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# **Greenwood Lake Water Level Management Plan**

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**2011-2031**



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**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, NJ and  
Orange County, NY.**

**- Greenwood Lake -**



# Commission

- The Greenwood Lake Commission is responsible for initiating lake drawdowns because one of its duties is to “coordinate environmental clean up, maintenance, and protection efforts undertaken, for the benefit of Greenwood Lake and its watershed”
- This plan addresses protection of aquatic biota, potable water distribution, and public recreation including the trout stocked waters located downstream.



# Goal & 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 within and downstream of the lake, while maintaining minimum passing flow requirements and potable water uses.

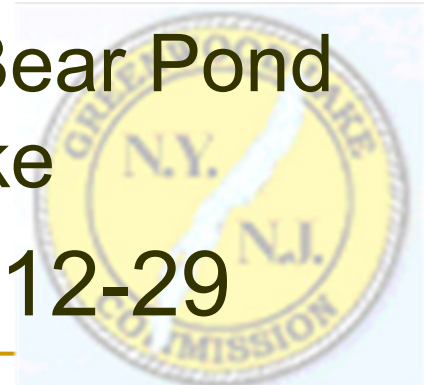
## ■ Objective

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



# Ownership of Dam & Control of Sluice Gates

- Dam belongs to State of NJ
  - Responsibility of NJDEP & NJ State Park Service
- Property and rights originally vested to Morris Canal and Banking Company
  - Includes Lake Hopatcong, Lake Musconetcong, Cranberry Lake, Bear Pond at Saxton Falls, & Greenwood Lake
- NJSA Title 13:12-1 through 13: 12-29



# Ownership of Dam & Control of Sluice Gates

- February 28, 1923 – March 13, 1925
  - ❑ Passage of 14 canal acts
  - ❑ Charter & rights deeded to State of NJ
  - ❑ Originally administration & management under Board of Conservation & Development
  - ❑ Then to NJDEP & NJ State Park Service



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



# Considerations

- Greenwood Lake is used for recreational purposes including power boating, sailing, fishing, and bathing in the summer months and ice boating and ice fishing in the winter months along with other recreational activities associated with a large inland lake
- 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 and lake water levels





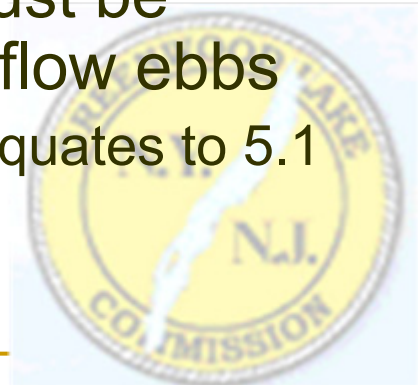
# Considerations

- Greenwood Lake is situated on the NY/NJ state border
  - Lies within both states
  - Two counties
  - Three local government jurisdictions
- Falls within jurisdiction of the federal government
  - US Army Corps of Engineers
  - US Coast Guard
- **This multi-jurisdictional factor compounds lake management by increasing approvals required and permit/agreements needed**



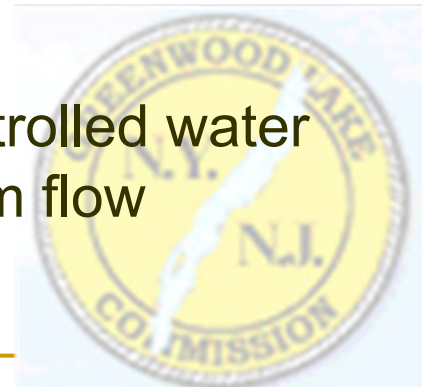
# Considerations

- Situated on the Wanaque River
  - ❑ River supplies water to Monksville and Wanaque Reservoirs
  - ❑ Any impact upon the waters of Greenwood Lake in turn impact each reservoir
  - ❑ The reservoirs provide water for both public recreation and consumption
- Waters located below the Greenwood Lake dam
  - ❑ Identified as trout stocked waters
  - ❑ Trout fishing remains important to the local and state economy
- 3 million gallons of water per day (MGD) must be released downstream when natural stream flow ebbs
  - ❑ Measured at a weir located below the dam and equates to 5.1 cubic feet per second



# Procedures

- One sluice gate at the Greenwood Lake dam is kept in a year round fixed position allowing for the required 3 MGD downstream flow
  - Except during an actual drawdown
  
- Trout stream fisheries below the dam are dependent upon natural spillway discharge
  - Not on controlled water release
  - Habitat would be dependent upon 3 MGD controlled water release especially in periods of reduced stream flow



# Facts

- The Greenwood Lake Commission
  - Historically acts as the unit requesting a lake drawdown
  - Can accept or disperse public funds from
    - State of NJ
    - County of Passaic
    - Township of West Milford
    - Any other government or private agency



# Facts

- The normal water discharge rate
  - Determined by 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
- The lake community of Awosting operates a sewage treatment plant below the dam



# Facts

- During the drawdown
  - Lake bed will freeze
    - Will kill the roots of nuisance aquatic vegetation
  - Opportunity for lake front property owners to make repairs on their docks and perform moderate cleaning of their properties



# Drawdown Schedule

- A drawdown of five feet (60 inches)
  - ❑ Should begin the year that this plan becomes effective (2011)
  - ❑ Continue every 4 years thereafter
  - ❑ Not to conflict with the drawdown of Lake Hopatcong unless directed by the Commissioner of the NJDEP during a declared drought warning or emergency



# Drawdown Schedule

## Example

- 2011/2012 Winter start
  - ❑ A drawdown of a maximum of 5 feet
  - ❑ Repeat process thereafter every 4 years
  - ❑ Drawdown to begin the 2nd Tuesday of October
  - ❑ Refill February 15th or whenever ice is loose from the shoreline.





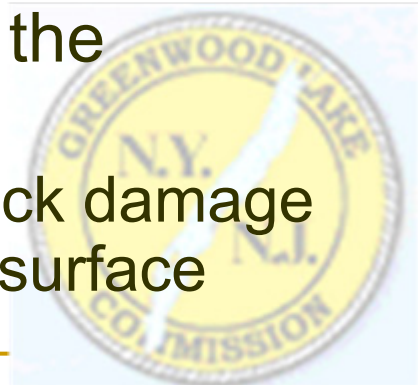
# Drawdown Procedures Overview

- By June 1st of each year prior to a scheduled drawdown
  - ❑ Commission will request that a drawdown be conducted.
  - ❑ Requests will be submitted in writing to the Director of NJ Division of Parks and Forestry
    - CN 404, Trenton, New Jersey 08625
  - ❑ The request will be accompanied by letters of support and/or by permits



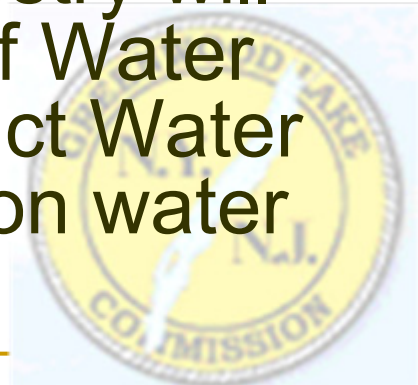
# Drawdown Procedures Overview

- NJ Division Parks and Forestry will submit a Water Lowering Application to the NJ Division of Fish and Wildlife by July 1st
- The Water Lowering permit will be transferred to the NJ Division of Parks and Forestry
  - Will hold the permit and provide a copy to the Commission once it has been approved
  - 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



# Drawdown Procedures Overview

- The Commission will request that the NYDEC issue a blanket stream encroachment permit for lake maintenance operations
- A drawdown approval will always be dependent upon water supply conditions
  - The NJ Division of Parks and Forestry will consult with the NJDEP Division of Water Supply and the North Jersey District Water Supply Commission for guidance on water supply conditions



# Drawdown Procedures Overview

- In the event of a drought warning or if a drought emergency is declared by the State of NJ
- North Jersey District Water Supply Commission and NJDEP Division of Water Allocation will provide policy and guidance on water transfer requirements to the Commission



# Drawdown Procedures Overview

- The maximum depth of the drawdown is set at 5 feet below the spillway elevation
- A gradual drawdown is proposed for the first 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**



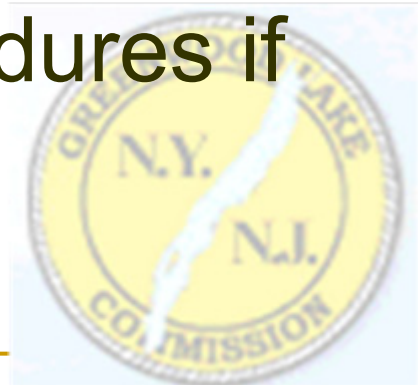
# Drawdown Procedures Overview

- The outflow at the dam will increase on the 11th day
  - Will go to 150 MGD as soon as permissible
    - In order to effectively drawdown the lake
- An effort will be made to maintain the 5 foot lake level reduction
  - Allow for maximum weed exposure during periods of freezing



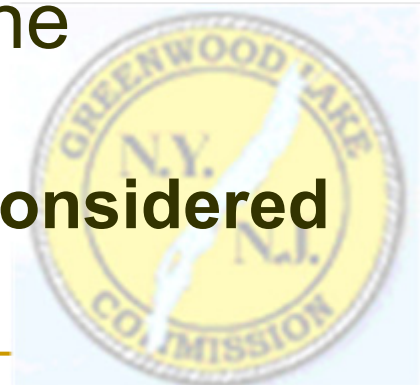
# Drawdown Procedures Overview

- The lake refilling process will begin in late February depending on conditions
- This plan will be a permanent, 4 year interval plan
  - As part of lake management
- NJDEP will be notified of any major date changes or highly altered procedures if they occur



# Drawdown Procedures Overview

- Partners need to provide evidence of approval in support of this effort for documentation to NJDEP
  - ❑ NJ Division of Parks and Forestry and/or other division
  - ❑ Since the plan is established as a twenty (20) year plan, partners may grant approval (or re-approval) for the entire period
- To facilitate gaining permission for the drawdown
  - ❑ **No response within 35 days will be considered as approval from the partners**





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# Roles & Partners

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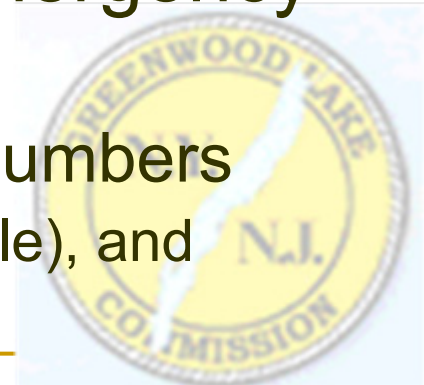
# Greenwood Lake Commission

- Commission will act as the requester
  - 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
  - Documentation from the public entities that are listed in the drawdown plan
  - Updated letters of support must be submitted for each successive drawdown
    - Unless the submitting party desires to cover the entire 20 year plan period when making its initial submission
    - Option will be left open to the submitting party or entity



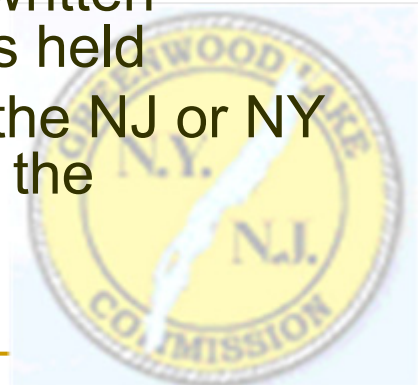
# Greenwood Lake Commission

- Responsible for all operational functions associated with any requested drawdown
  - With the exception of the operation of the sluice gate control mechanism
    - will be the responsibility of assigned State Park Service personnel from Ringwood State Park
- Will provide an update of its administrative roster for NYDEC and the New Jersey Division of Parks and Forestry for emergency contact purposes
  - Roster is to include name, title, phone numbers
    - Including cell phones, fax number (if available), and complete address



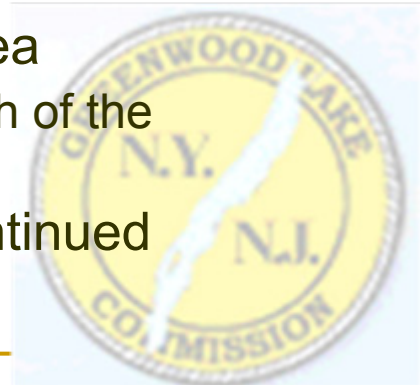
# Greenwood Lake Commission

- Responsible for arranging all meetings associated with a drawdown to include public hearings
- A minimum of 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 Partners list are to be invited in order 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 NJ or NY Chair, or his/her appointed designee, will chair the meetings



# Greenwood Lake Commission

- Minutes of the meetings will be the responsibility of the Commission
  - Copies of the minutes are to be distributed to all participating parties within 20 days
- Will submit a report evaluating the effect of each drawdown to the NJ Division of Parks and Forestry within 30 months of the approved drawdown date The report should include the following
  - Extent and type of vegetation control achieved
  - Percentage of vegetation remaining in the littoral zone
  - Changes in species composition noted
  - Effects on the density and species composition of macroinvertebrates in the dewatered and littoral area
    - Thereby providing information on the ecological health of the benthics
  - Any other factors that may support the need for continued drawdowns



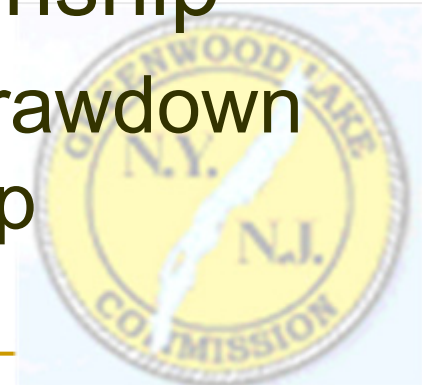
# Partners

- State of NJ
- NJ Division of Fish & Wildlife
- NYDEC
- NJ Highlands Council
- North Jersey District Water Supply Commission
- Passaic County, NJ
- Township of West Milford, NJ
- Village of Greenwood Lake, NY
- NJ Division of Parks & Forestry
- NJDEP
- NY District Corps of Engineers
- Orange County, NY
- Town of Warwick, NY
- USGS (US Geological Survey)
- US Coast Guard



# State of NJ

- The allocation of funds to support a drawdown is the responsibility of the Commission
  - Funding must be present to support each drawdown proposed
- Storm Island lies within the jurisdictional boundaries of West Milford Township
  - Questions on access during the drawdown should be directed to the Township



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# **NJ Division of Parks & Forestry**

**Contact: New Jersey Division of Parks and  
Forestry**

**New Jersey Department of Environmental  
Protection**

**P.O. Box 402**

**Trenton, NJ 08625-0402**

**Ringwood State Park  
(973) 962-2031**





# NJ Division of Parks & Forestry

- Provide a liaison between the NJDEP and the Commission
- To provide procedural guidance
- Will submit a water lowering application to the NJ Division of Fish and Wildlife by July 1
  - Each year of a scheduled drawdown
- Operate sluice gate in accordance with minimum passing flow requirements and the Greenwood Lake's Water Level Management Plan
- Produce a brief summary of each drawdown activity for distribution to interested parties
- Attend the Commission drawdown meetings scheduled



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# **NJ Division of Fish and Wildlife Bureau of Freshwater Fisheries**

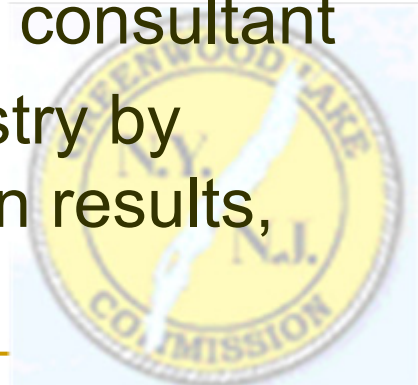
**Contact: Division of Fish and Wildlife  
Bureau of Freshwater Fisheries**

**P.O. Box 394  
Lebanon, NJ 08833**



# NJ Division of Fish and Wildlife Bureau of Freshwater Fisheries

- Review water lowering applications submitted by the NJ Division of Parks and Forestry
  - Issue permit in accordance with the NJ Administrative Code and the GLC Water Level Management Plan
- Attend the Commission drawdown meetings as scheduled
- Review fisheries management plans with the Commission and their lakes management consultant
- Work with the Division of Parks and Forestry by providing technical expertise on drawdown results, processes and procedures



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# NYDEC

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



# NYDEC

- Process the Environmental Quality Package submitted by the Commission
  - Package includes Freshwater Wetlands permit applicable to NY State
- Provide copies of permits to the Commission and consultant that support each drawdown activity
- In the event that a future drawdown interferes with a previously known and identified shallow well at the lake
  - State will be responsible for allocating and funding the required potable water sources throughout the drawdown period
  - Or for finding alternative solutions
- Attend the Commission drawdown meetings whenever applicable



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# **New Jersey Highlands Council**

**Contact: New Jersey Highlands Council  
100 North Road  
Chester, NJ 07930**



# New Jersey Highlands Council

- Provide letter of support for each drawdown activity
  - ❑ waive the necessity of their approval of any permits from the mean high water level into the lake bed
  - ❑ Letter to be submitted upon request to the Commission for inclusion in their drawdown request package to the NJ Division of Parks and Forestry
- Attend the Commission drawdown meetings whenever applicable



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# NY District Corps of Engineers

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





# NY District Corps of Engineers

- Review lake management consultant's plans for major lake restoration projects when applicable
- 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 NJ Division of Parks and Forestry



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# North Jersey District Water Supply Commission

**Contact: North Jersey District Water Supply  
Commission**

**1 Orechio Drive  
Wanaque, NJ 07465**



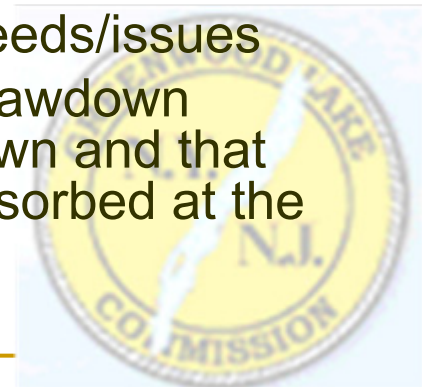
# North Jersey District Water Supply Commission

- 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 NJ Division of Parks and Forestry
- Attend the Commission drawdown meetings whenever applicable



# North Jersey District Water Supply Commission

- Enter into a Memorandum of Agreement with the Commission to do the following:
  - Monitor stream flow activities during the drawdown and refill process during normal working hours
    - Saturdays, Sundays and holidays excluded
  - Notify Ringwood State Park
    - (201) 962-7031 or 962-7047
    - Any changes required in stream flow that negatively impact upon the downstream reservoirs
  - Work with the NJ Division of Parks and Forestry liaison throughout the drawdown process
    - Provide technical support on reservoir supply needs/issues
  - Work with the DEP Water Supply Element on all drawdown requests to insure that water supply needs are known and that increased water flows due to drawdown may be absorbed at the reservoirs



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**Passaic County, NJ &  
Orange County, NY**

**Passaic County**

**Passaic County Administration Building  
Freeholder's Office  
401 Grand Street  
Paterson, NJ 07505**

**Orange County**

**Orange County Government Center  
255 Main Street  
Goshen, NY 10924**



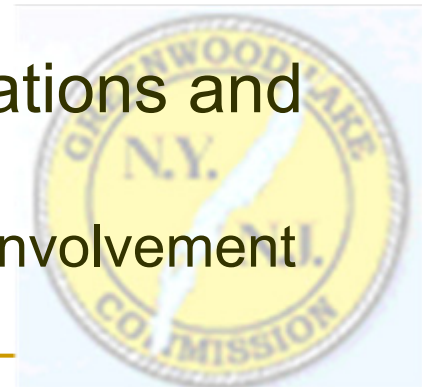
# Passaic County, NJ & Orange County, NY

- 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 NJ Division of Parks and Forestry
- Provide support to lakeside communities throughout each drawdown process if required



# West Milford, NJ, Greenwood Lake, NY & Warwick, NY

- 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 NJ Division of Parks and Forestry
- 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
- Work with local citizens and their organizations and with local businesses
  - Inform them of the municipality's support and involvement in the drawdown process



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# United States Geological Survey

- Notification of a drawdown must be given to the USGS as this organization monitors the gauging station at The Greenwood Lake dam

**U.S. Geological Survey  
810 Bear Tavern Road  
Suite 206  
West Trenton, NJ 08628**





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# United States Coast Guard

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

**Contact: First Coast Guard District**  
**U.S. Coast Guard**  
**408 Atlantic Avenue**  
**Boston, MA 02110**



# Drawdown Package Contents

- A written request from the Executive Director, or the NJ or NY Chair, or appointed designee, of the GLC to the Director, NJ Division of Parks and Forestry
  - Requesting that a drawdown be conducted according to the Water Level Management Plan
- Approvals given by permits issued or accompanying letters received from
  - NYDEC



# Drawdown Package Contents

- Supporting letters approving the proposed drawdown by:
  - ❑ NY District Corps of Engineers
  - ❑ North Jersey District Water Supply Commission
  - ❑ Passaic County, NJ
  - ❑ Orange County, NY
  - ❑ The Township of West Milford, NJ
  - ❑ The Village of Greenwood Lake, NY
  - ❑ The Town of Warwick, NY
  - ❑ The NJ Highlands Council
  - ❑ U.S. Geological Survey
  - ❑ U.S. Coast Guard



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**NOTE: Failure to provide any of the  
aforementioned documentation may  
delay the permitting process**

**Missing documentation must be  
accounted for in written form with  
proper explanations made**

