

SECTION 4

EVALUATION OF STAGING/PROCESSING/MANAGEMENT SITES

4.1 INTRODUCTION

As discussed previously, limited waterfront access locations are available surrounding Greenwood Lake. Significant portions of the lake waterfront are currently developed and occupied primarily by residential uses comprised of single family homes and areas of commercial uses associated with the lake including, but not limited to several marinas, restaurants, hotels and other related uses. In addition, there are several park areas also located along the lake's shoreline including the Thomas P. Morahan Town Beach Park located in the Village of Greenwood Lake, a public beach located along the eastern shore of the lake off of East Shore Drive and Browns Point Park in West Milford. Additional limitations include roads that run the length of Greenwood Lake specifically Lakeside Road and Jersey Avenue (County Road 511 and NY Route 210, respectively) along the western shore of the lake, Edgemere Avenue and East Shore Drive that generally parallel the eastern shore and Greenwood Lake Turnpike (County Road 511) which borders the southern portion of the lake. Significant changes in elevation occur within the areas east of East Shore Drive and west of Lakeside Road.

As a result of these constraints, limited near shore locations are available for potential use and this served to focus the review of areas that could be utilized under a proposed dredging plan. In addition, as the scope of the current study was largely limited to the development of a dredging plan for the New Jersey portion of the lake, the review was primarily focused upon potential sites within New Jersey with the exception of potential end use sites for the dredged material.

4.2 SITE REQUIREMENTS

Sites were evaluated for potential use for staging of construction equipment, the offloading and transport of dredged material and the potential use of sites for dredged material processing. Primary requirements for any of these uses consisted of waterfront access for staging or material handling, sufficient size for the proposed use(s), ease of access and proximity to major local roads.

4.2.1 Hydraulic Dredging Requirements

For hydraulic dredging, ideally, a near shore containment facility with enough storage capacity to handle the dredging and contain the slurry mixture would be preferred. The site would need to be a suitable location from an environmental and community perspective for the final resting place. Ideally a minimum of 10 acres with earth berms that are 20 feet high would be required to develop a small near shore containment facility. A facility of this size could potentially hold up to 290,000 cy of dredge material and slurry mixture (i.e. water used to transport sediment inside a pipeline). This would potentially allow multiple dredging events to occur before the site would have to be "mined" before the next inflow event. The site would require discharge into the lake or a nearby water body for water disposal or the water would need

to be treated for off-site disposal. Any discharge of these waters would need to be conducted in compliance with applicable federal, state or local requirements. Materials can be pumped several miles if there is a proper right of way for the pipeline route.

An alternative to this approach would be the use of Geotubes as discussed in Section 3.2 to contain the material. Small berms would contain runoff from the Geotubes. Approximately five (5) acres would be required to stage the Geotubes. Based upon a review of potential sites discussed within this section, it appears that this would likely not be possible at a near shore location due to the size of the sites evaluated.

4.2.2 Mechanical Dredging Site Requirements

Ideally, a near shore containment facility equipped with a bulkhead for offloading of barges with deepwater access, positive drainage to promote natural drying, and a suitable location from an environmental and community perspective for the final resting place would be the most economical. Ideally five (5) to 10 acres with earth berms that are 10 to 20 feet high would be required to develop a small near shore containment facility. A facility of this size could potentially hold up to 65,000 cy to 290,000 cy, respectively. This would potentially allow multiple dredging events to occur before the site would have to be the “mined” before the next inflow event.

Based on a preliminary site reconnaissance of the study area, there does not seem to be a site that fits all of these requirements. All of the major commercial waterfront property is operated by small private marina owners with limited space to perform their own daily operations. Several other waterfront properties that were evaluated appear to be private property or parkland with limited space and acreage and it is likely that private owners would not be willing to sell/lease their property for dredged material disposal.

The ideal site for offloading and transloading of dredged material to truck or roll off containers would have the following attributes:

- Deep water access (i.e. greater than 5 feet during normal pool elevation) to a sturdy bulkhead that barges could be tied off to,
- Access for multiple trucks entering and leaving the site and ability to easily maneuver on the property,
- Safe access onto roadways,
- Private property that is zoned for commercial operations with about 0.5 acres that could be dedicated to the transloading process,
- Areas that are not located in wetlands or environmentally sensitive areas, and
- Areas located away from residential use, if possible, due to truck traffic and noise associated with offloading and loading trucks.

For a pug milling operation, approximately one (1) acre would be required for offloading material, equipment for mixing in stabilization reagent, and staging of a small stock for loading to dump trucks. All of site characteristics discussed above would also ideally be required.

4.2.3 Removal in the Dry

Multiple staging locations for each candidate dredged area would be required to enter the lake. Each one would need to have access for trucks (off-road hauling trucks and regular dump trucks) and access for bulldozers. Multiple staging locations would be required because it would not be practical to truck material from one end of the lake to the other or across the lake. All water cannot be removed from the lake due to limitations of approved lake drawdowns and because there are deep holes that would never be dry.

For this scenario all material would be directly trucked out of the lake to the final resting location. It is assumed that this approach would only be considered during the winter when the ground might be frozen and the lake is drawn down.

4.3 SITES EVALUATED

In consultation with the Greenwood Lake Commission and based upon a review of aerial photographs and general knowledge of the lake area, site visits were conducted to several potential locations in New Jersey. In addition, block and lot maps were acquired in order to assist in identifying the potential size of these locations. These locations were evaluated for several potential uses (Table 4-1) including;

- Equipment Staging – Locations that would be suitable for providing initial access for equipment into the lake (e.g. barges, excavators, etc.) and/or the offloading of dredged material to trucks.
- Material Processing – Locations that may have the potential for the potential processing of dredged materials. Processing would primarily include dewatering of these materials and the addition of stabilizing materials (e.g., Portland cement) to reduce the amount of free water within the materials.
- Materials Management – Subsequent to the removal of dredged materials, these materials will need to be managed. Potential end use or disposal of the dredged materials could be accomplished through a variety of potential options. Potential sites in close proximity to Greenwood Lake were evaluated.

Marinas typically are identified as potential staging or processing areas for lake dredging as these locations have lakefront access, may have some level of existing waterfront development to allow lake access (e.g. access roads, boat launch areas, etc.) and are not typically utilized during the off season with the exception of potential over winter boat storage or dock storage. This is likewise the case for those marinas located along Greenwood Lake. As part of the current study, commercial marinas within the New Jersey portion of the lake were also evaluated for their potential use.

Table 4-1. Potential Use of Proposed Sites

Site	Staging	Processing	Materials Management
Greenwood Lake Marina	X	X	
Sportsman's Marina	X	X	
Moosehead Marina	X	X	
Greenwood Small Craft Marina	X		
South Shore Marina	X	X	
Browns Point Park	X	X	
Tilcon Ringwood Quarry			X
West Milford Yard Waste Composting Facility			X
Evergreen Farms			X
Wallisch Estates			X
Horse Farm			X
Fox Island Landing	X		
Storms Island Landing	X		
Former Bowling Alley		X	
Vacant Parcel (Pinecliff Lake)			X
Belcher Creek Condominiums	X		
MacDonald Road	X		

4.3.1 Greenwood Lake Marina

Greenwood Lake Marina straddles the New York and New Jersey border (Figure 4-1). The marina is located at 538 Lakeside Road (County Road 511) and is northwest of Fox Island. Based upon a review of tax block and lot maps, the site is comprised of two lots within New Jersey (Block 3013, Lot 28 and Block 3015, Lot 1) which encompasses an area of approximately 0.92 acres. Additional area is located within New York as shown on Figure 4-1. The entire site is approximately 1.55 acres. The site contains a one to two story structure along the northern edge of the site (Figure 4-2). The balance of the site is comprised of upland area that during the winter months is used for the storage of boats and dock floats (Figure 4-3). A creek enters the site from the west and discharges to Greenwood Lake through a culvert or channel that separates the on-site structure to the north from the open areas to the south (Figure 4-4).



Base Map Source: New Jersey Geographic Information Network, 2007
 All block and lot data is approximate.

0 125 250 Feet



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Figure 4-1 Greenwood Lake Marina

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Figure 4-2. Greenwood Lake Marina, Existing One to Two Story Structure Along Northern Edge of Site.



Figure 4-3. Boat and Dock Storage Areas Along the Southern Portion of the Greenwood Lake Marina Site.



Figure 4-4. Existing Drainage Channel from Stream to West of Lakeside Road at Greenwood Lake Marina

The area that is used for the winter storage of boats and dock floats represents an area that may be suitable for the staging of equipment to Greenwood Lake or the loading of vehicles. In addition, the site is located immediately west of Fox Island Channel which was identified as one of the candidate locations for dredging. The site also may potentially be suitable for some limited material processing if required although the size of the site would be a limiting factor.

4.3.2 Sportsman's Marina

Sportsman's Marina is one of three marinas that are located within 0.5 miles of each other. This marina is located at 325 Lakeside Road, approximately 1.0 mile from the New York and New Jersey border (Figure 4-5) and 0.2 miles north of Moosehead Marina to the south. This marina is also located west of Fox Island. The site is comprised of six lots (Block 3101, Lots 6, 7, 8 and 9 and Block 3107, Lots 1 and 2) that are located east and west of Lakeside Road. The entire marina and adjoining parcels encompasses approximately 22.64 acres.

The area west of Lakeside Road is comprised of Block 3101, Lots 6, 7, 8 and 9 and encompasses an area of approximately 21.84 acres. This area is used for some boat storage and is also occupied by a single family home. There is a significant change in elevation as one proceeds west from Lakeside Road.

The areas east of Lakeside Road include Block 3107, Lots 1 and 2. These lots are located on the Greenwood Lake waterfront and are approximately 0.8 acres in size. The site contains a one story structure that is generally located in the middle of the waterfront lots. An additional small building (Lakeside Inn), is located along the southern edge of the site.



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Figure 4-5 Sportsman's Marina

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The waterfront area that is used for the winter storage of boats and dock floats would represent an area that would appear to be suitable for the staging of equipment. Insufficient space for potential material processing is available along the waterfront. The site is also located in close proximity to Fox Island Channel which is a candidate dredging location. Areas west of Lakeside Road may have some potential for the placement of dredged material, but these areas would be very limited, presently have an active residential use and additional investigations would be needed to further evaluate these areas.

4.3.3 Moosehead Marina

Moosehead Marina is located at 254 Lakeside Road, approximately 1.4 miles from the New York and New Jersey border (Figure 4-6). The marina is also located west of Fox Island. The site is comprised of several lots (Block 3201, Lots 3, 5 and 6 and Block 3202, Lots 6 and 7) that are located both east and west of Lakeside Road. The entire marina property is approximately 3.81 acres in size.

The upland areas west of Lakeside Road are comprised of Block 3201, Lots 3 and 5 and Block 3202, Lots 6 and encompass an area of approximately 2.68 acres. The areas immediately adjacent to Lakeside Road encompass a storefront/showroom building, a boat storage area and a residential house, while the areas further west are primarily used for boat storage (Figure 4-7). The boat storage areas are located within an area that is at a significant elevation above Lakeside Road.

The areas east of Lakeside Road include Block 3201, Lot 6 and Block 3202, Lot 7. These lots are located on the Greenwood Lake waterfront and are approximately 1.13 acres in size. The waterfront area has a small building located on the site and the balance of these lots are used for the winter storage of boats and dock floats (Figure 4-8) and would represent an area that would be suitable for the staging of equipment. Available area for the processing of materials at the site is limited due to the narrow nature of the waterfront parcels. The site is also located in close proximity to Fox Island Channel. As with the other marina locations, use of the waterfront parcels would require the temporary relocation of boat and dock storage during any use for staging or processing.

Areas west of Lakeside Road have very limited potential for the placement of dredged material due to their size. In addition, these areas are adjacent to additional areas that are known to possess some wetlands which would need to be addressed as part of any proposed use of this location for dredged material placement.



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Figure 4-6 Moosehead and
 Greenwood Small Craft Marina

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Figure 4-7. View of Waterfront Parcels at Moosehead Marina.



Figure 4-8. Moosehead Marina Showing Existing Residential House and Store/Showroom at Right and Waterfront Lots with Existing Structure to the Left.

4.3.4 Greenwood Lake Small Craft Marina

Greenwood Small Craft Marina is located at 240 Lakeside Road, approximately 1.5 miles from the New York and New Jersey border (Figure 4-6). The marina is also located west and south of Fox Island. The site is comprised of one lot (Block 3202, Lot 5) that is located along the waterfront east of Lakeside Road on Greenwood Lake. The site encompasses an area of approximately 0.59 acres.

The site contains a small one story structure and the balance of the site is used for the over winter storage of boats and dock floats. Residential uses are located south of the site. Although this site has available waterfront access, the site is very small and its use as a staging or processing location would probably not be feasible.

4.3.5 South Shore Marina

South Shore Marina is located at 1880 Greenwood Lake Turnpike (County Road 511) at the southeastern corner of Greenwood Lake (Figure 4-9). The marina is comprised of a single lot (Block 3705, Lot 10) which is located north of Greenwood Lake Turnpike. The site encompasses an area of approximately 4.2 acres (Figure 4-10).

The site has a paved road that provides access from Greenwood Lake Turnpike to the water's edge where a concrete apron for the launching of boats is located (Figure 4-11). Areas to the west of the access road are used for the storage of boats and dock floats during the winter months (Figure 4-12). In addition, several structures are also located within this portion of the site. Additional boat and dock storage is provided within smaller areas to the east of the access road.

The South Shore Marina site provides excellent access to the Browns Point and Belcher Creek areas that represent one of the candidate dredging locations. Direct roadway access through the site and the existence of a concrete apron for the launching of boats represents an excellent staging location and for the potential offloading of dredged material from barges for transport to off-site locations. In addition, the size of the site also provides potential for its use for the processing of materials, if required. Several potential end use sites are also located in close proximity to this location.



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Figure 4-9 South Shore Marina

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Figure 4-10. Aerial View of South Shore Marina.



**Figure 4-11. Access Road to Lake at South Shore Marina,
Looking Northwest Towards Lake**



Figure 4-12. South Shore Marina Access Road Looking Southeast Towards Greenwood Lake Turnpike.

4.3.6 Browns Point Park

Browns Point Park is located at the southernmost portion of Greenwood Lake (Figure 4-13). The park is approximately 10.7 acres in size and is comprised of one lot (Block 3611, Lot 1). The park is owned by the State of New Jersey and is managed by the Township of West Milford. The park is a designated NJDEP Green Acres site.

Browns Point Park is largely a passive use park with broad views of Greenwood Lake. Access to the park is from one location off of Greenwood Lake Turnpike (County Road 511). The western edge of the park is immediately adjacent to Belcher Creek and this area of the park also possesses state-designated wetlands based upon a review of NJDEP data (Figure 4-14). The park has an extended shoreline of several hundred feet and an unpaved access road from the interior parking lot within the park to the lake is located in the western portion of the park (Figure 4-15). This access road is currently used for the launching of the weed harvester that is used within this portion of the lake (Figure 4-16). A grassy open area is located along the waterfront and further south of this are numerous mature trees that make up a substantial portion of the park (Figures 4-17 and 4-18).

This location is immediately adjacent to the Belcher Creek and Browns Point areas that have been identified as potential dredging locations. The site would provide excellent access to the lake for the staging of equipment particularly for dredging equipment and/or the offloading of materials to trucks, although there is only an unimproved road to the waterfront. This road leads to an area of existing waterfront access where the Commission currently launches its weed harvester for this portion of the lake. In addition, the site could potentially be used for the



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Figure 4-13 Browns Point Park and Former Bowling Alley

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Figure 4-14. Forested Area Along Western Edge of Browns Point Park with Belcher Creek Visible in Background.



Figure 4-15. Access Road from Browns Point Park Parking Area to Waterfront.



Figure 4-16. Boat Launch Area at Browns Point Park Showing Unimproved Access Road.



Figure 4-17. Existing Shoreline Areas at Browns Point Park Looking Southeast.



**Figure 4-18. Browns Point Park Shoreline Looking Northwest
Towards Mouth of Belcher Creek.**

processing of dredged material if removal of existing trees and vegetation were undertaken. This location could also potentially be used for the offloading of dredged materials to trucks for transport to end use or materials management locations.

While this location has very good access to Greenwood Lake and in particular the Browns Point and Belcher Creek areas which are a considered high priority candidate sites for dredging, the location has several issues that would need to be considered for its use. A portion of Browns Point Park that borders Belcher Creek is mapped as freshwater wetlands by the NJDEP and as a result potential permitting issues or additional restrictions (e.g., transition area requirements) could potentially impact any proposed use of the park. In addition, the park is owned by the NJDEP and managed by the Township of West Milford and has also been designated as part the state's Green Acres program. Use of the park would therefore require approval from NJDEP for the temporary use of a Green Acres site (see Section 5.4.4).

Use of the park would very likely result in the need for the removal of existing mature trees and potential impacts to the current population that uses the park. The park represents one of the few public access areas to Greenwood Lake in New Jersey and it is utilized year-round. While any access restrictions within the park could be limited during its use as a staging or processing location, some impacts to public access would be inevitable. Finally any adverse impacts to the park would need to be addressed at the conclusion of its use and would be a requirement of any approval granted under the Green Acres program. As a result, the site should be further evaluated, particularly for the staging or offloading of materials while investigating the extent of any potential short-term impacts to the park that may be associated with these.

4.3.7 Tilcon Ringwood Quarry

The Tilcon Ringwood Quarry is located approximately 1.35 miles southeast of Greenwood Lake (Figure 4-19). The quarry is currently not utilized and possesses several quarry pit areas from prior rock removal activities (Figures 4-20 and 4-21). The site is comprised of two lots (Block 4601, Lots 17 and 21) and encompasses an area of approximately 80.9 acres. Access to the site is available from Burnt Meadow Road, immediately south of its intersection with Greenwood Lake Turnpike (County Road 511).

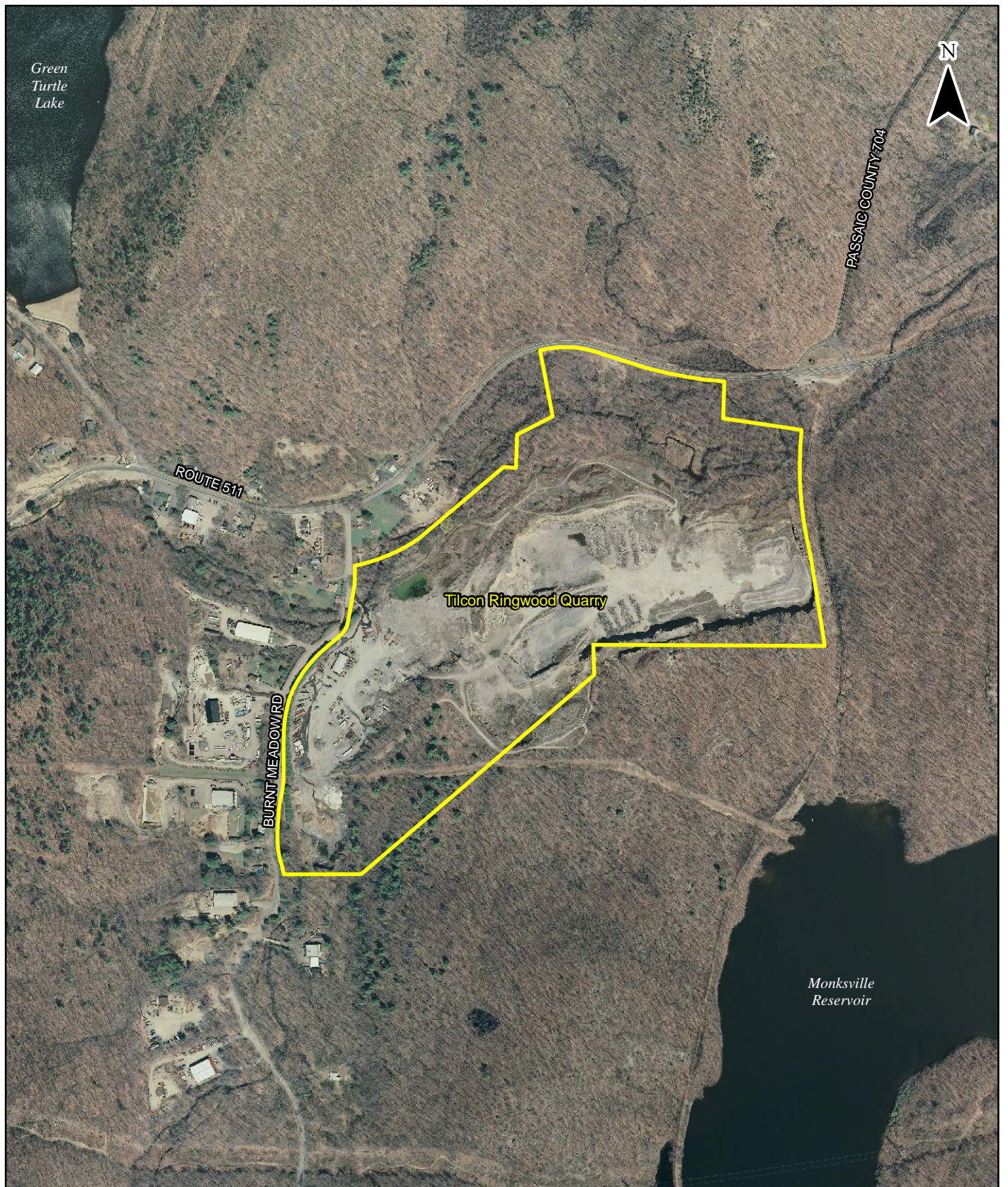
The site currently possesses limited vegetation which is most likely due to the lack of significant soil and exposed rock at the surface of the site. Located at the former access to the site are the former scales and scale house and several small buildings that were probably used for equipment storage or offices when the quarry was active (Figure 4-22). An internal access road from this area then accesses the former quarry areas. This is shown in Figures 4-21 and 4-23.

Although further studies would need to be conducted in order to determine the potential capacity of the site for dredged materials, preliminary reconnaissance has shown several areas on site with the capacity to accept a large quantity of dredged material. The Tilcon Ringwood quarry site has the greatest potential to provide significant capacity for dredged material and will have the greatest ability to handle the vehicular traffic that would occur from transporting and dumping any dredged material from the lake. As a formerly functioning quarry, the site had large trucks accessing the yard on a regular basis and no additional site clearing would be expected.

In addition, the site is located within a largely industrial area with a few residences located in proximity to the site along Greenwood Lake Turnpike. Additional investigations of the site, as well as discussions with the current owner of the site would be required to further advance this location. The site represents the most important potential site for the placement and management of dredged materials from Greenwood Lake. In addition, the site is very close to Greenwood Lake which would serve to minimize potential transportation costs. The quarry is located approximately three miles from each of the proposed dredging locations. Additional issues may arise with regard to the future use of the site. While no future use has been established for the quarry at this point, placement of dredged material could limit future development options.

4.3.8 West Milford Yard Waste Composting Facility

The Township of West Milford maintains several public works facilities off of Lycosky Drive including a yard waste composting facility that is approximately 8.2 acres. The location of the composting site is in close proximity to the Greenwood Lake Airport. The existing composting facility (Figure 4-24) is used for the composting of yard waste collected from and/or dropped off by residents of the Township of West Milford. The site is located approximately 0.9 miles south of the lake.



Base Map Source: New Jersey Geographic Information Network, 2007
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0 262.5 525 Feet



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Figure 4-19 Tilcon Ringwood Quarry

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Figure 4-20. Tilcon Ringwood Quarry Site Showing Location of Former Excavated Areas in Background



Figure 4-21. Existing Tilcon Ringwood Quarry Site Showing Former Quarried Areas and Access Road Within Site



Figure 4-22. General View of Area in Close Proximity to Former Scale House and Site Access.



Figure 4-23. Existing Access Road Within Quarry Site.



Base Map Source: New Jersey Geographic Information Network, 2007
 All block and lot data is approximate.

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Figure 4-24 West Milford Yard Waste Composting Facility

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Dredged material which would be brought to this location would be part of an admixture to the existing yard compost to prepare an organic soil material. For this reason, the potential for the facility to handle large quantities of soil would be greatly diminished. Further research and investigation would need to be conducted into the processing rate of the compost facility to determine the potential for handling additional material. This alternative however should remain under consideration for handling a limited quantity of material.

4.3.9 Evergreen Farms

Evergreen Farms or the Granatelli property is located along the east side of Union Valley Road (State Route 513) and is approximately 0.9 miles southwest of Greenwood Lake (Figure 4-25). The site is privately-owned and extends from Union Valley Road (State Route 513) to the west to Belcher Creek to the east. The site is approximately 83.2 acres in size and is currently occupied by several existing structures with the balance of the site comprised of forest and fields. The site would represent a potential site for the placement of dredged materials removed from Greenwood Lake.

Potential use of the site for the placement of dredged material would need to be coordinated with the current owner of the property. Initial reconnaissance has shown that portions of the site are heavily wooded, which would greatly diminish the potential for management of the dredged material. In order to create a substantial area for the placement of dredged materials, the site may need to be cleared. These actions would require authorization from current owner and potentially additional permits from local and state authorities, which would increase the cost to prepare the site to receive dredged material. Further evaluation of the quantity of dredged material to be managed would need to be conducted to determine the feasibility of this option. A cost analysis discussing the quantity of material that would be placed versus the amount of potential additional space to be cleared on-site would need to be investigated. Additional site investigations (e.g. wetlands, etc.) would also be required to further characterize the site if this location were to be considered further.

4.3.10 Wallisch Estates

The Wallisch Estates site is a large site that is currently publicly-owned by the Township of West Milford and the Township of West Milford Board of Education. The site is approximately 163 acres in size and is traversed by Lincoln Avenue (Figure 4-26). The site is comprised of multiple lots (Block 6401, Lots 4, 5, 6.01, 6.03; Block 6404, Lot 12, Block 6607, Lot 1; Block 6608, Lot 1; and Block 6609, Lot 1). The location was a former farm and is characterized by several large open fields (Figures 4-26, 4-27 and 4-28). Several former farm structures and a house are also still located on the site (Figures 4-29 and 4-30). The site is located approximately 0.7 miles south of Greenwood Lake.



Base Map Source: New Jersey Geographic Information Network, 2007
 All block and lot data is approximate.

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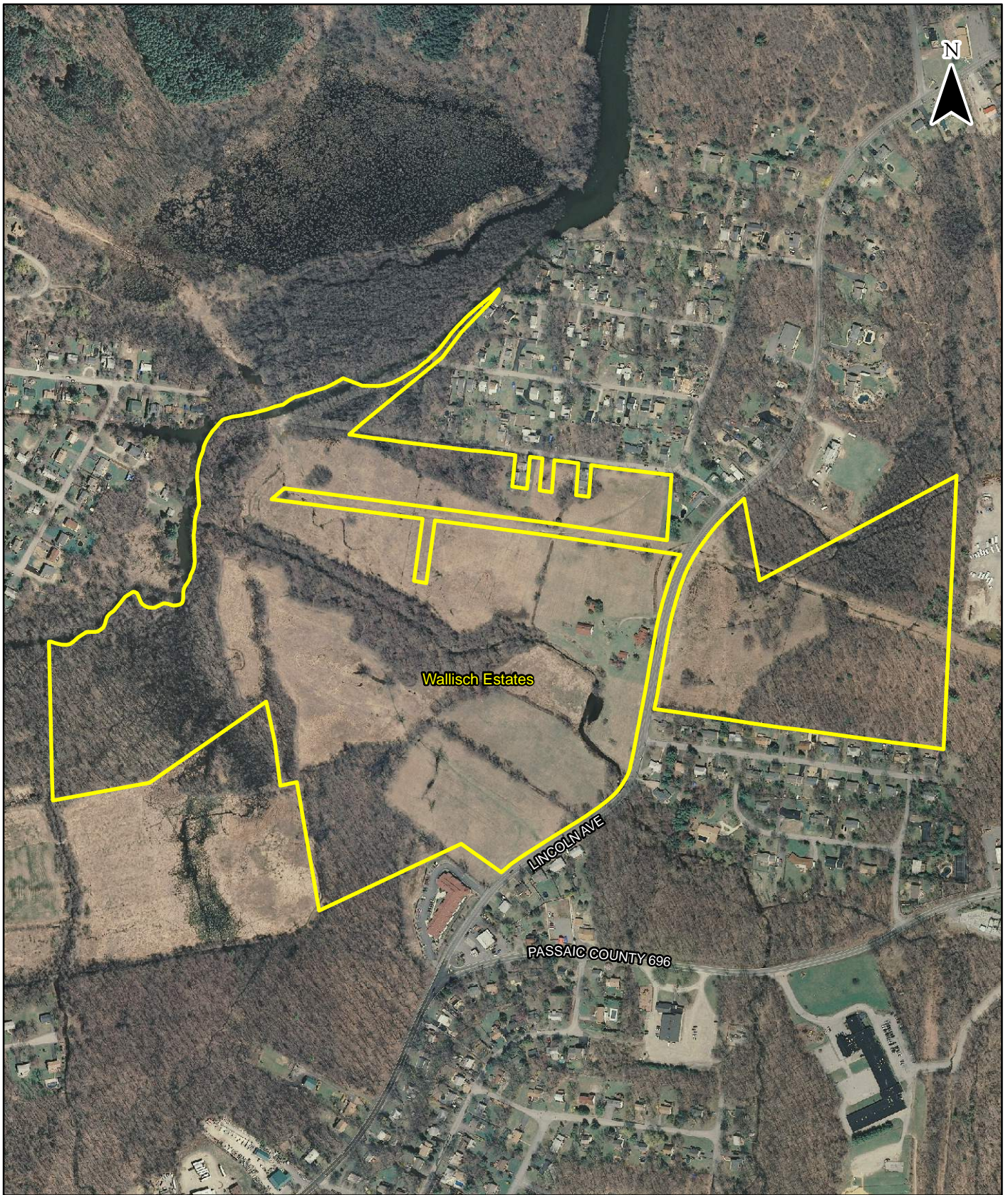


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Figure 4-25 Evergreen Farms

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Figure 4-26 Wallisch Estates

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Large portions of the site are relatively level and could be used for the placement of dredged material (Figures 4-27 and 4-28). Preparation of the site would be required if it was used for this purpose, in particular the development of a perimeter dike or berm to contain dredged material. Material would be placed on site in one to five foot lifts and the site could potentially handle placement of a large volume of material.

Based upon a site visit and review of aerial photography, several streams or former drainage ditches traverse portions of the site. In addition, an area of freshwater wetlands is located along the western portion of the site. These on-site features would limit the full use of the site for material management. Materials would have to be placed in such a way to not affect runoff into the wetlands or on-site streams and would need to conform to NJDEP regulations for setbacks from existing wetlands. Portions of this site are currently wooded land and may require additional clearing in order to place material and allow truck access to the site. This would involve additional permit work and approval by local and state authorities. Although these issues may limit the potential of the site and make it less attractive as an option for material management, there is still a potential for the placement of a large quantity of material and this site should continue to be given consideration as a potential site.

Additional information on site characteristics would need to be investigated further if use of the site was advanced in order to determine the areas that could be utilized for the placement of dredged materials and what control measures may need to be instituted.



Figure 4-27. View of Open Fields at Wallisch Estates Looking South.



Figure 4-28. View of Open Fields at Wallisch Estates Looking North.



Figure 4-29. Wallisch Estates Site Looking at On-site Structures.



**Figure 4-30. Wallisch Estates Site Showing On-site Structures
Looking West.**

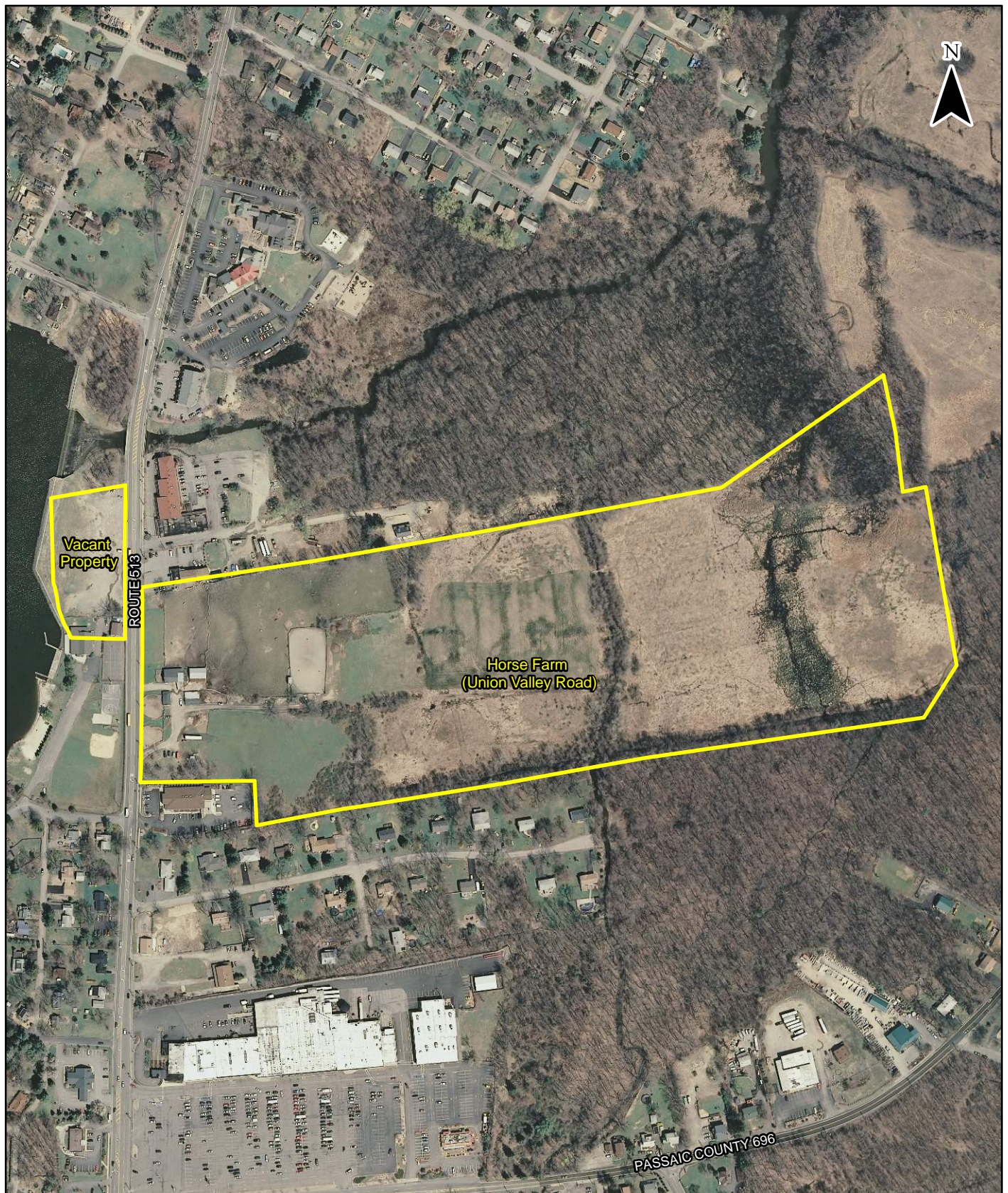
4.3.11 Horse Farm

An existing horse farm is located along the eastern side of Union Valley Road (State Route 513) approximately 1.5 miles southwest of Greenwood Lake (Figure 4-31). The site is comprised of one lot (Block 6401, Lot 7) and is approximately 40.2 acres. The site is privately-owned and the eastern edge of the site abuts the Wallisch Estates' site previously discussed. This location was evaluated as a potential end use site for the placement of dredged materials.

The size of the site, predominately comprised of open field areas, would make it potentially desirable as an end use site. A review of aerial photographs indicated that the site has at least one stream that traverses the site south to north. In addition, wetland areas may be located along the eastern edge of the site. Any potential use of this location would need to evaluate these issues further and discussions with the private owner of the site with regard to its possible use for the placement of dredged material would need to be undertaken if use of the site was advanced.

4.3.12 Fox Island Landing

Fox Island Landing is a small area located east of Lakeside Road (County Road 511) approximately 0.2 miles south of Greenwood Small Craft Marina (Figure 4-32). The location is used to provide boat access to Fox Island for existing residents of the island and other property owners. The landing area is very small, approximately 0.14 acres and narrow. The waterfront is largely undeveloped with the exception of several wooden docks (Figures 4-33 and 4-34). Access to the site is by a very narrow access road from Lakeside Road. Limited area is available within the landing area itself.



Base Map Source: New Jersey Geographic Information Network, 2007
 All block and lot data is approximate.

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Figure 4-31 Vacant Lot and Horse Farm

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Base Map Source: New Jersey Geographic Information Network, 2007
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0 50 100 Feet



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Figure 4-32 Fox Island Landing

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**Figure 4-33. Fox Island Landing Looking North
with Fox Island in Background.**



Figure 4-34. Fox Island Landing Looking South

The site was evaluated for potential staging, but based upon its small size it is unlikely that the site would meet this need as access by construction equipment would be difficult, the landing area would provide limited area for the staging or offloading of equipment or materials and the turning of construction vehicles (e.g., dump trucks) within the site would be difficult. In addition, the site is located in very close proximity to residential uses to the south.

4.3.13 Storms Island Landing

Storms Island Landing is located along the eastern shore of the lake, immediately east of Storms Island (Figure 4-35). The location provides boat access for Storms Island residents. The landing site is small, approximately 0.62 acres. Access to the site is from a steep roadway (Storms Island Road) from East Shore Road (County Route 704). Limited area is available within the landing area itself (Figures 4-36 and 4-37).

The site was evaluated for the potential staging of equipment or the offloading of materials. The site has some potential as a staging area, but is not ideal due to its location and the very shallow water depths that are present along the waterfront (one to two feet). Access to the site by a crane for the placement of scows or a Flexifloat would also likely be difficult due to the existing roadway access to the site.

4.3.14 Former Bowling Alley

Located south of Greenwood Lake Turnpike (County Road 511) and directly across from Browns Point Park is a vacant land parcel that was previously occupied by a former bowling alley (Figure 4-13). The site is approximately 3.3 acres and is comprised of one lot (Block 3610, Lot 26). The site is presently occupied by the remains of the former bowling alley. The site is adjacent to residential uses to the west and the New Jersey Transit Park and Ride facility to the south.

As this site is not located immediately adjacent to the lakefront, it was evaluated as a potential dredge material processing site. In general the site has sufficient size for development as a potential processing location however, material removed from the lake would need to be transported to the site for processing and then would need to be transported to an end use. As a result, the use of this location would require handling of dredged material at the point of offloading, again at this location for processing and for final transport which would result in additional cost. As a result, although this location has potential value as a potential processing location, it was not identified as a high priority site due to the need for multiple handling of materials. In addition, the site was determined to be too small to be useful as a potential dredged material end use site.



Base Map Source: New Jersey Geographic Information Network, 2007
 All block and lot data is approximate.

0 75 150 Feet



1200 MacArthur Boulevard
 Mahwah, New Jersey 07430
 (201) 529-5151 f:(201) 529-5728

Figure 4-35 Storms Island Landing

Greenwood Lake Dredging Plan
 Greenwood Lake Commission





Figure 4-36. Storms Island Landing with Storms Island in Background



Figure 4-37. Storms Island Landing with Channel in Background.

4.3.15 Vacant Parcel Adjacent to Pinecliff Lake

This location is a privately-owned vacant lot that is approximately 2.5 miles from Greenwood Lake (Figure 4-31). The site is approximately 1.9 acres in size and is comprised of one lot (Block 7215, Lot 2). While this location was chosen primarily for the close proximity to Greenwood Lake, there are issues which would prevent it from being chosen as a material management location. The largest of these issues is the relatively small size of the lot. Further analysis would need to be conducted to determine the quantity of dredged material which could be managed at this site and compare it to the volume of dredged material that may be expected to be removed as part of the proposed project, however the 1.9 acre site is believed to be too small to realistically serve as a placement location for material. In addition, the site is located immediately adjacent to Union Valley Road and Pinecliff Lake and placement of dredged materials at this location would result in a change in the elevation of the site and its relationship to the adjacent roadway.

4.3.16 Belcher Creek Condominiums

This location was evaluated as a potential access and staging area to Belcher Creek and Greenwood Lake (Figure 4-38). The site is located at the southwestern corner of the lake, immediately adjacent to Belcher Creek, and north of the Greenwood Lake Turnpike overpass over the creek. The potential access location is situated behind an existing townhouse or condominium development. A paved access road terminates at a boat launch area to the creek (Figure 4-39). While the site provides easy access to the creek, access to this location from Lakeside Road is through the adjacent residential development and a narrow roadway could present maneuvering challenges to construction vehicles. In addition, limited additional space is located at the point of access to the creek so the staging of equipment or materials would likely be very limited.

4.3.17 MacDonald Drive

This potential access site is located immediately adjacent to Belcher Creek at the terminus of MacDonald Drive (Figure 4-38). Residential uses are located west and immediately north of the site. The site is very small and undeveloped (Figure 4-40). Due to its proximity to residential uses and its small size, this site was determined to not be appropriate for potential staging or access to Belcher Creek and the lake.

4.4 ADDITIONAL MATERIALS MANAGEMENT SITES

Further material management options may involve the use of extended resources outside of the immediate vicinity of Greenwood Lake for the management of the dredged material. These options include municipal reuse, soil processors, turf/black dirt farms and existing landfills. Further analysis will need to be conducted to establish a compilation of possible specific locations for soil placement; however each of these alternatives may require possible long distance trucking to dispose of the dredged material. Trucking costs will vary depending on the distance, and multiple sites may need to be used to distribute the dredged material regardless of which distant alternative may be chosen.



Base Map Source: New Jersey Geographic Information Network, 2007
All block and lot data is approximate.

0 125 250 Feet



1200 MacArthur Boulevard
Mahwah, New Jersey 07430
(201) 529-5151 f:(201) 529-5728

Figure 4-38 Belcher Creek Condominiums and MacDonal Drive

Greenwood Lake Dredging Plan
Greenwood Lake Commission





**Figure 4-39. Belcher Creek Condominiums
Waterfront Access Location.**



**Figure 4-40. MacDonald Drive Site Looking South Towards Belcher
Creek and Greenwood Lake Turnpike Overpass in Background.**

All of these potential alternatives will require a quantity analysis to determine the available space versus the quantity of dredged material to be handled. For most municipalities, the areas in which soil may be needed is very limited and may require the investigation of multiple reuse sites spread out across the region. The potential use of turf/black dirt farms in Orange County within the Town of Warwick initially shows the greatest potential to handle large quantities of material, however multiple sites may still be required based upon the capacity of each individual farm.

The use of one or more of these additional materials management alternatives would not be expected to address the anticipated volumes of dredged material that may be generated by the dredging of Greenwood Lake. However, these opportunities may be part of a larger materials management program that relies upon one or more larger sites, while also utilizing the dredged materials to meet additional local needs or users of these materials.

4.5 SUMMARY

Several of the sites that were evaluated as part of this effort were determined to have insufficient size or access for use as staging, processing or materials management locations. These included the following locations, which were not evaluated further:

- Greenwood Small Craft Marina,
- Fox Island Landing,
- MacDonald Drive,
- Belcher Creek Condominium,
- Former Bowling Alley,
- Vacant Parcel at Pinecliff Lake,
- Storms Island Landing.

In addition, the West Milford Yard Waste Composting Facility was also eliminated from further consideration as a staging, processing or material placement site. This location would however still be considered as a potential “beneficial use” end user of dredged materials.

Evaluation of the remaining sites identified several potential staging locations. These sites had waterfront access and sufficient size that they could be used for the staging of equipment and in some instances for the offloading of materials. These included the Greenwood Lake, Sportsman’s, Moosehead and South Shore marinas. In addition, Browns Point Park was also identified as a potential staging or offloading site. Although these sites have the potential for use as staging and/or offloading locations, each site has certain issues or inherent constraints that would need to be addressed, such as the potential temporary relocation of boats at the marinas and the potential need for the removal of existing trees at Browns Point Park.

Finally several remaining locations were determined to warrant potential consideration as dredged material management locations. Primary sites of interest are the Tilcon Ringwood Quarry and Wallisch Estates. However, Evergreen Farms and the existing horse farm located on State Route 513 may also have potential use as end use locations. Each of the locations identified for the potential placement of dredged material would require additional investigations in order to determine if other constraints such as wetlands may be present at these sites.

SECTION 5

ENVIRONMENTAL PERMITTING REQUIREMENTS

5.1 INTRODUCTION

The proposed dredging of selected locations within Greenwood Lake will require consultation with and/or the acquisition of permits and/or approvals from agencies at the federal, state and local level. In addition, the potential development of temporary staging or processing locations in support of proposed dredging and the disposal or reuse of dredged materials may also require a variety of environmental permits. Presented within this section is an assessment of the environmental permits and/or approvals that may be required based upon the current understanding of potential activities that may be advanced in the future by the Commission. This assessment was only focused upon the environmental permits and approvals that may be required from federal and state agencies. Permits or approvals at the local level, such as building permits were not evaluated as part of this effort.

As selected alternatives for dredging, the potential processing of dredged materials and/or dredged materials management are advanced further and more detail is developed, a more comprehensive review of applicable permits and approvals in consultation with the Greenwood Lake Commission, additional stakeholders and involved agencies would need to be undertaken, including pre-application meetings. In addition, as additional information were acquired for individual sites that are considered as part of an overall dredging plan for the New Jersey portion of the lake, site-specific permit needs (e.g., wetlands, surface waters, threatened or endangered species, etc.) may be identified that also need to be considered and/or addressed. These future efforts and the selection of sites would serve to confirm the specific permitting requirements for individual activities and identify potential supporting documentation (e.g. sediment sampling, natural resource investigations) that may also be required.

5.2 PERMIT REQUIREMENTS

In addition to the dredging of the lake, several alternatives were considered to obtain access to the lake, to stage equipment, to process dredged materials and to dispose or reuse dredge spoils in upland locations. The agencies that would have primary jurisdiction over these activities would include the following:

- United States Army Corps of Engineers (USACE);
- New Jersey Department of Environmental Protection (NJDEP); and
- New York State Department of Environmental Conservation (NYSDEC).

Presented within this section is a brief discussion of each anticipated permit and/or approval that would be required for the proposed dredging of Greenwood Lake, as well as the additional permits and approvals that may be triggered by one or more of the potential alternatives evaluated for staging, material processing and/or the disposal or reuse of dredged materials. This information is summarized in Table 5-1.

Table 5-1. Summary of Potential Federal and State Permits/Approvals for Proposed Dredging of Greenwood Lake

Permit	Lead Agency(s)	Jurisdictional Basis	Regulated Activities	Certification/ Authorization Requirements	Fees	Public Notice
FEDERAL						
Section 10	U.S. Army Corps of Engineers	Section 10, Rivers and Harbors Act of 1899	Required for construction activities within navigable waters of the U.S.	No	No	Yes
Consultation	U.S. Fish and Wildlife Service	Section 7(a)(2) of the Endangered Species Act	Required for proposed activities that may have an effect upon threatened and/or endangered species	No	No	No
STATE						
Highlands Applicability and Water Quality Management Plan Consistency Determination	New Jersey Department of Environmental Protection	Highlands Water Protection and Planning Act (N.J.S.A. 13:20-1 et. seq.)	Required for all major Highlands Development in the Highlands Preservation Area unless exempted by the Highlands Act.	Site plans certified by a licensed New Jersey Professional Engineer	\$100 for individual applicants proposing improvements costing \$100,000 or less; or \$750	Yes
Highlands Preservation Area Approval	New Jersey Department of Environmental Protection	Highlands Water Protection and Planning Act (N.J.S.A. 13:20-1 et. seq.)	Required to undertake any activity in the Highlands Preservation Area pursuant to the Highlands Act.	Site plans certified by a licensed New Jersey Professional Engineer; Notarized permit form	Yes, Fee is dependent on alternatives selected	Yes
Flood Hazard Area Permit	New Jersey Department of Environmental Protection	Flood Hazard Area Control Act (N.J.S.A. 58:16A), The Water Pollution Control Act (N.J.S.A. 58:10-1 et.seq.), The Department of Environmental Protection Act 13:ID-1 et. seq., and N.J.A.C. 7:13-1.1 et. Seq.	Required for disturbance to land and vegetation within the flood hazard area of a regulated waterbody.	Site plans certified by a licensed New Jersey Professional Engineer, Notarized permit form.	\$1,000 plus \$100 for each 100 feet	Yes
Green Acres Program Application	New Jersey Department of Environmental Protection	NJDEP Green Acres Rules (N.J.A.C. 7:36)	Required to preserve areas of open space for recreation and public use.	No	No	No

Table 5-1. Summary of Potential Federal and State Permits/Approvals for Proposed Dredging of Greenwood Lake

Permit	Lead Agency(s)	Jurisdictional Basis	Regulated Activities	Certification/ Authorization Requirements	Fees	Public Notice
Dam Safety	New Jersey Department of Environmental Protection	Safe Dam Act (N.J.S.A. 58:4-1)	Required for all work conducted within 200 feet of a dam.	A licensed New Jersey Professional Engineer must certify that dredging within 200 feet of the dam would not compromise its safety; and site plans signed by a licensed New Jersey Professional Engineer	No	No
Acceptable Use Determination	New Jersey Department of Environmental Protection	Water Pollution Control Act (N.J.S.A. 58:10A-1 et. seq.), Waterfront Development Act (N.J.S.A. 12:5-3 et. seq.), Spill Compensation and Control Act (N.J.S.A. 58:10-23.11), Solid Waste Management Act (N.J.S.A. 13:1E-1 et. seq.)	Required for use or transfer of dredged materials from their point of origin.	Site plans certified by a licensed New Jersey Professional Engineer; Approved sampling program	No	No
Consultation	New Jersey Natural Heritage Program	Natural Heritage Act of 1988 (N.J.S.A. 13:18-15 et. seq.)	Required to determine the presence or absence of any rare, threatened or endangered species.	No	\$70 per hour for the review service.	No
Beneficial Use Determination	New York State Department of Environmental Conservation	New York State Solid Waste Management Regulations (6 NYCRR Part 360)	Required to determine the suitability of dredged materials for reuse.	Description of proposed use and approved sediment/material sampling program	No	No

For each permit or approval, the lead agency involved is identified; a general overview of application requirements including applicable form(s), certification requirements, design plan requirements, the need for site photographs, sampling and analysis requirements, public notification requirements and additional studies or consultations; a general overview of the permit process and schedule; and any applicable permit fees. A more detailed discussion of the individual permits and/or approvals and the anticipated requirements for each are provided below

5.3 FEDERAL PERMITS

5.3.1 United States Army Corps of Engineers

The proposed action would occur within Greenwood Lake, a navigable water of the United States, as defined under Section 10 of the Rivers and Harbors Act of 1899. The lake is an interstate lake and is categorized by the USACE as a Section 10 lake and therefore dredging activities within the lake would require a permit. The specific approval required from the USACE would include the following:

- A Section 10 Permit would be required under the Rivers and Harbors Act of 1899. This permit is required for any work, such as excavation or dredging, conducted in, over or under a navigable water of the United States and has the potential to impact its navigable capacity.

The application for this permit would be reviewed by the USACE and would also involve a federal interagency review process that would allow other involved agencies, such as the United States Fish and Wildlife Service (USFWS), to provide input and comment on the application related to proposed activities that may have an effect upon threatened and/or endangered species.

Application for a Section 10 USACE permit would require the submission of the following information:

- ENG-4345 Permit Form. This form is used for making application for any required USACE permit and approval. Required information includes a complete description of the proposed action, proposed purpose and need, and methods of construction. A quantitative discussion of proposed dredge volumes, types and quantities of construction materials; construction equipment; and other site-specific information that may be required by the USACE or reviewing agencies.
- Supplemental Form to ENG-4345 or Environmental Questionnaire, which primarily addresses dredging and other specific waterfront construction activities. Adjacent property owners to the proposed action must be identified.
- Representative site plans and section views of the proposed action, including sufficient dredge profiles through the length of the proposed dredged area. These drawings must be provided in USACE-required format.
- Site photographs representative of the areas proposed for dredging, as well as staging, processing and disposal/material management locations.

The overall application package is provided to the USACE. Once the application is deemed complete by the USACE, a public notice would be issued to allow for public comment on the proposed project for 30 days. During this period, the application would also undergo a federal interagency review process that would solicit input from other federal agencies with an interest in the project, such as the USFWS, who would be allowed to formally comment on the application. Once the public notice period is complete, any concerns would need to be compiled by the USACE and submitted to the applicant to be addressed. If there is substantial adverse reaction to the proposed project, a public hearing may also be required.

Once all comments received from the public and/or federal agencies are adequately addressed, the USACE review process is completed. The USACE permit would then require approximately 30 to 90 days to prepare the permit for the proposed action.

The overall estimated schedule for the receipt of USACE permits would be on the order of six to nine months from the submission of application materials for the proposed action

5.3.2 United States Fish and Wildlife Service

The USFWS would have an interest in protecting endangered and threatened fish and wildlife species and natural resources (e.g. wetlands); however, it would not have formal regulatory authority over the proposed action. The USACE, however, would consult with the USFWS to solicit comments on the potential affect of the proposed project on endangered and threatened species or other resources in the area, as part of normal interagency review process, prior to the completion of their determination on the application. The USFWS involvement in the project would be triggered by the submission of an application package to the USACE.

A biological opinion must be submitted by the USFWS within 30 days of the submission of the application. The biological opinion would state whether or not the proposed action would be likely to jeopardize the continued existence of a species of concern or result in the destruction or adverse modification of habitat critical to that species.

5.4 NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Dredging activities within Greenwood Lake would occur within open waters of the State of New Jersey and therefore, would be subject to the review and approval of the NJDEP. Greenwood Lake is also located within the Highlands Preservation Area. In addition, dewatering of dredged materials may be required and these materials would also need to be disposed or reused. Several permits and/or approvals from a variety of divisions within NJDEP would therefore potentially apply. Permits or approvals that may be required include the following:

- A Highlands Applicability and Water Quality Management Plan (WQMP) Consistency Determination would be required under the Highlands Water Protection and Planning Act. This determination is required for any project that is located within the Highlands Preservation Area.
- A Highlands Preservation Area Approval may be required under the Highlands Water Protection and Planning Act if the proposed dredging of Greenwood Lake is not determined to be exempt based on the Highlands Applicability and WQMP Consistency Determination.

- A Flood Hazard Area Individual Permit would be required under the Flood Hazard Control Act. If the proposed dredging is exempt from the Highlands Preservation Area Act, the project would still require a Flood Hazard Permit to conduct dredging activities.
- A Green Acres temporary access agreement would be required under the NJDEP Green Acres rules. A temporary access agreement would be required for any activities that are part of the proposed action that may take place within Browns Point Park, a designated Green Acres site.
- A Dam Safety authorization would be required under the Safe Dam Act for any dredging that may occur within 200 feet of a dam.
- An Activity Use Determination (AUD) would be required under several New Jersey State acts, including, but not limited to the Water Pollution Control Act, Waterfront Development Act, Spill Compensation and Control Act and Solid Waste Management Act. An AUD would be required for the use or transfer of dredged materials from their point of origin.

The NJDEP would serve as the lead agency for each of these permits. Application requirements and other submission requirements are described in greater detail below and it should be noted that many of the individual permits could be applied for concurrently or as part of one overall application.

The permitting and approval process would commence with a pre-application meeting. The pre-application process allows the NJDEP and the applicant to discuss the various procedures and policies associated with the proposed permitting effort and to identify additional supporting documentation or studies that may be required. Before a pre-application meeting can be scheduled, the NJDEP Division of Land Use Regulation would require information about the proposed action, including, but not limited to the specific location(s) of proposed dredging within the lake, a basic site plan containing information about the proposed dredging and hydrographic surveys. Additional information that the NJDEP would also typically require, if available, for the pre-application meeting would include:

- Proposed dredging method(s), project depth and areal extent of project;
- Location of the proposed disposal area, photographs of the disposal site and method of transporting material to the disposal area;
- For beneficial reuse, a description of how the dredged material would be used;
- Estimated volume of dredged material;
- Length of time necessary to conduct the dredging;
- The past history of on-site and adjacent land uses;
- Documented significant spills, if any (including type, volume, date and if either land-based or in-water); and

- Additional details about the project that may be useful in identifying the full scope of work.

Review of this material by the NJDEP would take approximately two to four weeks prior to the pre-application meeting. The pre-application meeting will serve to establish an initial relationship with the NJDEP for the proposed project and more importantly will assist to identify applicable permits, approvals, sampling needs and other requirements, as applicable.

5.4.1 Highlands Applicability and Water Quality Management Plan Consistency Determination

A Highlands Applicability and WQMP Consistency determination would be required if the proposed action disturbed an area greater than one-quarter acre of land within the New Jersey Highlands Preservation Area, inclusive of, but not limited to, staging, processing and upland disposal or dredged material reuse areas. Consistency of the proposed action with the Highlands Preservation Area Act regulations would be required.

The NJDEP would serve as the lead agency for this process. The application for this determination would require the submission of the following information:

- A Highlands Applicability and WQMP Consistency Determination Application Form (Highlands Applicability Form).
- Municipal tax maps showing the project site by block(s) and lot(s).
- USGS quadrangle map showing the project site and boundaries. The datum used for all maps should be NAD 1983.
- A detailed discussion of the proposed action, proposed purpose and need, methods of dredging and processing, areas where access, staging and processing will occur, disposal or beneficial reuse location(s) and other project specific information that may be applicable to the proposed action or requested by NJDEP.
- Site plans certified by a licensed New Jersey Professional Engineer that detail (if applicable depending upon the chosen alternatives) site improvements, total area of disturbance including supporting area calculations, a metes and bounds disturbance area delineation description, total area of existing impervious surfaces at the site, total area of permanent impervious cover to be generated by the project, delineation of all forested areas on site if applicable, a copy of the official proof of filing for site plan(s) that includes a county signature and stamp.

As part of the application process, a public notification must be issued. Certified receipts must be provided to show proof of notice delivery to the Municipal Clerk, Highlands Water Protection and Planning Council, Municipal Environmental Commission, Municipal Planning Board, Municipal Construction Official, Passaic County Planning Board, and the County Environmental Commission, as applicable.

The application package and supporting documentation would then be provided to the NJDEP Division of Watershed Management. Within 20 days, the administrative unit will issue a

determination of the application's completeness. Once the application is deemed complete, a notice is published in the NJDEP bulletin, which would be for 30 days. Once the public comment period is complete, any concerns would need to be compiled by the NJDEP and submitted to the applicant to be addressed.

Once all comments are adequately addressed, the NJDEP will complete its review and issue an exemption or a notice that the proposed action would be subject to the Highlands Preservation Area Act.

The overall estimated schedule for the receipt of a Highlands Preservation Area Determination would be on the order of six to nine months from the submission of application materials, including the review by the administrative unit, public comment period and NJDEP review.

5.4.2 Highlands Preservation Area Approval

If it is determined that the dredging of Greenwood Lake is subject to the Highlands Water Protection Planning Act and rules, all applications submitted to the NJDEP would be subject to the review and approval of the NJDEP's Highland Regulatory Program. Application for a Highlands Preservation Area Approval would require the submission of the following information, which would be the same or comparable to materials prepared as part of the Highlands Applicability and WQMP Consistency Determination process discussed above. Application for a Highlands Preservation Area Approval would require the submission of the information identified below. In those instances where the information would be comparable to that required for the Highlands Applicability and WQMP Consistency Determination, no further discussion is provided.

- LURP-2 Application form which requires a detailed project description, site location maps, site photographs and tax maps. This form is used for making application for all NJDEP permits or approvals that may be required for a proposed action.
- Public notice, including proof of receipt of such notice to applicable individuals or entities. In addition to the public notice requirements described previously, notice must also be sent to all owners of land within 200 feet of the boundary of the site, the Municipal Engineer, County Engineer, the local Soil Conservation District and the Municipal Clerk, Planning Board and Construction Official for the municipality on the other side of the watercourse from the site and within one mile downstream on either side of the waterway. Notification of the County Mosquito Control Agency may also be required.
- Site location maps (USGS Quadrangle, county road map, tax maps, etc).
- Site Photographs.
- A copy of the Highlands Applicability Determination issued by the NJDEP.
- A signed statement certifying that the proposed action will not result in any direct or indirect adverse impacts to bog turtles or their documented habitat.

- Determination of the presence or absence of any rare, threatened or endangered species, ecological communities, historic or archaeological resources or other features on or near the site. This information must include a letter from the Natural Heritage Program and/or a review of the Natural Heritage Database.
- Information about the location of any special Highland's resources on the site.
- A detailed project description.
- Site plans certified by a licensed New Jersey surveyor.
- A mitigation proposal for impacts or disturbances to Highland's open waters must be submitted, if applicable.
- Copies of NJDEP approvals previously acquired for the proposed action.

The application package and supporting documentation would be submitted to the NJDEP Division of Land Use Regulation. Within 20 days, the administrative unit will issue a determination of the application's completeness, which will start the public comment period, as described above, and NJDEP's formal review of the application.

The estimated schedule for the receipt of a Highlands Preservation Area Approval is dependent on each project. NJDEP currently has not established a formal timeframe for the issuance of a decision.

5.4.3 Flood Hazard Area

The proposed dredging of Greenwood Lake will disturb areas beneath the lake within the flood hazard area. Any disturbance to land or vegetation within the flood hazard area of a regulated waterway would require a Flood Hazard Area permit. Application for the Flood Hazard Area permit would require the submission of the information discussed below. For information that would be required for other permits and approvals, no further discussion is provided.

- A completed copy of the Flood Hazard Area Individual Permit Checklist;
- LURP-2 Application Form;
- Flood hazard map;
- All previous NJDEP approvals, if any, acquired for the proposed action;
- Site photographs with a photo locator map.
- An engineering report that provides detailed engineering calculations to assist in determining whether the proposed action complies with the Flood Hazard Area regulations;

- An environmental report describing any potential adverse impacts to resources and how these would be minimized. The report would also describe a justification for any adverse impacts to resources, as well as an analysis of alternatives and measures evaluated to reduce or mitigate potential impacts;
- Public notice of 30 days that would also require certified mailing of the notice to municipal and county contacts as well as property owners within 200 feet of the property boundary;
- Certified and sealed site plans showing the regulated activities and additional required details; and
- Presence/ absence determination of any rare, threatened or endangered species, ecological communities, historic or archaeological resources or other features on or near the site.

Upon submittal of the application and the determination that the application is complete and any comments received during the public notice period have been addressed, the NJDEP will make its determination on the proposed action and issue a permit within 90 days.

5.4.4 Green Acres

Browns Point Park, located in the southernmost portion of Greenwood Lake, is a potential staging and/or processing site that is being considered. Browns Point Park is a designated Green Acres site. Green Acres sites are part of a system of interconnected open spaces in New Jersey that have been created in an effort to protect, preserve and enhance New Jersey's natural environment and its historic, scenic and recreational resources for the public's use and enjoyment.

If Browns Point Park is selected as an alternative for staging and/or processing, a report will need to be prepared and submitted to the NJDEP Green Acres Program making a request for the temporary use of the park during the proposed dredging. This report would need to be prepared by the Greenwood Lake Commission with input from the Township of West Milford and will include the following information:

- A summary of the proposed action and the specific use of Browns Point Park;
- Description of the project purpose and need;
- A description of the public benefit;
- The duration of dredging, staging and/or processing activities that would impact the park;
- Size of the area disturbed or used in the park;
- The volume of dredged materials to be managed and/or processed in the park;
- A discussion of potential disturbance to the park (e.g., tree removal or other potential disturbances);

- A description of restoration activities to be implemented at the conclusion of park use; and
- Any potential long-term impacts to the park.

The information provided above will be incorporated into the report prepared for the use of the park and will be provided to the NJDEP Green Acres Program for review. A meeting with the NJDEP Green Acres Program and a visit by NJDEP to the park may be required prior to the granting of a temporary use determination.

Once the NJDEP Green Acres Program has received all required information, the application would undergo an internal review. A decision from the NJDEP would require approximately one to two months.

5.4.5 Dam Safety

Potential dredging may be recommended within close proximity to the existing outlet dam from Greenwood Lake to the Wanaque River. Any dredging that occurs within 200 feet of the dam requires authorization from the NJDEP Bureau of Dam Safety. As part of this approval process, NJDEP would require the following information:

- A letter detailing proposed dredging activities in proximity to the dam;
- A New Jersey licensed professional engineer experienced in the design and construction of dams would need to certify that dredging within 200 feet of the dam will not compromise its safety; and
- An engineering plan/hydrographic survey signed by a licensed New Jersey professional engineer outlining the limit of disturbance, spoil locations, erosion and sedimentation controls and cross sections showing depths of dredging and sequence of construction.

Once this information is received, the Bureau of Dam Safety will review the proposed dredging to determine that it will not impact the dam or nearby embankments which could affect the safety of the dam and would ensure that the dam has recently been inspected and is structurally sound. The review process is usually completed within 30 days, after which time the Bureau of Dam Safety will issue their authorization that the dam's integrity will or will not be impacted during dredging.

5.4.6 Activity Use Determination

Disposal or beneficial reuse of dredged materials within upland areas may require a NJDEP Activity Use Determination (AUD). All upland management options for dredged material in New Jersey, with the exception of landfills, are subject to an AUD process that the NJDEP will apply to authorize the use of dredged materials within upland areas. Disposal of dredged materials within landfills would be subject to the individual landfill requirements for the acceptance of dredge spoils and an AUD would not apply. In support of an AUD, sampling of sediments may be required as discussed in Section 6, and this would be determined during pre-application meetings with the NJDEP discussed above. Sampling would be conducted in support of AUD process. The following information would be submitted to the NJDEP Division of Land

Use Regulation at the same time as potential submissions required for a Highlands Preservation Area Approval or Flood Hazard Area permit:

- A description of all dredged materials or admixtures to be combined with the dredged material at the acceptable use sites, including the quantity of each admixture used; ratios of admixtures; evidence that the dredged material and admixture are used directly as a product or as a substitute for raw materials that meet the specifications and standards for a generally-accepted and similarly-manufactured product or raw material; a general description of each admixture; a contaminant profile; an evaluation of the general quality of all dredged material, admixtures and all products produced in accordance with the AUD; and a description of any treatment or processing of the dredged materials.
- A description of the acceptable use project, including a description of the geographical location of the proposed acceptable use; a description of the current use of the acceptable use project site and adjoining properties; a schedule for initiation and completion of the acceptable use project; and copies of any state or other authorizations or applications that will be required for receipt or use at the disposition site.
- Copies of documents providing authorizations and permits for siting, construction and operation of the acceptable use project and evidence or applications for authorizations from local, regional, state and federal agencies that have jurisdiction over the proposed action.
- Municipal tax map showing the block and lot numbers of the acceptable use project site and adjoining properties.
- A site plan is required showing where the dredged material and/or admixture may be managed or used. The site map shall be prepared, signed and sealed by a licensed New Jersey professional engineer or surveyor.

Once the completed application has been received by NJDEP, the review period would be approximately 90 days from the time the application was received.

5.5 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

5.5.1 Beneficial Use Determination

Although the current project study area is only evaluating potential dredging that would occur in New Jersey, some of the dredged materials may be disposed of and/or beneficially reused for a variety of potential end uses in New York State. As an example, materials removed as part of previous dredging conducted within the New York portions of Greenwood Lake were used for fill material at several municipal sites.

In order to use or place dredge spoils in New York State at a location other than a landfill, a Beneficial Use Determination (BUD) would be required under the 6 NYCRR Part 360 Solid Waste Management Facilities regulations from the NYSDEC. The BUD would be required to determine how the dredged materials can be used in New York. Upland areas, with the exception of landfills, that would allow the use or placement of dredged sediments can be conducted in accordance with a generic or case-specific BUD, which would require review by

the NYSDEC. If dredged materials will be disposed of within a New York State landfill, the specific landfill would need to be contacted to determine the site-specific requirements for the acceptance of these materials. Placement of dredge materials within a landfill does not require any specific permits or authorizations from the NYSDEC. The NYSDEC would serve as the lead agency for the BUD.

In order to obtain a BUD, a sampling plan outlining the proposed volume, number of samples and location and parameters to be sampled would need to be submitted to NYSDEC for review and approval. Results of the sampling program would need to be provided to NYSDEC for review and comparison with the Part 375 Unrestricted Soil Cleanup Objectives to determine whether the materials would qualify for a generic BUD. If this determination is approved, the material can be used for any purpose and is no longer considered a solid waste. However, if there are exceedences of the Unrestricted Soil Cleanup Objectives, the NYSDEC would need to be petitioned for a specific use of the materials. As part of this petition, engineering controls would be required to contain the contaminant(s); a specific location and how, where and to what depth the materials will be placed; what type of vegetative, asphalt or other cover would be placed on the materials; and what additional measures to limit the potential of this contamination would be required.

Once the results of approved sampling have been submitted to the NYSDEC, a generic use determination would take approximately one week. However, a case-specific BUD would require review within the applicable NYSDEC regional office and the NYSDEC Solid Waste Management Unit in Albany. This would typically require two to three weeks for a decision.