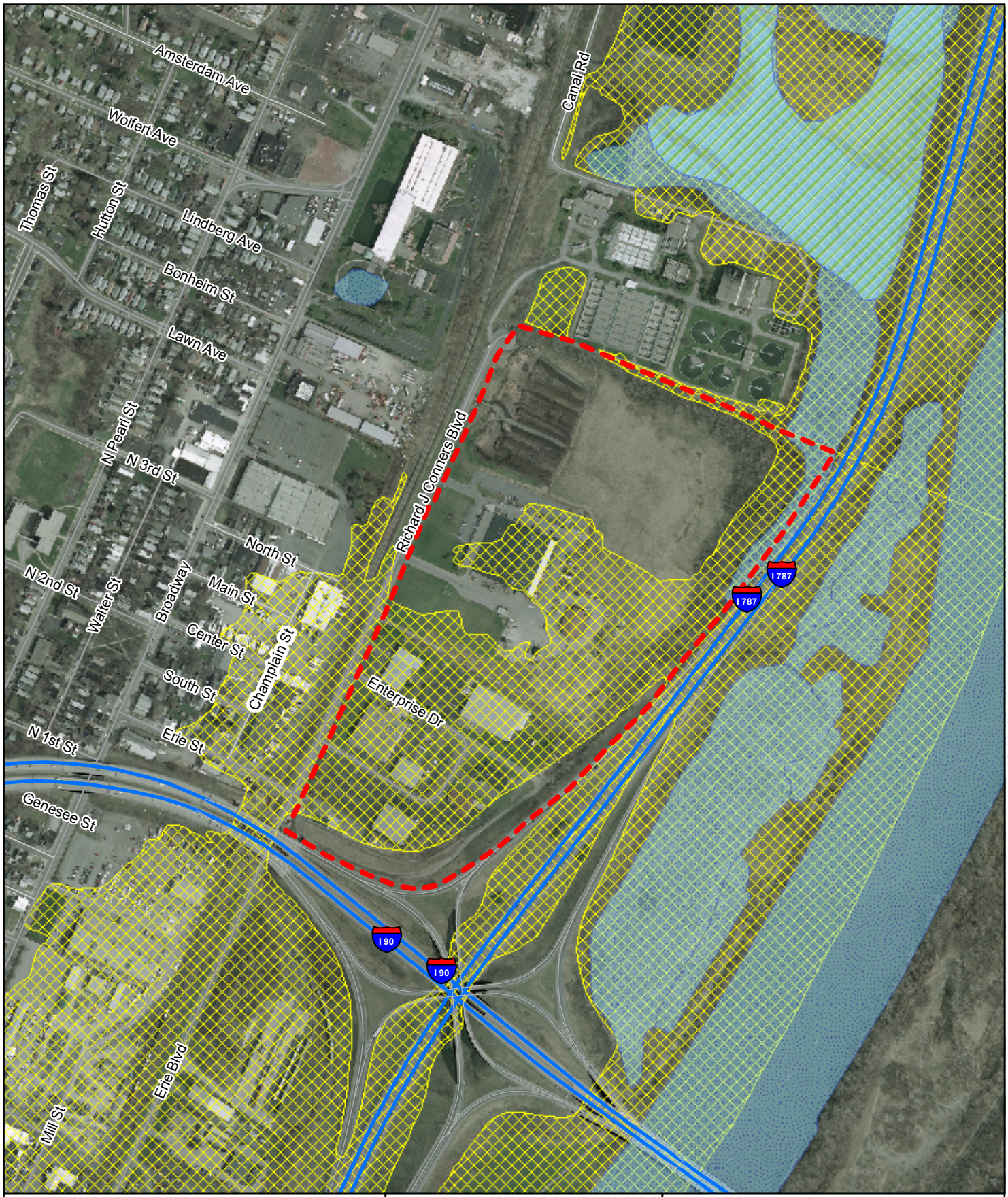
- Favorable (3): A minimum of 10 to 15 level acres whose configuration is appropriate for landfilling (i.e., not elongated or discontinuous).
- Acceptable (2): A site that has between 5 and 10 acres whose configuration may be appropriate for landfilling in certain areas of the site.
- Unfavorable (1): A site that has less than 5 acres of area available for landfilling and whose configuration is not appropriate for landfilling.

4.3 Site Specific Analyses

This section provides a summary of each criterion with respect to the site and the score which applies. The tables and narrative which follow in this section provide an evaluation of each site based on the siting criteria previously discussed. Evaluations for Sites 6 and 8 are provided even though the developable area is such that it is not feasible to construct a landfill facility (including cells, access roads, etc.) at these sites.

1. Erie Boulevard

This site consists of three parcels totaling approximately 63 acres located north of the intersection of Interstate 787 and Interstate 90 (Figure 2). Immediately west of the site is Erie Boulevard, railroad tracks, and a commercial/ industrial area. East of the site is Interstate 787 and the Hudson River; the Albany County North Wastewater Treatment Plant is situated north of the site.



City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York

CLOUGH HARBOUR & ASSOCIATES LLP

1 inch equals 600 feet

N
W
E
S

Legend

- Site Outline
- State Wetlands
- Federal Wetlands
- 100-year Flood Zones

Figure 2

Alternative Landfill

Site # 1 - Erie Blvd.

Date: 6/13/07 K:\12206\GIS\Map\Siting Maps

The southernmost of the three parcels comprising the site is approximately 17 acres and has recently been developed as a commercial office-warehouse complex. The middle and northern parcels were used as the City's sanitary landfill until 1973. From 1973 to early 1989, both of these parcels were used as a construction and demolition debris landfill. There is a city Department of General Services building on the 20 acre middle parcel. The 25 acre parcel on the northern portion of the site is no longer accepting construction and demolition waste materials and is closed. Soil borings conducted for closure of this site indicate that solid waste has been deposited on the middle and northern parcels up to the National Grid easement which runs parallel to Erie Boulevard. A City composting facility is situated in the northwestern corner of this site, and an exempt waste landfill (DGS Lower Landfill) is located southeast of the new building.

According to a 1980 USGS Topographic map, the site lies at approximately 10 feet above mean sea level. This site is relatively flat with no significant slopes. Ecological community observations at the site included a stream and associated wetland situated along the eastern border of the site and hardwood forested areas along Interstate 787. Available mapping for geologic hazards did not include this site. Access to the site would be along Erie Boulevard from Interstate 787. This road is currently traveled by trucks that service the industrial and commercial operations that take place in this area.

According to the New York State Geological Survey (NYSGS) Surficial Geologic Map, Hudson-Mohawk Sheet, the site is mapped as recent alluvium which consists of fine sand and gravel. Bedrock beneath the Erie Boulevard site is mapped by the NYSGS as the Normans Kill Shale. No community water supply sources are known to exist near this site (NYSDOH, 1982). Site 1 is mapped as an unconfined aquifer capable of supplying more than 100 gallons of water per minute (gpm) on the Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York, Bugliosi, 1988. According to the Federal Emergency Management Agency (FEMA) maps, a portion of this site is situated within the 100-year floodplain. A review of the DEC Natural Heritage Program files for Site 1, conducted for the 1999 Siting Study indicated no threatened or endangered species listed by DEC occur on this site. Although no change is anticipated, contact has been made with the DEC Natural Heritage Program for the current study and a response is pending. Based on a cursory site visit, less than one acre of wetland exists on the site.

As stated above and as can be seen on Figure 3, large portions of the Erie Boulevard Site are situated within the 100-year floodplain as defined by the Federal Emergency Management Agency (FEMA). This is a prohibited area stipulated by Part 360 regulations and was therefore determined unsuitable for the development of a new landfill. Other unfavorable criteria for this

site include incompatible structures and land use, unconsolidated deposits of construction and demolition debris, and the proximity of an aquifer capable of producing greater than 100 gallons per minute. Recent evaluations revealed that the site appears to be the same as reported in the P-4 SDEIS. All commercial and city buildings are occupied and the composting facility is active. Debris is scattered in the non developed areas indicating the past landfill activities that occurred in the area.

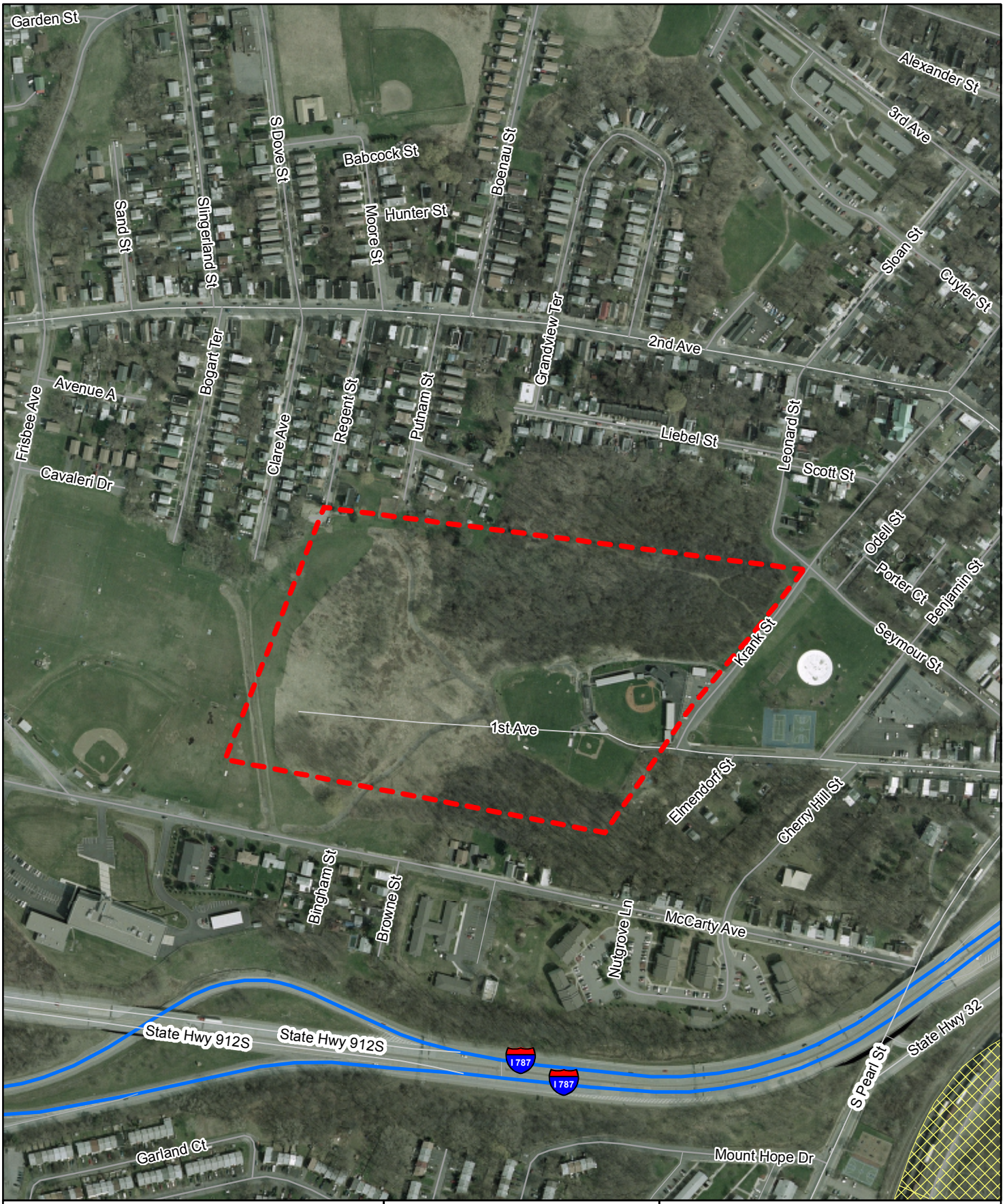
Site 1 Evaluation -Erie Boulevard

Criterion	Evaluation	Basis
Unconsolidated Deposits	1	Site mapped as sand and gravel.
Proximity to Water Supply Sources	3	None within one mile.
Natural Topography	3	Site is relatively flat w/ no significant slopes
Wetland and Aquatic Resources	3	<1 acre of wetlands on site
Local Land Use	1	Incompatible structures include Dept. of General Services building.
Site Acquisition	3	City owns site
Site Access	2	Access from I-787 & Erie Boulevard
Area Available for Landfilling	2	Northern region of site is a closed, capped landfill.
Total Score	**18**	

The Erie Boulevard Site is not suitable for a new landfill because, among other reasons, it is partially situated within the 100-year floodplain which is a prohibited siting area as stipulated by the Part 360 regulations. The Hudson River, a DEC Class C waterbody, is situated east of the site; an intermittent stream (i.e., federal wetland) was observed along the eastern border of the property. It is estimated that less than one acre of wetlands exist on this site. Site 1 has areas within it which were formerly sanitary and construction and demolition debris landfills. This parcel is occupied by the City of Albany's Department of General Services building, a composting facility, and a commercial office-warehouse complex.

2. Frisbie Avenue

This 40-acre parcel is located in a residential area in the southeastern region of the City, north of the intersection of Interstate 787 and Route 9W, and west of State Route 32 (Figure 3). The site currently serves as an open space/recreational area for southeast Albany residents. Hoffman Park is immediately west of Frisbie Avenue. The site also contains the Veterans Memorial Park. The



City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York

CLOUGH HARBOUR & ASSOCIATES LLP

1 inch equals 400 feet

Legend

- Site Outline
- 100-year Flood Zones
- State Wetlands
- Federal Wetlands

Figure 3

Alternative Landfill

Site # 2 - Fisbie Ave.

Date: 6/13/07 K:\12206\GIS\Map\Siting Maps

western and eastern portions of the site are developed as baseball parks. This site was used as a municipal solid waste landfill until about 30 years ago. In the 1960's the site was used as a repository for demolition debris and excavated material from the construction of the Empire State Plaza. Methane explosions have occurred at this site in the past. As of the 1999 siting study, the only portion of the site not utilized as a recreation area is located east of Frisbie Avenue and the upper ball field.

Site elevations range from approximately 60 to 150 feet above mean sea level; topography decreases toward the central area of the site from the north, west and south. A series of drainage runs that flow in an easterly direction are situated in the western portion of the site. A portion of the site east of Frisbie Avenue is situated within a steeply sloped (30% or greater) ravine. According to the Geologic Hazards map for the site, the northern and southern areas of the site are mapped as having the potential for landslides or other slope instability problems.

Regarding site access, vehicles exiting Interstates 787 or 87 en route to the site would travel on McCarthy Avenue for a short distance before turning onto Frisbie Avenue. The Frisbie Avenue Site is mapped by the NYSGS as lacustrine silt and clay. Bedrock beneath the site consists of the Normanskill Shale. No community water supply sources are mapped near this site (NYSDOH, 1982). Site 2 is not mapped on the Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York, Bugliosi, 1988 as an unconfined aquifer. The site is not located within the 100-year floodplain. A review of the DEC Natural Heritage Program files for Site 2, conducted in 1999, indicated that no threatened or endangered species listed by DEC occur on this site. A request has been sent to the DEC Natural Heritage Program to update this information and a response is forthcoming. Based on a cursory site visit, less than one acre of wetland exists on the site.

The major issue with the Frisbie Avenue site is the difficulty of constructing a landfill over the Southern Boulevard Trunk Sewer. The topography of the area is unfavorable due to slopes of 30% or greater occurring at the site. A City park is located within this area. Even though no prohibited siting criteria occur on the Frisbie Avenue site, the above issues and surrounding land use make development of a landfill at this location unlikely. A recent site visit revealed that the recreational fields are still present and appear to have been expanded to include soccer fields on the upper east side of the site.

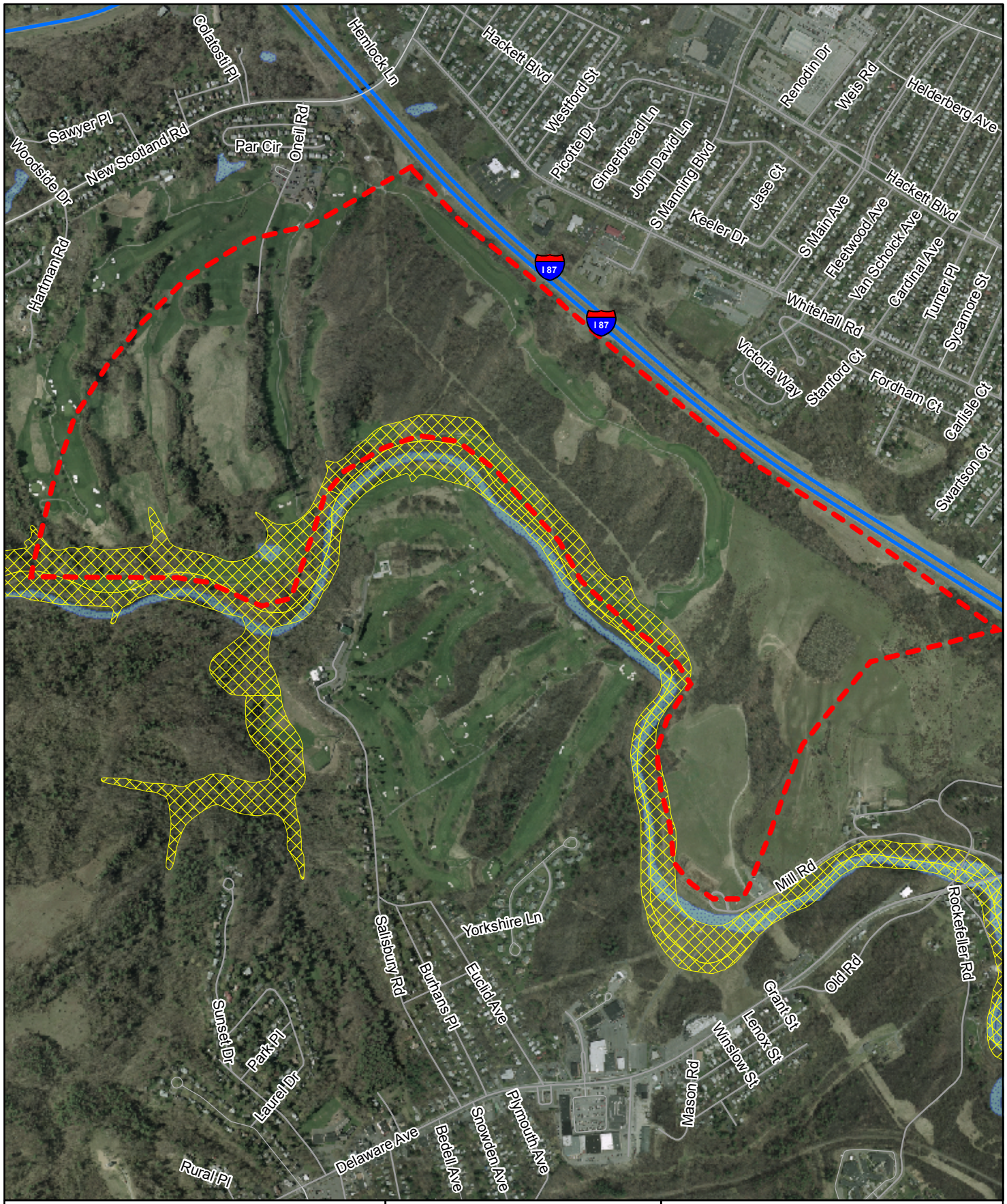
Site 2 Evaluation – Frisbie Avenue

Criterion	Evaluation	Basis
Unconsolidated Deposits	3	Mapped by NYSDEC as silt & clay
Proximity to Water Supply Sources	3	None within 1 mile
Natural Topography	1	Site mapped as clay & slopes of 30% or greater on site
Wetland and Aquatic Resources	3	No state wetlands or waterbodies on or adjacent to site. Federal wetlands (drains) exist on site (>1 acre).
Local Land Use	1	Site is urban park & open space area; residential neighborhoods surround site.
Site Acquisition	1	Site is established urban city park
Site Access	2	Access from McCarthy Ave. & Frisbie Ave. (residential area).
Area Available for Landfilling	1	Level areas of site are developed as community baseball field.
Total Score	**15**	

Use of Site 2 would require substantial cutting, filling and stabilization measures prior to use as a landfill facility. Additionally, this site is not a viable alternative site because of potential difficulties associated with constructing a landfill over the Southern Boulevard Trunk Sewer, which crosses the site from west to east. Construction of a landfill over a sanitary sewer line may not be acceptable to NYSDEC because of the potential for contaminated groundwater entering the sewer or traveling parallel to the sewer in the sewer bedding material. If this is the case, mitigation measures such as relocating the sewer and construction of a pump station would be required. Methane explosions have occurred at this site in the past due to the old construction and demolition debris placed at the site. It is estimated that less than one acre of wetlands exist on the site. Site 2 does not lie within a prohibited siting area, but is surrounded by incompatible land uses making it difficult to develop a landfill at this location.

3. Normanskill Farm

The Normanskill Farm site consists of approximately 350 City-owned acres located between Delaware Avenue and New Scotland Avenue, with Interstate 87 and the Normans Kill bordering the site to the north and south, respectively (Figure 4). The western portion of the site (approximately 35%) is the City's public golf course. Portions of the site are currently being used as a City farm, horse stables for the City's mounted police, and cross country skiing trails.



City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York

CLOUGH HARBOUR & ASSOCIATES LLP

1 inch equals 1,200 feet

N
W
E
S

Legend

- Site Outline
- 100-year Flood Zones
- State Wetlands
- Federal Wetlands

Figure 4

Alternative Landfill

Site # 3 - Normanskill Farm

Date: 6/13/07

K:\12206\GIS\Map\Siting Maps

Associated with the farm are a number of large pastures used for grazing animals such as cows and sheep.

Site elevations range from 100 to 220 feet above mean sea level. A majority of the site contains deep ravines with steep slopes which drain surface water to the Normans Kill. Slopes in these areas range from 15 to 35 percent. There is an approximate 50 acre, elongated area located in the eastern portion of the site, along Interstate 87. The level area on Site 3 is not wide, but segmented making the geometry of available level areas not conducive to landfill development. According to the Geologic Hazards map of the site area, only the east-southeastern region of the site is not mapped as either having the potential for landslides or other slope instability issues or having the potential for wind erosion if stripped of surface cover. Access to this portion of the site would require construction of a road from Delaware or New Scotland Avenue and the construction of bridges over ravines 50 feet deep and 700 to 800 feet wide.

According to the NYSGS Surficial Geologic Map, Hudson-Mohawk Sheet, the site is mapped as lacustrine silts and clays. Areas around the Normans Kill are mapped as recent alluvium which is comprised of fine sand and gravel. Bedrock at the site is mapped by the NYSGS as the Normans Kill Shale Formation. No community water supply systems are known to exist in the vicinity of this site (NYSDOH, 1982). Those portions of the site situated along the Normans Kill and in the northwest corner are mapped by Bugliosi as an unconfined aquifer capable of supplying greater than 100 gpm (1988). The 100-year floodplain is mapped along the Normans Kill. A 1999 review of the DEC Natural Heritage Program files for Site 3, indicated that no threatened or endangered species listed by DEC occur on this site. The status of this site is being confirmed for this study. Based on a cursory field visit and proximity to the Normans Kill, greater than five acres of wetlands exist on the site.

The Normanskill Farm is a City park/open space area that was purchased using money obtained from the Federal Land and Water Conservation Fund. Acquisition of this area requires an act of the State Legislature making development of a landfill prolonged and costly. Portions of this site are situated within a 100-year floodplain (a prohibited siting area) and greater than 5 acres of wetlands occur along the Normans Kill (a class C(T) stream). Construction of roads and bridges would be required for access to the site. Overall the Normanskill Farm site is unacceptable for the development of a landfill.

A recent site visit revealed that the conditions at the Normanskill Farm site have remained relatively unchanged since the P-4 SDEIS was completed. Changes include a K-9 Training area

that appears to be operating on the site and a sign indicating the location of a water conduit, both of which were not mentioned in the P-4 SDEIS.

Site 3 Evaluation Normans Kill Farm

Criterion	Evaluation	Basis
Unconsolidated Deposits	3	Site mapped as silt & clay
Proximity to Water Supply Sources	3	None within 1 mile
Natural Topography	1	Slopes at site range from 15-35%.
Wetland & Aquatic Resources	1	Normans Kill is Class C(T) stream bordering the site. >5 acres of wetlands exist on site.
Local Land Use	1	City-owned parcel containing a working farm, golf course & public open space.
Site Acquisition	1	City park/open space purchased through Federal Land & Water Conservation Fund.
Site Access	1	Poor access requiring construction of roads on steep slopes in clay soils &/or construction of bridges
Area Available for Landfilling	1	Potential landfill area is bisected by numerous ravines
Total Score	**12**	

This site would involve a significant infrastructure planning, design and construction effort as well as considerable costs. Construction of the access roads could cost 1 to 3 million dollars and would take 12 to 24 months to construct. Additionally, most of the lands on this site, including the portion under consideration, were purchased with federal dollars which require that the land be dedicated to public recreation. All non-public recreational uses must be reviewed and approved by the New York State Office of Parks, Recreation and Historic Preservation. Portions of Site 3 are situated within the 100-year floodplain (prohibited siting area) of the Normans Kill. An unconfined aquifer is mapped and incompatible land uses exist near the site (restricted siting areas). As identified above, greater than 5 acres of wetlands occur along the Normans Kill (a class C(T) stream). With impermeable, clay soils mapped on the site, wetlands and drainage areas are likely to exist in pockets over level areas.

In summary, the access problems, deed restrictions associated with developing the Normanskill site, and the extent of wetlands make it an unacceptable site for a landfill.

4. Graceland Cemetery

Graceland Cemetery, Inc. owns approximately 140 acres of land located north of the Normans Kill (Figure 5). It is bounded on the north and east by Interstate 87 and on the west by Delaware Avenue. The western one-third of the site is developed as a cemetery with the remaining portions of the site, east of an unnamed tributary to the Normans Kill, currently undeveloped. The unnamed tributary to the Normans Kill flows through the center of the site with the Normans Kill forming the southern border of the site.

Site elevations range from 70 to 200 feet above mean sea level. Most of the undeveloped portions of the site contain steep slopes (grades ranging from 15 to 30 percent) which drain to the Normans Kill. A large majority of this site is shown on the Geologic Hazards Map as having the potential for landslides or other slope instability problems. Access to the site could be from the Thruway at Exit 23; no other roads are situated in close proximity to this site.

Surficial geology of the site is mapped primarily as lacustrine silts and clays with recent alluvium (fine sands and gravel) situated along the Normans Kill stream corridor. Bedrock mapped by the NYSGS at the site consists of the Normans Kill Shale Formation. No community water supply systems are mapped in the vicinity of this site. A large portion of Site 4 is mapped by Bugliosi as an unconfined aquifer capable of yielding greater than 100 gpm (1988). Those portions of this site near the Normans Kill are situated within the 100-year floodplain. A 1999 review of the DEC Natural Heritage Program files for Site 4 indicated that no threatened or endangered species listed by DEC occur on this site. The DEC Natural Heritage Program is being contacted for this study to confirm the status of this site. Based on a cursory field visit, greater than one and less than five acres of wetlands exist on the site.

The Graceland Cemetery is considered unsuitable for the development of a landfill due to its steep topography and presence of prohibited and restricted siting criteria. The majority of the Graceland Cemetery site contains steep slopes making the development of a landfill extremely difficult and costly. Additionally, the site is located within a 100-year floodplain (a prohibited siting area) and is located above an unconfined aquifer (requiring a variance). Finally, the Graceland Cemetery is privately owned and acquisition would be necessary. A recent site visit revealed no change in site characteristics and surrounding land use.

City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York

CLOUGH HARBOUR & ASSOCIATES LLP

1 inch equals 500 feet

N
W
E
S

Legend

- Site Outline
- State Wetlands
- Federal Wetlands
- 100-year Flood Zones

Figure 5

Alternative Landfill

Site # 4 - Graceland Cemetary

Date: 6/13/07

K:\12206\GIS\Map\Siting Maps

Site 4 Evaluation Graceland Cemetery

Criterion	Evaluation	Basis
Unconsolidated Deposits	1	Site is mapped as sand & gravel
Proximity to Water Supply Sources	3	None within one mile.
Natural Topography	1	Most of site contains steep slopes.
Wetland and Aquatic Resources	1	Normans Kill a Class C(T) stream borders site. 1-5 acres of wetlands exist on site.
Local Land Use	2	Area is neither commercial nor industrial & is not residential
Site Acquisition	2	The site is privately owned by Graceland Cemetery Inc.
Site Access	2	Access via Route 9W or 1-787 requires travel over local road that currently carries commercial traffic.
Area Available for Landfilling	1	Most of the site contains slopes.
Total Score	**13**	

Accounting for buffer areas between a landfill cell and existing site features (Normans Kill, I-87), there are no sufficiently level areas on Site 4 to construct a landfill. In order to develop this site, existing ravines would have to be lined then filled, or portions of the site would have to be excavated to create an area suitable for landfill construction. Constructing a stable liner system on steep side slopes is difficult if not impossible because of the tendency for clay to fail under loads when slopes are greater than 20 to 25 percent. Once the slope is loaded (filled with solid waste) the entire facility could slump (move downhill) resulting in partial or complete destruction of the liner system. Excavation to create a level area large enough for a landfill and supporting structures is feasible but in the case of Site 4, not practical because of the amount of excavation required. To create a suitable 15 to 20 acre area, approximately 725,000 cubic yards of material would have to be excavated.

The cost and, more importantly, time, required to move this amount of material makes this alternative unacceptable; therefore, Site 4 is rejected as an alternative site. Additionally, the site is situated within a prohibited siting area: the 100-year floodplain of the Normans Kill. It is estimated that greater than one and less than five acres of wetlands exist on the site. Restricted siting areas for this location include incompatible land use and an unconfined aquifer is mapped.

5. Kenwood/Mt. Hope

This site is located between Kenwood Road, Mount Hope Drive, U.S. Route 9W and State Route 32 in the southeast corner of the City (Figure 6). The site consists of approximately 35 acres of land, primarily owned by Sacred Heart Female Academy with the balance of the site also privately owned. Nature trails exist on the site. Doane Stuart School is located on the south side of Kenwood Road. A Howard Johnson Hotel is located on Route 9W, which also owns a portion of the area. There is a small residential community located along Mount Hope Drive.

According to the USGS Topographic Map, the site lies at approximately 100 feet above mean sea level. Almost the entire site contains steep slopes that slope east toward the Hudson River. Slopes vary from 15 to 40 percent throughout the site. According to the NYSGS Geologic Hazards Map, the entire eastern region of this site has the potential for landslides or other slope instability problems.

Trucks from 1-787 and 1-90 (Exit 23) could travel south on Southern Boulevard (a four lane road) turning onto Doane Stuart Road. Surficial geology of the site is comprised of lacustrine silts and clays with the Normans Kill Shale mapped as the bedrock underlying the site. No community water supply sources were found near this site. Site 5 is not mapped by Bugliosi as an unconfined aquifer (1987). The site does not lie within the 100-year floodplain. A 1999 review of the DEC Natural Heritage Program files for Site 5, indicated that no threatened or endangered species listed by DEC occur on this site. The status of this site is being confirmed for this study. A cursory site visit indicated greater than one and less than five acres of wetlands exist on the site.

Although no prohibited siting areas occur on the Kenwood/Mt. Hope site, it does have similar topography issues as the Frisbie Avenue and Graceland Cemetery Sites. Slopes at this site are steep (15-40%), therefore stability is a primary concern. The site is also adjacent to a school and residential neighborhood (incompatible land uses deemed a restricted siting criteria) making this site not a viable option for the construction of a landfill. A recent site visit revealed the same conditions as reported in the P-4 SDEIS.

City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York

CLOUGH HARBOUR & ASSOCIATES LLP

1 inch equals 400 feet

N
W
E
S

Legend

- Site Outline
- State Wetlands
- Federal Wetlands
- 100-year Flood Zones

Figure 6

Alternative Landfill

Site # 5 - Kenwood / Mt. Hope

Date: 6/13/07

K:\12206\GIS\Map\Siting Maps

Site 5 Evaluation Kenwood/Mt. Hope

Criterion	Evaluation	Basis
Unconsolidated Deposits	3	Site is mapped as silt & clay
Proximity to Water Supply Sources	3	Site is not mapped as an aquifer
Natural Topography	1	Almost entire site contains steep slopes (15-40%)
Wetland and Aquatic Resources	2	No state wetlands or water bodies on or adjacent to the site. Federal wetlands (drains) exist on site (1-5 acres)
Local Land Use	1	Area is adjacent to a school & residential neighborhood.
Site Acquisition	2	Site is comprised of more than 1 private owner.
Site Access	2	Access is from Rt. 32 directly off Rt. 9W via a short length on a local road.
Area Available for Landfilling	1	Entire site slopes to the east
Total Score	**15**	

For the same reasons stated in the discussions of Sites 2 and 4, the topography of Site 5 makes it extremely difficult, if not impossible, to construct a landfill at the site. The slopes may not be stable enough to sustain load or weight from solid waste and the clay soil beneath the liner would be vulnerable to slumping, which would damage the liner system. No prohibited siting areas occur on this site; however, Site 5 is situated adjacent to a residential neighborhood (a restricted siting criterion) and between one and five acres of wetlands exist on the site. Site 5 is not considered a viable alternative site due to the proximity to residential areas.

6. Corporate Woods

Site 6, is located south of the Corporate Woods office complex adjacent to 1-90 at the Corporate Woods Boulevard Exit (Figure 7). The site is privately owned and approximately 80% developed. In reviewing tax maps and topographic maps during the site evaluation it was determined that the amount of available land between the Thruway right-of-way and the City's northerly boundary is less than 10 acres (i.e., less than the threshold set). Nonetheless, Site 6 is evaluated in the subsequent section.

According to the USGS Topographic Map, Site 6 has topography that gently slopes to the east and lies at approximately 240 feet above mean sea level. The NYSGS Geologic Hazards Map, indicates that only the northwestern corner of the site is subject to wind erosion. Access could be

City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York

CLOUGH HARBOUR & ASSOCIATES LLP

1 inch equals 400 feet

N
W E
S

Legend

- Site Outline
- 100-year Flood Zones
- State Wetlands
- Federal Wetlands

Figure 7

Alternative Landfill

Site # 6 - Corporate Woods

Date: 6/13/07 K:\12206\GIS\Map\Siting Maps

afforded to this site from 1-90 at Exit 5A. A short distance would have to be traveled on an entrance road to the Corporate Woods office complex prior to reaching Site 6.

This site is mapped as lacustrine sand and the Normans Kill Shale Formation. According to the NYS Department of Health, no community water supply systems are situated in the vicinity of this site. This site is mapped by Bugliosi as an unconfined aquifer capable of yielding between 10 and 100 gpm (1988). The site is not situated within a floodplain area. A 1999 review of the DEC Natural Heritage Program files for Site 6, indicated that no threatened or endangered species listed by DEC occur on this site. As part of the current siting study, correspondence will be sent to the DEC Natural Heritage Program confirming this information. A cursory field visit indicated less than one acre of wetland exists on the site.

The small size of the Corporate Woods site and the fact that it is approximately 80% developed for commercial office space severely limits this property as a potential municipal landfill site. The remaining undeveloped areas are not nearly sufficient enough to accommodate a landfill with the required infrastructure and facilities. No prohibited siting areas are located at the site but restricted siting area criteria include an unconfined aquifer and incompatible adjacent land uses. A recent field visit confirmed these conditions.

Site 6 Evaluation Corporate Woods

Criterion	Evaluation	Basis
Unconsolidated Deposits	1	Site mapped as sand.
Proximity to Water Supply Sources	3	None within one mile.
Natural Topography	3	Site has gently sloping terrain.
Wetland and Aquatic Resources	3	No state wetlands or water bodies on or adjacent to site. Federal wetlands exist on site (< 1 acre).
Local Land Use	1	Area adjacent to a large commercial office complex.
Site Acquisition	2	Privately owned site.
Site Access	2	Access is from 1-90
Area Available for Landfilling	1	Most of the site is level.
Total Score	**16**	

Site 6 comprises less than 10 acres of land bounded on two sides by Interstate 90 and an exit. The undeveloped area is not sufficient to accommodate a landfill with the required infrastructure

and facilities. Although less than one acre of wetlands exist on the site, Site 6 is not a viable alternative landfill area due to the surrounding site development. Land use adjacent to the site consists of newly developed office buildings which are incompatible structures for a landfill. Additional restricted siting areas include an unconfined aquifer mapped at the site.

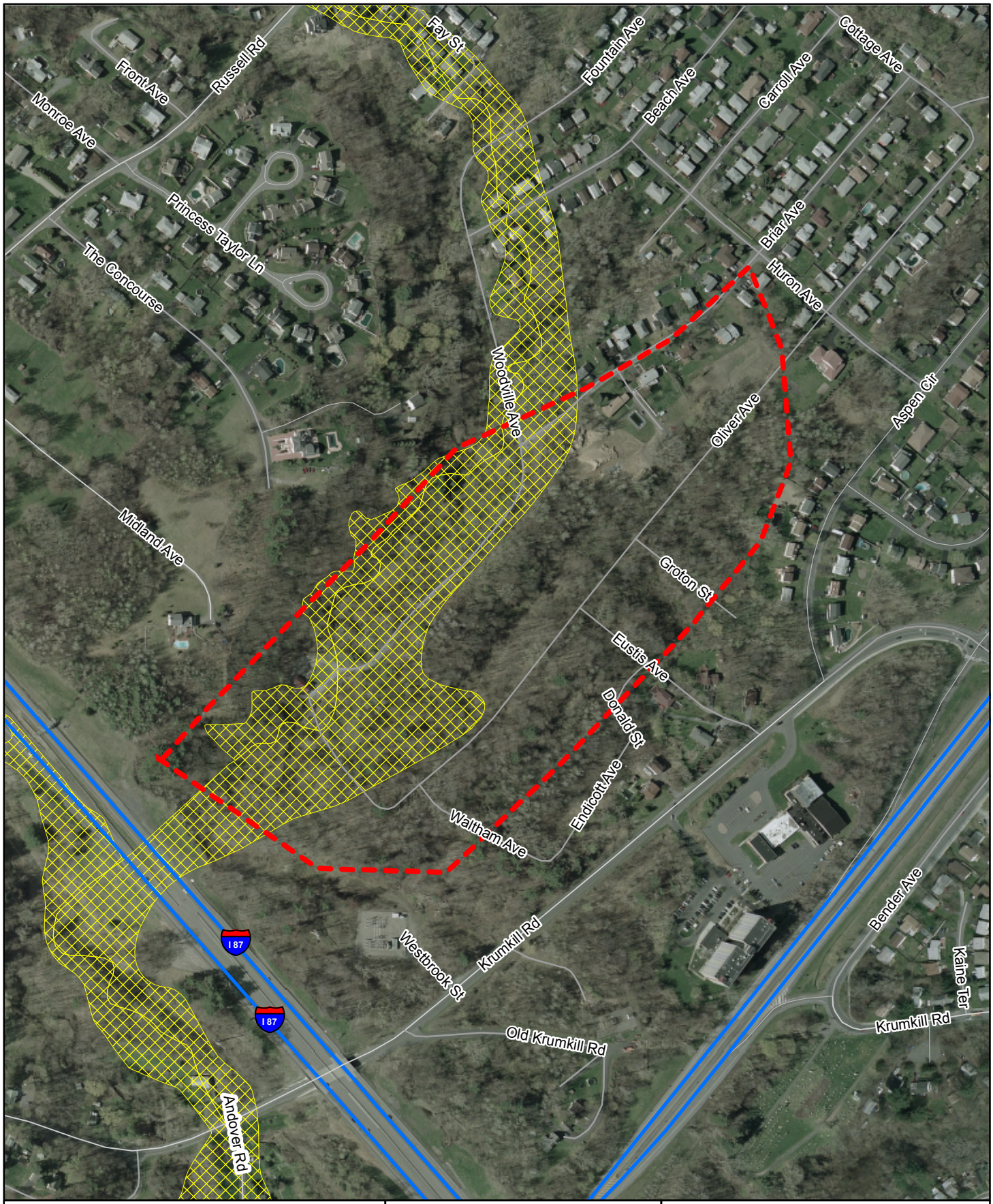
7. Krumkill Road

This site is located west of Krumkill Road, south of Huron Street and east of Briar Avenue and the Krum Kill (Figure 8). Site 7 consists of approximately 50 acres bordered by I-87 on the south and a National Grid electric power substation and transmission line. The northern portion of the site, along Huron Street and Briar Avenue, is a residential neighborhood (approximately 25% of the site). A church and an apartment complex are located on the east side of Krumkill Road. Newer residential developments were observed on Krumkill Road and just off Russell Road since the preparation of the P-4 SDEIS. The site is composed of numerous parcels, with less than 10 percent of the site owned by the City of Albany, and the balance owned by individuals or corporations.

According to the USGS Topographic Map, site elevations range from 200 to 300 feet above mean sea level. Slopes in the northern end of the site, adjacent to the residential area, vary from 8 to 20 percent. Two wetlands along the eastern edge of the property were identified, as well as one wetland in the northeastern corner and an unnamed tributary to the Krum Kill. In the southern portion of the site, slopes range from 10 to 35 percent, sloping generally west to the Krum Kill. According to the NYSGS Geologic Hazards Map, two-thirds of the site is mapped as having the potential for landslides or other slope stability problems.

Access to the site would be from Route 85 and Krum Kill Road. Surficial geology of the site area is mapped as lacustrine silts and clays with bedrock beneath the site mapped as the Normans Kill Shale Formation. No community water supply systems are situated in the vicinity of this site (NYSDOH, 1982). The area is mapped by Bugliosi as a principal aquifer because of the presence of sand and silt deposits interspersed with some lake clay deposits. Only those portions of Site 7 near the Krum Kill are situated within the 100-year floodplain. Based on a review of the DEC Natural Heritage Program files for Site 7, no threatened or endangered species are listed by DEC as occurring on this site as of 1999. Correspondence has been mailed to the DEC Natural Heritage Program confirming this status as part of this siting study. Based on a cursory site visit, greater than five acres of wetlands exist on the site.

The natural topography at the Krumkill Road site varies from 8 to 35%, making only portions of the site suitable for siting a landfill and therefore reducing the available volume and the life span



City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York

CLOUGH HARBOUR & ASSOCIATES LLP

1 inch equals 400 feet

N
W E
S

Legend

- Site Outline
- 100-year Flood Zones
- State Wetlands
- Federal Wetlands

Figure 8

Alternative Landfill

Site # 7 - Krumkill Road

Date: 6/13/07

K:\12206\GIS\Map\Siting Maps

of the landfill. The entire area slopes toward the Krum Kill, a class C waterbody and is mapped as an unconfined aquifer. The site also contains areas of designated 100-year floodplain and contains a Federal wetland, both of which are prohibited siting criteria. Furthermore, private residences are within the proposed Krumkill Road site and will need to be acquired and demolished before landfill construction could begin.

Site 7 Evaluation Krumkill Road

Criterion	Evaluation	Basis
Unconsolidated Deposits	3	Site mapped as silt & clay
Proximity to Water Supply Sources	3	None within one mile.
Natural Topography	1	Slopes at the site vary from 8 to 35%.
Wetland and Aquatic Resources	1	Krum Kill is a Class C waterbody. Federal wetlands exist on the site (>5 acres).
Local Land Use	1	Area is residential with a house of worship nearby.
Site Acquisition	2	Site is partly owned by the City with the balance privately owned.
Site Access	2	Access is from Krumkill Road, classified as a minor collector road. This would result in a change in the predominant functional use.
Area Available for Landfilling	1	Entire site slopes toward the Normans Kill.
Total Score	**14**	

Development of the northern portion of Site 7 would require the demolition of existing homes. A landfill could potentially be constructed on the southern two thirds of the site, but this would require demolition of two existing homes and excavation and regrading of 150,000 to 200,000 cubic yards of soil. In addition, due to the site's configuration, available volume and therefore the facility's life span, would be reduced by over 25 percent. A portion of Site 7 is located within the 100-year floodplain (prohibited siting area) of the Krum Kill. It is estimated that greater than five acres of wetlands exist on the site. Restricted siting areas for this location include incompatible land uses and the site is mapped by Bugliosi as an unconfined aquifer. This site is marginal for the above stated reasons and is not considered a viable alternative landfill site.

8. Fuller East

The Fuller East site is located in the northwest corner of the State University of New York (SUNY) campus (Figure 9). The 50-acre site is bounded on the west by Fuller Road and on the north by Washington Avenue. The site is undeveloped except for a parking lot on the northeast

City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York

CLOUGH HARBOUR & ASSOCIATES LLP

1 inch equals 400 feet

N
W E
S

Legend

- Site Outline
- State Wetlands
- Federal Wetlands
- 100-year Flood Zones

Figure 9

Alternative Landfill

Site # 8 - Fuller East

Date: 6/13/07

K:\12206\GIS\Map\Siting Maps

corner of the site, a major electric transmission line which bisects the site, and a SUNY Health Services building, parking lot and walkway situated in the southeastern region of the site.

The terrain in this area is relatively flat with ground elevations ranging from 260 to 300 feet. No significant slopes exist at the site. Site 8 is mapped on the Geologic Hazards map as having the potential for wind erosion if stripped of surface cover.

Access to the site could be via Fuller Road or Washington Avenue Extension. Surficial geology of the site is characterized by dunes which consist of fine to medium sands. Bedrock beneath the site is mapped as the Normans Kill Shale Formation. No community water supply systems are mapped in the vicinity of this site (NYSDOH, 1982). This site area is mapped by Bugliosi as a principal aquifer. No floodplains are situated on the site or in close proximity to the site. Site 8 is located within the Pine Bush Study area but is not designated as Pine Bush Protected lands. A 1999 review of the DEC Natural Heritage Program files indicated that the Inland Barrens Buckmoth (state-listed as 'Unprotected') and the Karner Blue Butterfly (state- and federally-listed as 'Endangered') are mapped as occurring on Site 8. Contact has been made with the DEC Natural Heritage Program to confirm this status. Based on a cursory field review, less than one acre of wetlands exists on the site.

The Fuller East site is not considered a viable option due to the presence of two listed threatened or endangered species. Furthermore, the site is owned by the State of New York and is part of the SUNY Albany Campus. Construction of a landfill here would be a significant incompatible land use. There have been no significant changes in land use on or in the vicinity of this site since the P-4 SDEIS.

Site 8 Evaluation Fuller East

Criterion	Evaluation	Basis
Unconsolidated Deposits	1	Site is mapped as sand.
Proximity to Water Supply Sources	3	None within one mile.
Natural Topography	3	Site is relatively flat, no significant slopes.
Wetland and Aquatic Resources	3	Rensselaer Lake is a Class D waterbody located nearby. <1 acre wetlands exist on site.
Local Land Use	1	Site is part of SUNY Albany campus
Site Acquisition	1	Site is owned by State of New York & cannot be acquired by eminent domain.
Site Access	2	Site access from Washington Ave. & Fuller Rd.
Area Available for Landfilling	2	Site is relatively level.
Total Score	**16**	

Development of Site 8 is complicated by two issues. The first is that a major electric transmission line traverses the site and would have to be relocated. Secondly the site is owned by and immediately adjacent to the SUNY Albany Campus. Moving of the transmission line would add significantly to both time and cost of the project. Development of the site would also require that the parking lots and perhaps the health services and maintenance buildings be demolished. Perhaps most important to the development of this site is its current ownership and location on the SUNY campus. The site could not be acquired through Eminent Domain Procedure Law and it is highly unlikely that the State University System would look favorably on constructing a landfill on this parcel. Although the site has less than one acre of wetlands, two threatened or endangered species are mapped as occurring on the site. The site is within the Pine Bush Preserve Study area but is not mapped as protected lands or as a recommended full protection area. There are also two restricted siting areas on this property: incompatible land use and the identification of this site as containing an unconfined aquifer. A recent field visit indicated that no significant changes in land use on or in the vicinity of this site since the P-4 SDEIS.

9. Fuller West

This site is located on the west side of Fuller Road and is bounded to the north and west by Washington Avenue Extension and on the south by the City's common boundary with the Town of Guilderland (Figure 10). Site 9 consists of approximately 35 acres of land and is owned by the State of New York. The site is bisected by existing roads. There is a residential community

City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York

CLOUGH HARBOUR & ASSOCIATES LLP

1 inch equals 400 feet

N
W
E
S

Legend

- Site Outline
- 100-year Flood Zones
- State Wetlands
- Federal Wetlands

Figure 10

Alternative Landfill

Site # 9 - Fuller West

Date: 6/13/07

K:\12206\GIS\Map\Siting Maps

located in the Town of Guilderland south of the site and an electric transmission line east of the site. SUNY dormitory buildings and parking lots currently occupy a significant portion of this site.

Ground elevations are close to 260 feet over the entire site. Wetland areas were found to occur in the vicinity of the electric transmission line in the southern region of the site. Surficial geology of this area is the same as for Site 8 with the potential for wind erosion to occur. Bedrock beneath the site consists of the Normans Kill Shale Formation. No community water supply systems are situated in proximity to this site. This area is mapped by Bugliosi as an unconfined aquifer (1988). No floodplains are situated on the site or in close proximity to the site. Site 9 is situated within designated Pine Bush Preserve Study Area but is not designated as Albany Pine Bush Protected Lands or recommended for full protection. A 1999 review of the NYSDEC Natural Heritage Program files for Site 10 indicates that no threatened or endangered species are listed as occurring on this site. Contact has been made with the NYSDEC Natural Heritage Program requesting an update as part of this siting study. Based on a cursory field review, greater than one and less than five acres of wetlands exist on the site.

As this site is also owned by the State of New York, it cannot be acquired through Eminent Domain Procedure Law. The Fuller West site is not considered a reasonable alternative due to its small size and proximity to SUNY dormitories and residential neighborhoods. Lake Rensselaer, a Class D waterbody, is adjacent to the site and an estimated 1-5 acres of wetlands occur within the proposed project area. The Fuller West site is located within the Albany Pine Bush Preserve. A recent site investigation revealed no significant change in these conditions.

Site 9 Evaluation Fuller West

Criterion	Evaluation	Basis
Unconsolidated Deposits	1	Site is mapped as sand
Proximity to Water Supply Sources	3	None within 1 mile.
Natural Topography	3	Site is flat with no significant slopes.
Wetland and Aquatic Resources	2	Rensselaer Lake is Class D somewhat adjacent to site. Approximately 1-5 acres of wetlands exist on site.
Local Land Use	1	Large majority of site is comprised of SUNY dormitories.
Site Acquisition	1	Site owned by State of New York & cannot be acquired by eminent domain.
Site Access	2	Access is from Fuller Rd. but would require construction of an access road.
Area Available for Landfilling	2	Site is relatively level.
Total Score	**15**	

Since there is not enough land to construct a landfill on this parcel and timely acquisition of the site is not guaranteed, Site 9 is not considered a reasonable alternative site for an alternative landfill. The available area on the site for a landfill, and close proximity to SUNY dormitories and residential neighborhoods make site development very difficult. As stated above Site 9 is located within the Pine Bush Preserve Study Area but is provided no additional protections nor is it recommended for additional protections. The site is mapped as an unconfined aquifer by Bugliosi with incompatible land use surrounding the site (both restricted siting areas). Additionally, it is estimated that between one and five acres of wetlands on site.

10. Rapp Road Landfill Eastern Expansion

The Eastern Expansion at Rapp Road has also been evaluated as part of the landfill siting process, particularly as the suitability of other sites is low. There are a number of impacts both adverse and beneficial related to this scenario which are discussed below. In regards to access the sites location immediately adjacent to the existing landfill will result in continued access from Rapp Road. The City will need to acquire an approximately 3.5 acres directly east of the landfill and approximately 1 acre of land owned by New York State, however it presently owns the 13 acres to the northeast that would be necessary for this expansion.

The Eastern Expansion would transform approximately 13 acres of forested land, including 5.6 acres of wetlands, located adjacent of Albany Pine Bush Preserve lands into landfill. To

compensate for this and other issues associated with landfill operations, an extensive Habitat Mitigation, Restoration & Enhancement Plan (Habitat Plan) has been proposed that will recharge wetlands on State lands to the east, create new wetlands, establish historic stream corridors, and convert the mobile home park and eventually much of the landfill to Pine Bush habitat.

Nearby land uses include the NYS Thruway and businesses along Washington Avenue Extension to the south. North of the landfill is a mix of light industrial and residential uses along with lands dedicated to the Albany Pine Bush Preserve. Preserve and State lands also occur to the east and west of the Landfill with a few homes along Rapp Road.

Topography at this site has been influenced by the landfilling operations that have taken place over the years. The GAL is approximately 405 feet high at its highest elevation and the AIL is a slightly lower elevation, although it is not completely filled. Slopes exist along the sides of both landfills. According to the Geologic Hazards map, the site is mapped as having the potential for wind erosion if stripped of surface cover. Access to the site is afforded by an existing infrastructure for the AIL and GAL. Trucks enter the site from Rapp Road via the Thruway and Washington Avenue Extension and travel on existing access roads. Surficial geology of the general area consists of dune sands from the Pine Bush Formation. Bedrock beneath the site is mapped as the Normans Kill Shale Formation. Several subsurface investigations have been conducted at the Rapp Road facility; therefore, the geology of the landfill expansion area is already documented and known. The DEIS for the AIL, the Phase II Investigation Report for the GAL (March 1991), and the Third Supplemental Draft Environmental Impact Statement (TSDEIS) for P-4 all contain boring log information and discussions about geology.

No community water systems exist in close proximity to this site. Fox Run Estates, situated north of the Rapp Road facility, was converted from private water wells to City water around 1991. Site 10 is mapped by Bugliosi as an unconfined aquifer capable of supplying greater than 100 gpm (1987). No floodplains are mapped at this site. Rensselaer Lake is the only major surface waterbody in the vicinity of the site situated approximately 4,000 feet southeast. Based on a review of the DEC Natural Heritage Program files for Site 10, several threatened or endangered species are listed by DEC as occurring in the Pine Bush Preserve; however, none are mapped as occurring on the Rapp Road facility (the AIL, GAL, or P-4).

Site 10 Rapp Road Landfill Eastern Expansion

Criterion	Evaluation	Basis
Unconsolidated Deposits	1	Site is mapped as sand.
Proximity to Water Supply Sources	3	None within one mile.
Natural Topography	3	Site is relatively flat, no significant slopes.
Wetland and Aquatic Resources	1	>5 acres of wetland on site. Cannot be avoided.
Local Land Use	2	Mixture of industrial, commercial & residential.
Site Acquisition	3	Site is owned by City of Albany.
Site Access	3	Expansion would use existing landfill access.
Area Available for Landfilling	3	All areas adjacent to existing landfill allowing expansion and overfill.
Total Score	**19**	

The two major concerns for the expansion are the presence of a primary aquifer and the need to impact wetland. The landfill liner system is designed to prevent leachate from entering the aquifer and an aquifer variance will be required from NYSDEC as part of the Part 360 Permit process. Wetland impacts will be mitigated as part of the Habitat Plan that will ultimately result in the re-establishment of viable Pine Bush habitat linking existing habitat west and east of the landfill and mobile home park. Land use conflicts are not significant but land use is an issue relative to past odor impact issues that the City is currently addressing. The fact that the expansion builds off of existing operations and the majority of surrounding land uses are vacant, Preserve lands, and commercial and industrial uses, land use conflicts are minimal.

5.0 SUMMARY OF EVALUATION

Evaluation criteria used for this study included unconsolidated deposits, proximity to water supply sources, natural topography, wetland and aquatic resources, local land use (including incompatible structures and zoning), site acquisition, and site access. Values of 1 for unfavorable, 2 for acceptable and 3 for favorable were applied to each criterion. The highest ranking site is deemed to be the most favorable landfill site. Based on the evaluation criteria applied to each site, Site 10, the proposed Eastern Expansion of the Rapp Road Landfill, has the highest ranking of the alternative sites evaluated. The following table summarizes scores for each site.

Site Identification	Score
Site 1 (Erie Boulevard)	18
Site 2 (Frisbie Avenue)	15
Site 3 (Normanskill Farm)	12
Site 4 (Graceland Cemetery)	13
Site 5 (Kenwood/ Mt. Hope)	15
Site 6 (Corporate Woods)	16
Site 7 (Krumkill Road)	14
Site 8 (Fuller East)	16
Site 9 (Fuller West)	15
Site 10 (Eastern Expansion)	19

As shown, the scores range from 12 for Site 3 to 19 for Site 10. Several sites do not have appropriate area or configurations to accommodate landfill operations. For instance, Site 6 with a score of 16 covers only about 10 acres of land and therefore would not be a viable option for a landfill facility due to its size. Similarly, Site 8 is situated on the University at Albany's campus representing an incompatible land use and therefore not a viable alternative (refer to the specific evaluation criteria for each site related to the area available for landfilling).

Based on Figure 2, which presents prohibited and restricted siting criteria applied to the City, the following table provides a summary of the number of prohibited and restricted siting criterion that apply to each site.

Site Identification	# of Prohibited Criteria	# of Restricted Criteria
Site 1 (Erie Boulevard	1	2
Site 2 (Frisbie Avenue)	0	1
Site 3 (Normanskill Farm)	1	2
Site 4 (Graceland Cemetery)	1	2
Site 5 (Kenwood/ Mt. Hope)	0	1
Site 6 (Corporate Woods)	1	1
Site 7 (Krumkill Road)	1	2
Site 8 (Fuller East)	2	2
Site 9 (Fuller West)	1	2
Site 10 (Eastern Expansion)	0	2

Prohibited siting areas applied to the City included 100-year floodplains, DEC-mapped wetlands, threatened and endangered species, and the Pine Bush Preserve. Sites 1, 3, 4, and 7 have a portion of their area covered by the 100-year floodplain. No sites were found to be situated within a DEC-mapped wetland area. Regarding restricted siting criteria, it is important to note that eight of the ten sites reviewed for this study are either mapped entirely or partially as an unconfined aquifer that could be considered a principal aquifer.

The following list provides a summary of whether each site is considered to be a viable alternative landfill site and why:

Site Designation	Viable Alternative?	Primary Reasoning
Site 1	No	Lack of sufficient area for landfilling.
Site 2	No	Lack of sufficient area for landfilling.
Site 3	No	Irregular geometry of level areas.
Site 4	No	Slopes and unnamed tributaries to the Normans Kill bisect the site.
Site 5	No	Significant slopes exist on the site.
Site 6	No	Site is primarily developed already.
Site 7	No	Topography of the site not conducive to landfilling.
Site 8	No	Lack of sufficient area for landfilling.
Site 9	No	Lack of sufficient area for landfilling.
Site 10	No	Expansion of existing landfill accompanied by a comprehensive habitat restoration plan

Although there are adverse impacts related to the Eastern Expansion, it provides the best opportunity for a short term solution (6-7 years) to address the needs of the ANSWERS communities and the region. It is considered the only viable short term option to address landfill needs within the remaining life of the current P-4 expansion (approximately 3 years).

6.0 RESULTS & CONCLUSIONS

The City of Albany has conducted siting studies in 1988, 1989, 1996, and 1999 to evaluate options for solid waste disposal within the corporate boundaries of the City for either a long term or interim facility. The purpose of this report is to update the 1999 study, providing a current evaluation of the sites based on the criteria set forth in NYCRR Part 360, Solid Waste Management Facilities (October, 1993). The 1999 site selection study applied the prohibited and restricted siting criteria provided in Part 360 to the City of Albany as a whole and concluded that no areas within the City of Albany satisfy the requirements. Therefore, the sites previously identified in the 1989 study were evaluated based on ranking system.

This 2007 siting study used the same ranking criteria to update the report. As anticipated, the results are essentially the same due to the fact the any location within the City that supports reasonably developable land is either developed or surrounded by development, most often residential or mixed uses. The physical conditions of the alternative sites and the surrounding land use have not changed significantly since the 1999 study.

When comparing rankings, the proposed Rapp Road Landfill Eastern Expansion ranks the highest due to the fact that this alternative avoids the need to retrofit a new landfill operation on a new site. Selection of a new site would be a far more costly proposition for the City that would yield limited capacity (an interim solution) and would result in greater land use, traffic and infrastructure impacts than what is anticipated for the Eastern Expansion.

SELECTED SITE PHOTOGRAPHS

Photo 1, Erie Boulevard, Department of General Services Building

Photo 2, Erie Boulevard, Composting Area

CLOUGH HARBOUR & ASSOCIATES LLP

SITE PHOTOGRAPHS

Albany Landfill Eastern Expansion
City of Albany
Albany County, NY

Sheet 1	CHA File No. 12206

Photo 3, Frisbie Avenue Memorial Fields

Photo 4, Frisbie Avenue –Western Sports Field

CLOUGH HARBOUR & ASSOCIATES LLP

SITE PHOTOGRAPHS

Albany Landfill Eastern Expansion
City of Albany
Albany County, NY

Photo 5, Site 3- Normanskill Farm

Photo 6, Site 3- Normanskill Farm

CLOUGH HARBOUR & ASSOCIATES LLP

Sheet 3	CHA File No. 12206

SITE PHOTOGRAPHS

Albany Landfill Eastern Expansion
City of Albany
Albany County, NY

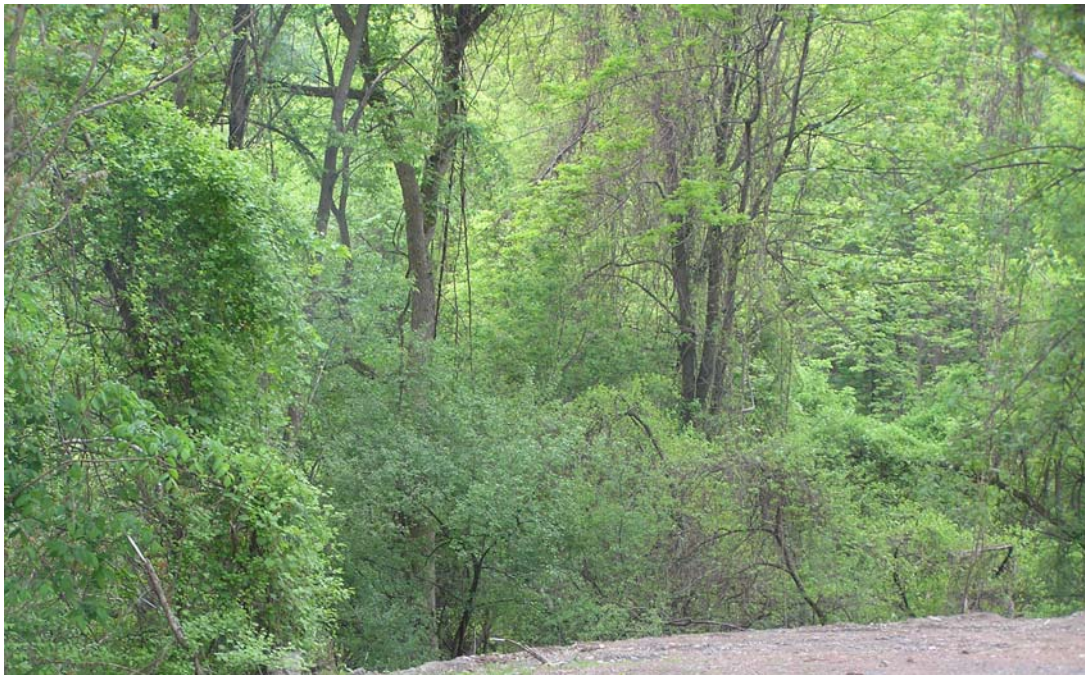


Photo 7, Site 4- Graceland Cemetery

Photo 8, Site 5-Kenwood/Mt. Hope

CLOUGH HARBOUR & ASSOCIATES LLP

Sheet 4	CHA File No. 12206

SITE PHOTOGRAPHS

Albany Landfill Eastern Expansion
City of Albany
Albany County, NY

Photo 9, Site 6- Corporate Woods

Photo 10, Site 7- Krumkill Road- Niagara Mohawk Substation

CLOUGH HARBOUR & ASSOCIATES LLP

SITE PHOTOGRAPHS

Albany Landfill Eastern Expansion
City of Albany
Albany County, NY