

STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

| GREAT LAKES HYDRO AMERICA, LLC.) | | | MAINE WATER QUALITY PROGRAM |
|-----------------------------------|------------------------|-----|-----------------------------|
| Pittston Academy Gr | ant, Alder Brook Twp., |) | FEDERAL CLEAN WATER ACT |
| Soldiertown Twp., So | eboomook Twp., |) | |
| Plymouth Twp., T2 F | R13 WELS, T3 R13 WEL | S,) | |
| T6 R14 WELS, T6 R | 15 WELS, T 7 R14 WEL | S,) | |
| and T7 R15 WELS | |) | |
| Somerset and Piscata | quis Counties |) | |
| | |) | |
| GLHA STORAGE PR | OJECT |) | |
| #L-19665-32-G-N | (Canada Falls Lake) |) | |
| #L-19666-32-G-N | (Seboomook Lake) |) | |
| #L-19667-32-G-N | (Ragged Lake) |) | |
| #L-19668-32-G-N | (Caucomgomoc Lake) |) | WATER QUALITY CERTIFICATION |

Pursuant to the provisions of 38 MRSA Sections 464 et seq. and Section 401 of the Federal Water Pollution Control Act (a.k.a. Clean Water Act), the Department of Environmental Protection has considered the application of GREAT LAKES HYDRO AMERICA, LLC with its supportive data, agency comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. APPLICATION SUMMARY

- a. <u>Application</u>. Great Lakes Hydro America LLC (GLHA) proposes the continued operation of the GLHA Storage Project, located on the West Branch Penobscot River and its tributaries in the unorganized territories of Pittston Academy Grant, Alder Brook Township, Soldiertown Township, Seboomook Township, Plymouth Township, Township T2 R13 WELS, Township T3 R13 WELS, Township T6 R14 WELS, Township T6 R15 WELS, Township T7 R14 WELS and Township T7 R15 WELS, Somerset and Piscataquis Counties, Maine (see Exhibit 1).
- b. Existing Project Features. The project consists of four dams and associated storage reservoirs. There are no hydroelectric generating facilities at the Storage Project developments.
 - Canada Falls Lake and Dam. Canada Falls Dam forms Canada Falls Lake on the South Branch of the Penobscot River, and is located 85 miles from Millinocket. The South Branch flows approximately 4 miles from the outlet of Canada Falls Lake to its confluence with the North Branch of the Penobscot River at the upper end of Seboomook Lake.

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The existing Canada Falls Dam was constructed for water storage purposes in 1921, with major improvements completed in 1982. The dam is a 765-foot-long concrete gravity structure, approximately 50 feet high, that consists of: a non-overflow wing wall at each end of the dam; an 87-foot-long concrete overflow spillway section, topped with 3-foot-high flashboards; a 68-foot-long concrete gated section with three deep slide gates and a log sluice gate; a fishway section; and appurtenant facilities. The existing fishway is not in use, as directed by the Maine Department of Inland Fisheries and Wildlife in the 1960s to prevent the upstream migration of warm water fish species into Canada Falls Lake and its tributaries.

Canada Falls Lake is an artificial reservoir with a surface area of 2,521 acres at a normal full pond elevation of 1,238 feet USGS datum (at the top of the concrete spillway).

ii. Seboomook Lake and Dam. Seboomook Dam is located 72 miles from Millinocket and forms Seboomook Lake at the beginning of the West Branch of the Penobscot River (the North Branch and South Branch join at the upper end of Seboomook Lake). The West Branch below Seboomook Dam flows 24.4 miles to its confluence with Chesuncook Lake, which is impounded by Ripogenus Dam.

The existing Seboomook Dam was constructed in 1936, replacing a series of four earlier timber dams used for log driving and water storage. The dam is a 491-footlong concrete gravity structure, with a maximum height of 60 feet, that consists of: a retaining wall section and non-overflow section at each end of the dam; a 60-footlong deep gate section with four deep sluice gates; a 159-foot-long gated spillway section with five slide gates and a log sluice gate; and appurtenant facilities. The dam also serves as a vehicle access bridge across the West Branch and is generally available for public use.

Seboomook Lake is an artificial reservoir with a surface area of 6,838 acres at a normal full pond elevation of 1,073 feet USGS datum.

iii. <u>Caucomgomoc Lake and Dam</u>. Caucomgomoc Lake is formed by Caucomgomoc Dam at the head of Caucomgomoc Stream, and is located 74 miles from Millinocket. Caucomgomoc Stream flows 2.5 miles from the outlet of the lake to its confluence with Black Pond, which is part of the Chesuncook Lake impoundment.

The existing dam at the outlet of Caucomgomoc Lake was built in 1981, replacing earlier dams constructed in 1915 and 1931 for log driving and water storage purposes. The dam is a 2,584-foot-long earthen embankment and concrete gravity structure approximately 16 feet high, that consists of: a 1,450 foot-long South embankment; a 108-foot-long concrete overflow spillway section; a 42-foot-long gated spillway section with four slide gates; a fishway section; a 975-foot-long North embankment;

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and appurtenant facilities. The dam also serves as a restricted vehicle access bridge across Caucomgomoc Stream.

Caucomgomoc Lake has a surface area of 5,728 acres at a normal full pond elevation of 998 feet USGS datum (at the crest of the overflow spillway). The dam has raised the level of the natural lake by about 10 feet.

iv. Ragged Lake and Dam. Ragged Lake Dam forms Ragged Lake at the head of Ragged Stream, and is located 44 miles from Millinocket. Ragged Stream flows 3.8 miles from Ragged Lake Dam to its confluence with Caribou Lake, which is part of the Chesuncook Lake impoundment.

The existing Ragged Lake Dam was constructed in 1921 for log driving and water storage purposes, with major improvements to the dam completed in 1975. The existing structure replaces earlier dams dated back to 1901, which were located about one-half mile upstream from the existing dam. The dam is a 1,163-foot-long earthen embankment and concrete gravity structure, with a maximum height of 30 feet, that consists of: a 900-foot long South embankment with a masonry wall; a 54-foot-long gated spillway section with two slide gates and a log sluice gate; a 209-foot-long North embankment; and appurtenant facilities. The dam also serves as a vehicle access bridge across Ragged Stream and is generally available for public use.

Ragged Lake has a surface area of 2,786 acres at a normal full pond elevation of 1,135 feet USGS datum. The lake consists of two basins. The south basin, adjacent to the dam, is a 534-acre artificial reservoir. The north basin is a natural lake that has been raised by 8 feet by the dam.

c. Existing Project Operation. The GLHA Storage Project's four impoundments are operated to store and release water on an annual cycle to benefit downstream hydroelectric generation at GLHA's six downstream generating facilities on the West Branch (Ripogenus, North Twin, Millinocket, Dolby, and East Millinocket) and main stem (Mattaceunk) of the Penobscot River. In addition, this mode of operation contributes to meeting the needs of various water users and environmental resources located downstream of the Storage Project. Flow releases and lake levels in any particular year are determined by water availability and downstream water needs.

To ensure dam safety, impoundment levels are drawn down in late fall, prior to the gates freezing in place. The dams are essentially operated in a run-of-river mode through the winter and early spring, with outflow equal to inflow. During the spring snowmelt, the dam gates are closed to capture and control a portion of the spring runoff of the West Branch watershed. By the time spring runoff begins to subside, the four impoundments are typically at or near their normal full pond levels. Over the summer and fall months, water is released from storage in the impoundments to augment downstream flows and

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increase impoundment levels in Chesuncook Lake. By November, the available storage in the lakes is typically depleted, and the gates are placed in the "winter gate" position. Winter gate operation is not practical, due to the remoteness of the sites, the difficulty in access to the dams on unplowed or muddy roads during the winter and spring, the lack of permanent sources of electric power to operate the gates, and severe icing of the gate structures. As a result, several gates have historically been left open at each dam during the winter to ensure that the dams would not be overtopped and damaged during high runoff events.

The following table provides information on the surface area at full pond, maximum drawdown, surface area at current maximum drawdown, usable storage capacity, and minimum flow releases for the four storage impoundments as currently operated.

CURRENT GLHA STORAGE PROJECT OPERATION

| LAKE | SURFACE AREA AT FULL POND (ACRES) | MAXIMUM DRAWDOWN (FEET) | SURFACE AREA AT MAXIMUM DRAWDOWN (ACRES) | USABLE STORAGE CAPACITY (BCF)* | MINIMUM FLOW RELEASE (CFS)** |
|--------------|---|-------------------------------|--|---|------------------------------|
| Canada Falls | 2,521 | 26 | <1 | 0.944 | 50 |
| Seboomook | 6,838 | 33 | 427 | 5.100 | 150 |
| Caucomgomoc | 5,728 | 9 | 4,659 | 1.852 | 35 11 |
| Ragged | 2,786 | 20 | 1,844 | 1.328 | 25 |

- * Usable storage capacity is given in billions of cubic feet (bcf), based on the difference in volume between the normal full pond elevation and the maximum drawdown elevation of each lake. 1 bcf = 22,960 acre-feet of storage.
- ** Minimum flow release is given in cubic feet per second (cfs). Each dam is operated to release the designated minimum flow or inflow to the dam, whichever is less, during the operational period (about mid-April to mid-November, depending on runoff, storage and access conditions each year).

Since 1994, Canada Falls Dam has been voluntarily operated with a drawdown limit of 11 feet, per an agreement with the Maine Department of Inland Fisheries and Wildlife (MDIFW), as part of a trial program to enhance the resident brook trout population in Canada Falls Lake. GLHA has also voluntarily collaborated with MDIFW and the Maine Department of Conservation (MDOC) to provide recreational, fishery, and fish attraction flows below the project dams.

Historically, eight unlicensed storage impoundments in the West Branch drainage were also used to augment water storage for downstream power generation. These impoundments included Penobscot Lake, Long Pond, Dole Pond, Loon Lake, Umbazooksus Lake, Harrington Lake, Nesowadnehunk Lake, and Rainbow Lake. In 1998, the Rainbow Lake Dam was permanently removed and the gates at the

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Umbazooksus Lake Dam were removed to provide wetland enhancement under the terms of the Ripogenus Project license. In 2000, in response to a decision by the Federal Energy Regulatory Commisssion (FERC) that licensing of the remaining six impoundments was required, the operation of these impoundments was discontinued by the previous owner, rendering them no longer subject to FERC licensing jurisdiction. The Nesowadnehunk Lake dam was subsequently sold to a local sporting camp owner, and the gates were removed from the remaining dams.

d. Proposed Offer of Settlement. GLHA has joined various stakeholders in signing the July 16, 2004 Offer of Settlement for the GLHA Storage Project ("Settlement"). The parties to the Settlement include GLHA, Penobscot Indian Nation, Passamaquoddy Tribe, U.S. Bureau of Indian Affairs, U.S. Fish and Wildlife Service, National Park Service, Maine Department of Inland Fisheries and Wildlife, Maine Department of Conservation, Appalachian Mountain Club, American Whitewater, and New England FLOW.

The goal of the Settlement is to provide for the continued operation of the GLHA Storage Project with appropriate long-term environmental protection and enhancement measures that will meet diverse objectives for maintaining a balance of power and non-power values. The Parties to the Settlement recognized that the relicensing of the Storage Project offered a unique opportunity to take a watershed approach. The Settlement's water management provisions were developed using a comprehensive approach to achieve the best balance of resource values between a number of river reaches and reservoirs within almost the entire upper West Branch of the Penobscot River watershed. The Settlement contains the terms and conditions for the resolution of Tribal, fisheries, wetlands, wildlife, water management and water quality, recreational, cultural and archaeological, aesthetic, access, land-use, operational, and generation issues raised by the parties in the relicensing process.

In balancing the resource values of the upper West Branch watershed, the parties to the Settlement agreed to management of the project lands and waters to accomplish the following project management goals and enhancements:

- Protect and enhance the wetland and waterfowl and loon nesting habitat values of all four impoundments by minimizing water level fluctuations from May 15 through July 15;
- Provide fishery and recreational boating flow enhancements in the outlet streams from July 15 to the winter gate setting, while maintaining or enhancing the aquatic habitat value of the streams, with lake levels drawn down gradually to meet flows targeted for those uses and habitat values;
- Prioritize and minimize the drawdown of Canada Falls Lake to enhance the high value native brook trout fishery and wetland and wildlife values of the lake;

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- Establish a drawdown regime for Seboomook Lake that allows it to remain
 economically viable, while maintaining Seboomook Dam as a barrier to the potential
 upstream movement of non-native fish species, and that provides outlet flows
 designed to enhance and protect downstream aquatic biota, with particular emphasis
 on maintaining high quality spawning and rearing habitat for landlocked salmon and
 brook trout;
- Establish a drawdown regime for Ragged Lake to meet fisheries management goals for splake;
- Enhance wetlands and associated wildlife habitat in the project impoundments through modified and controlled drawdowns;
- Enhance recreational angling and boating, including new scheduled white-water boating releases on the West and South Branches of the Penobscot River below Seboomook and Canada Falls Lakes, respectively;
- Preserve the backcountry recreation, aesthetic, water quality and wildlife values of the project impoundments through conservation easements and limits on new recreational facilities;
- Protect and enhance public and tribal access to project lands and waters through annual payments of \$2,800 to MDOC for road maintenance and through provision of access passes for the North Maine Woods gate system for tribal members (up to 225 annual day passes);
- Augment cultural resources work by providing money for archaeological surveys of off-site mitigation sites and for cultural resource education;
- Provide off-site enhancements for brook trout and aquatic habitat in Dole Brook and the North Branch of the Penobscot River by establishing minimum flows from Dole Pond and Long Pond. Flows from Penobscot Lake and Harrington Lake will also be used to enhance downstream fisheries and aquatic habitat;
- Provide significant off-site enhancements for wetlands and wildlife habitat by (1)
 managing Loon Lake for wetlands values and (b) providing a one-time payment of
 \$35,000 to MDIFW for wetland enhancement project(s) in the West Branch drainage;
- Provide shoreline stabilization and erosion control at the Passamaquoddy Tribe's Alder Brook campsite on Canada Falls Lake;

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- Provide off-site compensation for impacts of drawdowns to scenic and recreational values by converting the existing Ripogenus term conservation easement to a permanent conservation easement; and
- Provide for a mutually agreed-upon study of mercury.
- e. <u>Proposed Operation/Protection, Mitigation and Enhancement Measures</u>. Under the terms of the Settlement, GLHA proposes the following project operational and non-operational measures for the protection, mitigation and enhancement of public resources:

Reservoir Water Levels and Stream Flows

Typically, winter gate settings shall be made between November 1 and November 30. Specified minimum flow releases shall be provided until storage is depleted (i.e., the allowable drawdown level is reached), at which point outflow will equal inflow.

Canada Falls Lake

During the spring run-off period, the lake shall be filled as near to full as practical. Then, stable lake levels shall be maintained (plus or minus 1 foot from the level achieved by May 15) until July 15. After July 15 and until the winter gate setting, GLHA shall endeavor to provide a gradual drawdown not to exceed 3.5 feet while maintaining minimum flows.

South Branch (below Canada Falls Lake)

<u>Ice-out to May 31</u>: A minimum flow of 150 cfs, or outflow equal to inflow if the lake level drops to one foot below the level achieved by May 15.

June 1 to July 15: A minimum flow of 75 cfs, or outflow equal to inflow if the lake level drops to one foot below the level achieved by May 15.

July 16 to August 31: A minimum flow of 75 cfs.

September 1 to September 30: A minimum flow of 200 cfs. October 1 to winter gate setting: A minimum flow of 150 cfs

Winter gate setting to ice-out: Run-of-river (outflow equal to inflow).

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Seboomook Lake

During the spring run-off period, the lake shall be filled as near to full as practical. Then, stable lake levels shall be maintained (plus or minus 1 foot from the level achieved by May 15) until July 15. After July 15 and until the winter gate setting, GLHA shall endeavor to provide a gradual drawdown not to exceed 17 feet while maintaining minimum flows.

West Branch (below Seboomook Lake)

<u>Ice-out to July 15</u>: A minimum flow of 400 cfs, or outflow equal to inflow if the lake level drops to one foot below the level achieved by May 15.

July 16 to August 31: A minimum flow of 500 cfs. September 1 to October 14: A flow typically between 750 and 1250 cfs for fish attraction, angling and recreational boating, as determined through consultation.

October 15 to November 15: A flow of between 250 and 400 cfs, as determined through consultation.

November 16 to ice-out: Winter gate setting; run-of-river (outflow equal to inflow), except flows shall be reduced gradually after November 16 when there is a surplus of water to avoid surges or extreme changes in flow.

Caucomgomoc Lake

During the spring run-off period, the lake shall be filled as near to full as practical. Then, stable lake levels shall be maintained (plus or minus 1 foot from the level achieved by May 15) until July 15. After July 15 and until the winter gate setting, GLHA shall endeavor to provide a gradual drawdown to the sill of the dam gates (a drawdown of 9 feet) while maintaining minimum flows.

Caucomgomoc Stream

<u>Ice-out to June 6</u>: A minimum flow of 200 cfs, or outflow equal to inflow if the lake level drops to one foot below the level achieved by May 15.

June 7 to July 15: A minimum flow of 35 cfs, or outflow equal to inflow if the lake level drops to one foot below the level achieved by May 15.

<u>July 16 to August 31</u>: A minimum flow of 90 cfs. <u>September 1 to winter gate setting</u>: A minimum flow of 200 cfs.

Winter gate setting to ice-out: Run-of-river; gates set to discharge a minimum flow of 200 cfs at the time of winter gate setting.

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Ragged Lake

During the spring run-off period, the lake shall be filled as near to full as practical. Then, stable lake levels shall be maintained (plus or minus 1 foot from the level achieved by May 15) until July 15. After July 15 and until the winter gate setting, GLHA shall endeavor to provide a gradual drawdown not to exceed 12 feet while maintaining minimum flows. The maximum drawdown shall be 20 feet.

Ragged Stream

<u>Ice-out to June 6</u>: Incubation flow of a minimum of 65 cfs or April 1 flow, whichever is less, or outflow equal to inflow if the lake level drops to one foot below the level achieved by May 15.

June 7 to July 15: A minimum flow of 25 cfs, or outflow equal to inflow if the lake level drops to one foot below the level achieved by May 15.

July 16 to winter gate setting: A minimum flow of 65 cfs. Winter gate setting to ice-out: Run-of river (outflow equal inflow); deep gate set to discharge a minimum flow of 65 cfs at the time of winter gate setting.

Water Management Monitoring

GLHA shall develop and implement a monitoring plan for lake levels and stream flows.

Fisheries Studies

GLHA shall develop a 3-year monitoring plan to assess landlocked salmon reproduction in response to flow management below Seboomook Lake.

Fisheries and Wetlands Enhancement

The gates at Penobscot Lake, Harrington Lake, Long Pond, and Dole Pond shall be reinstalled and shall be used, in addition to the Loon Lake Dam, to enhance wetlands, fisheries and aquatic life.

Typically, winter gate settings shall be made between November 1 and November 30, with the gates set to a position sufficient to maintain dam safety.

Penobscot Lake

During the spring run-off period, the lake shall be filled as near to full as practical. A minimum water level of 2 feet over the dam sill shall be retained during the winter. A

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minimum flow of 10 cfs shall be released from the lake from May 15 to the winter gate setting as long as storage is available. When storage is no longer available, flow shall be run-of-river (outflow equals inflow).

Harrington Lake

During the spring run-off period, the lake shall be filled as near to full as practical. A minimum water level of 1 foot over the dam sill shall be retained during the winter. A minimum flow of 20 cfs shall be released from the lake from May 15 to the winter gate setting as long as storage is available. When storage is no longer available, flow shall be run-of-river (outflow equals inflow).

Dole Pond

During the spring run-off period, the lake shall be filled as near to full as practical. A minimum flow of 15 cfs shall be released from the lake from May 15 to the winter gate setting as long as storage is available, except that a minimum flow of 100 cfs shall be released throughout the month of September as long as storage is available. When storage is no longer available, flow shall be run-of-river (outflow equals inflow).

Long Pond

During the spring run-off period, the lake shall be filled as near to full as practical. A minimum flow of 7 cfs shall be released from the lake from May 15 to the winter gate setting as long as storage is available. When storage is no longer available, flow shall be run-of-river (outflow equals inflow).

Loon Lake

Stop logs shall be set at 1.5 feet above the dam sill at the start of the first growing season following license issuance, and the lake level shall be allowed to fluctuate naturally. Thereafter, the stop log elevation shall be set at or above the sill in order to maximize aquatic emergent vegetation through maintenance of relatively stable water levels, as directed by MDIFW and USFWS.

In addition, GLHA shall make a one-time payment of \$35,000 to MDIFW for wetlands enhancement project(s) in the Penobscot River watershed.

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Boating Flows

GLHA shall provide the following boating flow releases from Canada Falls Dam to the South Branch of the Penobscot River on Saturdays from 10 AM to 3 PM:

| Saturday | <u>July</u> | August | <u>September</u> |
|------------|-------------|---------|-----------------------------|
| 1 | 500 cfs | 600 cfs | 750 cfs (Labor Day weekend) |
| 2 | 600 cfs | 750 cfs | 600 cfs |
| 3 | 600 cfs | 600 cfs | 500 cfs (On or before 9/15) |
| 4 | 900 cfs | 750 cfs | |
| 5 (when it | 600 cfs | 600 cfs | |
| occurs) | | | |

GLHA shall provide one special boating flow release of 1500 cfs from 10 AM to 3 PM from Seboomook Dam to the West Branch of the Penobscot River on the Saturday of Labor Day weekend.

GLHA shall post the boating flow schedule on the internet by June 15 of each year, and shall report current and predicted flows daily on the internet and on a toll free flow phone number from April 1 until October 1 of each year.

Mercury Monitoring

GLHA shall develop a mercury monitoring plan, the goals of which shall be to (1) determine and provide updates on human health risks from consumption of mercury-contaminated fish and wildlife in the project waters, (2) determine ecological health risks to top trophic level wildlife predators of project area fish, and (3) examine trends in mercury levels in biota over time to see if reduced drawdowns affect mercury accumulation levels.

Bald Eagle Management Plan

GLHA shall develop a bald eagle management plan for the project.

Shoreline Protection

With limited exemptions, there will be no new recreational facilities on GLHA-owned lands within the project boundaries.

GLHA shall convey a permanent conservation easement on all GLHA-owned islands within Seboomook Lake and on the 10-foot strip of GLHA-owned land around the project impoundments.

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GLHA shall exercise its rights to obtain conservation easements on lands currently owned by Great Northwoods LLC within 200 feet of the normal high water mark of Ragged and Caucomgomuc Lakes. GLHA is not required to obtain these easements if it is unable to obtain them without payment to the landowner as consideration for the conservation easements.

Erosion Control

GLHA shall repair specific erosion damage at the Alder Brook Campsite.

Recreational Facilities

GLHA shall provide the following recreational facilities:

Canada Falls Lake: Install concrete planks west of the dam to provide a defined boat launch site; improve the canoe portage and provide directional signs.

Seboomook Lake/West Branch: Improve two existing informal boat launch sites on the lake; improve the canoe portage and angler access trail below the dam.

Caucomgomoc Lake: Construct a boat launch and parking area; improve the canoe portage and provide directional signs.

Ragged Lake: Improve the boat launch and parking area.

Public and Tribal Access

GLHA shall provide a report to FERC every six years on the costs and availability of public access to project lands and waters. The report shall identify actions taken or to be taken by GLHA to remove obstacles (including egregious fees) to public access.

GLHA shall provide annual payments of \$2,800 to MDOC for maintenance of the following access roads: the road across Seboomook Dam from the Golden Road to Roll Dam; the Canada Falls Dam Road from the Twenty Mile Road to the dam; and the Twenty Mile Road from the end of the County Road to the Canada Falls Road.

GLHA shall develop and implement a plan to improve access to, and camping in, North Maine Woods lands for Tribal members.

Protection of Cultural Resources

GLHA shall implement a Historic Resources Management Plan, and shall provide up to \$20,000 for archaeological survey work at Long Pond, Penobscot Lake, Harrington Lake,

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Dole Pond, and Loon Lake. GLHA shall transfer to tribal ownership any artifacts found on GLHA-owned lands in the project area. Finally, GLHA shall provide \$4,650 to the Tribes for cultural resource education.

2. JURISDICTION

The proposed continued operation of the GLHA Storage Project qualifies as an "activity...which may result in (a) discharge into the navigable water (of the United States)" pursuant to the Clean Water Act (CWA), 33 USC 1251 et seq. Section 401 of the CWA requires that any applicant for a federal license or permit to conduct such an activity obtain a certification that the activity will comply with applicable State water quality standards.

The Storage Project was originally licensed to Great Northern Nekoosa Corporation by FERC (Project No. 2634) on April 18, 1980 with an expiration date of April 30, 2000.

On April 28, 1998, Great Northern Paper filed an Application for New License for the Storage Project. This application is currently pending before FERC. The project currently operates under an annual license.

Great Lakes Hydro America, LLC acquired the project in January 2002.

The Department of Environmental Protection has been designated by the Governor of the State as the certifying agency for issuance of Section 401 water quality certification for all activities in the state not subject to Land Use Regulation Commission permitting and review. While the GLHA Storage Project is located in unorganized territories subject to LURC regulatory jurisdiction, this licensing is not subject to LURC permitting or review under the Land Use Regulation Law or the Maine Waterway Development and Conservation Act. Therefore, the DEP is the certifying agency for the project.

3. APPLICABLE WATER QUALITY STANDARDS

- a. <u>Classification</u>. The receiving waters that are or may be affected by the project are currently classified as follows:
 - Canada Falls Lake, Seboomook Lake, Caucomgomoc Lake, and Ragged Lake—Class GPA. 38 MRSA § 465-A.
 - South Branch Penobscot River, from the dam at the outlet of Canada Falls Lake to its confluence with Seboomook Lake—Class A. 38 MRSA § 467(7)(C)(2).
 - West Branch Penobscot River, from the dam at the outlet of Seboomook Lake to a point 1,000 feet downstream from the dam at the outlet of Seboomook Lake—Class B. 38 MRSA § 467(7)(C)(1).

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- West Branch Penobscot River, from a point located 1,000 feet downstream from the dam at the outlet of Seboomook Lake to its confluence with Chesuncook Lake—Class A. 38 MRSA § 467(7)(C)(1).
- Caucomgomoc Stream, from the dam at the outlet of Caucomgomoc Lake to its confluence with Black Pond/Chesuncook Lake—Class A. 38 MRSA § 467(7)(C)(2).
- Ragged Stream, from the dam at the outlet of Ragged Lake to its confluence with Caribou Lake/Chesuncook Lake—Class A. 38 MRSA § 467(7)(C)(2).
- b. Designated Uses. Class GPA, Class A, and Class B waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection; recreation in and on the water; fishing; industrial process and cooling water supply; hydroelectric power generation; navigation; and as habitat for fish and other aquatic life. The habitat of Class GPA and Class A waters shall be characterized as natural. The habitat of Class B waters shall be characterized as unimpaired. 38 MRSA § 465-A(1)(A), 38 MRSA § 465(2)(A), and 38 MRSA § 465(3)(A).
- c. Numeric Standards. The numeric standards for the receiving waters are as follows.

Class GPA waters shall be described by their trophic state based on measures of the chlorophyll "a" content, Secchi disk transparency, total phosphorus content and other appropriate criteria. Class GPA waters shall have a stable or decreasing trophic state, subject only to natural fluctuations, and shall be free of culturally induced algal blooms which impair their use and enjoyment. The number of Escherichia coli bacteria of human origin in these waters may not exceed a geometric mean of 29 per 100 milliliters or an instantaneous level of 194 per 100 milliliters. 38 MRSA § 465-A(1)(B).

The dissolved oxygen content of Class A waters shall be not less than 7 parts per million or 75% of saturation, whichever is higher, and the aquatic life and bacteria content of these waters shall be as naturally occurs. 38 MRSA § 465(2)(B).

The dissolved oxygen content of Class B waters shall be not less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration shall not be less than 9.5 parts per million and the 1-day dissolved oxygen concentration shall not be less than 8.0 parts per million in identified fish spawning areas. 38 MRSA § 465(3)(B).

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d. Narrative Standards. The narrative standards for the receiving waters are as follows.

There may be no new direct discharge of pollutants into Class GPA waters. Discharges into these waters licensed prior to January 1, 1986 are allowed to continue only until practical alternatives exist. 38 MRSA § 465-A(1)(C).

The habitat and aquatic life criteria of Class GPA are deemed to be met in an existing impoundment classified as GPA if the impounded waters, at a minimum, satisfy Class C aquatic life criteria (the receiving waters shall be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community), provided that, where the actual quality of the impounded waters attains any more stringent characteristic or criteria, that existing water quality must be maintained and protected. 38 MRSA § 464(9).

On November 17, 2004, pursuant to 38 MRSA Section 464(2-A), and on the basis of the Use Attainability Analysis prepared by GLHA, with its supporting documents, and after holding a public hearing, the Board of Environmental Protection voted to recommend that the Legislature adopt a subcategory of the designated use of Ragged and Seboomook Lakes as habitat for fish and other aquatic life, as established for Class GPA hydropower impoundments, taking into account annual drawdowns of up to 20 feet for Ragged Lake and 17 feet for Seboomook Lake. This change in standards must be approved by the Maine Legislature and by the U.S. Environmental Protection Agency before being in effect.

New direct discharges to Class A waters are permitted only if, in addition to satisfying all other requirements, the effluent is equal to or better than the existing water quality of the receiving water. Discharges into these waters licensed prior to January 1, 1986 are allowed to continue only until practical alternatives exist. 38 MRSA § 465(2)(C).

Discharges to Class B waters shall not cause adverse impact to aquatic life in that the receiving waters shall be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community. 38 MRSA § 465(3)(C).

e. Antidegradation. The Department may only approve water quality certification if the standards of classification of the waterbody and the requirements of the State's antidegradation policy will be met. The Department may approve water quality certification for a project affecting a waterbody in which the standards of classification are not met if the project does not cause or contribute to the failure of the waterbody to meet the standards of classification. 38 MRSA § 464(4)(F).

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4. TROPHIC STATE—STORAGE IMPOUNDMENTS

- a. Existing Conditions. Canada Falls Lake, Seboomook Lake, and Caucomgomoc Lake are artificial reservoirs that were created by the construction of their respective outlet dams. Ragged Lake is a natural lake that has been increased in area, volume and depth by the construction of its outlet dam. The area around the lakes is heavily forested, with limited shoreline development. The lakes currently receive no direct discharges of waste water.
- b. Water Quality Data. Water quality sampling was conducted in the four storage impoundments between 1994 and 1997. In 1994, sampling occurred in May, July, August, and September. In 1995 and 1996, sampling occurred monthly from May through September. Supplemental sampling was performed in 1997 in association with plankton and macroinvertebrate sampling. Sampling was performed in general accordance with the DEP's Lake Trophic State Sampling Protocol, and included vertical profile measurements of dissolved oxygen and temperature, Secchi disk transparency, pH, and conductivity. Separate water quality samples were subsequently analyzed in the laboratory for turbidity, alkalinity, color, chlorophyll a, and total phosphorus. In 1996, samples were also analyzed for total sulfate, total silica, total iron, total manganese, total calcium, and total magnesium.

Analysis of the data collected indicates that water quality in the storage impoundments is good. The trophic state of the lakes is oligotrophic. Canada Falls Lake and Seboomook Lake exhibited only a slight degree of thermal stratification, due to their shallow nature. Ragged Lake and Caucomgomoc Lake exhibited pronounced seasonal thermal stratification.

- c. <u>Applicant's Proposals</u>. The applicant proposes to manage lake levels and flow releases in accordance with the terms of the July 16, 2004 Offer of Settlement for the GLHA Storage Project [see Section 1(e) above].
- d. <u>Discussion</u>. The trophic state of the storage impoundments appears to be stable or decreasing. The applicant's proposals are not expected to affect the water quality or trophic state of these waters.

5. AQUATIC HABITAT—STORAGE IMPOUNDMENTS

a. Existing Conditions. Water levels in the storage impoundments are controlled by outlet dams. Large annual fluctuations in lake levels have been shown to adversely affect aquatic organisms. The DEP uses the benthic macroinvertebrate community as an indicator of the general state of aquatic life for the purpose of attainment of classification standards.

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b. <u>Studies</u>. To evaluate the littoral zone aquatic communities in the storage impoundments, benthic macroinvertebrates were sampled during the summer of 1997. Littoral zones were defined as twice the average early summer season Secchi depth, as an approximation of the one percent incident light penetration level.

An additional macroinvertebrate study for the storage impoundments was conducted during the summer of 1998. Macroinvertebrates were collected on both hard and soft bottom substrates at three locations (shallow, mid-depth, and deep) in each impoundment under full pond conditions. All samples collected at Seboomook Lake and only the deep samples at Canada Falls Lake, Caucomgomoc Lake and Ragged Lake, were identified and enumerated.

Analysis of the data collected indicates that the aquatic communities in Canada Falls Lake, Seboomook Lake and Ragged Lake are severely altered and depleted as a result of the historic drawdowns of these lakes. The effects of these drawdowns include (1) reduced permanent aquatic habitat, both in area and volume, as a result of dewatering, (2) direct mortality through stranding and desiccation of aquatic organisms, (3) displacement and concentration of organisms, (4) downstream "washout" of organisms, (5) loss of habitat structure, (6) reduced primary and secondary productivity, (7) loss of species diversity, and (8) freezing of habitats.

- c. <u>Applicant's Proposals</u>. The applicant proposes to manage lake levels in accordance with the terms of the July 16, 2004 Offer of Settlement for the GLHA Storage Project [see Section 1(e) above].
- d. <u>Discussion</u>. There must be both sufficient quality and quantity of habitat for aquatic organisms to meet aquatic life standards. The DEP has found that, generally, water levels providing wetted conditions for 75% of the littoral zone of a lake or pond, as measured from full pond conditions, are sufficient to meet aquatic life and habitat standards. This is not a rule, but a guideline the Department applies on a case-by-case basis, informed by best professional judgment, and considering site-specific data and circumstances.

Using littoral zone curves developed by GLHA for each of the licensed storage impoundments, the DEP has calculated that the following drawdown imits would be needed to maintain 75% of the full pond littoral zone of these impoundments:

| • | Canada Falls Lake | 4.0 feet |
|---|-------------------|----------|
| • | Seboomook Lake | 5.4 feet |
| • | Caucomgomoc Lake | 9.1 feet |
| • | Ragged Lake | 4.5 feet |

The applicant's proposal to continue to manage Caucomgomoc Lake with a drawdown of 9 feet will maintain 75% of the full pond littoral zone of the lake and thus, applying best

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professional judgment, and after consideration of site-specific data and circumstances, should be adequate to ensure that the waters of this lake will continue to be suitable for the designated use of habitat for fish and other aquatic life.

The applicant's proposal to limit the drawdown of Canada Falls Lake to 3.5 feet will maintain more than 75% of the full pond littoral zone of the lake and thus, applying best professional judgment, and after consideration of site-specific data and circumstances, should be adequate to ensure that the waters of this lake will in the future be suitable for the designated use of habitat for fish and other aquatic life.

The applicant's proposals to manage Ragged Lake and Seboomook Lake with drawdowns of 20 feet and 17 feet, respectively, will only maintain 52% and 19%, respectively, of the full pond littoral zones of each lake. In this case, applying best professional judgment, and after consideration of site-specific data and circumstances, the Department believes that the proposed drawdowns will not be adequate to meet applicable aquatic life standards. However, on November 17, 2004, pursuant to 38 MRSA Section 464(2-A), and on the basis of a Use Attainability Analysis prepared by GLHA, with its supporting documents, and after holding a public hearing, the Board of Environmental Protection voted to recommend that the Legislature adopt a subcategory of the designated use of Ragged and Seboomook Lakes as habitat for fish and other aquatic life, as established for Class GPA hydropower impoundments, taking into account annual drawdowns of up to 20 feet for Ragged Lake and 17 feet for Seboomook Lake. This change in standards must be approved by the Maine Legislature and by the U.S. Environmental Protection Agency before being in effect. Therefore, the applicant's proposals to manage Ragged Lake with a drawdown of 20 feet and Seboomook Lake with a drawdown of 17 feet will be adequate to ensure that the waters of these lakes will be suitable for the designated use of habitat for fish and other aquatic life, provided that the subcategory of the designated use of habitat for aquatic life for these lakes that have been recommended by the Board of Environmental Protection are approved by the Maine Legislature and by the U.S. Environmental Protection Agency.

With respect to the unlicensed storage impoundments, based on available Secchi depth data from the Volunteer Lake Monitoring Program and bathymetry from the DEP's Lakes Database, the proposed drawdowns of Penobscot Lake (6.6 feet), Harrington Lake (8.0 feet), and Long Pond (6.0 feet) will maintain at least 75% of the full pond littoral zone of each lake, and will therefore be adequate to ensure that these waters will be suitable for the designated use of habitat for fish and other aquatic life. However, the proposed drawdown of Dole Pond (11 feet) will only maintain about 40% of the full pond littoral zone of the lake. The drawdown of Dole Pond can be limited either by lowering the managed full pond level or by raising the minimum pond level. GLHA has stated that it would prefer not to install stop logs in the gate bays to raise the minimum pond level (currently at elevation 1,402 feet USGS datum) due to the loss of gate capacity this would cause and the resulting risk that the dam would be overtopped and would fail under high

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flow events. DEP analysis shows that lowering the full pond level of the pond to elevation 1,406 feet, thereby limiting the drawdown of the pond to 4 feet, will maintain about 70% of the littoral zone habitat of the pond while still providing the target September fishery enhancement flow from Dole Pond of 100 cfs during most years. It is noted that the DEP analysis is based on limited data, and that evaluation of additional site-specific data may demonstrate that larger drawdowns will in fact be protective of aquatic habitat in the pond. It is also noted that, in dry years, there should be flexibility to reduce the target fishery enhancement flow during the month of September so as to minimize the impact of reduced storage. Therefore, in order to ensure that the waters of Dole Pond will be suitable for the designated use of habitat for fish and other aquatic life, the drawdown of the pond must be limited to 4 feet (from elevation 1,406 feet to elevation 1,402 feet), subject to further evaluation by the DEP.

6. MERCURY—STORAGE IMPOUNDMENTS

a. Existing Conditions. A fish consumption advisory has been issued for all freshwaters in Maine due to the presence of elevated levels of mercury in fish tissue. As a result, all Maine lakes are classified as not supporting fish consumption. In addition, high mercury levels have been shown to affect the reproduction of loons.

The largest source of mercury appears to be atmospheric deposition from out-of-state sources. However, some studies have suggested that there may be a correlation between lake drawdowns and the bioavailability of mercury (in the form of methylmercury).

b. Studies. GLHA and its predecessors have cooperated in several studies of mercury levels in fish and sediments in the storage impoundments. The available data show elevated levels of mercury on fish and sediments from Seboomook Lake (current drawdown limit of 33 feet) and Ragged Lake (current drawdown limit of 20 feet) when compared to reference lakes. The data do not show elevated mercury levels in fish and sediments at Caucomgomoc Lake (current drawdown limit of 9 feet). Finally, insufficient data are available to determine whether mercury levels in fish and sediments are elevated at Canada Falls Lake (voluntary drawdown limit of 11 feet in effect since 1994).

Limited data from other lakes has shown a statistically significant increase in mercury levels in fish and loons in lakes with drawdowns greater than 20 feet, but not from lakes with drawdowns less than 10 feet, as compared to unregulated reference lakes.

- c. <u>Applicant's Proposals</u>. The applicant proposes to manage lake levels and to develop a mercury monitoring plan in accordance with the terms of the July 16, 2004 Offer of Settlement for the GLHA Storage Project [see Section 1(e) above].
- d. <u>Discussion</u>. To the extent that extensive drawdowns contribute to elevated mercury levels in fish and sediments, the proposed limits on the drawdowns of Canada Falls Lake

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and Seboomook Lake are expected to reduce levels of mercury in these lakes. However, there is insufficient evidence to determine the relationship between drawdowns and mercury levels in the storage impoundments. Therefore, additional analysis of mercury levels in these and suitable reference lakes is needed. The Settlement contains the elements of a proposed mercury monitoring plan that will include sampling and analysis of mercury levels in selected aquatic species in all four storage impoundments and a non-project reference lake at 5-year intervals for a total of 5 sampling events. After review, the DEP's Division of Environmental Assessment has approved the elements of the plan as proposed. A final mercury monitoring plan, as provided for in the Settlement, should be submitted for DEP review and approval prior to implementation.

7. FISH RESOURCES AND FISHING

- a. Existing Conditions. The fish communities in the project waters consist primarily of diverse coldwater salmonid populations. All life stages of brook trout, landlocked salmon and round whitefish are found in the lacustrine and riverine reaches of the project area. Relict populations of lake trout and perhaps lake whitefish exist within project waters. Rainbow smelt and burbot are also present in at least three of the project impoundments. Native brook trout, followed by non-native landlocked salmon, provide the greatest amount of recreational fishing opportunity. Burbot provide a winter fishery in at least one project impoundment, and a relict population of lake trout provides some fishing opportunity at Ragged and Caucomgomoc Lakes. Maintenance and potential enhancement of wild brook trout and landlocked salmon stocks is a priority management goal of the MDIFW.
- b. <u>Studies</u>. Beginning in 1994, GLHA's predecessor conducted intensive studies of the fish populations, fisheries, and fish habitat in the storage impoundments and outlet streams. These studies have included evaluations of population dynamics, movement, age and growth, habitat assessments, and fishing opportunity. Data collections were made by spring and fall trap netting and a season-long creel survey. Tributary fish collections were made with backpack electrofishing gear. The results of these studies indicate that implementation of the voluntary drawdown limit of 11 feet on Canada Falls Lake, which has been in place since 1994, has increased the growth rates, recruitment, and overall population size of brook trout in the lake, and has resulted in increased angler use and catch.

In 1996, GLHA's predecessor cooperated with state and federal fisheries agencies and the Penobscot Indian Nation to conduct instream flow studies in all four outlet streams. The goal of the studies was to determine flow regimes that would optimize aquatic habitat. Evaluation species and target evaluation flows were established for each stream.

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Finally, GLHA's predecessor developed a computer-based hydrologic model using 20 years of historical flow data to evaluate the ability of alternative water management plans to meet natural resource goals and to identify any conflicts between these goals.

- c. Applicant's Proposals. The applicant proposes to manage lake levels and stream flows in accordance with the terms of the July 16, 2004 Offer of Settlement for the GLHA Storage Project [see Section 1(e) above]. Specifically, the applicant proposes to manage storage impoundment levels and outlet stream flows to maintain and enhance native brook trout and landlocked salmon fisheries while maintaining Seboomook Lake as a barrier to the upstream migration of non-native fish species. The applicant also proposes to operate the dams at Penobscot Lake, Harrington Lake, Long Pond, and Dole Pond to enhance fisheries habitat through regulated minimum flow releases. Finally, the applicant proposes to conduct a 3-year monitoring program to assess landlocked salmon reproduction in response to flow management below Seboomook Lake.
- d. <u>Discussion</u>. Based on the available data and the strong support of the Settlement parties, the applicant's proposals to manage lake levels and stream flows will be adequate to ensure that these waters are suitable for the designated uses of habitat for fish and for fishing.

8. DISSOLVED OXYGEN—OUTLET STREAMS

- a. Existing Conditions. The streams below the outlet of the storage impoundments receive flows released from the storage dams and from runoff/snowmelt. The South Branch below Canada Falls Lake, Ragged Stream below Ragged Lake, and Caucomgomoc Stream below Caucomgomoc Lake are all between 2.5 and 4 miles in length, while the West Branch below Seboomook Lake is 24.4 mile long. The area around the outlet streams is undeveloped and forested. There are no direct discharges of waste water to these streams.
- b. <u>Studies</u>. Water quality sampling was conducted in September 1994 and monthly for five consecutive months during the summers of 1995 and 1996. Sampling was conducted in accordance with DEP's River Sampling Protocol. Sampling occurred from the shoreline in an area downstream from both gate leakage and release waters to assure representative conditions. Parameters measured included dissolved oxygen, temperature, pH, conductivity, alkalinity, turbidity, color, and E. coli bacteria (1994 only). AM/PM sampling was performed on two consecutive days in August 1996 to determine the magnitude of diurnal changes in dissolved oxygen in the streams.

Analysis of the data collected indicates that dissolved oxygen levels in the outlet streams under existing project operations are good (ranging from 7.9 to 8.6 parts per million) and meet current standards.

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- c. <u>Applicant's Proposals</u>. The applicant proposes to manage stream flows in accordance with the terms of the July 16, 2004 Offer of Settlement for the GLHA Storage Project [see Section 1(e) above].
- d. <u>Discussion</u>. The applicant's proposal to manage flows in the outlet streams below the storage impoundments will be adequate to ensure that these waters will continue to meet applicable dissolved oxygen standards.

9. AQUATIC HABITAT—OUTLET STREAMS

- a. Existing Conditions. The streams below the outlet of the storage impoundments receive flows released from the storage dams and from runoff/snowmelt. The South Branch below Canada Falls Lake, Ragged Stream below Ragged Lake, and Caucomgomoc Stream below Caucomgomoc Lake are all between 2.5 and 4 miles in length, while the West Branch below Seboomook Lake is 24.4 miles long. The DEP uses the benthic macroinvertebrate community as an indicator of the general state of aquatic life for the purpose of attainment of classification standards.
- b. <u>Studies</u>. Macroinvertebrate community sampling was conducted in the outlet streams as follows:
 - South Branch of the Penobscot River—below Canada Falls Dam (1994) and 300-1000 feet and 2 miles below Canada Falls Dam (1996);
 - West Branch of the Penobscot River—below Seboomook Dam (1994) and 300-1000 feet and 3.5 miles below Seboomook Dam (1996);
 - Caucomgomoc Stream—below Caucomgomoc Dam (1995); and
 - Ragged Stream—below Ragged Lake Dam (1994).

All sampling was performed in accordance with DEP sampling protocols, and all samples were analyzed using the DEP's linear discriminant model.

Analysis of the data collected in the South Branch below Canada Falls Dam indicates that the communities sampled within 1000 feet of the dam only attain Class C standards, instead of the assigned Class A standards. These samples exhibited high enrichment, with high numbers of organisms. However, the diversity (Generic Richness) of organisms and the proportion of sensitive taxa were low. The data collected 2 miles below the dam shows some recovery in the aquatic community, with the proportion of sensitive taxa and the diversity of organisms both increasing while the total umber of organisms decreased, but is still not reflective of a Class A community. As a result, the community sampled at the lower South Branch station only meets Class B standards.

Analysis of the data collected in the West Branch below Seboomook Dam indicates that the communities sampled within 1000 feet of the dam had very low diversity (Generic

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Richness) and that the number of different sensitive taxa was also low. The 1996 sampling here also showed an extremely enriched community. As a result, these communities only attain Class C standards, instead of the assigned Class B standards. The data collected 3.5 miles below the dam shows an increase in both species diversity and the number of different sensitive organisms, but is still not reflective of a Class A community. As a result, the community sampled at the lower West Branch station only meets Class B standards, instead of the assigned Class A standards.

Analysis of the data collected in Caucomgomoc Stream and Ragged Stream indicates that the majority of the organisms in the communities sampled here are filter feeders, which is more indicative of a Class B community than a Class A community. However, sensitive organisms were present in good numbers, and the lake outlet effect is most likely the cause of the shift to a filter feeding community. Therefore, utilizing professional judgment, the DEP has determined that the sampled community meets Class A standards.

- c. <u>Applicant's Proposals</u>. The applicant proposes to manage stream flows in accordance with the terms of the July 16, 2004 Offer of Settlement for the GLHA Storage Project [see Section 1(e) above].
- d. <u>Discussion</u>. Based on an analysis of the numbers and diversity of benthic macroinvertebrates found in the outlet streams, the South Branch of the Penobscot River below Canada Falls Dam and the West Branch of the Penobscot River below Seboomook Dam do not currently meet assigned aquatic life standards. However, this lack of classification attainment is due primarily to the lack of sufficient minimum flow releases from Canada Falls Dam (currently 50 cfs) and Seboomook Dam (currently 150 cfs). It is likely that the increased minimum flows proposed to be released from the two dams will result in the macroinvertebrate communities in these outlet streams meeting classification standards in the future. Follow-up sampling should be conducted to confirm attainment of standards.

There must be both sufficient quality and quantity of habitat for aquatic organisms to meet aquatic life standards. The DEP has found that, generally, flows providing wetted conditions in a weighted average of 75% of the cross-sectional area of a river or stream, as measured from bank full conditions, are sufficient to meet aquatic life and habitat standards. This is not a rule, but a guideline the Department applies on a case-by-case basis, informed by best professional judgment, and considering site-specific data and circumstances. Each waterway is different in terms of the value of varying flows in providing habitat for aquatic life, and conflicts may exist between the habitat needs of various resident aquatic organisms. As a result, on a case-by-case basis, the DEP often establishes alternative flows based on identified site-specific conditions and data, where those alternative flows can be shown to meet all water quality standards. Such a case-by-case analysis of the flows needed to meet aquatic life standards in the outlet streams below the storage impoundments follows.

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Using stream channel transect data collected by GLHA, the DEP has calculated that the following flows would be needed to provide 75% wetted area conditions in the outlet streams:

| • | South Branch below Canada Falls Dam | 75 cfs |
|---|-------------------------------------|---------|
| • | West Branch below Seboomook Dam | 263 cfs |
| • | Caucomgomoc Stream | 96 cfs |
| • | Ragged Stream | 25 cfs |

With respect to the South Branch of the Penobscot River below Canada Falls Lake, all proposed minimum flow releases meet or exceed 75% wetted area conditions except for the period from the winter gate setting to ice out, when run-of-river flows (outflow equal inflow at Canada Falls Dam) are proposed. Providing natural flows during the winter months, when there is limited biological activity in the stream, will not harm the aquatic community. Therefore, the applicant's proposals will be adequate to ensure that these waters will be suitable for the designated use of habitat for fish and other aquatic life, subject to the other provisions of this Order.

With respect to the West Branch of the Penobscot River below Seboomook Lake, all proposed minimum flow releases meet or exceed 75% wetted area conditions except for the period from the winter gate setting to ice out, when run-of-river flows (outflow equal inflow at Seboomook Dam) are proposed. Providing natural flows during the winter months, when there is limited biological activity in the stream, will not harm the aquatic community. Therefore, the applicant's proposals will be adequate to ensure that these waters will be suitable for the designated use of habitat for fish and other aquatic life, subject to the other provisions of this Order.

With respect to-Caucomgomoc Stream below Caucomgomoc Lake, all proposed minimum flow releases meet or exceed 75% wetted area conditions except for the period from June 7 to July 15, when a flow of 35 cfs is proposed, and for the period from the winter gate setting to ice out, when run-of-river flows (outflow equal inflow at Caucomgomoc Dam) are proposed. The June 7 to July 15 flow has been proposed in order to optimize landlocked salmon nursery fry habitat, which is thought to be adversely affected by higher flows. However, this flow is unnaturally low for this period and is significantly less than the 90 cfs flow needed to provide 75% wetted area conditions in the 2.5 miles of Caucomgomoc Stream from Caucomgomoc Lake to Black Pond/Chesuncook Lake. Nevertheless, cross sectional profiles show that a flow of 35 cfs will provided wetted conditions in 3/4ths of the width of the stream, on average, at depths that will allow fish and other aquatic organisms to function. However, unless flows are ramped down from the ice-out to June 6 period flow of 200 cfs, implementation of the 35 cfs flow on June 7 could result in aquatic organisms being stranded. Finally, providing natural flows during the winter months, when there is limited biological activity in the

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stream, will not harm the aquatic community. Therefore, there is a reasonable assurance that the applicant's proposals will be adequate to ensure that these waters will be suitable for the designated use of habitat for fish and other aquatic life, subject to the other provisions of this Order, provided that a plan is implemented to ramp flows down prior to June 7 in order to prevent stranding of aquatic organisms.

With respect to Ragged Stream below Ragged Lake, all proposed minimum flow releases meet or exceed 75% wetted area conditions except for the period from the winter gate setting to ice out, when run-of-river flows (outflow equal inflow at Ragged Lake Dam) are proposed. Providing natural flows during the winter months, when there is limited biological activity in the stream, will not harm the aquatic community. Therefore, the applicant's proposals will be adequate to ensure that these waters will be suitable for the designated use of habitat for fish and other aquatic life, subject to the other provisions of this Order.

Finally, with respect to the outlet streams below the unlicensed storage impoundments (Penobscot Lake, Harrington Lake, Dole Pond, and Long Pond), the proposed fishery enhancement flow releases will be adequate to ensure that these waters will be suitable for the designated uses of habitat for fish and other aquatic life.

10. RECREATIONAL ACCESS AND USE

a. <u>Existing Conditions</u>. Existing recreational opportunities within the project area include whitewater boating, canoeing, fishing, hiking, camping, hunting and trapping, and snowmobiling.

Several project waters support highly used and well-recognized fisheries for wild landlocked salmon and brook trout.

The South Branch of the Penobscot River below Canada Falls Lake and the West Branch of the Penobscot River below Seboomook Lake offer significant whitewater boating opportunities. In particular, the South Branch has Class II-V rapids, scenic gorges, and waterfalls.

Existing recreational facilities include the following:

- At Canada Falls Lake, 18 non-project campsites located at the dam and along the South Branch below the dam, a gravel boat launch at the dam, and an unmarked canoe portage trail around the dam;
- At Seboomook Lake, 10 non-project campsites, a gravel boat launch at Pittston Farm, a carry-in boat access site at the dam, and an unmarked canoe portage trail around the dam;

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- At Caucomgomoc Lake, 6 non-project campsites, a gravel boat launch, and an unmarked canoe portage trail around the dam; and
- At Ragged Lake, 9 non-project campsites and a gravel boat launch.
- b. <u>Studies</u>. GLHA conducted a whitewater boating study in the spring of 2002 in the outlet streams below Canada Falls Lake and Seboomook Lake. The study involved the evaluation by a number of expert whitewater boaters of a range of demonstration flow releases from the dams.

The study concluded that whitewater boating opportunities could be enhanced below Canada Falls Lake and Seboomook Lake by providing short-term (4 hours at minimum) flow releases. Boaters indicated that they would prefer a variety of flows and that higher challenge releases should be offered. Boaters also indicated that controlled and predictable releases should be provided during July or August when air and water temperatures are warmer and use would most likely be maximized.

- c. <u>Applicant's Proposals</u>. The applicant proposes to provide new and improved recreational facilities, whitewater boating flows, and boating flow information in accordance with the terms of the July 16, 2004 Offer of Settlement for the GLHA Storage Project [see Section 1(e) above].
- d. <u>Discussion</u>. Based on the available data and the support of the Settlement parties, the applicant's proposals to provide new and improved recreational facilities, whitewater boating flows, and boating flow information will be adequate to ensure that these waters are suitable for the designated use of recreation in and on the water.

11. WETLANDS AND WILDLIFE RESOURCES

a. Existing Conditions. A diversity of wildlife species utilize the extensive wetlands, terrestrial and open-water habitats in the project area, which is predominately undeveloped and forested. Common wildlife species include aquatic mammals (including beaver, muskrat and river otter), waterfowl (including mallard, green-winged teal, American black duck, common loon, and wood duck), songbirds, deer, moose, black bear, amphibians and reptiles, and invertebrates. Deer and moose use the riparian woods and emergent wetland margins of the storage impoundments extensively.

The state-listed and federally-listed threatened bald eagle is known to occur in the project area. MDIFW has identified five bald eagle nests near Caucomgomoc Lake and one nest near Seboomook Lake. Bald eagles have also been observed on Canada Falls Lake and Ragged Lake.

Existing wetlands associated with the storage impoundments are predominantly emergent. A total of 3,670 acres of wetlands are associated with the project, as follows:

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Canada Falls Lake
 Seboomook Lake
 Caucomgomoc Lake
 Ragged Lake
 277 acres (222 acres emergent)
 1,753 acres (1,240 acres emergent)
 1,459 acres (772 acres emergent)
 181 acres (124 emergent)

- b. <u>Studies</u>. In 2001, an assessment was conducted of the wetland mitigation potential on five of GLHA's unlicensed storage lakes (Dole, Long, Penobscot, Loon, and Harrington). This assessment was prepared for Land & Water Associates by Woodlot Alternatives, Inc., on behalf of the Department of the Interior. The assessment concluded that maintenance of intermediate (i.e., partial drawdown) water levels in these lakes would result in the greatest overall potential for wetland development and enhancement.
- c. Applicant's Proposals. The applicant proposes to manage lake levels and provide off-site enhancements for wetlands in accordance with the terms of the July 16, 2004 Offer of Settlement for the GLHA Storage Project [see Section 1(e) above]. Specifically, the applicant proposes to: manage all four storage impoundments to maintain stable water levels during the waterfowl and loon nesting period; limit the drawdown of Canada Falls Lake to 3.5 feet; operate the dams at Penobscot Lake and Harrington Lake to institute partial drawdowns; operate the dams at Dole Pond and Long Pond to institute full drawdowns; install stop logs in the Loon Lake Dam with the goal of enhancing emergent and aquatic bed wetlands; and making a one-time payment to DIFW of \$35,000 for wetlands enhancement project(s) in the Penobscot River watershed.

The applicant also proposes to develop a bald eagle management plan in accordance with the terms of the July 16, 2004 Offer of Settlement for the GLHA Storage Project [see Section 1(e) above].

d. <u>Discussion</u>. Based on the available data and the support of the Settlement parties, the applicant's proposals to manage lake levels, provide off-site enhancements for wetlands, and develop a bald eagle management plan will be adequate to ensure that the project waters, including those waters contained in wetlands, are suitable for the designated use of habitat for wildlife, subject to the other provisions of this Order.

12. HYDROELECTRIC POWER GENERATION

a. <u>Existing Generation</u>. The GLHA Storage Project is part of a hydroelectric system that consists of six generating stations located on the West Branch and main stem of the Penobscot River with a combined generating capacity of 126 megawatts, capable of producing on average 730,000,000 kilowatt-hours of electricity annually.

The four storage impoundments have historically been operated in a store and release manner based on water availability and downstream water resource needs. The storage

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capacity of these impoundments, as currently licensed, represents about 16% of the total usable storage capacity in the GLHA system, and contributes about 4% of the downstream generation. This represents a contribution of about 27,210,000 kilowatthours of electricity annually. This is equivalent to the energy that would be produced by burning about 45,350 barrels of oil or about 12,609 tons of coal each year.

- b. Existing Energy Policies/Plans. The State of Maine has developed a comprehensive energy plan (Final Report of the Commission on Comprehensive Energy Planning, May 1992) with the goal of meeting the State's energy needs with reliable energy supplies at the lowest possible cost, while assuring that energy production and use are consistent with a healthy environment and vibrant economy. Specifically, the Plan establishes the following targets for Maine's energy future:
 - Reduce the State's level of dependence on oil from 50% to at least the national average of 43% by the year 2000, with further reductions to at least the 30% level by 2010:
 - Increase the percentage of renewable energy resources in the State's primary energy mix from 30% to 40% by the year 2000, and to at least 50% by 2010;
 - Increase statewide energy efficiency relative to 1990 levels by 25% by the year 2000 and by at least 50% by 2010; and
 - Work to stabilize long-term energy prices, in balance with Maine's other energyrelated goals, with a special emphasis on enhancing Maine's competitive position relative to New England and the United States.

With respect to renewable energy, the Plan recommends that Maine actively encourage the development of wind and solar energy resources and support the continued utilization and further development, where appropriate, of the State's renewable, indigenous hydro and biomass energy resources.

- c. <u>Applicant's Proposals</u>. The applicant proposes to manage lake levels and stream flows in accordance with the terms of the July 16, 2004 Offer of Settlement for the GLHA Storage Project [see Section 1(e) above].
- d. <u>Discussion</u>. The applicant's proposals will result in the Storage Project having an average annual contribution to downstream generation of between 23,140,000 and 25,813,000 kilowatt-hours of electricity, depending on whether incidental storage in Dole Pond, Long Pond, Penobscot Lake, and Harrington Lake actually contributes to downstream generation (this contribution exists only if water is stored in these ponds that would not otherwise be stored in the downstream Ripogenus Project impoundment). This represents a 5% to 15% reduction in annual generation due to storage. It is the

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applicant's position that the storage project will remain economically viable under the terms of the July 16, 2004 Offer of Settlement.

e. <u>Discussion</u>. Based on the evidence, the applicant's proposals to manage lake levels and stream flows will be adequate to ensure that the project waters are suitable for the designated use of hydroelectric generation.

BASED on the above FINDINGS OF FACT, and the evidence contained in the application and supporting documents, and subject to the conditions listed below, the Department CONCLUDES that the continued operation of the GLHA STORAGE PROJECT will result in all waters affected by the project being suitable for all designated uses and meeting all other applicable water quality standards, provided that:

- 1. Water levels in Canada Falls Lake, Seboomook Lake, Caucomgomoc Lake, and Ragged Lake are managed as proposed, with the modifications discussed in section 5(d) above;
- 2. Minimum flows from Canada Falls Lake, Seboomook Lake, Caucomgomoc Lake, and Ragged Lake are managed as proposed, with the modifications discussed in section 9(d) above;
- 3. The dams at Penobscot Lake, Harrington Lake, Long Pond, Dole Pond, and Loon Lake are managed as proposed, with the modification discussed in section 5(d) above;
- 4. Monitoring is conducted to assess landlocked salmon reproduction in response to flow management below Seboomook Dam;
- 5. Whitewater boating flows and boating flow information are provided as proposed;
- 6. Follow-up macroinvertebrate sampling in the South Branch of the Penobscot River below Canada Falls Dam and in the West Branch of the Penobscot River below Seboomook Dam is conducted, as discussed in section 9(d) above;
- 7. A plan to ramp flows down in Caucomgomoc Stream prior to the flow reduction to 35 cfs on June 7 is developed and implemented, as discussed in section 9(d) above;
- 8. A mercury monitoring plan is developed and implemented as proposed;
- 9. A bald eagle management plan is developed and implemented as proposed;
- 10. New and improved recreational facilities are provided as proposed; and

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11. A one-time payment to the Maine Department of Inland Fisheries and Wildlife for wetland enhancement project(s) in the Penobscot River watershed is made as proposed.

THEREFORE, The Department APPROVES the application of GREAT LAKES HYDRO AMERICA, LLC and GRANTS CERTIFICATION that there is a reasonable assurance that the continued operation of the GLHA STORAGE PROJECT, as described above, will not violate applicable water quality standards, SUBJECT TO THE FOLLOWING CONDITIONS:

1. WATER LEVELS—LICENSED STORAGE IMPOUNDMENTS

A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicant's control, as defined below, or (4) agreement between the applicant and appropriate state and/or federal agencies, water levels in Canada Falls Lake, Seboomook Lake, Caucomgomoc Lake, and Ragged Lake shall be managed in accordance with the provisions of the July 16, 2004 Offer of Settlement for the GLHA Storage Project, as modified herein. Specifically, water levels shall be managed as follows:

Canada Falls Lake

- During the spring runoff period, the lake will be filled as near to full (elevation 1,238 feet USGS datum) as practical.
- Following spring refill, stable lake levels will be maintained (plus or minus one foot of fluctuation from the level achieved by May 15) until July 15.
- After July 15 and until the winter gate setting, the lake level will be drawn down gradually to a minimum level of 3.5 feet below full pond (elevation 1,234.5 feet USGS datum) while maintaining minimum flows as long as storage remains available.
- Following the winter gate setting and until the spring run-off period, the minimum lake level of 3.5 feet below full pond (elevation 1,234.5 feet USGS datum) will be maintained.

Seboomook Lake

- During the spring runoff period, the lake will be filled as near to full (elevation 1,073 feet USGS datum) as practical.
- Following spring refill, stable lake levels will be maintained (plus or minus one foot of fluctuation from the level achieved by May 15) until July 15.
- After July 15 and until the winter gate setting, the lake level will be drawn down gradually to a minimum level of 17 feet below full pond (elevation 1,056 feet USGS datum) while maintaining minimum flows as long as storage remains available.

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 Following the winter gate setting and until the spring run-off period, the minimum lake level of 17 feet below full pond (elevation 1,056 feet USGS datum) will be maintained.

Caucomgomoc Lake

- During the spring runoff period, the lake will be filled as near to full (elevation 998 feet USGS datum) as practical.
- Following spring refill, stable lake levels will be maintained (plus or minus one foot of fluctuation from the level achieved by May 15) until July 15.
- After July 15 and until the winter gate setting, the lake level will be drawn down gradually to a minimum level of 9 feet below full pond (elevation 989 feet USGS datum) while maintaining minimum flows as long as storage remains available.
- Following the winter gate setting and until the spring run-off period, the minimum lake level of 9 feet below full pond (elevation 989 feet USGS datum) will be maintained.

Ragged Lake

- During the spring runoff period, the lake will be filled as near to full (elevation 1,135 feet USGS datum) as practical.
- Following spring refill, stable lake levels will be maintained (plus or minus one foot of fluctuation from the level achieved by May 15) until July 15.
- After July 15 and until the winter gate setting, the lake level will be drawn down gradually to a minimum level of 12 feet below full pond (elevation 1,123 feet USGS datum) while maintaining minimum flows as long as storage remains available.
- Following the winter gate setting and until the spring run-off period, a maximum drawdown of 20 feet below full pond (elevation 1,115 feet USGS datum) will occur.

Typically, the winter gate settings will be made between November 1 and November 30.

- B. Operating emergencies beyond the applicant's control include, but are not limited to: acts of God; acts of war or terrorism; equipment failure or other temporary abnormal operating conditions; generation unit operation or interruption under power supply emergencies; and orders from local, state or federal law enforcement or public safety authorities.
- C. The applicant shall, within 6 months after issuance of a New License for the project or upon such other schedule as established by FERC, submit the details of a plan for providing and monitoring the minimum flows required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

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D. The approved drawdowns of Ragged Lake and Seboomook Lake contained in this condition shall be in effect as interim limits commencing with the first annual drawdown following the issuance of a New License for the project by FERC, pending approval by the Maine Legislature and the U.S. Environmental Protection Agency of the subcategory of the designated use of habitat for fish and other aquatic life for these lakes that have been recommended by the Board of Environmental Protection. All other drawdown provisions of this condition shall be effective in the first spring runoff period following the issuance of a New License for the project by FERC.

2. MINIMUM FLOWS—LICENSED STORAGE IMPOUNDMENTS

A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicant's control, as defined below, or (4) agreement between the applicant and appropriate state and/or federal agencies, minimum flows shall be released from Canada Falls Dam, Seboomook Dam, Caucomgomoc Dam, and Ragged Lake Dam in accordance with the provisions of the July 16, 2004 Offer of Settlement for the GLHA Storage Project, as modified herein. Specifically, minimum flows shall be released as follows:

South Branch (below Canada Falls Lake)

- From ice-out to May 31, a minimum flow of 150 cfs, or outflow equal inflow if the level of Canada Falls Lake drops to one foot below the level achieved by May 15.
- From June 1 to July 15, a minimum flow of 75 cfs, or outflow equal inflow if the level of Canada Falls Lake drops to one foot below the level achieved by May 15.
- From July 16 to August 31, a minimum flow of 75 cfs.
- From September 1 to September 30, a minimum flow of 200 cfs.
- From October 1 to the winter gate setting, a minimum flow of 150 cfs.
- From the winter gate setting to ice-out, outflow equal inflow.

West Branch (below Seboomook Lake)

- From ice-out to July 15, a minimum flow of 400 cfs, or outflow equal inflow if the level of Seboomook Lake drops to one foot below the level achieved by May 15.
- From July 16 to August 31, a minimum flow of 500 cfs.
- From September 1 to October 14, a flow typically between 750 and 1250 cfs for fish attraction, angling and recreational boating, as determined through a consultation process set forth in the July 16, 2004 Offer of Settlement.
- From October 15 to November 15, a flow of between 250 and 400 cfs for spawning, as determined through a consultation process set forth in the July 16, 2004 Offer of Settlement.

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- From November 16 to the winter gate setting, flows reduced gradually to run-of-river conditions when there is a surplus of water, to avoid surges or extreme changes in flow during this period.
- From the winter gate setting to ice-out, outflow equal inflow.

Caucomgomoc Stream

- From ice-out to June 6, a minimum flow of 200 cfs, or outflow equal inflow if the level of Caucomgomoc Lake drops to one foot below the level achieved by May 15.
- From June 7 to July 15, a minimum flow of 35 cfs, or outflow equal inflow if the level of Caucomgomoc Lake drops to one foot below the level achieved by May 15.
- From July 16 to August 31, a minimum flow of 90 cfs.
- From September 1 to the winter gate setting, a minimum flow of 200 cfs.
- From the winter gate setting to ice-out, gates set to discharge a minimum flow of 200 cfs at the time of the winter gate setting.

Ragged Stream

- From ice-out to June 6, a minimum flow of 65 cfs or April 1 outflow, whichever is less, for fish egg incubation, or outflow equal inflow if the level of Ragged Lake drops to one foot below the level achieved by May 15.
- From June 7 to July 15, a minimum flow of 25 cfs, or outflow equal inflow if the level of Ragged Lake drops to one foot below the level achieved by May 15.
- From July 16 to the winter gate setting, a minimum flow of 65 cfs.
- From the winter gate setting to ice-out, a deep gate set to discharge a minimum flow of 65 cfs at the time of the winter gate setting.

Typically, the winter gate settings will be made between November 1 and November 30.

In all cases, the specified minimum flow releases at each dam will be provided until storage is depleted, i.e., until the minimum lake levels established in Condition 1 above are reached, at which point outflow will equal inflow at the specific dam.

B. Operating emergencies beyond the applicant's control include, but are not limited to: acts of God; acts of war or terrorism; equipment failure or other temporary abnormal operating conditions; generation unit operation or interruption under to power supply emergencies; and orders from local, state or federal law enforcement or public safety authorities.

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- C. The applicant shall, within 6 months after issuance of a New License for the project or upon such other schedule as established by FERC, submit the details of a plan for providing and monitoring the minimum flows required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.
- D. All minimum flow provisions of this condition shall be effective in the first spring runoff period following the issuance of a New License for the project by FERC.

3. OPERATION OF UNLICENSED STORAGE DAMS

A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicant's control, as defined below, or (4) agreement between the applicant and appropriate state and/or federal agencies, the dams at Penobscot Lake, Harrington Lake, Dole Pond, Long Pond, and Loon Lake shall be managed in accordance with the provisions of the July 16, 2004 Offer of Settlement for the GLHA Storage Project, as modified herein. Specifically, water levels shall be managed and minimum flows shall be released as follows:

Penobscot Lake

- During the spring runoff period, the lake will be filled as close as practical to the normal full level (elevation 1603 feet USGS datum).
- From May 15 to the winter gate setting, a minimum flow of 10 cfs will be released.
- During the winter, a minimum lake level of two feet over the dam sill (elevation 1596.4 feet USGS datum) will be maintained.

Harrington Lake

- During the spring runoff period, the lake will be filled as close as practical to the normal full level (elevation 1034 feet USGS datum).
- From May 15 to the winter gate setting, a minimum flow of 20 cfs will be released.
- During the winter, a minimum lake level of one foot over the dam sill (elevation 1026 USGS datum) will be maintained.

Dole Pond

- During the spring runoff period, the lake will be filled as close as pratical to an
 interim full pond level that is 4 feet above the dam sill (elevation 1,406 feet USGS
 datum).
- From May 15 to the winter gate setting, a minimum flow of 15 cfs shall be released, except that a minimum flow of 100 cfs, or such reduced flow as may be approved by

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the Maine Department of Inland Fisheries and Wildlife, throughout the month of September.

During the winter, a maximum drawdown to the dam sill (elevation 1,402 feet USGS datum) will occur.

Long Pond

- During the spring runoff period, the lake will be filled as close as practical to the normal full level (elevation 1491 feet USGS datum).
- From May 15 to the winter gate setting, a minimum flow of 7 cfs will be released.
- During the winter, a maximum drawdown to the dam sill (elevation 1,485 feet USGS datum) will occur.

Loon Lake

Stop logs will be set at 1.5 feet above the dam sill (elevation 1,020.5 feet USGS datum) at the start of the first growing season following license issuance, and lake levels and flow releases will be allowed to fluctuate naturally. Thereafter, the stop log elevation will be set at or above the sill in order to maximize aquatic emergent vegetation through maintenance of relatively stable water levels, as directed by the Maine Department of Inland Fisheries and Wildlife and the U.S. Fish and Wildlife Service.

Typically, the winter gate settings will be made between November 1 and November 30, with the gates set to a position sufficient to maintain dam safety.

In all cases, the specified minimum flow releases at each dam will be provided until storage is depleted, i.e., until the minimum lake levels established in Condition 1 above are reached, at which point outflow will equal inflow at the specific dam.

- B. Operating emergencies beyond the applicant's control include, but are not limited to: acts of God; acts of war or terrorism; equipment failure or other temporary abnormal operating conditions; generation unit operation or interruption under power supply emergencies; and orders from local, state or federal law enforcement or public safety authorities.
- C. The applicant shall, within 6 months after issuance of a New License for the project or upon such other schedule as established by FERC, submit the details of a plan for providing and monitoring the minimum flows required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

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- D. The approved drawdown of Dole Pond shall be in effect as an interim limit, subject to further evaluation by DEP of site-specific data demonstrating that a larger drawdown will result in the pond remaining suitable for the designated use of habitat for fish and aquatic life. The approved drawdown of Dole Pond may be temporarily increased to facilitate the study of the impact of drawdowns on aquatic habitat in the pond, provided that such a study is undertaken pursuant to a study plan approved by the DEP.
- E. All drawdown and minimum flow provisions of this condition shall be effective in the second spring runoff period following the issuance of a New License for the project by FERC.

4. LANDLOCKED SALMON MONITORING PLAN

- A. The applicant shall, in accordance with the provisions of the July 16, 2004 Offer of Settlement for the GLHA Storage Project, develop a 3-year monitoring plan to assess landlocked salmon reproduction in response to the new minimum flow management provisions specified in Condition 2 above in the West Branch of the Penobscot River below Seboomook Lake.
- B. The applicant shall, within 6 months after the issuance of a New License for the project or upon such other schedule as established by FERC, submit the details of a landlocked salmon monitoring plan as required by Part A of this condition. This plan shall be prepared in consultation with the Maine Department of Inland Fisheries and Wildlife and other parties as provided in the Offer of Settlement, and shall include a schedule for implementation. This plan shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality prior to implementation.

5. WHITEWATER BOATING FLOWS AND FLOW INFORMATION

A. Except as modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicant's control, as defined below, or (4) agreement between the applicant and appropriate state and/or federal agencies, whitewater boating flows and flow information shall be provided in accordance with the provisions of the July 16, 2004 Offer of Settlement for the GLHA Storage Project. Specifically, the following boating flows shall be released:

Canada Falls Dam (South Branch)

The applicant shall release the following boating flows from Canada Falls Dam to the South Branch of the Penobscot River on Saturdays from 10 AM to 3 PM:

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| Saturday | <u>July</u> | August | <u>September</u> |
|-----------------|-------------|---------|-----------------------------|
| 1 | 500 cfs | 600 cfs | 750 cfs (Labor Day weekend) |
| 2 | 600 cfs | 750 cfs | 600 cfs |
| 3 | 600 cfs | 600 cfs | 500 cfs (On or before 9/15) |
| 4 | 900 cfs | 750 cfs | |
| 5 (when it | 600 cfs | 600 cfs | |
| occurs) | | | |

Boating flows at Canada Falls Dam that exceed the flow levels existing one hour prior to the scheduled start of whitewater boating releases shall be gradually increased from pre-existing flow levels, and shall be similarly gradually decreased over a one hour period after the end of the whitewater boating releases.

Seboomook Dam (West Branch)

The applicant shall provide one special boating flow release of 1500 cfs from 10 AM to 3 PM from Seboomook Dam to the West Branch of the Penobscot River on the Saturday of Labor Day weekend

- B. By June 15 of each year, the applicant shall post the boating flow schedule for the remainder of the boating season on the internet on a publicly accessible website. From April 1 until October 15 of each year, the applicant shall also report daily on the internet and on a toll free phone number the current flow and the predicted flows for the upcoming three (3) days at the reservoir outlets.
- C. Operating emergencies beyond the applicant's control include, but are not limited to: acts of God; acts of war or terrorism; equipment failure or other temporary abnormal operating conditions; generation unit operation or interruption under power supply emergencies; and orders from local, state or federal law enforcement or public safety authorities.
- D. The applicant shall, within 6 months of issuance of a FERC license for the project or upon such other schedule as established by FERC, submit plans for providing and monitoring the whitewater flows required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.
- E. All whitewater boating flow and flow information provisions of this condition shall be effective in the first summer period following the issuance of a New License for the project by FERC.

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6. MACROINVERTEBRATE SAMPLING

- A. The applicant shall conduct follow-up macroinvertebrate sampling in the South Branch of the Penobscot River below Canada Falls Dam and in the West Branch of the Penobscot River below Seboomook Dam to confirm that the macroinvertebrate communities in these waters attain their assigned aquatic life standards in response to the new minimum flow management provisions specified in Condition 2 above.
- B. The applicant shall, within one year after the issuance of a New License for the project or upon such other schedule as established by FERC, submit the details of a macroinvertebrate sampling plan as required by Part A of this condition. This plan shall be prepared in consultation with the DEP Division of Environmental Assessment, and shall include a schedule for implementation and reporting. This plan shall be reviewed by and must receive approval of the DEP Bureau of Land and Water Quality prior to implementation.

7. CAUCOMGOMOC STREAM FLOW RAMPING PLAN

- A. The applicant shall develop and implement a plan to ramp flows down in Caucomgomoc Stream prior to the required flow reduction to 35 cfs on June 7, in order to prevent stranding of aquatic organisms.
- B. The applicant shall, within one year after the issuance of a New License for the project or upon such other schedule as established by FERC, submit the details of a Caucomgomoc Stream flow ramping plan as required by Part A of this condition. This plan shall be prepared in consultation with the Maine Department of Inland Fisheries and Wildlife and shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality prior to implementation.

8. MERCURY MONITORING PLAN

- A. The applicant shall, in accordance with the provisions of the July 16, 2004 Offer of Settlement for the GLHA Storage Project, develop and implement a mercury monitoring plan. The goals of the plan shall be to (1) determine and provide updates on human health risks from consumption of mercury-contaminated fish and wildlife in the project waters, (2) determine ecological health risks to top trophic level wildlife predators (e.g., eagles, loons, and otters), and (3) examine trends in mercury levels in biota over time to see if reduced drawdowns affect mercury accumulation levels.
- B. The applicant shall, within 90 days after issuance of a New License for the project or upon such other schedule as established by FERC, submit the details of a mercury monitoring plan as required by Part A of this condition. This plan shall be prepared in consultation with the DEP, the Maine Department of Inland Fisheries and Wildlife, and

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other parties as provided in the Offer of Settlement, and shall include a schedule for implementation and reporting. This plan shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality prior to implementation.

9. BALD EAGLE MANAGEMENT PLAN

- A. The applicant shall, in accordance with the provisions of the July 16, 2004 Offer of Settlement for the GLHA Storage Project, develop and implement a bald eagle management plan for the project.
- B. The applicant shall, within two years after the issuance of a New License for the project or upon such other schedule as established by FERC, submit the details of a bald eagle management plan as required by Part A of this condition. This plan shall be prepared in consultation with the Maine Department of Inland Fisheries and Wildlife and other parties as provided in the Offer of Settlement, and shall include a schedule for implementation. This plan shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality prior to implementation.

10. RECREATIONAL FACILITIES

A. The applicant shall, in accordance with the provisions of the July 16, 2004 Offer of Settlement for the GLHA Storage Project, provide the following recreational facilities within three years of the issuance of a New License for the project by FERC:

<u>Canada Falls Lake</u>: Install concrete planks west of the dam to provide a defined boat launch site; improve the canoe portage and provide directional signs.

<u>Seboomook Lake/West Branch</u>: Improve two existing informal boat launch sites on the lake; improve the canoe portage and angler access trail below the dam.

<u>Caucomgomoc Lake</u>: Construct a boat launch and parking area; improve the canoe portage and provide directional signs.

Ragged Lake: Improve the boat launch and parking area.

B. The applicant shall, within one year of the issuance of a New License for the project or upon such other schedule as established by FERC, submit a plan to provide the new and improved recreational facilities as required by Part A of this condition. This plan shall be prepared in consultation with the Maine Department of Conservation and the Maine Department of Inland Fisheries and Wildlife, and shall include a schedule for implementation. This plan shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality prior to implementation.

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11. WETLAND ENHANCEMENT FUND

The applicant shall, in accordance with the provisions of the July 16, 2004 Offer of Settlement for the GLHA Storage Project, make a one-time payment of \$35,000 to the Maine Department of Inland Fisheries and Wildlife for wetlands enhancement project(s) in the Penobscot River watershed. Payment shall be made within one year of the issuance of a New License for the project by FERC.

12. LIMITS OF APPROVAL

This approval is limited to and includes the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. All variances from the plans and proposals contained in said documents are subject to review and approval of the DEP prior to implementation.

13. COMPLIANCE WITH ALL APPLICABLE LAWS

The applicant shall secure and appropriately comply with all applicable federal, state and local licenses, permits, authorizations, conditions, agreements and orders required for the operation of the project in accordance with the terms of this certification.

14. EFFECTIVE DATE

This water quality certification shall be effective concurrent with the effective date of the New License issued for the project by the Federal Energy Regulatory Commission.

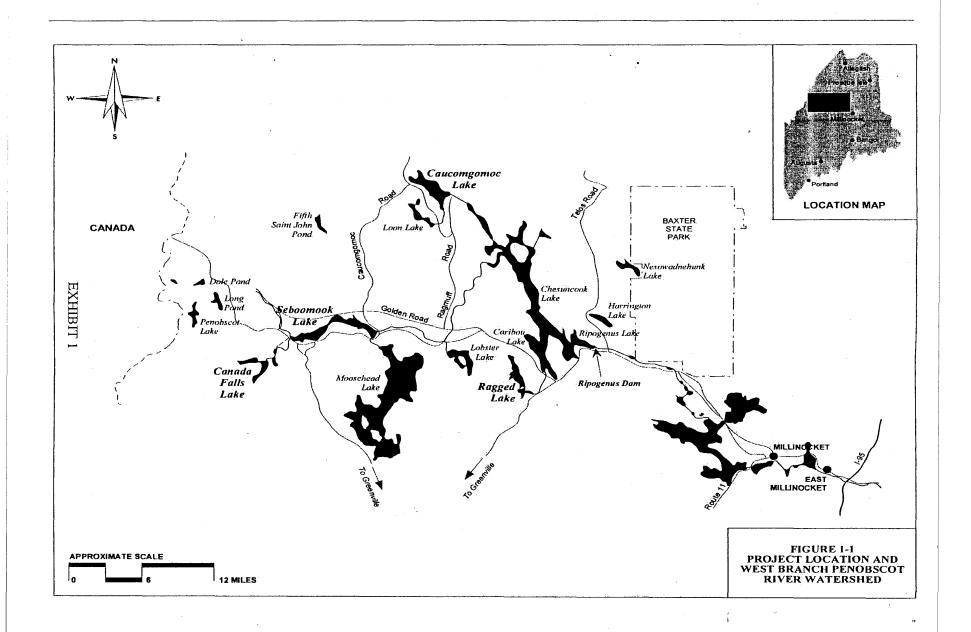
15. REVOCATION OF CERTIFICATION

This certification and all the terms and conditions contained herein shall be automatically revoked and shall be null and void in the event that the Maine Legislature fails to enact or the U.S. Environmental Protection Agency disapproves the new site-specific aquatic life and habitat standards for Ragged Lake and Seboomook Lake that have been recommended by the Board of Environmental Protection.

GREAT LAKES HYDRO AMERICA, LLC Page 41 #L-19665-32-G-N (Canada Falls Lake) #L-19666-32-G-N (Seboomook Lake) #L-19667-32-G-N (Ragged Lake) #L-19668-32-G-N (Caucomgomoc Lake) WATER QUALITY CERTIFICATION DONE AND DATED AT AUGUSTA, MAINE, THIS 33" DAY OF DEPARTMENT OF ENVIRONMENTAL PROTECTION BY: Dawn R. Gallagher, Commissioner PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES. Date of receipt of application: 12/23/2003 Date application accepted for processing: 12/20/2003 (Initial application received 04/13/1998 and subsequently withdrawn and refiled 03/25/1999, 03/03/2000, 02/02/2001, 01/22/2002, and 01/08/2003.) **-1** 2004 DEC BOARD OF ENVIRONMENTAL PROT. STATE OF MAINE

Date filed with Board of Environmental Protection

This Order prepared by Dana Murch, Bureau of Land and Water Quality.





DEP INFORMATION SHEET

Appealing a Commissioner's Licensing Decision

Dated: May 2004 Contact: (207) 287-2811

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) in an administrative process before the Board of Environmental Protection (Board); or (2) in a judicial process before Maine's Superior Court. This INFORMATION SHEET, in conjunction with consulting statutory and regulatory provisions referred to herein, can help aggrieved persons with understanding their rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

DEP's General Laws, 38 M.R.S.A. § 341-D(4), and its Rules Concerning the Processing of Applications and Other Administrative Matters (Chapter 2), 06-096 CMR 2.24 (April 1, 2003).

HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written notice of appeal within 30 calendar days of the date on which the Commissioner's decision was filed with the Board. Appeals filed after 30 calendar days will be rejected.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017; faxes are acceptable for purposes of meeting the deadline when followed by receipt of mailed original documents within five (5) working days. Receipt on a particular day must be by 5:00 PM at DEP's offices in Augusta; materials received after 5:00 PM are not considered received until the following day. The person appealing a licensing decision must also send the DEP's Commissioner and the applicant a copy of the documents. All the information listed in the next section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal.

WHAT YOUR APPEAL PAPERWORK MUST CONTAIN

The materials constituting an appeal must contain the following information at the time submitted:

- 1. Aggrieved Status. Standing to maintain an appeal requires the appellant to show they are particularly injured by the Commissioner's decision.
- 2. The findings, conclusions or conditions objected to or believed to be in error. Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal.
- 3. The basis of the objections or challenge. If possible, specific regulations, statutes or other facts should be referenced. This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements.
- 4. The remedy sought. This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.

OCF/90-1/r95/r98/r99/r00/r04

Appealing a Commissioner's Licensing Decision May 2004 Page 2 of 2

- 5. All the matters to be contested. The Board will limit its consideration to those arguments specifically raised in the written notice of appeal.
- 6. Request for hearing. The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing is requested and granted. A request for public hearing on an appeal must be filed as part of the notice of appeal.
- 7. New or additional evidence to be offered. The Board may allow new or additional evidence as part of an appeal only when the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or show that the evidence itself is newly discovered and could not have been presented earlier in the process. Specific requirements for additional evidence are found in Chapter 2, Section 24(B)(5).

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

- 1. Be familiar with all relevant material in the DEP record. A license file is public information made easily accessible by DEP. Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials. There is a charge for copies or copying services.
- 2. Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal. DEP staff will provide this information on request and answer questions regarding applicable requirements.
- 3. The filing of an appeal does not operate as a stay to any decision. An applicant proceeding with a project pending the outcome of an appeal runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge initiation of the appeals procedure, including the name of the DEP project manager assigned to the specific appeal, within 15 days of receiving a timely filing. The notice of appeal, all materials accepted by the Board Chair as additional evidence, and any materials submitted in response to the appeal will be sent to Board members along with a briefing and recommendation from DEP staff. Parties filing appeals and interested persons are notified in advance of the final date set for Board consideration of an appeal or request for public hearing. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision. The Board will notify parties to an appeal and interested persons of its decision.

II. APPEALS TO MAINE SUPERIOR COURT

Maine law allows aggrieved persons to appeal final Commissioner licensing decisions to Maine's Superior Court, see 38 M.R.S.A. § 346(1); 06-096 CMR 2.26; 5 M.R.S.A. § 11001; & MRCivP 80C. Parties to the licensing decision must file a petition for review within 30 days after receipt of notice of the Commissioner's written decision. A petition for review by any other person aggrieved must be filed within 40-days from the date the written decision is rendered. The laws cited in this paragraph and other legal procedures govern the contents and processing of a Superior Court appeal.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, contact the DEP's Director of Procedures and Enforcement at (207) 287-2811.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.