

Greenwood Lake Water Level Management Plan



A Collaborative Effort by
Greenwood Lake Commission
with
New Jersey Department of Environmental Protection
2023 – 2043

Contributors to the Greenwood Lake Water Level Management Plan:

Jack Roe, New Jersey Chairperson

Floyd DeAngelo, New York Chairperson

Laura Franek - NJDEP Representative

Jessica Krugel – NJDEP Representative

Paul Sullivan – Passaic County Representative

Dan Sullivan – West Milford Township Representative

Jack Roe – West Milford Township Representative

George Vurno – NY Governor’s Representative

Floyd DeAngelo – Orange County Representative

Eric Hastings – Town of Warwick Representative

Matt Veth – Village of Greenwood Lake Representative

Catherine Ahlers - Alternate NYDEC Representative

Kelly Turturro - NYDEC Representative

Dale Van Nimwegen – Greenwood Lake Watershed Management District Representative

Allison Wagner – Administrative Assistant

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Introduction

This document is to be used as a Water Level Management Plan that is the source for directing future drawdowns of the waters which lie within Passaic County, New Jersey and Orange County, New York.

The title of ownership to the dam impounding the waters known as Greenwood Lake and the control of the sluice gates controlling the impounded waters belong to the State of New Jersey and are the responsibility of the Department of Environmental Protection and the State Park Service. The property and rights were originally vested in trust to the Morris Canal and Banking Company. The property and rights vested in trust include Lake Hopatcong, Lake Musconetcong, Cranberry Lake, Bear Pond at Saxton Falls and Greenwood Lake (NJSA Title 13:12-1 through 13: 12-29).

Passage of 14 canal acts during the period February 28, 1923 through March 13, 1925 continued the lakes as part of the Morris Canal and Banking Company. Its charter and rights were deeded to the State of New Jersey. The Acts placed the administration and management of the Company and its properties under the Board of Conservation and Economic Development and then to the Department of Environmental Protection and to the State Park Service.

In 2001, the Greenwood Lake Protection Act (N.J.S.A. 32:20A-1 and Laws of New York 2002 Chapter 47) created the Greenwood Lake Commission, a bi-state agency with the goal of protecting and managing the natural, recreation, and scenic resources of Greenwood Lake and its watershed. Including but not limited to providing for safe navigation, recreation, and conduct of authorized commercial activities. The Greenwood Lake Commission is responsible for initiating lake drawdowns because one of its duties is to, “coordinate environmental clean-up, maintenance, management and protection efforts undertaken, for the benefit of Greenwood Lake and its watershed”.

Because Greenwood Lake is an important recreational resource that is dependent upon a stable water level and because the lake also supplies water flow to Wanaque River, Monksville Reservoir, and Wanaque Reservoir, supplying water to over 3 million residents and thousands of businesses, this plan, addresses protection of aquatic biota, potable water distribution, and public recreation including the trout stocked waters located downstream.

There are several downstream and in lake considerations that must be balanced by the Greenwood Lake Water Level Management Plan. In general, the Department believes a 5.1 CFS passing flow from Greenwood Lake to be protective of all the downstream resources. Based on the information above, if a reduction in the passing flow is contemplated the most sensitive resource consideration is the protection of aquatic life in the downstream Wanaque River. This river segment just below the dam relies almost extensively on the water released from the Lake. The release from Greenwood Lake makes up less of the overall flow in the Wanaque River as one moves progressively further downstream. However, during extremely dry periods all resource considerations enumerated above should be examined before any departure from the Greenwood Lake Water Level Management Plan is authorized.

Greenwood Lake Dam

Greenwood Lake Dam is located in the Hudson River Basin within the State of New Jersey, County of Passaic, West Milford Township in Block 2903 Lot 1. Constructed between 1927-1928, it is 18 feet high and 270 feet in length. The Greenwood Lake Dam is classified as a High Hazard Dam. The High Hazard classification owes to the inundation potential and threat to life and property if the dam were to fail. The classification has nothing to do with the condition of the dam itself.

Low level outlet consists of two 42-inch by 60-inch sluice gates located below the gatehouse (middle and left side). The third sluice gate (42-inch by 42-inch) on the right side was permanently sealed with concrete.

The Greenwood Lake Dam spillway is about 90 feet long and has an elevation of 18 feet. The dam also has a water control structure consisting of three sluice gates which allow the water level to be manipulated below the spillway elevation. The Greenwood Lake Dam is a large dam as it impounds more than 1,900 acres of water.

Dam Safety regulations require the Greenwood Lake Dam to be inspected by a Licensed Professional Engineer every year (N.J.A.C. 7:20). A drawdown of the lake is not required to perform this inspection, though it is beneficial to temporarily stop water from spilling over the dam to facilitate inspection of the downstream face of the dam. Based on the most recent inspection the dam is in poor condition. The primary reason for the poor condition rating is due to concerns about the spillway design storm. "Spillway design storm" means the storm upon which the hydraulic capacity of the spillway structure is designed.

The Department typically schedules necessary repairs to the dam to coincide with the regularly scheduled four-year drawdown of the lake. Repairs to the dam include: 1997 Sluice Gates, 1999 Overtopping protection, concrete repair, stabilization of discharge channel, and 2012 sluiceway maintenance. Replacement of the fish screens and sluice gates have been recommended. Additionally, contained within the most recent inspection report (2022) as determined by an investigation in 2012 the replacement of the sluice gates was recommended.

The Greenwood Lake Dam is not designated for flood control. Therefore, requests to open and close gates for the purpose of water retention cannot be entertained.

Schedule of Water Lowering Events

A five-foot drawdown is scheduled to occur every five years to provide an opportunity for property owners to schedule and perform significant maintenance to lake structures and lake environment as is permitted according to state, county, and local ordinances. If a drought warning is declared by the Commissioner of the Department of Environmental Protection a departure from this plan may be warranted.

Lowering of lake levels has been completed six times during the period 1997 through 2021, with a drawdown scheduled to commence again in fall of 2026. Details of the lake levels during the drawdowns are as follows:

Year	Maximum Scheduled Drawdown*	Elevation (gauge elevation)
1997-1998	60"	5 ft
2001-2002	60"	5 ft
2005	60" (suspended)	5 ft
2006-2007	60"	5 ft
2011-2012	60"	5 ft
2016-2017	60"	5 ft
2020-2021	60" (postponed)	5 ft
2021-2022	60"	5 ft
2026-2027	60" (scheduled)	5 ft
2031-2032	60" (scheduled)	5 ft
2036-2037	60" (scheduled)	5 ft
2041-2042	60" (scheduled)	5 ft

*Normal pool elevation is 10 feet

I. Goal and Objective

Goal: To maximize recreational opportunities at Greenwood Lake and provide opportunity for improvements and repairs to shoreline structure through a scheduled Water Level Management Plan while providing for the protection of the aquatic resources located with and downstream of the lake, while maintaining minimum passing flow requirements and potable water uses.

Objective: To establish a set of management and operational guidelines for manipulation of the lake's water level to meet the established goal.

The Goal of this plan is as follows:

- To ensure the safety of, and to maximize the recreational and existing commercial opportunities at Greenwood Lake, and to provide opportunity for improvements and repairs to shoreline structures through a scheduled Water Level Management Plan, while
- Providing for the protection of the aquatic resources located within and downstream of the lake, and while maintaining minimum passing flow requirements and potable water uses.

The Objective of this Plan is as Follows:

- To establish a set of management and operational guidelines for manipulation of the lake's water level to meet the established goal.
- To establish a set of easily understood management and operational guidelines for the manipulation of the Greenwood Lake water control structure to maintain a lake elevation as near as possible to 10 feet in Greenwood Lake conditions permitting and except during scheduled drawdown periods
- To maintain lake elevation levels during the five-foot drawdown years when the

drawdown shall start on or about the 2nd Tuesday of October, and refill shall begin on or after January 1st and occur every five years commencing in 2026.

Disclaimer: At no time is this plan is intended to restrict the ability of the Superintendent in charge of Wawayanda State Park to exercise best professional judgement in response to unusual or unforeseen circumstances as necessary to minimize property damage or the threat to human safety in the Greenwood Lake Watershed.

RESOURCE MANAGEMENT CONSIDERATIONS

NJDEP Fish & Wildlife (NJFW) notes that both the fishery in Greenwood Lake and the fishery downstream in the Wanaque River are important resources and management of them requires balancing the needs of both. Fish & Wildlife stocks Greenwood Lake and Wanaque River with a variety of fish. These water bodies provide strong recreational fisheries.

**The Division's regulations governing water lowering in impoundments (N.J.A.C. 7:25-6.25) require that north of I-195 lake lowering must be completed by November 1 in order to protect hibernating turtles and amphibians. Fish & Wildlife has made an exception to this requirement for Greenwood Lake due to the lake's large size. Requiring drawdown to be completed by November 1 would result in the initiation of lowering in the late summer and early fall when recreational use of the lake is still at its peak. These regulations also require that downstream flows must be maintained, at all times.*

The Wanaque River below the Greenwood Lake Dam is classified as Trout-Maintenance supporting trout on a year-round basis in certain sections. Trout in particular are very sensitive to elevated water temperatures. Stream temperatures are dependent on flow conditions from the lake. Management of water released from Greenwood Lake is important to reduce the impacts on the managed cool/cold water fishery downstream. Elevated temperatures associated with poorly managed releases can result in stress and potentially mortality to trout that are stocked in the Wanaque River. Greenwood Lake by comparison is designated as FW2 Non-Trout as it lacks sufficient cooler temperatures and associated oxygen levels in its water column to support trout through the summer months and as such cannot support trout year-round. Maintaining stream flows below the lake is extremely important to maintaining aquatic life in the river.

II. Facts

The following analysis of considerations, procedures, and facts are based on historic lake controls, local economic factors, environmental conditions, law, policy and procedures and recommendations both private and public.

A. Considerations

1. The waters of Greenwood Lake are used for recreational purposes to include, but are not limited to, power boating, sailing, fishing, and bathing in the

summer months and ice boating and ice fishing in the winter months, community-oriented festivals and events and other recreational activities associated with a large inland lake.

2. The economic base for several businesses that are situated on the lake or in the vicinity of the lake is highly dependent upon lake water quality, fisheries habitat, navigational safety, and lake water levels.
3. Greenwood Lake is situated on the New York/New Jersey state border and lies within both states, two counties, and several local government jurisdictions. The lake also falls within the jurisdiction of the federal government through the US Army Corps of Engineers and the US Coast Guard. This multi-jurisdictional factor compounds lake management by increasing approvals required and permit/agreements needed.
4. The waters located below the Greenwood Lake dam are identified as trout stocked waters, and trout fishing is a popular sporting activity that remains important to the local and state economy.
5. Greenwood Lake is situated on the Wanaque River, and the river supplies water to the Monksville and Wanaque Reservoirs. Any impact upon the waters of Greenwood Lake in turn impacts upon each reservoir. The reservoirs provide water for over 3 million residents and thousands of businesses. Monksville is open to public recreation.
6. 3.3 MGD (million gallons per day) must be released downstream when natural stream flow ebbs. The 3.3 MGD is measured at a weir located below the dam and equates to 5.1 CFS as specified by the New Jersey DEP-Division of Water Supply and Geosciences.
7. The Wanaque River immediately downstream of Greenwood Lake is classified as FW2- Trout Maintenance (N.J.A.C. 7:9B-1.15(c)). Indicating its ability support trout year-round. The temperature criterion for trout maintenance waters is not to exceed an absolute maximum of 25 degrees Celsius (77 degrees F) and not to exceed a rolling seven-day average of maximum temperatures of 23 degrees Celsius (73.4 degrees F) (N.J.A.C. 7:9B-1.14(d)11.). The dissolved oxygen criterion for Trout Maintenance waters is not less than 6 parts per million (ppm) as a 24-hour average concentration and no instantaneous concentration of less than 5 ppm.

B. Procedures

1. One sluice gate at the Greenwood Lake dam is kept in a year-round fixed position allowing for the required 3.3 million gallon per day (MGD) downstream flow. (Except as is necessary during an actual drawdown.)
2. The trout fishery below the Greenwood Lake dam has historically been dependent upon natural spillway discharge and not on controlled water releases. However, the habitat would be dependent upon the 3.3 MGD

controlled water release especially in periods of reduced stream flow due to drought, etc.

C. Facts

1. The Greenwood Lake Commission is a bi-state agency and historically acts as the unit requesting a lake drawdown.
2. The Veolia Water operates a sewage treatment plant on the Wanaque River below the Greenwood Lake dam, which serves the residents of the lake community of Awosting.
3. The rate of water that normally discharges from Greenwood Lake is determined by the sluice gates and the natural stream flow coming into the lake and thereafter running over the spillway. Several springs are known to feed the lake and contribute to the overall water supply available.
4. The drawdown is an opportunity for lake front property owners to make repairs on their docks and bulkheads and to perform moderate cleaning of their properties adjacent to the lake. Drawdowns during colder winters when bottom sediments freeze, may provide some weed control benefits.

III. Drawdown Schedule 20-year Plan

A drawdown of five feet (60 inches) should begin in 2026 to commence again every five (5) years thereafter or otherwise determined by the Greenwood Lake Commission and is not to conflict with the drawdown of Lake Hopatcong unless otherwise directed by the Commissioner of the Department of Environmental Protection during a declared drought warning or emergency. The drawdown is to begin the 2nd Tuesday of October and the refill on or after January 1st whenever hard ice is generally loose from most shorelines, at the discretion of the Wawayanda State Park Superintendent.

*If a **drought warning** is declared by the Commissioner of the Department of Environmental Protection, or a **water supply emergency** is declared by the Governor, the Assistant Commissioner for State Parks, Forests and Historic Sites shall consult with the Assistant Commissioner for Water Resources to determine whether a departure from the Greenwood Lake Water Level Management Plan is warranted. This could affect the drawdown schedule, as well a reduction in the passing flow out of Greenwood Lake. Any deviation from the Lake's Water Level Management Plan shall be immediately communicated to the Greenwood Lake Commission, so that it may be broadcast on the Commission's website and various media outlets.

[Example: 2021/2022 Winter start
 A drawdown of a maximum of 5 feet
 Repeat process thereafter every five (5) years
 Drawdown to begin the 2nd Tuesday of October and the refill to

begin on January 1st.

IV. Overview of Procedures for Drawdown

1. By June 1st of each year in which a drawdown is scheduled to commence, the Greenwood Lake Commission will request that a drawdown be conducted. The request will be submitted in writing to the Administrator, New Jersey State Park Service. The request will be accompanied by letters of support and/or by permit from the parties listed in Section VII.
 - a. Partners need to provide evidence of approval in support of this effort for documentation to NJDEP, New Jersey Division of Parks, Forests, and Historic Sites. Since the plan is established as a twenty (20) year plan, partners may grant approval (or re-approval) for the entire period.
 - b. To facilitate gaining permission for the drawdown, no response within 35 days will be considered as approval from the partners.
 - c. This plan will be a permanent, scheduled five-year interval drawdown plan as part of lake management.
2. New Jersey Division Parks, Forests and Historic Sites will submit a water lowering application to the NJDEP Fish & Wildlife by July 1st.
3. The Commission will request that the New York Department of Environmental Conservation issue a permit for lake maintenance operations.
4. The actual water lowering permit will be transferred to the New Jersey Division of Parks, Forests, and Historic Sites, which will hold the permit and provide a copy to the Greenwood Lake Commission once it has been approved. The drawdown will commence on the second Tuesday of October for a 5-foot drawdown. Stable water levels at the reduced elevation will be maintained to the extent feasible for the duration of the drawdown. A slow refill may be required to avoid dock damage due to heavy ice formations on the lake surface.
5. A drawdown approval will always be dependent upon water supply conditions. The New Jersey Division of Parks, Forests, and Historic Sites will consult with the New Jersey Department of Environmental Protection's Division of Water Supply and the North Jersey District Water Supply Commission for guidance on water supply conditions. If a drought warning is declared by the Commissioner of the New Jersey Department of Environmental Protection, or a water supply emergency is declared by the Governor, the Assistant Commissioner for Parks, Forests, and Historic Sites shall consult with the Assistant Commissioner for Water Resources to determine whether a departure from the Greenwood Lake Water Level Management Plan is warranted.

6. Drawdown Procedures

- a) The maximum depth of the drawdown is set at five (5) feet below the spillway elevation.
- b) Drawdown of the lake will begin on or about the 2nd Tuesday of October. A gradual drawdown is proposed for the first ten (10) days. The actual rate of outflow will be dependent upon weather conditions during this period. All boats and docks should be removed at this time.
- c) The outflow at the dam will increase on the eleventh (11th) day and will go to 150 MGD (million gallons per day) as soon as permissible thereafter to effectively drawdown the lake.
- d) An effort will be made to maintain the five (5) foot lake level reduction when it has been reached.
- e) The lake refilling process will begin on January 1st depending on conditions.
- f) NJDEP will be notified of any major date changes or highly altered procedures if they occur.

7. Refill Procedures

- a. The refill will begin on or after January 1st or whenever, in the opinion of the Wawayanda State Park Superintendent, hard ice is generally loose from most shorelines to prevent ice damage to private property. The gates on the Greenwood Lake Dam shall be closed to allow the 5.1 CFS passing flow and the lake shall be allowed to fill to the spillway crest elevation of 10 feet.

8. Annual Review

- a. This water level management plan shall be reviewed annually prior to April 1 to determine whether adjustments to the plan are required. The annual review shall include the Greenwood Lake Commission and a citizens advisory committee made up of residents from each of the following: West Milford Township, the Village of Greenwood Lake, and Warwick Township.

V. Primary Partners and Roles

The partners shall be:

State of New Jersey
New Jersey Division of Parks, Forests, and Historic Sites
New Jersey DEP Fish & Wildlife
New Jersey DEP, Division of Land Resource protection
Greenwood Lake Commission

A. The Role of the State of New Jersey

1. The allocation of funds to support a drawdown is the responsibility of the Greenwood Lake Commission (the Commission), except as otherwise specified herein or as required by law. Funding must be present to support each drawdown proposed.
2. Storm Island lies within the jurisdictional boundaries of West Milford Township. As the regulatory authority, questions on access during a drawdown should be directed to the West Milford Township Administrator.

B. The Role of the New Jersey Division of Parks, Forests and Historic Sites

New Jersey Division of Parks, Forests, and Historic Sites
Mail Code 501 – 04
P.O. Box 420
Trenton, NJ 08620-0420

1. Wawayanda State Park phone number is (973) 853-4462.
2. To provide a liaison between the Department of Environmental Protection and the Commission.
3. To provide procedural guidance to the Commission.
4. Division of Parks, Forests, and Historic Sites will submit a water lowering application to the New Jersey DEP Fish & Wildlife by July 1, of each year of a scheduled drawdown.
5. Operate sluice gate in accordance with minimum passing flow requirements and the Greenwood Lake's Water Level Management Plan.
6. Produce a summary of each drawdown activity for distribution to interested parties.
7. Attend the Commission drawdown meetings scheduled.
8. Periodic funding for dam and dam controls (i.e., sluice gates valves, etc.) repairs and upgrades, per dam recommendations from the Department's Dam Safety unit.
9. Conduct annual Greenwood Lake Water Level Management Plan Review

C. The Role of NJDEP Fish & Wildlife

NJDEP Fish & Wildlife
Bureau of Freshwater Fisheries
P.O. Box 394
Lebanon, NJ 08833

1. Review water lower applications submitted by the NJ Division of Parks, Forests and Historic Sites and issue permit in accordance with the New Jersey Administrative Code and the Greenwood Lake Commission's Water Level Management Plan and that impacts to aquatic resources are minimized.
2. When needed, attends the Commission drawdown meetings as scheduled.
3. Review and coordinate with the Commission and NYDEC on the management of the lake's fishery, including the development of any related fisheries management plans. Work with the Division of Parks, Forests and Historic Sites by providing technical expertise on drawdowns, processes, and procedures.

D. The Role of NJDEP Land Resource Protection

1. Permits from this Division (Freshwater Wetlands and Flood Hazard Area) are not required as part of the lowering procedures. However, permits from this Division may be necessary to perform typical drawdown repairs, such as dock and seawall (bulkhead) repair. See Appendix D for additional information.

E. The Role of the Greenwood Lake Commission

Greenwood Lake Commission
P.O. Box 93
Hewitt, NJ 07421
(973) 506-7800
www.gwlc.org

1. The Greenwood Lake Commission (the Commission) is a bi-state government commission formed to advance the maintenance, management, and preservation of Greenwood Lake.
2. In the matter of a drawdown, the Commission will act as the requester. The Commission will be responsible to provide written documentation of support of all drawdowns from the federal, state, county and local government agencies having jurisdiction over the lands and waters involved along with like documentation from the public entities that are listed in the drawdown plan (see attachment #2).
3. Updated letters of support must be submitted for each successive drawdown unless the submitting party desires to cover the entire twenty (20) year plan period when making its initial submission. That option will be left open to the submitting party or entity.
4. The Commission will be responsible for all operational functions

- associated with any requested drawdown except for the operation of the sluice gate control mechanism which will be the responsibility of assigned State Park Service personnel from Wawayanda State Park.
5. The Commission will provide an update of its administrative roster for NYDEC and the New Jersey Division of Parks, Forests, and Historic Sites for emergency contact purposes. The roster is to include name, title, phone number(s) – including cell phones, fax number (if available), and complete address.
 6. The Commission will be responsible for arranging all meetings associated with a drawdown to include public hearings. A minimum of two (2) meetings are to be held between January 1st and June 30th the year of a scheduled drawdown; one meeting must be in New York and one meeting must be in New Jersey. All parties identified on the following Other Parties list in Section VII are to be invited to discuss their concerns or bring forth new issues. Absence will be taken as non-concern unless written submissions are received before the meeting is held. The Executive Director of the Commission, or the New Jersey or New York Chair, or his/her appointed designee, will chair the meetings.
 7. Minutes of the meetings will be the responsibility of the Commission and copies of the minutes are to be distributed to all participating parties within twenty (20) days.
 8. The Commission will submit a report evaluating the effect of each drawdown to the New Jersey Division of Parks, Forests and Historic Sites within (thirty) 30 months of the approved drawdown date. The report should include the following:
 - a. The extent and type of vegetation control achieved.
 - b. The percentage of vegetation remaining in the littoral zone.
 - c. The changes in species composition noted.
 - d. The effects on the density and species composition of macroinvertebrates in the dewatered and littoral area thereby providing information on the ecological health of the benthic.
 - e. Any other factors that may support the need for continued drawdowns.

VI. Other Parties Involved

The following list contains the known public and private entities that are involved in varying fashion during a drawdown and that require notification or approval.

A. Role of the New York State Department of Environmental Conservation

New York State Department of Environmental Conservation
Region 3 Program
21 South Putt Corners Road
New Paltz, NY 12561-1696

The New York State Department of Environmental Conservation has regulatory

jurisdiction in the following areas:

1. Docks, Platforms & Moorings – ECL Article 15, Title 5
2. Excavation & Fill in Navigable Waters – ECL Article 15, Title 5
3. Water Quality Certification – Section 401 – Clean Water Act
4. Freshwater Wetlands – Article ECL 24

A permit application shall be submitted to NYSDEC requesting authorization for activities proposed during the seasonal drawdown of Greenwood lake.

B. Role of the New Jersey Highlands Council

New Jersey Highlands Council
100 North Road
Chester, NJ 07930
(908) 879-6737
highlands@highlands.nj.gov

1. Provide letter of support for each drawdown activity and waive the necessity of their approval of any permits from the mean high-water level into the lakebed. Letter to be submitted upon request to the Commission for inclusion in their drawdown request package to the New Jersey Division of Parks, Forests, and Historic Sites.
2. Attend the Commission drawdown meetings whenever applicable.

C. Role of the New York District, Corps of Engineers

U.S. Army Corps of Engineers
Jacob K. Javits Federal Building
26 Federal Plaza, Room 2109
New York, NY 10278-0090

1. Review lake management consultant's plans for major lake restoration projects when applicable.
2. Provide letter of support for each drawdown activity. This letter is to be submitted upon request to the Commission for inclusion in their drawdown request package to the New Jersey Division of Parks, Forests, and Historic Sites.

D. Role of the North Jersey District Water Supply Commission

North Jersey District Water Supply Commission
1 Orechio Drive
Wanaque, NJ 07465
(973) 835-3600
<https://www.njdwsc.com/>

1. Provide a letter of support for each drawdown activity. The letter is to be submitted upon request to the Commission for inclusion in their drawdown request package to the Division of Parks, Forests and Historic Sites.
2. Enter into a Memorandum of Agreement with the Commission to do the

following:

- a. Monitor stream flow activities during the drawdown and refill process during normal working hours. Saturdays, Sundays, and holidays excluded.
 - b. Notify Wawayanda State Park at (973) 853-4462 of any changes required in stream flow that negatively impact upon the downstream reservoirs.
 - c. Work with the New Jersey Division of Parks, Forests, and Historic Sites liaison throughout the drawdown process. Provide technical support on reservoir supply needs/issues.
 - d. Work with the DEP Water Supply Element on all drawdown requests to ensure that water supply needs are known, and that increased water flows due to drawdown may be absorbed at the reservoirs.
3. Attend the Commission drawdown meetings whenever applicable.

E. Roles of Passaic County, New Jersey and Orange County, New York

Passaic County
Passaic County Administration Building
Freeholder's Office
401 Grand Street
Paterson, NJ 07505
(973) 881-4000

Orange County
Orange County Government Center
255 Main Street
Goshen, NY 10924
(845) 291-4000

1. Provide letter of support for each drawdown activity. Letter to be submitted upon request to the Commission for inclusion in their drawdown request package to the New Jersey Division of Parks, Forests, and Historic Sites.
2. Provide support to lakeside communities throughout each drawdown process if required.

F. Roles of the Township of West Milford, New Jersey; the Village of Greenwood Lake, New York; and the Town of Warwick, New York

Township of West Milford, NJ
West Milford Town Hall
Administrator's Office
1480 Union Valley Rd
West Milford, NJ 07480
(973) 728-2710
TwpAdministrator@WestMilford.org

Town of Warwick
132 Kings Highway
Warwick, NY 10990
(845) 986-1124

Village of Greenwood Lake
18 Church Street
PO Box 7
Greenwood Lake, NY 10925
(845) 477-9215

1. Provide a letter of support for each drawdown activity. Letter to be submitted upon request to the Commission for their inclusion in the drawdown request package to be submitted to the New Jersey Division of Parks, Forests, and Historic Sites.
2. Provide in-kind services if requested by the Commission. This will be done only at the request of the Commission and only with approval of municipal officials.
3. Work with local citizens and their organizations and with local businesses and inform them of the municipality's support and involvement in the drawdown process.

G. The United States Geological Survey

New Jersey Water Science Center
3450 Princeton Pike
Suite 110
Lawrenceville, NJ 08648
Phone: (609) 771-3900

1. Notification of a drawdown must be given to the U.S. Geological Survey, as this organization monitors the gauging station at the Greenwood Lake dam.

H. The United States Coast Guard

Commander Fifth Coast Guard District
431 Crawford Street
Portsmouth, Virginia 23704
Portsmouth Federal Building Staff Status:
(757) 398-6441 or (800) 334-8377

1. Notification of a drawdown must be given to the U.S. Coast Guard, whose responsibility it is to patrol this bi-state lake.

VI. Drawdown Package Contents

A drawdown package is to be submitted to the Administrator, New Jersey Division of Parks, Forests, and Historic Sites containing the following:

1. A written request from the New Jersey or New York Co-Chairperson or appointed designee, of the Greenwood Lake Commission to the Administrator, New Jersey Division of Parks, Forests, and Historic

Sites requesting that a drawdown be conducted according to the Water Level Management Plan.

2. Approvals given by permits issued or accompanying letters received from the following:
 - a. New York State, Department of Environmental Conservation
3. Supporting letters approving the proposed drawdown by the following:
 - a. The New Jersey Highlands Council
 - b. New York District, Corps of Engineers
 - c. North Jersey District Water Supply Commission
 - d. Passaic County, New Jersey
 - e. Orange County, New York
 - f. The Township of West Milford, New Jersey
 - g. The Town of Warwick, New York
 - h. The Village of Greenwood Lake, New York
 - i. U.S. Geological Survey
 - j. U.S. Coast Guard

NOTE: Failure to provide any of the above documentation may delay the permitting process. Missing documentation must be accounted for in written form with proper explanations made.

Appendix A - Greenwood Lake and Watershed Statistics

Greenwood Lake Surface Area - source

1947 acres – Greenwood Lake Commission

84,811,320 sq. ft. = 1947 * 43,560 sq. ft./acre

Greenwood Lake Watershed Area (to dam)

26 square miles – United States Geological Survey

16,640 acres = 26 sq. mi. * 640 acres / sq. mi. (includes surface area of the lake)

Winter / Spring Rainfall vs. Lake Elevation

An inch of rain produces a rise of 4.68” in lake level.

Summer Rainfall vs. Lake Elevation

An inch of rain produces a 2.12” of rise in lake level.

Appendix B - Conversion Factors

1 square mile = 640 acres

1 acre = 43,560 square feet

1 inch = 0.083 feet

1 day = 86,400 seconds

1 cubic foot = 7.48 gallons

1 million gallons per day (mgd) = 1.56 cubic feet per second (cfs)

1 cfs = 0.65 mgd

Appendix C - Calculated Water Level Responses

Lake Elevation Response to 4.64 CFS discharge (disregarding evaporation and precipitation)

440,640 cu.ft/day = 5.1 CFS * 86,400 seconds in a day

440,640 / 82,067,000 sq.ft = 0.005 ft/day = 0.06 inches per day = 1.8 inches per month

6,811,561 cu.ft. = 0.083 feet (1 inch) * 82,067,000 sq.ft.

6,811,561 cu.ft. / 440,640 cu.ft = 15.4 days to lower one inch

Maximum Discharge Rate and Lake Elevation Response

5.1 CFS = Minimum passing flow = 1.6 feet on stream gauge

232 CFS = 150 MGD = 3.17 feet on stream gauge (Greenwood Lake Water Management

Plan)

$232 \text{ CFS} * 86,400 \text{ seconds/day} = 20,044,800 \text{ cu. ft. per day}$

$20,044,800 \text{ cu.ft. per day} / 82,067,000 \text{ sq.ft.} = .24 \text{ feet per day}$

$0.24 \text{ feet} * 12 \text{ inches} = 2.88 \text{ inches per day}$

$60 \text{ inches} / 2.88 \text{ inches} = 22.73 \text{ days}$

$4.21 \text{ inches (average precipitation for Oct-Dec)} * 4 \text{ inches (lake rise)} = 16.84 \text{ inches}$

$16.84 \text{ inches} / 2.88 \text{ inches} = 5.85 \text{ days}$

Total Days to lower 60 inches at 150 MGD = 28.58 days

Appendix D – New Jersey Permit Information

Lake Lowering Permit

Responsibility to obtain: Division of Parks, Forests and Historic Sites

Pursuant to N.J.S.A. 23:5-29 and N.J.A.C. 7:25-6:25, a water lowering permit must be obtained to partially or completely lower a body of water, regardless of ownership. Water withdrawal activities (water supply, irrigation etc.) which are already permitted or specifically exempted by the Department do not require a water lowering permit. For example: the lowering of water on a water supply reservoir for potable water use does not require a water lowering permit. However, a water lowering permit is needed for lowering the same body of water for dam repair, or aquatic vegetation control. If uncertain whether a permit is required, please contact the Bureau of Freshwater Fisheries at (908) 236 – 2118 for clarification. The NJDEP Fish & Wildlife issues water lowering permits for the sole purpose of protecting the state’s aquatic biota.

The timing, duration and extent of lowering’s are tailored to each situation and are designed to avoid or minimize the loss of fish and impacts to other biota. Permits are conditioned to further minimize these impacts to the extent possible and permittees assume responsibilities to protect aquatic biota while the waterway is lowered. Every lowering has an impact to both aquatic biota present within the waterway and downstream and no waterway should be lowered on a routine annual basis. Typically, the Division of Fish and Wildlife requires the lowering of lakes north of I-195 to be completed before November 1 to minimize impacts on reptiles and amphibians that hibernate by burrowing into the mud. The Division has routinely made an exception for Greenwood Lake in consideration of the long-standing water level management practices in the lake and as an accommodation to recreational boating uses on the lake.

APPLICATION INFORMATION

Applications are available on NJDEP Fish & Wildlife’s website www.NJFishandWildlife.com or by contacting the Bureau of Freshwater Fisheries at (908) 236 - 2118. Applications should be submitted at least two months prior to the date requested to begin lowering to allow time for review and processing. A separate application is required for each water body requested to be lowered.

Applications should be submitted to: NJDEP Fish & Wildlife Bureau of Freshwater Fisheries PO Box 394, Lebanon, NJ 08833

New Jersey Land Resource Protection Permits

Responsibility to obtain: Individual property owners conducting regulated activities.

Department of Environmental Protection
Division of Land Resource Protection
Mail Code 501-02A P.O. Box 420
Trenton, New Jersey 08625-0420
(609) 777-0454

MINOR DREDGING AND SHORELINE CLEANUP

Flood Hazard Area Control Act

Hand removal of sediment and debris is covered by a permit-by-rule at N.J.A.C. 7:13-7.5. Mechanical removal of debris is covered by a permit-by-rule at N.J.A.C. 7:13-7.6. There are numerous permits-by-rule, permits by certification, General Permits, and Individual Permits. For further information contact the Division of Land Resource Protection.

Attn: Permit-By-Rule Notification
NJDEP, Coastal and Land Use Compliance and Enforcement
P.O. Box 422
Trenton, New Jersey 08625-0422
Fax: (609)633-6798

Mechanical removal of accumulated sediment requires an individual Flood Hazard Area Control Act Permit.

Freshwater Wetlands Protection Act
N.J.A.C. 7:7A-5.13(b) – No Permit Required if: 1) Activity is in open waters only (no wetlands involved); 2) No fill is being placed in open waters for any reason (no cofferdams). 3) Activity doesn't occur until water level has been lowered and finishes prior to water level being raised; 4) No dredging below the original lakebed.

N.J.A.C. 7:7A-5.13(a) – General Permit required if wetlands disturbance is proposed. In addition to limitations 2-4 above: 5) Only one acre and only emergent wetlands may be dredged; 6) temporary wetlands disturbance to gain access to dredging site is limited to .125 of an acre of other wetlands (.25 of an acre with justification); no permanent fill of dredged material may be placed in wetlands.

DOCKS AND PIERS

Flood Hazard Area Control Act
N.J.A.C. 7:13-7.17 – Permit-By-Rule (No notice required): 1) New dock up to 2,000 square feet built on pilings, 2) Does not extend more than 20% across width of the regulated water, 3) A fixed deck or pier on pilings must remain open underneath to allow floodwaters

to pass freely, 4) No riparian zone vegetation disturbance except within 10 feet of the dock or pier where necessary to facilitate construction.

Freshwater Wetlands Protection Act

N.J.A.C. 7:7A-5.19(a) – No Permit Required: Construction of docks and piers on pilings (or floating) only affecting state open waters (no wetlands disturbance).

N.J.A.C. 7:7A-5.19(b) – General Permit: Docks and piers must be elevated on pilings over wetlands, not exceed 6-feet in width and not disturb more than .1 of an acre (4,356 sq. ft.) of wetlands or transition area. Limit one dock per private property.

BOAT RAMPS

Flood Hazard Area Control Act

N.J.A.C. 7:13-7.18 – Permit-By-Rule (Requires prior written notice to the Department 14 days prior to commencing construction): 1) footprint not greater than 2,000 square feet; 2) must be constructed at or below grade; 3) No riparian zone vegetation disturbance except within 10 feet of the dock or pier where necessary to facilitate construction.

Freshwater Wetlands Protection Act

Public Boat Ramp - N.J.A.C. 7:7A-5.19(b) – General Permit: 1) disturbance in wetlands, transition areas and open waters limited to .1 acre.

Private Boat Ramp – Requires a Freshwater Wetlands Individual Permit and is unlikely to be approved.

REPAIR OF EXISTING STRUCTURES

(Bulkheads, boat houses, crib structures, revetments)

Flood Hazard Area Control Act

N.J.A.C. 7:13-7.2: Permit-By-Rule (Requires prior written notice to the Department 14 days prior to commencing construction): 1) Structure is not a habitable building; is not enlarged; and does not result in any riparian zone vegetation clearing. Please note that repair is defined as “to patch, mend, replace, rebuild and/or restore a lawfully existing structure to a usable condition after decay or damage has occurred, in which less than 50 percent of the structure is replaced and the size, shape or location of the structure is not altered.”

The reconstruction of a bulkhead requires a Flood Hazard Individual Permit.

Freshwater Wetlands Protection Act

N.J.A.C. 7:7A-5.1 – General Permit (30-day review from receipt of a complete application): Repair, reconstruction, rehabilitation, replacement, or maintenance of lawfully existing and currently serviceable structures provided that it is not put to a different use and shall not expand or enlarge the structure except for minor deviations due to changes in materials or construction techniques may be allowed.

Appendix E – New York Permit Information

New York State Department of Environmental Conservation (NYSDEC) Regulatory Jurisdictions and Permit Information

New York State Department of Environmental Conservation (NYSDEC) has several potential permit jurisdictions for Greenwood Lake. The most common permit jurisdictions are identified below; however, some projects could be subject to additional permit requirements. For additional information on permits not identified below, please visit the following webpage: <https://www.dec.ny.gov/permits/6222.html>

Environmental Conservation Law Article 15 Title 5 Protection of Waters

There are three distinct jurisdictions within Protection of Waters that may be applicable on Greenwood Lake, as outlined below. For additional information, please visit the following webpage: https://www.dec.ny.gov/permits/6042.html#Application_Checklist

Stream Disturbance: A Permit is required to disturb the bed or banks of a “Protected Stream”. A Protected Stream is any Class A or B stream and Class C streams with a Standard of (t) or (ts). This is not applicable to Greenwood Lake itself but would apply to any project that also disturbed a Protected Stream or an unclassified perennial stream that is a direct tributary to Greenwood Lake. There are no applicable exceptions or exemptions to this jurisdiction. For more information visit the following webpage: https://www.dec.ny.gov/permits/6042.html#Disturbance_of_The_Bed_or_Banks

Excavation and Fill in Navigable Waters: Any construction, excavation or discharge of fill below “mean high water” requires a permit. Mean high water on Greenwood is determined by physical characteristics such as water stains on rocks or existing bulkheads, the transition from aquatic to terrestrial vegetation, scour, etc. There are no applicable exceptions or exemptions to this jurisdiction. For more information visit the following webpage: https://www.dec.ny.gov/permits/6042.html#Excavation_or_Placement_of_Fill

Docks and Moorings- Generally, the construction, reconstruction or repair of docks, piers, wharfs, platforms, breakwaters and the installation of moorings, in, on or above Greenwood Lake requires a permit with some limited exemptions. For more information visit the following webpage: https://www.dec.ny.gov/permits/6042.html#Construction_Reconstruction_or_Expansion_of_Docking

Water Quality Certification Section 401 of Clean Water Act

Activities that require a permit from the US Army Corps of Engineers also may require a Water Quality Certificate from NYSDEC verifying compliance with state water quality requirements. This is generally necessary when fill is placed in waters of the United States.

Maintenance and repair activities generally that do not result in the discharge of additional fill in waters of the United States generally can be covered under Nationwide Permits and the Blanket Water Quality Certification. For additional information visit the following webpage: https://www.dec.ny.gov/permits/6042.html#Water_Quality_Certification

Environmental Conservation Law Article 24 Freshwater Wetlands:

Activities that are regulated and occur within a New York State regulated freshwater Wetland or adjacent area requires a Freshwater Wetland Permit. Examples of regulated activities include clearing vegetation, excavation, fill, grading, construction of a structure and altering hydrology. A Freshwater Wetland Permit is required for the drawdown of Greenwood Lake. Please visit the following webpage for additional information: <https://www.dec.ny.gov/permits/6277.html>

The New York State Freshwater Wetland law was amended to, among other things, eliminate the requirement that freshwater wetlands be identified on a regulatory map beginning January 1, 2025. Additional information will be available as regulations are promulgated. Please visit the following webpage for additional information: <https://www.dec.ny.gov/lands/5124.html>

Environmental Conservation Law Article 11 Threatened and Endangered Species

Greenwood Lake is currently within the screening distance of species listed as Threatened or Endangered, the Timber Rattlesnake and Northern Long-eared Bat. A permit is required if an activity may result in an inadvertent death of an individual or a loss of habitat utilized by these species. Due to the time of year the drawdown occurs and the nature of the activities that take place under the general permit a Threatened and Endangered Species Incidental Take Permit will not be required. Other activities beyond the scope of the drawdown and General Permit in the overall area may require review by DEC, the incorporation of avoidance measures in the proposal or a Permit. It is also possible that species covered by this law will change over time. Please visit the following webpage for additional information: <https://www.dec.ny.gov/animals/7181.html>

Flood Hazard Areas

In New York State, municipalities are responsible for implementing regulations that are required for a community to be eligible to participate in the National Flood Insurance Program. In order to participate, there are minimum standards that the local law must meet but a municipality can implement stricter requirements. Please contact the Town of Warwick or the Village of Greenwood Lake for more information and visit the following webpage for additional information: <https://www.dec.ny.gov/lands/24267.html>

Environmental Resource Mapper, Info Locator and EAF Mapper

The NYSDEC has several GIS based applications to help people determine if a permit is required for a project. These can be accessed at the following links:

<https://www.dec.ny.gov/animals/38801.html>

<https://gisservices.dec.ny.gov/gis/dil/>

<https://gisservices.dec.ny.gov/eafmapper/>

Please also feel free to contact NYSDEC, Region 3 at 845-256-3000.

Applying for a Permit

Applications for NYSDEC permits utilize the Joint Application Form. This includes applications for coverage under general permits. Projects that require multiple permits from DEC generally require one submission and receive one permit document with authorizations covering the multiple jurisdictions. The Joint Application Form can also be utilized to apply for permit from the US Army Corps of Engineers and NYS Office of General Services, if necessary. Please visit the following webpage for additional information: <https://www.dec.ny.gov/permits/6230.html>.

NYSDEC - Greenwood Lake General Permit

NYSDEC issued a General Permit authorizing the following activities during the seasonal drawdown of Greenwood Lake through March 31, 2026:

- Maintenance dredging. This permit does not authorize maintenance dredging at commercial or public marinas.
- Repair or in-kind replacement of existing bulkheads, retaining walls, docks, boathouses, platforms, or other existing structures, including the use of new support structures/pilings.
- Debris removal.
- Replenishment of existing beach areas on the shoreline and exposed lake bottom.

Instructions for the Greenwood Lake Drawdown General Permit can be found at the following webpage:

https://www.dec.ny.gov/docs/permits_ej_operations_pdf/gp321002instretns.pdf

A copy of the Greenwood Lake Drawdown General Permit can be found at the following webpage:

https://www.dec.ny.gov/docs/permits_ej_operations_pdf/gp321002.pdf

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