



City of Plattsburgh City Beach Property *Site Reconnaissance Report*

April 2016



SARATOGA
ASSOCIATES



 **McFarland Johnson**

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1. INTRODUCTION

The Site Reconnaissance Report is a summary of findings of information collected during the site reconnaissance, review of published information, previous planning efforts made by the City, agency correspondence, and discussions with City personnel and public officials for the City Beach property (herein referred to as Site) located on the northeastern edge of the City of Plattsburgh.

This report includes information from the review of various sources available on the City of Plattsburgh website and other sources, consisting of, but not limited to, the following:

Adirondack Coast Destination Plan, 2011

Boundary Survey Map, Design Engineering & Land Surveying, revised 1995

City Beach Concept Narrative, 2011

City of Plattsburgh Local Waterfront Revitalization Program (Preliminary Draft), January 2016

City Zoning Code

Comprehensive Plan for the City of Plattsburgh, 1999

Destination Master Plan, 2013

Municipal Beach Complex, Environmental Assessment, Stage III, 1967

The primary goal of the report is to utilize the information presented herein for preparation of a preliminary feasibility study, which shall examine the physical, environmental, regulatory, and fiscal constraints of the preferred alternative.

A field reconnaissance of the Site was performed by McFarland Johnson, Inc. on December 5, 2014. The field reconnaissance focused on existing conditions on the Site and the identification of specific features or constraints which may affect the compatibility of potential development, e.g., land use, infrastructure, transportation and public access, natural resources, hazardous/solid waste, floodplains, etc.

A building assessment of the Crete Memorial Civic Center (herein referred to as Crete Center) was performed in December 2014 and January 2015 and a *Crete Civic Center Assessment Report*, prepared by McFarland Johnson, Inc. dated April 2015, was submitted to the City. In addition, Aztech Technologies, Inc. conducted a Phase I Environmental Site Assessment (ESA) of the City Beach property and the Crete Center building. The Phase I ESA included representative sampling for asbestos and lead paint within the Crete Center. Findings are presented in the *Phase I Environmental Site Assessment (ESA), Crete Center and City Beach Property* dated March 12, 2015 which was submitted to the City. Refer to the aforementioned reports for detailed information regarding the Crete Civic Center and Phase I ESA findings.



2. OWNERSHIP/GRANT/LEASE STATUS OF LANDS

The City Beach property, once divided into several parcels, is currently made up of two parcels owned by the City of Plattsburgh, identified as tax map numbers 194.17-1-1 and 194.17-1-2. The majority of the Site is a partially developed 93 acre parcel (194.17-1-1) and the remainder is a mostly undeveloped 12.65 acre parcel (194.17-1-2). A portion of the Site was donated by Hon. John Keady Collins. There are very limited ownership details for the remainder of the Site.

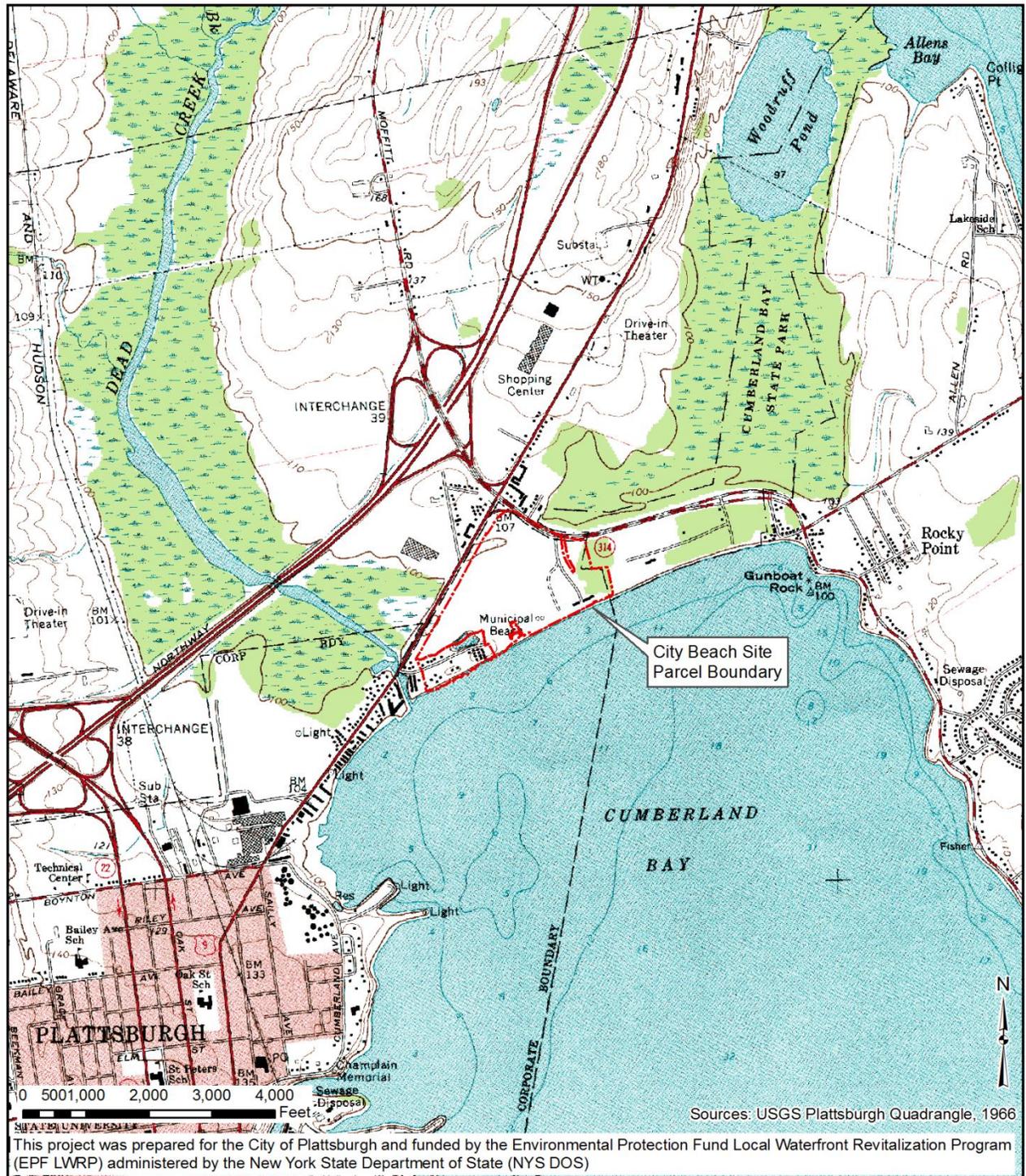
Lands underlying the waters of Lake Champlain are owned by the State of New York and administered by the Office of General Services. These lands are held in trust for the benefit of the people of the State of New York. A topographic map of the Site and surrounding area is illustrated on **Figure 1 – Site Location Map** and an aerial view of the Site with parcel boundaries is illustrated on **Figure 2 – Aerial Map**.

3. EXISTING LAND AND WATER USES

The Site is situated in the northeastern edge of the City of Plattsburgh, in the County of Clinton in northeastern New York State along the Canadian border. The Site is less than 1.5 miles from City Hall Place and is easily accessed by Interstate 87, which is approximately 1/3 of mile to the northwest.

The Plattsburgh town boundary borders the Site to the east, north and west. The Site is bounded on the west by State Route 9, on the north by State Route 314, on the east by the Cumberland Bay State Park and on the south by Lake Champlain and Scotion Creek (a.k.a. Dead Creek). The eastern portion of the Site is developed for public recreation purposes. The western portion is mostly wooded with the exception of a pedestrian trail and pavilion. The southern portion of the Site consists of an approximate 4,700 foot long beach along the Cumberland Bay of Lake Champlain.





 Map Prepared By:  McFarland Johnson	CITY OF PLATTSBURGH CITY BEACH PROPERTY CLINTON COUNTY, NEW YORK	FIGURE 1
		SITE LOCATION MAP
March 2015		







Concrete retaining walls are located along the beach near the concession building (left), old bath house (right), and new bath house.

Community resources on and within the vicinity of the Site include scenic viewpoints, historic and cultural resources, and parks and recreational amenities.

3.1. LAND USES

The Site is located along Lake Champlain in the northeastern corner of the City of Plattsburgh in Clinton County. According to the *New York State Office of Real Property Services, Property Type Classification and Ownership Codes*, the Site's 12.65-acre parcel is classified as vacant land located in a commercial area and the 93-acre parcel is classified as city public park and recreation area land. Land uses of the immediate vicinity and surrounding areas are shown on **Figure 3**.

A fence is located around a majority of the eastern, northern and western boundaries of the Site. Secured fence gates are located at the entrance to the Crete Center parking and the beach parking area.

The Site is mainly used for recreation by the public. The developed portion of the Site consists of the Crete Center, a groomed swimming beach, a lifeguard patrol, picnic areas with outdoor grills, pavilion, restroom facilities, walking trails, boardwalk, and parking for both the beach and Crete Center. The Crete Center is a multi-use facility currently used for indoor soccer and football games. In addition, the turf floor can be removed for other events, such as trade shows and live entertainment. An evaluation of the mechanical, electrical, plumbing, and structural systems of the Crete Center was conducted by McFarland Johnson. The findings, along with an evaluation of rehabilitation, redevelopment, and reconstruction, as well as cost estimates for repairs to deficiencies and for demolition, were issued to the City in the *Crete Center Assessment Report*. Improvements have been made to the Site over the years, including a pavilion, new bath house and concessions building.



Additional recreation uses include an annual Adventure Race hosted by the City. The obstacle course race traverses a path through the western wooded portion of the Site. Former recreation and entertainment land uses near the Site entrance consisted of amusement rides and go-cart and mini-golf facilities. Remnants of the mini-golf and go-cart track exist. A vacant concessions building associated with these facilities is located near the Site entrance.

The western portion of the Site was formerly used as an industrial and solid waste dump as evidenced by debris on the surface, including tires, drums, appliances, and automobile parts. Additional information regarding the old landfill is included in the *Phase I ESA* report.

Existing buildings and facilities are generally located on the eastern portion of the Site and associated with public recreation and entertainment use. The original bath house is currently not being used due to required repairs and upgrades. Asphalt and grass parking areas to the north and south of the Crete Center provide ample parking for Crete Center and City Beach visitors. A cashier's booth is located at the entrance to the beach parking area. Buildings and facilities, their general purpose/use and photographs are shown in **Table 1** and the figure below.

Building/Structure Location Map



Currently, the City has a user fee for access to the beach. However, it is considering implementing a parking fee only for vehicle access to the beach. Pedestrian access would be free and therefore promote walking and biking to the beach. Multiple boardwalks and pedestrian paths, including the City of Plattsburgh Heritage Trail, connect the buildings and beach facilities. The Site and beach can be accessed from the Heritage Trail which continues to Route 9.

Historical research regarding site uses was conducted by Aztech Technologies as part of the *Phase I Environmental Site Assessment*. At one time, the Site was split into several parcels and, from at least 1949 through at least 1952, a trailer park with individually-owned lots and numerous owners was located on the southwestern portion of the Site. Residential development appears on historical topographic maps as early as 1894, and in historic photographs as early as 1939, but was no longer present in the 2011 photograph, indicating that these uses had been removed between 2009 and 2011. Aztech's review of assessor information also indicated that there was an "ice house" owned by the Plattsburgh Ice Company located on the Site. The building also included a blacksmith shop and had been constructed by 1905 but was reportedly down by 1953. The exact location of this former building is unknown. Historic topographic maps identified the site as a municipal beach as early as 1943, and the 1943 map also identified a Civilian Conservation Corps Camp. In addition, Aztech found that there were property cards for "camp" buildings and associated lots in municipal records from 1989 through 1952. These listings include the Beach House. The property was donated to the City of Plattsburgh sometime prior to the construction of the Crete Center in 1972. City directories listed the Site as "The Beach Club" in 1992 and 1995, with Can Am Go Karts also listed in 1995; as Can Am Go Karts and residential in 1999; and as The Beach Club in 2013.

Land uses immediately adjacent to the Site include residential to the west, commercial and vacant land to the west and north along Route 9, commercial and parkland to the north, and parkland to the east. Willow Beach Townhouses are located directly west of the Site along the eastern bank of Scotion Creek. Cumberland Bay State Park is located on the north side of Route 314 and immediately to the east of the Site. The portion of the park located on the north side of Route 314 is undeveloped and consists of mostly wetlands, including Woodruff Pond. The portion of Cumberland Bay State Park to the east of the Site consists of picnic areas, a swimming beach, campground, bath house, and associated amenities.

Recreation opportunities surrounding the Site include Cumberland Bay State Park immediately east of the Site. The Heritage Trail network extends south along Route 9 to the City center and north and west onto Route 314, connecting to additional City trails, such as the Healthy Lung Trail and the Riverwalk Park near the McDonough Monument.

Surrounding land uses consist of residential (townhomes and apartment buildings) and commercial development to the west and north along Route 9. An industrial development, the Georgia Pacific paper mill, is located approximately 0.5 miles south of the Site along Route 9. Development to the north of the Site along Route 9 is primarily commercial, including motels, a



strip mall, restaurants, and offices. Additionally, an RV park and residential development are located along Route 9 north of the Site. Agricultural land is located further north on the west side of Interstate 87. Vacant land consisting of mostly wetlands and Scotion Creek is located west of the site. Surrounding lands east of the Cumberland Bay State Park include residential and vacant land on the peninsula of Cumberland Head.



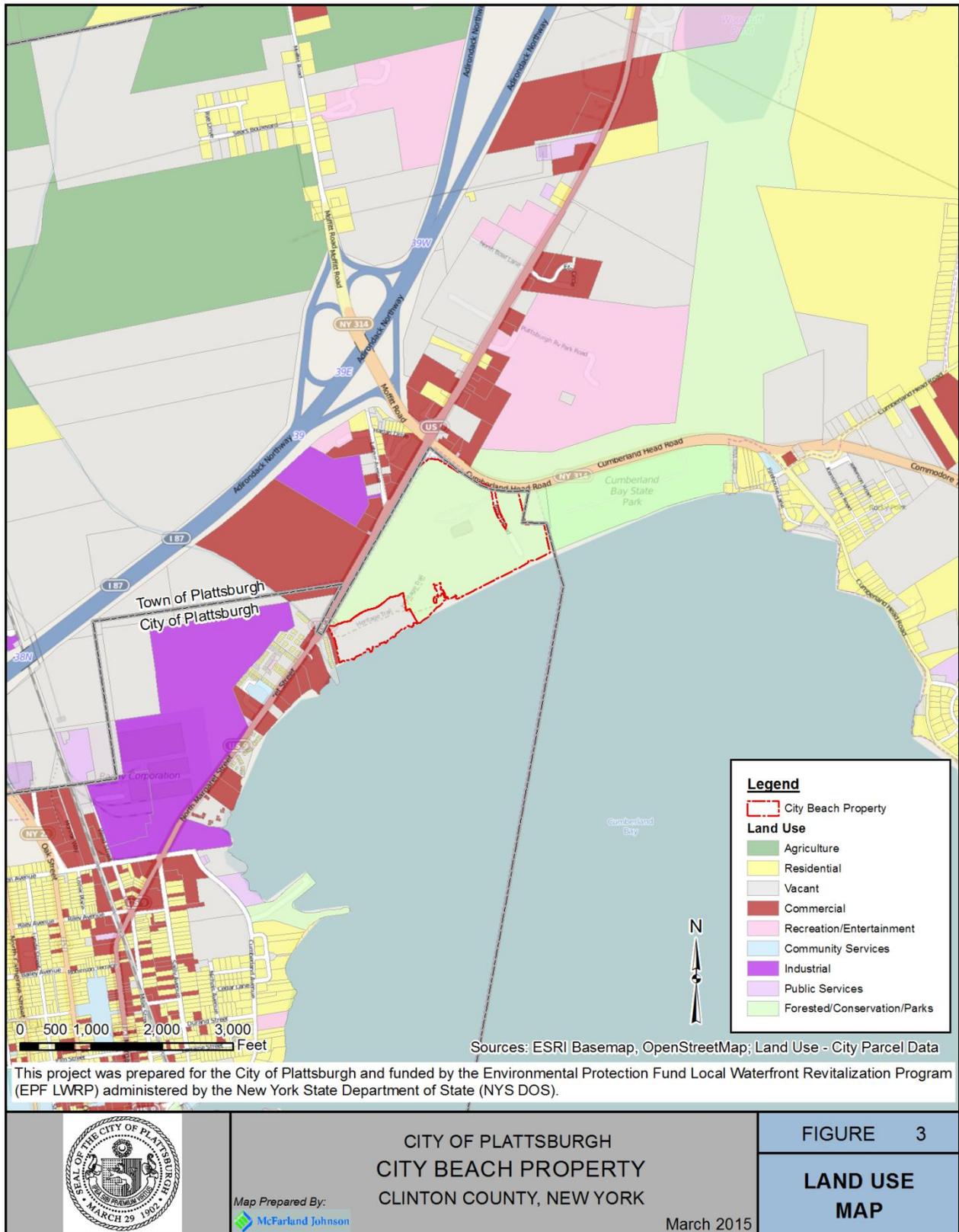


Table 1. Buildings and Facilities

Building Description	Use	Photograph
Crete Center Building	Multi-use facility (sporting events, trade shows, live entertainment)	
Storage Building	Storage for recreational equipment	
Garage Storage Building	Storage for property maintenance equipment, beach grooming tractor, and old Crete Center equipment	
Bath House (Original)	Restrooms and showers (currently closed)	

Table 1. Buildings and Facilities (Cont'd)

Building Description	Use	Photograph
Bath House (New)	Restrooms and showers	
Concession Building	Retail, snack bars, kayak rentals, life guard patrol	
Pavilion	Multi-purpose area	
Booth	Parking cashier booth	

3.2. WATER USES

Water-dependent uses are uses which can only be conducted on, in, over, or adjacent to the water because such activity requires direct access to that waterbody and involves, as an integral part of such activity, the use of the water.

As stated earlier, Cumberland Bay is regularly used for recreational boating. However, the Site itself lacks appropriate access for most watercraft. There are no formal docking facilities or launches on the Site, and watercraft currently moor off-shore.

Water-dependent uses on the Site consist of kayaking, windsurfing, kitesurfing, fishing, swimming, and recreational boating, including kayaking and paddleboarding. A strong south wind in the Cumberland Bay area makes it a popular location for windsurfing and kitesurfing. According to the 2106 Preliminary Local Waterfront Revitalization Program, the Lake Champlain Basin Program confirms that the Plattsburgh area is one of the more heavily used boating areas of the Lake. Boats frequently moor off of the City Beach and smaller watercraft beach onto the shore. A handicapped fishing pier and boat launch is located at the McDonough Monument, which is approximately 2 miles south of the Site. In addition, a State-owned boat launch and dock operated and maintained by the City of Plattsburgh are located on Dock Street.



4. EXISTING ZONING AND OTHER LOCAL DEVELOPMENT CONTROLSThe City of Plattsburgh has a number of local laws and regulations which pertain to land use and development activities, including zoning, code, floodplain regulations, and subdivision and environmental review procedures.

4.1. CITY OF PLATTSBURGH CODE AND ZONING

The City of Plattsburgh Zoning Ordinance has been in effect since 1981, with revisions in 1983, 1988, and 2001. The Site is zoned as Recreation and Related Uses (RC) and is within the Waterfront Overlay District. Zoning surrounding the Site consists of RC to the west and south along Route 9, except for the large Industrial-zoned parcel owned by Georgia Pacific. Zoning within the Town of Plattsburgh consists of Land Conservation District to the east and west, Shopping Center Commercial District and Service Center District to the north. Zoning, including the existing Waterfront Overlay District, is illustrated on **Figure 4**.

According to the Zoning Ordinance, the RC classification includes a variety of permitted uses, including multi-family residences, townhouse residences, hotels and motels, eating and drinking establishments, indoor and outdoor commercial recreation, public recreation and related facilities, retail businesses and commercial uses commonly associated with recreation-related and tourist areas, and personal and business services establishments.

The Waterfront Overlay District was first proposed in the 1999 City of Plattsburgh Comprehensive Plan to encourage development or re-development of land between public streets and Lake Champlain while preserving public views to the water and while minimizing restrictions on property owners areas. The proposed district included the following:

“Beginning at the intersection of the City Line and Route 314; then east along Route 314 to its intersection with New York State Route 9 (Margaret Street); then southwest along NYS Route 9 to its intersection with Cumberland Avenue; then east and south along Cumberland Avenue to the pedestrian bridge. Across the bridge to the railroad tracks, thence following the Saranac River side of the railroad tracks, encompassing all City owned property east of the tracks to include the CP Rail Yards, crossing Dock Street from Trackside to the intersection of Jay and Bridge Streets. Then continuing on the east side of Jay Street to where it intersects with Hamilton Street. Thence following the Plattsburgh AFB boundary fence line south along the train tracks to the southernmost boundary of the City, east along that boundary to Lake Champlain, thence northerly following the city’s eastern line to the northernmost boundaries of the Municipal Beach to the point of origin (omitting all R-1 zoned areas).”

The 2001 City Zoning update included a map for the Waterfront District which began at the northern city line, and included only lands adjoining the Lake Champlain waterfront that fell east of North Margaret Street, to Cumberland Avenue, then east of Cumberland Avenue to the



railroad tracks, then east of the railroad tracks to the southern city line. A bulk table was also included in the 2001 update, but no regulatory text was adopted.

The 2016 City of Plattsburgh Preliminary Draft Local Waterfront Revitalization Program proposed an expanded Waterfront Overlay District, coterminous with the proposed Waterfront Revitalization Area, the boundaries of which are as follows:

“Beginning at the intersection of the City Line and NYS Route 314, then west on NYS Route 314 to its intersection with NYS Route 9 (N Margaret Street), then southwest along NYS Route 9 to Scotion Creek, including parcel 193.21-1-1; along Scotion Creek and westward along the City Line to its corner, and southward along the City Line until it reaches parcel 207.8-1-18.1; then following the parcel boundary to Boynton Avenue; then eastward along Boynton Avenue to its intersection with Saily Avenue; then south along Saily Avenue to its intersection with Cumberland Avenue; then west on Cumberland Avenue to its intersection with City Hall Place; then northwest on Miller Street to its intersection with Cornelia Street; then west on Cornelia Street to its intersection with Oak Street; then south on Oak Street to its intersection with Broad Street; then east along Broad Street to its intersection with Pine Street; then following Pine Street along the meanders of the Saranac River to its intersection with South Catherine Street; then following Steltzer Road to the SUNY Plattsburgh campus, following the edge of campus north to Broad Street; then west along Broad Street to Rugar Street; the southwest on Rugar Street to its intersection with Adirondack Lane, then south on Adirondack lane to the stream crossing; the west along the stream banks to the SUNY Plattsburgh road; then north along the SUNY Plattsburgh road toward Bowman Street, continuing to the western intersection of the SUNY Plattsburgh Road and Rugar Street; then West on Rugar Street to the City Line; the south along the City Line to the southern bank of the Saranac, then following the City Line to its intersection with Route 22; then east on Route 22 to Arizona Avenue; then northwest to the eastern side of the railroad tracks; then following the railroad tracks north to Main Mill Street; then east along Main Mill Street toward the intersection with Hilltop Way; then north to Underwood Avenue; then east along Underwood Avenue to the eastern edge of the River Heights Homes community; then east to connect with Riverside Avenue; then north along Riverside Avenue to North Street and continuing east on North Street to Waterhouse Street; then north on Waterhouse Street to Hartwell Street; then east on Hartwell Street to Route 22; then crossing Route 22 to follow South Platt Street to the east to its intersection with NYS Route 9 (Peru Street/U.S. Avenue); then south along Route 9 to the southern city line, then following the city line east to the waters of Lake Champlain, then northerly following the city’s eastern line to the northernmost boundaries of the Municipal Beach, to the point of beginning.”



Additionally, the 2016 Draft LWRP states the following in regard to the Waterfront District: *the zoning regulations of the underlying zoning district shall apply to all land within the Waterfront District, except as modified, or permitted to be modified, by the Waterfront District zoning regulations.* The City Code currently states that all new construction and additions require Planning Board approval of a site plan – this would apply to areas within the Waterfront District as well.

4.2. FLOOD ZONE DEVELOPMENT

The City of Plattsburgh participates in the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) and has adopted a Flood Damage Prevention Law. The law institutes limits on the development allowed in 100-year floodplains (the area inundated by a storm that has a 1% chance of happening in any year). The 100-year floodplain extends onto the Site and is discussed further in Section 5.4.

A Flood Development Permit is required for all construction or other development within special flood hazard areas. The Flood Damage Prevention Law requires all new structures be constructed two feet above the adjacent water surface elevation of the 100-year floodplain. The law also requires subdivision proposals to be consistent with the need to minimize flood damage. Additionally, development along Lake Champlain within the City of Plattsburgh must involve the submittal of a Flood Study to the City showing the 100-year floodplain and water surface elevation, based on both current land use and future land use assumptions.

4.3. SUBDIVISION AND ENVIRONMENTAL QUALITY REVIEW

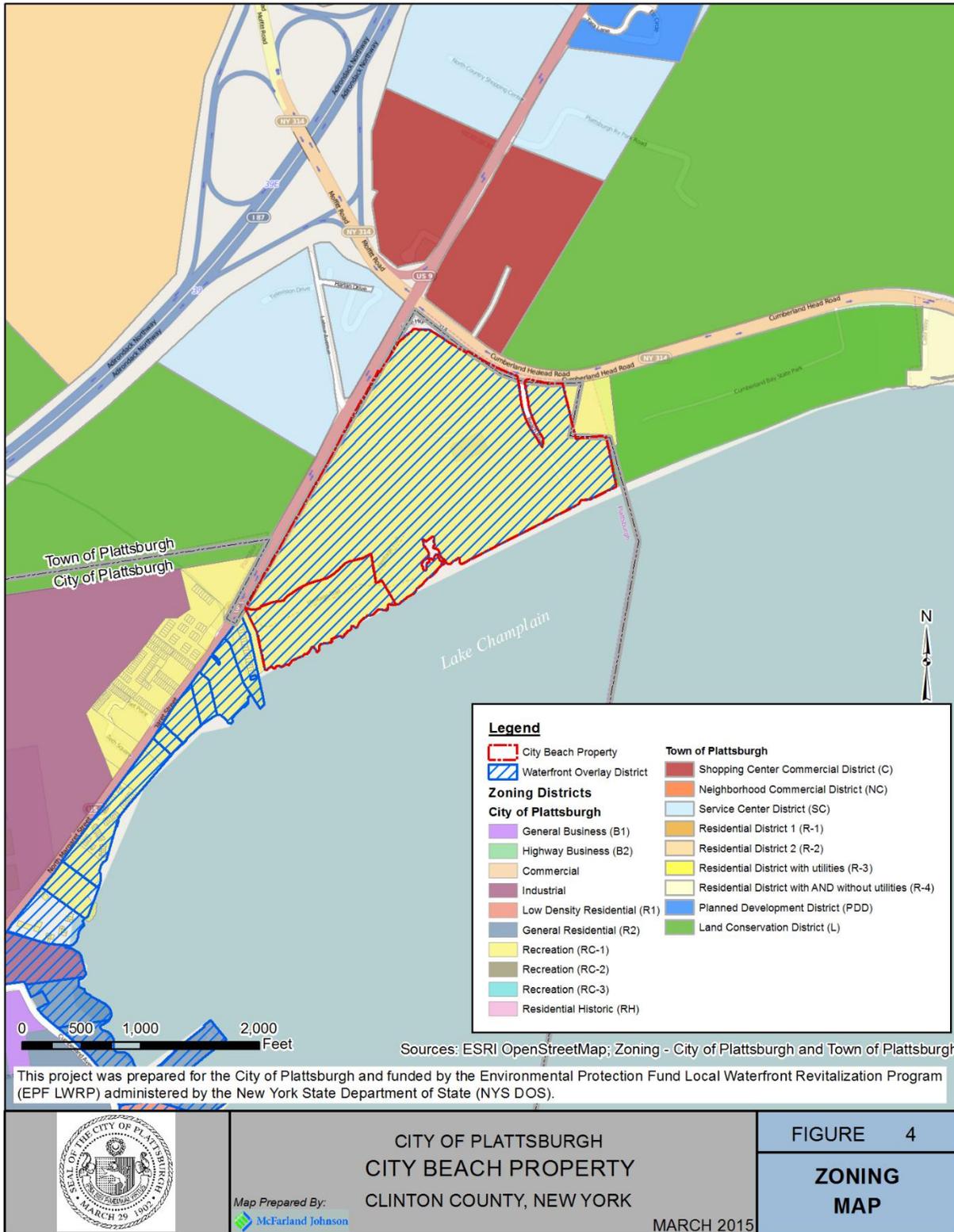
Additionally, the City has a Subdivision Local Law for the review of site plans and building permit approvals and an Environmental Quality Review code, which authorizes the City Planning Board to review a proposed action and determine whether it will or will not have a significant effect on the environment.

4.4. COASTAL MANAGEMENT

The Site is located within the Local Waterfront Revitalization Area proposed by the City of Plattsburgh in their 2016 Preliminary Draft Local Waterfront Revitalization Program (LWRP). The LWRP is implemented through policies, projects, and actions, including a proposed City of Plattsburgh Waterfront Consistency Law. Consistency review is the decision-making process through which proposed actions and activities are determined to be consistent or inconsistent with the coastal policies of the New York State Coastal Management Program or approved LWRPs. Once the City adopts the LWRP and it is approved by the NYS Secretary of State, certain activities at the Site may be subject to review under the Waterfront Consistency Law. This review consists of completion of a Waterfront Assessment Form (WAF) and determination by the designated local board whether there are effects on waterfront policies as outlined in the LWRP.







5. NATURAL RESOURCES

Natural resources within and surrounding the Site can pose critical development limitations that could create impracticalities resulting from the associated costs of land preparation, improvements, and/or construction. The review and evaluation of natural resources can highlight site constraints and critical and unique areas that would be better suited for restoration and/or conserved as natural features and/or open space. **5.1. TOPOGRAPHY**

In general, the terrain on and surrounding the Site gently slopes toward the Lake Champlain. However, the Site has varying topography with steep slopes associated with the landward side of the beach and sand dune area and low-lying wet areas along Route 9.

More specifically, the developed portion of the Site is relatively flat. The southern portion adjacent to the lake is relatively flat and steeply rises four to eight feet, mostly due to erosion, along the landward side of the beach. The wooded western portion of the Site is relatively flat with low-lying wetland areas. The wooded western terrain has been disturbed in the past by landfilling activities. The easternmost portion of the Site is slightly higher than the surrounding area and gently slopes to the north.



Steep eroded sandy slope on landward side of beach.

Naturally occurring sand dunes occur along the beach and are concentrated between the new bath house and the pavilion. Heights of the sand dunes vary from 6 to 15 feet. The sand dunes are a geologic feature unique to the Site and are discussed further in Sections 5.2 and 5.11.

Previous development, including the former city dump area, has impacted the Site topography over the years. According to the Boundary Survey Map, the lowest elevation is 95 feet above mean sea level (AMSL) along the beach and the highest is 116 feet AMSL within the sand dune area northeast of the pavilion.

5.2. SOIL CHARACTERISTICS

Currently, the eastern portion of the Site is developed and consists of buildings, large areas of pavement, concrete, manicured lawn, and landscaping. Additionally, a paved pedestrian path extends across the Site from the Crete Center west to Route 9. According to the USDA NRCS Web Soil Survey, the Site consists of four soil types. Almost half of the Site is made up of Udorthents, smoothed (Ug), which are typically deep, sandy and moderately well-drained. Urban land (Un) makes up approximately 25% of the Site, approximately 20% of the Site is made up of Udorthents, wet substratum (generally filled areas that were previously tidal marshes, river flood plains, bays, harbors, or swamps) and the remaining 10% is made up of Grattan loamy sand (GrB) which are

generally very deep, excessively drained soils. The Site and surrounding area are made up of mostly lacustrine sands and silts overlying dense glacial till.

According to the Web Soil Survey, GrB soil suitability is somewhat limited for camp areas, picnic areas, playgrounds, paths and trails due to the content of sand. However, onsite investigation of the soils would be needed to confirm soil suitability. Site soil characteristics are further described in **Table 2** below and soils on the Site are illustrated on **Figure 5**. See the attached Custom Soil Resource Report (**Appendix A**) for additional information on Site soils.

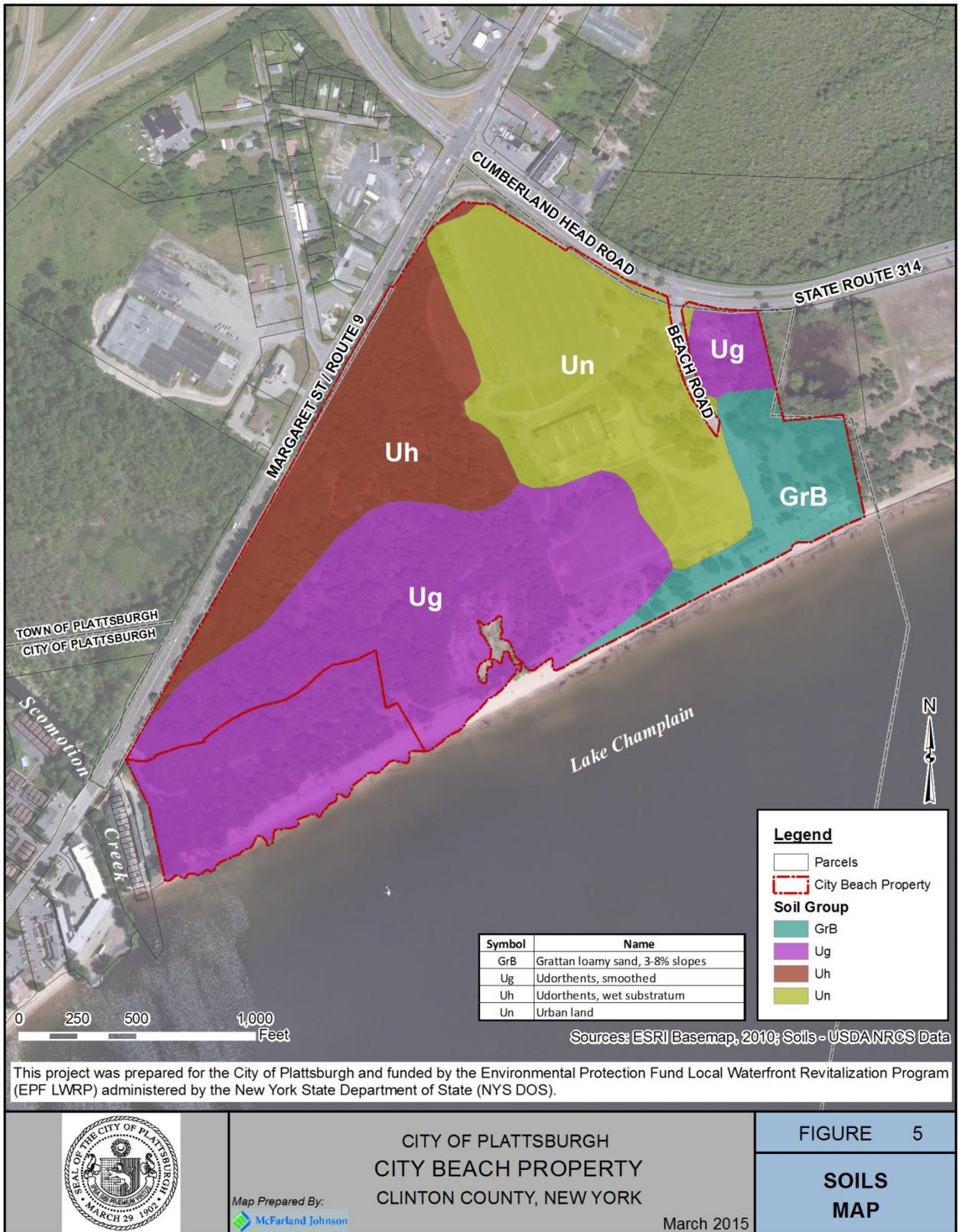
Table 2. Soil Characteristics

Symbol	Name	Hydrologic Soil Group	Drainage Class	Depth to Water Table	Slope
GrB	Grattan loamy sand, 3-8% slopes	A	Excessively Drained	> 80 inches	3-8%
Ug	Udorthents, smoothed	A	Well Drained	36-72 inches	0-15%
Uh	Udorthents, wet substratum	B	Somewhat Poorly Drained	12-36 inches	0-8%
Un	Urban land	N/A	N/A	N/A	N/A

The naturally occurring sand dunes are a unique geologic feature to the Site and Lake Champlain. The dunes are remnant of a larger dune system that extended to the north and east, which is now partially forested and developed. The sand dunes come from a layer of glacial till-- soil that was left atop bluffs when the last glacier melted. The bluffs eroded over thousands of years, and the soil was carried off by lake currents. Currents washed eroded sands into the base of some bays, including Cumberland Bay. In the late summer and fall, when lake levels are the lowest, prevailing southerly winds blow sand into cliffs and hills.



Sand dunes viewed from the north, looking south toward the lake.



5.3. SURFACE WATER

The Site is located on the western bank of the widest section of Lake Champlain. Lake Champlain, the sixth largest unregulated lake in the United States, is 120 miles long from its southernmost point in Whitehall, NY to its northernmost point in Richelieu River in Quebec, where it empties into the St. Lawrence River and, ultimately, the Atlantic Ocean. The lake has 435 square miles of surface area, more than 70 islands, and 587 miles of shoreline and is also part of the New York State Barge Canal System.

Near the Site, Lake Champlain has a B classification from the New York State Department of Environmental Conservation (NYSDEC). Class B waters are best used for primary and secondary contact recreation and fishing and are suitable for fish, shellfish, and wildlife propagation and survival.

The water level of Lake Champlain typically varies seasonally from 95 to 101 feet (29 to 30 m) above mean sea level. The year 2011 brought the highest lake levels in recorded history at 103.57 feet above sea level after exceptionally heavy late snowfalls and heavy spring rains.

The Scotion Creek historically flowed across the western portion of the Site. Today the creek flows through a large wetland habitat north of the City boundary and empties into Lake Champlain west of the Site. This wetland helps to slow movement of sediment and water-borne nutrients from rural runoff, acting as a natural filter that helps to mitigate negative impacts on Lake Champlain water quality. The creek is regulated by the NYSDEC as a Class C waterway. Class C waters are best used for fishing and are suitable for fish, shellfish, and wildlife propagation and survival. The water quality may be suitable for primary and secondary contact recreation.

Stormwater runoff on the eastern portion of the Site sheet flows into a series of catch basins and drainage swales. The stormwater management system directs stormwater towards Lake Champlain where it discharges via two outfalls located on the beach near the new bath house and the concessions building. Stormwater on the western portion of the Site appears to pond within wetland areas onsite and ultimately infiltrates into the ground.

The quality of water discharging into the lake via the beach outfalls is unknown. However, impacts to water quality may result from stormwater runoff onsite.

5.4. FLOODING AND EROSION

One of the most significant natural characteristics of the Site is a strong susceptibility to flooding. The Site's location on Lake Champlain and the large wetland complexes to the north make the Site prone to flooding. As stated earlier, the City participates in the FEMA NFIP and provisions have been incorporated into the City's Zoning Law for the flood hazard zone. FEMA, who designates special flood hazard areas, is an agency whose primary purpose is coordinating the



response to a disaster that has occurred which overwhelms the resources of local and state authorities.

There are three Flood Insurance Rate Maps that cover the entire Site. The Clinton County FIRM Map numbers are 36019C0605D, 36019C0604D and 36019C0610D and are all dated September 28, 2007. Flood zones along Lake Champlain, including the 100-year flood zone, extend onto the Site (as shown on **Figure 6**). As stated in Section 4, the local floodplain regulations would apply to development of the Site.

The 100-year flood elevation of 102 feet extends onto the Site between the concessions building and new bath house, north to the Crete Center and most of the wooded western portion of the Site. The high lake levels in 2011 flooded a majority of the Site. According to City officials and aerial imagery, floodwaters overtopped the beach near the new bath house and concessions building and flooded the beach parking area and western wooded area.

The Site soils are slightly to moderately erodible. Erosion is visible along the landward side of the beach (see photograph on Page 5). Significant areas have eroded from high lake levels and strong high waves. Additionally, strong winds blow sand from the beach and dunes across the southeastern portion of the Site.

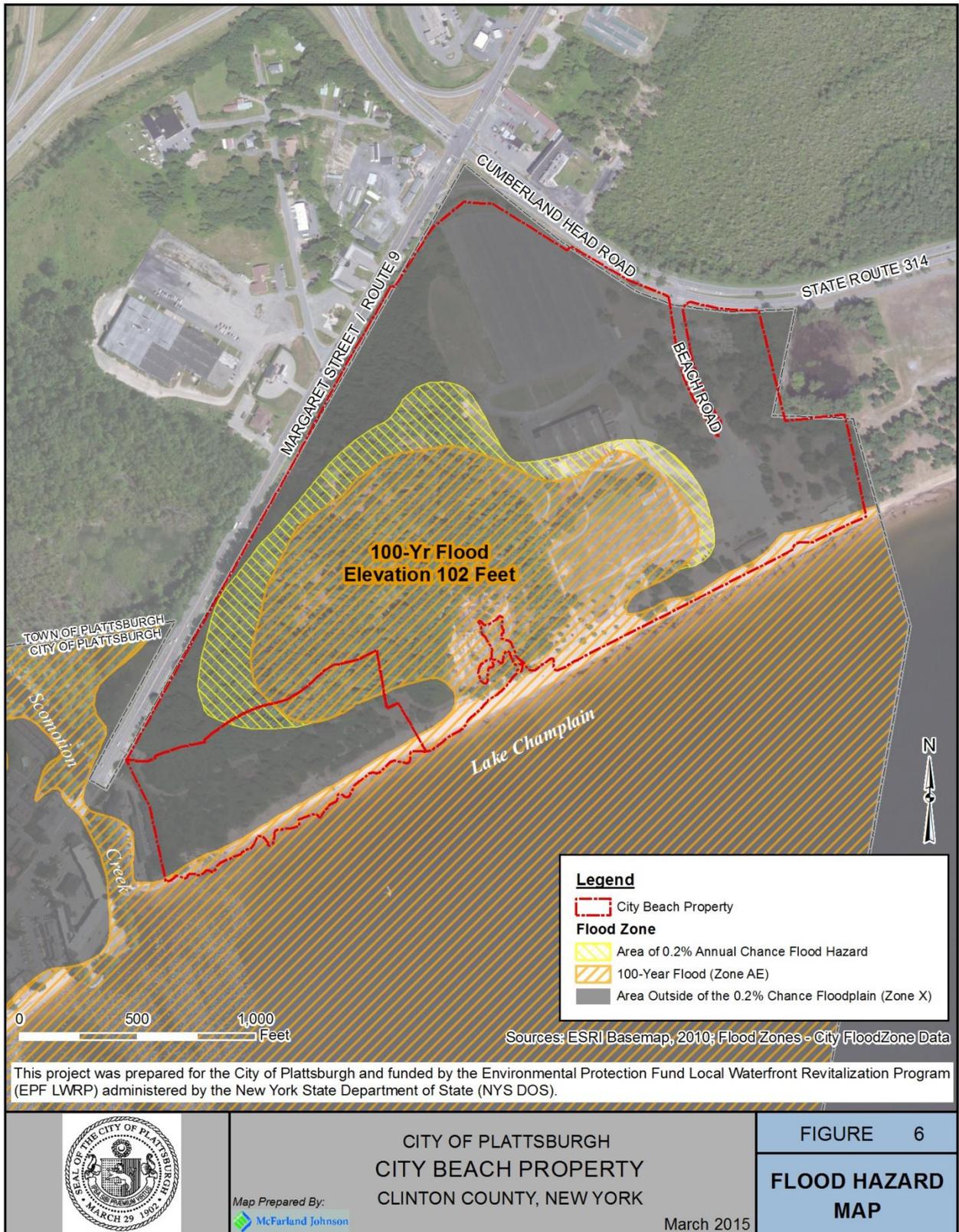


Erodible sandy soils near the walkway from the beach to Crete

5.5. GROUNDWATER

The Site does not rest over an U.S. Environmental Protection Agency (EPA) designated Sole Source Aquifer, or NYSDEC designated Primary or Principal Aquifer. An unconfined aquifer is located south of the mouth of the Saranac River.

Groundwater elevations and flow patterns on the Site are unknown. However, based on the topography, it is assumed that groundwater flows in a southerly direction toward Lake Champlain. Groundwater quality is unknown, but there is potential for groundwater contamination resulting from past landfilling activities.



5.6. WETLANDS

State and federal wetlands maps were reviewed for the presence of wetlands on and in the vicinity of the Site. State and federal mapped wetlands are shown on **Figure 7**. State and federal mapped wetlands and flood zones are shown on **Figure 8**.

The federal National Wetland Inventory (NWI) map indicates potential wetland areas that were identified by the USFWS using aerial photography. These maps do not have any regulatory consequence, but rather indicate areas that may meet federal wetland criteria. Review of the NWI map of the Site indicated the potential presence of wetlands or waterways both within the Site and in the vicinity.

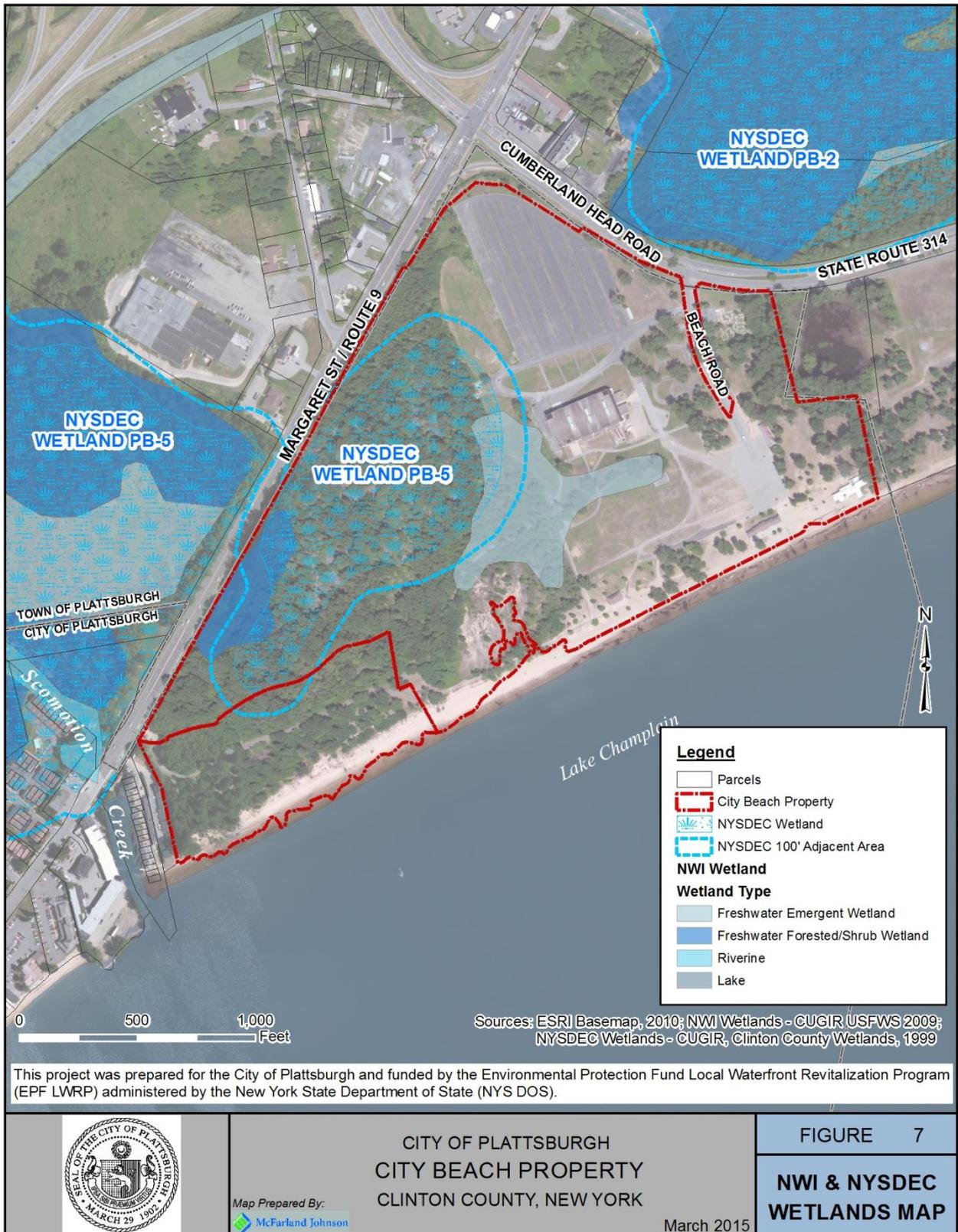
Two NWI wetlands are mapped onsite, a palustrine emergent (PEM) wetland adjacent to the Civic Center and a palustrine forested-shrub (PFO) wetland along the western property line adjacent to Route 9. Beyond the Site to the west and northeast, there are large wetland complexes containing forested, scrub shrub, and emergent wetland areas.

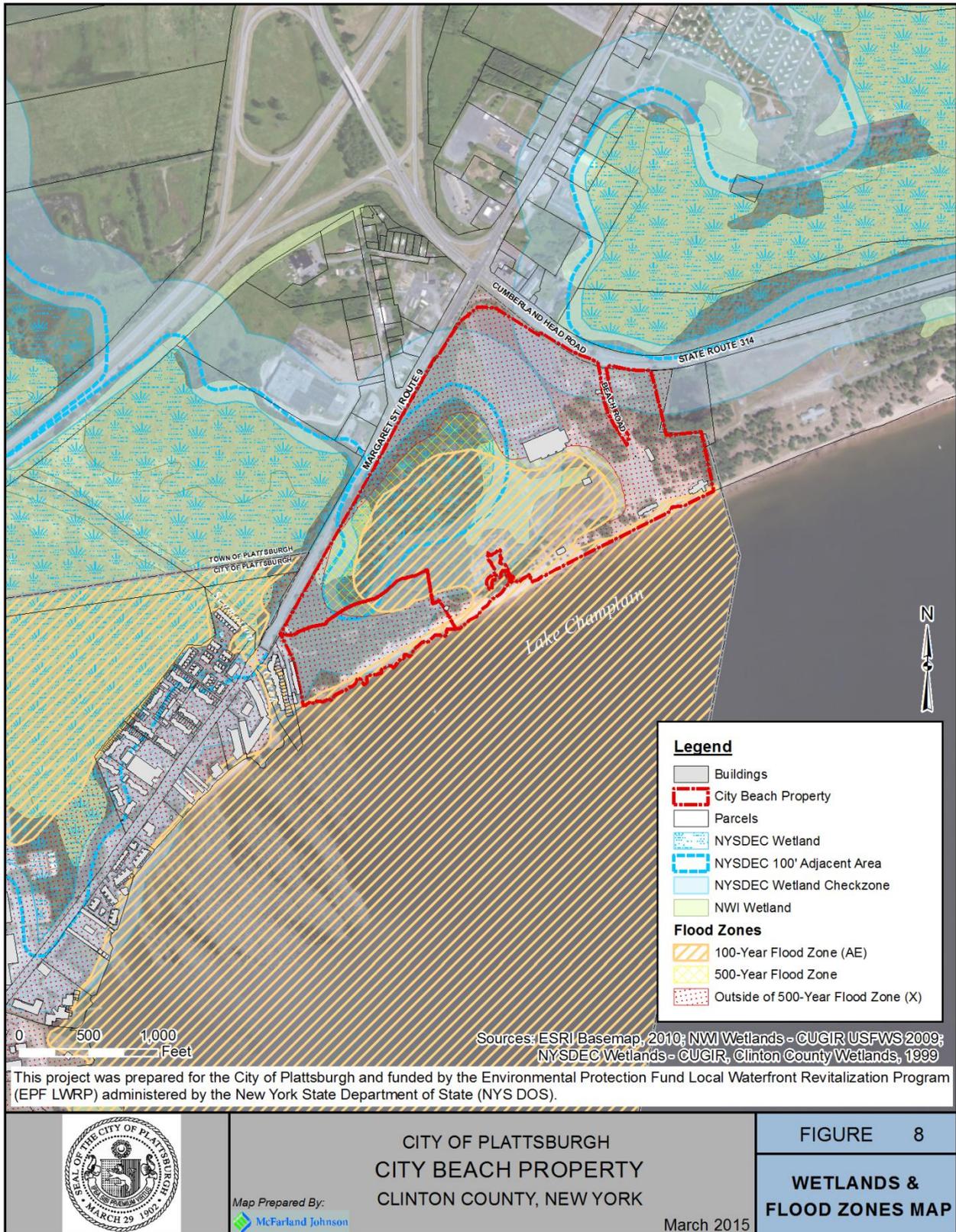
Review of the NYSDEC Freshwater Wetlands Map indicated that NYSDEC Freshwater Wetlands are mapped on and in the vicinity of the Site. NYSDEC Wetland PB-5 and its 100-foot adjacent area cover a large portion of the western forested area onsite.

The NYSDEC regulates certain wetlands within New York State under the Article 24 of the Environmental Conservation Law, often referred to as the “Freshwater Wetlands Act.” The NYSDEC regulates those wetlands within the State that are larger than 12.4 acres (5 hectares) in size, and certain smaller wetlands of unusual local importance. The NYSDEC also regulates a 100-foot “Adjacent Area” to provide a buffer for the wetland. The United States Army Corps of Engineers (USACE) regulates activities in wetlands that have a significant nexus to traditional navigable waters (TNWs) under Section 404 of the Clean Water Act (CWA). The USACE requires that an area have hydrophytic vegetation, hydric soils, and wetland hydrology present in order to be considered a wetland.

Based on the site reconnaissance, wetland areas appear to be located in the general vicinity of the NYSDEC and NWI mapped wetlands. However, it is recommended that a formal wetland delineation be performed by a qualified professional prior to any further development of the Site.







5.7. NAVIGATION AND DREDGING

The Site is situated on the Cumberland Head Bay of Lake Champlain. The lake, including Cumberland Bay, is typically used for recreational navigation. According to the USGS quadrangle, the shoreline along lake adjacent to the Site is a gently sloping sandy beach with water depths of 4 to 6 feet at approximately 500 feet out, as shown on **Figure 1. Site Location Map**. Dredging activities in the vicinity of the Site are unknown.

5.8. FISH, WILDLIFE AND PLANTS

The presence of potential wildlife, mature trees, and other significant vegetation and wildlife habitat was evaluated during the site reconnaissance. The Site does not contain any significant coastal fish and wildlife habitats as identified by the NYSDOS Division of Coastal Resources. Potential wildlife consists of typical urban wildlife, including typical backyard birds.

The Champlain Valley is used by an abundant number and variety of birds both year-round and during migration. Cumberland Bay is a great spot for bird watchers. Songbirds and hawks likely utilize the Site. Waterfowl, including ducks, grebes, loons, mergansers, and geese are present in large numbers on Lake Champlain.

The wooded portions of the Site, predominantly the west, consist of an oak-hickory forest with a dense understory interspersed throughout. According to the New York Natural Heritage Program (NYNHP), oak-hickory forests occur in the Lake Champlain valley. Mature white pines are mixed with the oaks and hickories on the easternmost portion of the Site. As stated in Section 5.6, wetland areas are scattered throughout the forested area on the western portion of the Site. The northern end of the City of Plattsburgh contains habitat, perhaps within the wetland areas, that may support one or more of the rare plants that occur in the vicinity. Areas for proposed action must be surveyed for endangered or threatened plants before undertaking development. Presence of rare or endangered plants precludes development where they occur.

Lake Champlain supports abundant and diverse warm water fish populations. According to the LWRP, the predominant species in the Cumberland Bay area are Lake Trout, Steelhead Trout, Landlocked (Atlantic) Salmon, Smelt, Walleye, Largemouth Bass, Smallmouth Bass, Northern Pike, Chain Pickerel, Muskellunge, and Yellow Perch.

5.9. FEDERAL & STATE LISTED THREATENED AND ENDANGERED SPECIES

The Endangered Species Act (ESA) directs all agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the ESA. Section 7 of the ESA, titled "Interagency Cooperation," is the mechanism by which federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. Endangered species are those which are in danger of extinction throughout their range or a significant portion of their range. Threatened species are those which are likely



to become endangered within the foreseeable future throughout all or a significant portion of their range. Candidate species are species which the U.S. Fish & Wildlife Service (USFWS) has sufficient information on the biological vulnerability of and threats to in order to support issuance of a proposal list, but issuance of a proposed rule is currently precluded by higher priority listing actions. Candidate species do not receive substantive or procedural protection under the ESA. However, USFWS does encourage federal agencies and other appropriate parties to consider these species in the planning process.

New York State Regulation 6 NYCRR Part 182 prohibits the Take or engagement in any activity that is likely to result in a Take of any State-listed threatened or endangered species. In accordance with Part 182, 'Take' or 'Taking' means the pursuing, shooting, hunting, killing, capturing, trapping, snaring and netting of any species listed as endangered or threatened, and all lesser acts such as disturbing, harrying or worrying. Species listed as *endangered* in New York are native species in imminent danger of extirpation or extinction in New York, or are species listed as endangered by the U.S. Department of the Interior. Species listed as *threatened* in New York are native species that are likely to become endangered species within the foreseeable future in New York. Species listed as *species of special concern* are native species that are at risk of becoming threatened in New York. Fauna classified as species of special concern do not qualify as either endangered or threatened, but have been determined by the New York State Department of Environmental Conservation (NYSDEC) to require some measure of protection to ensure that the species does not become threatened in the future. Species of special concern are considered "protected wildlife" under Article 11 of the Environmental Conservation Law (ECL).

Consultations with the NYSDEC and the USFWS were initiated to determine the existence of any recorded observations of federal or state listed threatened or endangered flora or fauna on or in the vicinity of the Site.

A response from the NYSDEC dated April 9, 2015 in regard to rare plants, rare animals, and significant natural communities, at or in the immediate vicinity of the project includes the following: common loon (*Gavia immer*) listed as Special Concern; Great Lakes dunes listed as a Rare Community Type; and Champlain beachgrass (*Ammophila breviligulata ssp. Champlainensis*) listed as Endangered and Critically Imperiled in NYS and Globally Rare. The NYSDEC response letter dated April 9, 2015 is included in **Appendix B**. According to the NYSDEC, loons were observed on Lake Champlain in 1994, however, they are still listed as Special Concern for issues related to breeding. The Site contains a small remnant of open dunes backed by woods and thickets. The dunes are typically dry to slightly moist. According to NYSDEC, the Site contains a very small, disturbed, somewhat protected remnant of larger occurrence with good representation of Champlain beachgrass and one core area in good condition.

A review of the USFWS Information, Planning and Consultation (IPaC) system was conducted on January 7, 2015. The USFWS database indicated the potential presence of Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) within the vicinity of the Site. The



Indiana bat is currently federally listed as endangered, while the northern long-eared bat is proposed to be federally listed as endangered. The USFWS has listed the northern long-eared bat as threatened and issued an Interim 4(s) rule on April 2, 2015, which went into effect on May 4, 2015. The Official Species List from the USFWS is included in **Appendix B**.

The site reconnaissance did not include a survey of the forested areas for suitable foraging and roosting habitat for bats. If future development is proposed, a field survey is recommended to determine bat habitat and potential impacts. Typically, the following conservation measures are recommended to avoid direct effects to bat populations:

1. Tree clearing must be conducted between October 31 and March 31;
2. Orange flagging or fencing will be used to mark trees to be protected during construction;
3. Suitable roosting trees will be retained to the maximum extent practicable for future use by bats;
4. No artificial dyes, coloring, insecticide, algacide, and/or herbicide will be used on the ground for long-term maintenance of the property; and
5. The use of lights will be limited and, if possible, include shields to direct the light downward.

The IPaC database also provided a list of 13 migratory bird species of concern for the project area. The bird species included, but are not limited to, the following: American Bittern, Bald Eagle, Peregrine Falcon, and Canada Warbler. The migratory bird species are protected by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). To meet conservation obligations of the MBTA and BGEPA, potential or existing project impacts to migratory birds and their habitat should be identified. If development or re-development were proposed at the Site, further consultation with the USFWS would be required and agency review of potential impacts of any proposed projects at the Site would be necessary. As such, conservation measures that avoid, minimize, or compensate potential impacts would be implemented.



6. COMMUNITY RESOURCES

Community resources on and within the vicinity of the Site include scenic viewpoints, historic and cultural resources, and parks and recreational amenities.

6.1. SCENIC RESOURCES AND VIEW CORRIDORS

In general, the City of Plattsburgh is situated on Lake Champlain such that it has prominent views of the lake, the Adirondack Mountains of New York, and the Green Mountains of Vermont. The City's Draft LWRP aims to identify and protect the view corridors. Lake Champlain, the Adirondacks, the Green Mountains, and the City of Plattsburgh can be seen from the City Beach. The City Beach is a valuable scenic resource for its views to and from the Site, shown in **Figure 9**, and the natural sand dunes and open space on the eastern portion of the Site. The City Beach also provides excellent views back to downtown Plattsburgh. The City Beach-Crete Center area

is not, however, located within a Scenic Area of Statewide Significance.



View of Lake Champlain with downtown Plattsburgh in the background.



View of Lake Champlain and Cumberland Head, with Vermont and the Green Mountains in the background.



	CITY OF PLATTSBURGH CITY BEACH PROPERTY CLINTON COUNTY, NEW YORK	FIGURE 9
		SCENIC VIEWS MAP
Map Prepared By: SARATOGA ASSOCIATES	MARCH 2015	

6.2. HISTORIC AND CULTURAL RESOURCES

The National Historic Preservation Act (NHPA) Section 106 requires that agencies consider the effects of their actions on historic properties via consultation with the State Historic Preservation Office (SHPO). According to 36 CFR Part 800, an historic property is “any prehistoric or historic district, site, building, structure, or object included in, or eligible for, inclusion in the National Register of Historic Places (NRHP).” The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) is responsible for maintaining historical, archaeological, and cultural resources sites throughout the state.

The terms archeological and historic resources are also often referred to as cultural resources. These resources may be located above ground, underground, or underwater, and have significance in the history, pre-history, architecture, or culture of the nation, the State, or local or tribal communities. Examples include:

- buildings (houses, barns, factories, churches, hotels, etc.);
- structures (dams, bridges, canals, aqueducts, lighthouses, etc.);
- districts (group of buildings or structures that have a common basis in history or architecture);
- sites (battlefields, historic forts, prehistoric encampments, shipwrecks, etc.);
- objects (ships, etc.); and
- areas (gorges, parks, etc.).



Commemorative marker.

Lake Champlain and Plattsburgh are well-rooted in the history of New York State, and the Plattsburgh area was the setting for battles during the Revolutionary War and the War of 1812. A commemorative marker for soldiers from the War of 1812 is located north of the old bath house. Additionally, the area is well-known for its Native American history. A Heritage Trail sign on the Site notes that Native American archaeological finds in the area include arrow points, stone axes, scrapers, fire stones, pottery, and human skeletons.

A submission to the New York State Cultural Resource Information System (CRIS) (<https://cris.parks.ny.gov>) was made on January 7, 2015 to review the project and determine whether there are any culturally or archeologically sensitive areas on the Site. The project was subject to two types of review, Survey and Evaluation as well as Archaeology. Both reviews indicated that further consultation would be required if development or re-development of the Site is proposed. The response from OPRHP specified that there are potential archaeological concerns because of known historic and pre-contact Native American archaeological resources in the region.

7. TOURISM & TOURISM SUPPORT FACILITIES

Within the City of Plattsburgh, the shoreline of Lake Champlain and adjacent upland areas provide a variety of recreational and educational opportunities, along with stunning scenic views. The City Beach Site's proximity to Interstate 87 provides easy access to tourists and the area offers tourist destinations, such as Lake Champlain, Ausable Chasm and the Adirondack Park.

The close proximity of City Beach, Cumberland Bay State Park, Point Au Roche State Park, and other nature areas, such as Woodruff Pond, present a concentration of attractions and amenities that could be linked, improved, and better marketed. The City could work with the NYS Office of Parks, Recreation and Historic Preservation, the Town of Plattsburgh, Clinton County, and others to develop long-term recreation plans to maximize and enhance mutual resources.

The City Beach area already attracts considerable tourism activity from Canada. Stronger linkages could be developed between the beach and downtown, as well as other waterfront and downtown amenities. Marketing and promotion efforts could then build on established linkages.



Boating on the lake

of Lake Champlain. Existing water-dependent uses at the Site, such as kayaking, windsurfing, and kitesurfing, contribute to the tourism opportunities. While lake users include motorboaters, sailboaters, other boaters (canoes, rowboats, paddleboats), and personal watercraft users, motorboats and sailboats predominate, and there is a general perception that 70-80% of boat traffic is Canadian.

Lake Champlain is a significant tourism draw for the area and the Site – the City of Plattsburgh has extensive freshwater beach access and City Beach site contains both a sand beach and unique habitat areas. Lake Champlain Basin Program studies have provided strong evidence that recreational use of Lake Champlain has increased dramatically in recent years. The Plattsburgh area is one of the more heavily used boating and water-based recreation areas



Heritage Trail interpretive signs near the beach facilities and the Heritage Trail, which includes interpretive signs about the history and ecology of the area. Increasing the variety of recreational opportunities available at the City Beach site provides an opportunity to enhance the tourism draw, not only from the upstate New York area, but from Vermont and Canada as well, resulting in an expanded regional tourism destination.

The Cumberland Bay area of Lake Champlain could be a potential tourist destination for persons interested in American history. The Cumberland Bay area was historically prominent during the Revolutionary War and the War of 1812 and many artifacts have been found nearby in Valcour Bay. Other existing tourism support facilities are the beach facilities and the Heritage Trail, which includes

8. TRANSPORTATION & PUBLIC ACCESS

The Site is generally outside of the City urban area and therefore transportation to and from the Site is important. The Site is accessible by vehicle via the main entrance located on Route 314. Pedestrians can access the Site by the main entrance, by the Karen Fleury Bike Path along Route 9 and Route 314, or by the Heritage Trail which extends onsite from Route 9 at the southwestern corner of the Site. Additionally, the Site can be accessed by smaller boats, such as personal watercraft/jet skis, via beaching on the extensive stretch of beach.

The Site is 62 miles from Montreal, Quebec, Canada, 51 miles from Lake Placid, NY and 67 miles from Montpelier, VT. Regionally, the New York State Northway (I-87) links Plattsburgh to Canada, Albany, and New York City. U.S. Route 9 connects the Site to downtown Plattsburgh. The local university, State University of New York at Plattsburgh; I-87; Amtrak; and the Plattsburgh International Airport are a short drive from Route 9.

Plattsburgh is served by the Canadian Pacific Railway, which provides both passenger and freight service. Passenger service is provided via Amtrak's Adirondack Train between NYC and Montreal. The Amtrak station is located approximately 3 miles from the Site on Jay Street, between the City's business district and the waterfront.

Additionally, there are air transportation services available at the Plattsburgh International Airport, which is owned and operated by Clinton County and located just southwest of the City, about six miles from the Site. The airport services flights to various cities in Florida, South Carolina, and Boston.

Greyhound Bus Lines also offers extensive and frequent bus service to Clinton County with roundtrips made daily to NYC and Montreal, including stops in Plattsburgh and Syracuse. The Greyhound bus station is located 1/3 of a mile north of the Site entrance. Clinton County Public Transit provides public bus transportation to all areas of the county and the city.

The Lake Champlain Transportation Company operates a 24-hour ferry service between Cumberland Head, NY (north of Plattsburgh) and Grand Isle, VT and a seasonal ferry service from Port Kent, NY to Burlington, VT and from Essex, NY to Charlotte, VT.



Heritage Trail on Site.

9. INFRASTRUCTURE

This section is an overview of the existing utilities on the Site based on Geographic Information System (GIS) data and the *Boundary Survey Map*. The Site is served by storm sewer, sanitary sewer, public water, natural gas, electric, street and site lighting, fiber optics, and telecommunications utilities. Infrastructure information is provided in **Figure 9**.

Stormwater Management System

Stormwater systems are mainly located on the eastern portion of the Site. Most drainage structures, such as catch basins, are located within the parking lots, along the access road, and the gravel area adjacent to the concessions. Stormwater on the Site currently drains south to Lake Champlain both by sheet flow and by collection of runoff by the storm sewer system and onsite catch basins and drainage ditches. Stormwater discharges to the lake via two outfalls located on the beach.

Wastewater Treatment System

The City of Plattsburgh Department of Water and Sewage provides wastewater treatment to the City of Plattsburgh and portions of the Town of Plattsburgh. A sanitary sewer pump station is located in the southwest corner of the Site. Sewer lines traverse the Site from the pump station to Civic Center. From there, the sewer services the beach bath houses, concessions, and the old mini-putt.

Water

The Plattsburgh City Water Department supplies water to the City and the Town of Plattsburgh. Water is pumped from City-owned surface reservoirs constructed on West Brook and Mead Brook (tributaries of the Saranac River), located approximately 5 miles west of the City on NYS Route 3. The watermains to the site come from the street alignment on Margaret Street (Route 9) and a loop is made through the Site, beginning at the sanitary sewer pump station and following the pedestrian/bike path through the wooded area to the Civic Center for its domestic water and fire protection needs. From there, the watermain continues north to cross under the Civic Center access drive and then Route 314. There are onsite service connections to the beach bathhouses and concessions.

Electric

The City has its own municipal electric system, which brings electricity in from the New York State Power Authority, with more than 50% of the electricity generated from hydro sources. The power lines run onsite near the main entrance with a transformer located in the old Go-Carts area, which also services the beach bathhouses, concessions, old mini-golf, Civic Center, the parking lot, and pedestrian/bike path lighting.



Telephone/Communications/Fiber Optics/Cable

Above-ground telephone and fiber optics serve the site from conduits on Route 314.

Street and Site Lighting

The Site is lit by pole fixtures in the parking lots and along the access roads and pedestrian/bike paths, which includes underground conduits and cabling and is maintained by the City. Power is supplied by the electrical line at the main entrance.





10. HAZARDOUS MATERIALS

A hazardous or contaminated environmental condition is defined as the presence or likely presence of any hazardous substances or petroleum products (including products currently in compliance with applicable regulations) on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.



A *Phase I Environmental Site Assessment* was conducted for the Crete Civic Center and City Beach Property by Aztech Technologies, beginning in December of 2014. The site reconnaissance on December 5, 2014 included visual observations of potentially hazardous materials on the western portion of the Site, which was used as a city dump for both solid and industrial waste from approximately 1930 through the early 1970s. Historical records indicate that this area may have been a former pond. Debris, including tires, 55-gallon drums, household appliances, and automobile parts, was observed on the surface. According to the *Phase I ESA*, it does not appear that any attempts have been made to investigate or characterize the soil and groundwater in the area of the landfill. Additional information regarding the old landfill is included in the *Phase I ESA* report. Based on the assessment, it is Aztech's opinion that potential exposure to hazardous substances or petroleum products in the soil, soil vapor, groundwater, and/or surface water on the Site is likely, specifically from the former solid waste and industrial waste disposal area located on the western portion of the Site.

Other sources of hazardous substances identified in the *Phase I ESA* include the refrigeration system which was once used to produce ice for the Crete Center skating rink, that currently

contains ammonia, and three 55-gallon drums located in the northeast portion of the Crete Center – one containing motor oil, one containing a liquid cooling agent, and one labeled as containing oil.

Two samples of pipe wrap and one sample of window caulk were collected for laboratory analysis regarding asbestos. Caulk from the exterior of the windows was the only material (out of the three materials sampled) with a positive return for asbestos. Aztech identified other visible potentially asbestos-containing materials in the *Phase I ESA*. Paint samples were also collected and, while none contained lead above federal standards, there was lead detected.

There is an active gasoline station approximately 600 feet to the north-northeast of the Site. There are no reported spills. However, there are active Underground Storage Tanks at the facility. There are active Aboveground Storage Tanks at the NYSDEC campgrounds located to the east-northeast of the Site (Cumberland Bay State Park).

11. SUMMARY

Findings from the *Phase I ESA* and the site reconnaissance will be utilized in the preparation of a preliminary feasibility study, which shall examine the physical, environmental, regulatory, and fiscal constraints of the preferred alternative. In general, site constraints which may affect the compatibility of potential development include wetlands, flood zones, hazardous/solid waste and soils, depending on the type of development. Site constraints are further evaluated in the design and feasibility study.



Appendix A

Custom Soil Resource Report



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Clinton County, New York**

City Beach Property



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Ug—Udorthents, smoothed.....	13
Uh—Udorthents, wet substratum.....	14
Un—Urban land.....	15
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

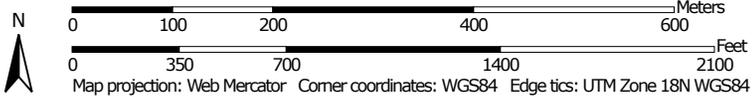
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:7,490 if printed on A landscape (11" x 8.5") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clinton County, New York
 Survey Area Data: Version 13, Sep 14, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 28, 2010—Oct 8, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Clinton County, New York (NY019)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GrB	Grattan loamy sand, 3 to 8 percent slopes	11.0	10.7%
Ug	Udorthents, smoothed	46.5	45.0%
Uh	Udorthents, wet substratum	19.8	19.2%
Un	Urban land	25.9	25.1%
Totals for Area of Interest		103.3	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

Custom Soil Resource Report

on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Clinton County, New York

GrB—Grattan loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9qy2

Elevation: 600 to 1,000 feet

Mean annual precipitation: 31 to 34 inches

Mean annual air temperature: 45 to 46 degrees F

Frost-free period: 130 to 170 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Grattan and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan

Setting

Landform: Deltas, terraces, outwash plains

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits or glaciolacustrine deposits

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material

H1 - 3 to 5 inches: loamy sand

H2 - 5 to 41 inches: loamy sand

H3 - 41 to 72 inches: sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Minor Components

Covert

Percent of map unit: 5 percent

Colton

Percent of map unit: 5 percent

Custom Soil Resource Report

Unnamed soils

Percent of map unit: 4 percent

Plainfield

Percent of map unit: 1 percent

Ug—Udorthents, smoothed

Map Unit Setting

National map unit symbol: 9r0t

Mean annual precipitation: 31 to 42 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 105 to 165 days

Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, smoothed, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Smoothed

Typical profile

H1 - 0 to 4 inches: loam

H2 - 4 to 72 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 15 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 5.95 in/hr)*

Depth to water table: About 36 to 72 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 3 percent

Available water storage in profile: Low (about 5.5 inches)

Minor Components

Unnamed soils

Percent of map unit: 7 percent

Malone

Percent of map unit: 1 percent

Schroon

Percent of map unit: 1 percent

Croghan

Percent of map unit: 1 percent

Uh—Udorthents, wet substratum

Map Unit Setting

National map unit symbol: 9r0v
Elevation: 50 to 2,400 feet
Mean annual precipitation: 31 to 42 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 105 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, wet substratum, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Wet Substratum

Typical profile

H1 - 0 to 4 inches: loam
H2 - 4 to 72 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 5.95 in/hr)
Depth to water table: About 12 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Available water storage in profile: Low (about 5.5 inches)

Minor Components

Unnamed soils

Percent of map unit: 5 percent

Unnamed soils, poorly drained

Percent of map unit: 3 percent
Landform: Depressions

Unnamed soils, very poorly drained

Percent of map unit: 2 percent
Landform: Depressions

Un—Urban land

Map Unit Setting

National map unit symbol: 9r0w

Mean annual precipitation: 31 to 42 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 105 to 165 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Typical profile

H1 - 0 to 6 inches: variable

Minor Components

Udipsamments

Percent of map unit: 3 percent

Udorthents

Percent of map unit: 3 percent

Deerfield

Percent of map unit: 1 percent

Grattan

Percent of map unit: 1 percent

Plainfield

Percent of map unit: 1 percent

Covert

Percent of map unit: 1 percent

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Camp Areas, Picnic Areas, and Playgrounds

The soils of the survey area are rated in this table according to limitations that affect their suitability for camp areas, picnic areas, and playgrounds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in this table can be supplemented by other information, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, saturated hydraulic conductivity (Ksat), and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, Ksat, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, Ksat, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, Ksat, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, Ksat, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, Ksat, and toxic substances in the soil.

Report—Camp Areas, Picnic Areas, and Playgrounds

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Camp Areas, Picnic Areas, and Playgrounds—Clinton County, New York							
Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GrB—Grattan loamy sand, 3 to 8 percent slopes							
Grattan	85	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.87	Too sandy	0.87	Slope	1.00
						Too sandy	0.87
Colton	5	Not rated		Not rated		Not rated	
Covert	5	Not rated		Not rated		Not rated	
Unnamed soils	4	Not rated		Not rated		Not rated	
Plainfield	1	Not rated		Not rated		Not rated	

Camp Areas, Picnic Areas, and Playgrounds--Clinton County, New York							
Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ug—Udorthents, smoothed							
Udorthents, smoothed	90	Not limited		Not limited		Somewhat limited	
						Gravel content	0.06
Unnamed soils	7	Not rated		Not rated		Not rated	
Croghan	1	Not rated		Not rated		Not rated	
Malone	1	Not rated		Not rated		Not rated	
Schroon	1	Not rated		Not rated		Not rated	
Uh—Udorthents, wet substratum							
Udorthents, wet substratum	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
						Gravel content	0.06
Unnamed soils	5	Not rated		Not rated		Not rated	
Unnamed soils, poorly drained	3	Not rated		Not rated		Not rated	
Unnamed soils, very poorly drained	2	Not rated		Not rated		Not rated	
Un—Urban land							
Urban land	90	Not rated		Not rated		Not rated	
Udipsamments	3	Not rated		Not rated		Not rated	
Udorthents	3	Not rated		Not rated		Not rated	
Covert	1	Not rated		Not rated		Not rated	
Deerfield	1	Not rated		Not rated		Not rated	
Grattan	1	Not rated		Not rated		Not rated	
Plainfield	1	Not rated		Not rated		Not rated	

Data Source Information

Soil Survey Area: Clinton County, New York
 Survey Area Data: Version 13, Sep 14, 2014

Paths, Trails, and Golf Fairways

The soils of the survey area are rated in this table according to limitations that affect their suitability for paths, trails, and golf fairways. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Report—Paths, Trails, and Golf Fairways

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Paths, Trails, and Golf Fairways—Clinton County, New York							
Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GrB—Grattan loamy sand, 3 to 8 percent slopes							
Grattan	85	Somewhat limited		Somewhat limited		Not limited	
		Too sandy	0.87	Too sandy	0.87		
Colton	5	Not rated		Not rated		Not rated	
Covert	5	Not rated		Not rated		Not rated	
Unnamed soils	4	Not rated		Not rated		Not rated	
Plainfield	1	Not rated		Not rated		Not rated	
Ug—Udorthents, smoothed							
Udorthents, smoothed	90	Not limited		Not limited		Somewhat limited	
						Low exchange capacity	0.75
						Droughty	0.06
Unnamed soils	7	Not rated		Not rated		Not rated	
Croghan	1	Not rated		Not rated		Not rated	
Malone	1	Not rated		Not rated		Not rated	
Schroon	1	Not rated		Not rated		Not rated	

Paths, Trails, and Golf Fairways--Clinton County, New York							
Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Uh—Udorthents, wet substratum							
Udorthents, wet substratum	90	Not limited		Not limited		Somewhat limited	
						Low exchange capacity	0.75
						Depth to saturated zone	0.19
						Droughty	0.06
Unnamed soils	5	Not rated		Not rated		Not rated	
Unnamed soils, poorly drained	3	Not rated		Not rated		Not rated	
Unnamed soils, very poorly drained	2	Not rated		Not rated		Not rated	
Un—Urban land							
Urban land	90	Not rated		Not rated		Not rated	
Udipsammets	3	Not rated		Not rated		Not rated	
Udorthents	3	Not rated		Not rated		Not rated	
Covert	1	Not rated		Not rated		Not rated	
Deerfield	1	Not rated		Not rated		Not rated	
Grattan	1	Not rated		Not rated		Not rated	
Plainfield	1	Not rated		Not rated		Not rated	

Data Source Information

Soil Survey Area: Clinton County, New York
 Survey Area Data: Version 13, Sep 14, 2014

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Report—Physical Soil Properties

Physical Soil Properties—Clinton County, New York														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
GrB—Grattan loamy sand, 3 to 8 percent slopes														
Grattan	0-3	-60-	-30-	-10-	0.20-1.00	1.40-42.00	0.20-0.50	—	35.0-80.0			5	2	134
	3-5	71-85- 89	1- 9- 29	2- 6- 10	1.35-1.55	42.00-141.00	0.10-0.12	0.0-2.9	1.0-8.0	.15	.15			
	5-41	71-79-10 0	1-17- 29	0- 4- 10	1.40-1.60	42.00-141.00	0.05-0.10	0.0-2.9	0.0-1.0	.24	.24			
	41-72	86-97-10 0	1- 2- 14	0- 2- 7	1.50-1.65	42.00-141.00	0.04-0.06	0.0-2.9	0.0-0.5	.05	.05			
Colton	—	—	—	—	—	—	—	—	—					
Covert	—	—	—	—	—	—	—	—	—					
Unnamed soils	—	—	—	—	—	—	—	—	—					
Plainfield	—	—	—	—	—	—	—	—	—					
Ug— Udorthents, smoothed														
Udorthents, smoothed	0-4	24-45- 52	28-43- 50	4-12- 27	1.20-1.80	0.42-141.00	0.06-0.15	0.0-2.9	0.0-5.0	.28	.28	5	5	56
	4-72	15-71- 85	0-17- 80	4-12- 40	1.30-1.90	0.42-42.00	0.04-0.13	0.0-2.9	0.0-1.0	.15	.28			
Unnamed soils	—	—	—	—	—	—	—	—	—					
Croghan	—	—	—	—	—	—	—	—	—					
Malone	—	—	—	—	—	—	—	—	—					
Schroon	—	—	—	—	—	—	—	—	—					

Physical Soil Properties--Clinton County, New York														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
Uh— Udorthents, wet substratum														
Udorthents, wet substratum	0-4	24-45- 52	28-43- 50	4-12- 27	1.20-1.80	0.42-141.00	0.06-0.15	0.0-2.9	0.0-5.0	.28	.28	5	5	56
	4-72	0-71- 85	0-17- 80	4-12- 40	1.30-1.90	0.42-42.00	0.04-0.13	0.0-2.9	0.0-0.5	.15	.28			
Unnamed soils	—	—	—	—	—	—	—	—	—					
Unnamed soils, poorly drained	—	—	—	—	—	—	—	—	—					
Unnamed soils, very poorly drained	—	—	—	—	—	—	—	—	—					
Un—Urban land														
Urban land	0-6	—	—	0- 0- 0	—	0.00-0.01	0.00	—	—					
Udipsamments	—	—	—	—	—	—	—	—	—					
Udorthents	—	—	—	—	—	—	—	—	—					
Covert	—	—	—	—	—	—	—	—	—					
Deerfield	—	—	—	—	—	—	—	—	—					
Grattan	—	—	—	—	—	—	—	—	—					
Plainfield	—	—	—	—	—	—	—	—	—					

Data Source Information

Soil Survey Area: Clinton County, New York
Survey Area Data: Version 13, Sep 14, 2014

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Report—RUSLE2 Related Attributes

RUSLE2 Related Attributes—Clinton County, New York								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
GrB—Grattan loamy sand, 3 to 8 percent slopes								
Grattan	85	—	A	.15	5	84.9	9.1	6.0
Ug—Udorthents, smoothed								
Udorthents, smoothed	90	—	A	.28	5	45.0	43.0	12.0
Uh—Udorthents, wet substratum								
Udorthents, wet substratum	90	—	B	.28	5	45.0	43.0	12.0
Un—Urban land								
Urban land	90	—	—	—	—	—	—	0.0

Data Source Information

Soil Survey Area: Clinton County, New York
 Survey Area Data: Version 13, Sep 14, 2014

Appendix B

Agency Correspondence



U.S. Fish and Wildlife Service

Trust Resources List

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

New York Ecological Services Field Office
3817 LUKER ROAD
CORTLAND, NY 13045
(607) 753-9334
<http://www.fws.gov/northeast/nyfo/es/section7.htm>

Project Name:

City Beach Property



U.S. Fish and Wildlife Service

Trust Resources List

Project Location Map:



Project Counties:

Clinton, NY

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-73.4429614 44.7176182, -73.4366057 44.7253024, -73.4328291 44.723412, -73.4290526 44.7238998, -73.426027 44.7204054, -73.43561 44.7164807, -73.4405796 44.7146449, -73.4429614 44.7176182)))

Project Type:

Development



Trust Resources List

Endangered Species Act Species List ([USFWS Endangered Species Program](#))

There are a total of 2 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

Species that should be considered in an effects analysis for your project:

Mammals	Status		Has Critical Habitat	Contact
Indiana bat (<i>Myotis sodalis</i>) Population: Entire	Endangered	species info		New York Ecological Services Field Office
northern long-eared Bat (<i>Myotis septentrionalis</i>) Population:	Proposed Endangered	species info		New York Ecological Services Field Office

Critical habitats within your project area:

There are no critical habitats within your project area.

FWS National Wildlife Refuges ([USFWS National Wildlife Refuges Program](#))

There are no refuges found within the vicinity of your project.

FWS Migratory Birds ([USFWS Migratory Bird Program](#))

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see: <http://www.fws.gov/migratorybirds/RegulationsandPolicies.html>.

All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential



Trust Resources List

or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

For information about Birds of Conservation Concern, go to:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html>.

To search and view summaries of year-round bird occurrence data within your project area, go to the Avian Knowledge Network Histogram Tool links in the Bird Conservation Tools section at: <http://www.fws.gov/migratorybirds/CCMB2.htm>.

For information about conservation measures that help avoid or minimize impacts to birds, please visit:

<http://www.fws.gov/migratorybirds/CCMB2.htm>.

Migratory birds of concern that may be affected by your project:

There are **13** birds on your Migratory birds of concern list. The underlying data layers used to generate the migratory bird list of concern will continue to be updated regularly as new and better information is obtained. User feedback is one method of identifying any needed improvements. Therefore, users are encouraged to submit comments about any questions regarding species ranges (e.g., a bird on the USFWS BCC list you know does not occur in the specified location appears on the list, or a BCC species that you know does occur there is not appearing on the list). Comments should be sent to the [ECOS Help Desk](#).

Species Name	Bird of Conservation Concern (BCC)	Species Profile	Seasonal Occurrence in Project Area
American bittern (<i>Botaurus lentiginosus</i>)	Yes	species info	Breeding
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Yes	species info	Year-round
Black tern (<i>Chlidonias niger</i>)	Yes	species info	Breeding
Black-billed Cuckoo (<i>Coccyzus erythrophthalmus</i>)	Yes	species info	Breeding
Black-crowned Night-Heron (<i>Nycticorax nycticorax</i>)	Yes	species info	Breeding
Canada Warbler (<i>Wilsonia canadensis</i>)	Yes	species info	Breeding



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Common tern (<i>Sterna hirundo</i>)	Yes	species info	Breeding
Golden-Winged Warbler (<i>Vermivora chrysoptera</i>)	Yes	species info	Breeding
Olive-Sided flycatcher (<i>Contopus cooperi</i>)	Yes	species info	Breeding
Peregrine Falcon (<i>Falco peregrinus</i>)	Yes	species info	Breeding
Pied-billed Grebe (<i>Podilymbus podiceps</i>)	Yes	species info	Breeding
Short-eared Owl (<i>Asio flammeus</i>)	Yes	species info	Year-round
Wood Thrush (<i>Hylocichla mustelina</i>)	Yes	species info	Breeding

NWI Wetlands ([USFWS National Wetlands Inventory](#)).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

Data Limitations, Exclusions and Precautions

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.



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Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Exclusions - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Precautions - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

The following wetland types intersect your project area in one or more locations:

Wetland Types	NWI Classification Code	Total Acres
Freshwater Emergent Wetland	PEM1A	6.7139
Freshwater Forested/Shrub Wetland	PFO4/1E	61.4485
Freshwater Forested/Shrub Wetland	PFO1E	2.8686
Lake	L1UBH	230339.8984