Information Sheet
Winnipesaukee River Basin Flood Control Project

Prepared by the Lake Winnipesaukee Association
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From: Army Corps of Engineers Winnipesaukee River Basin Feasibility Report September 1985

The NHWRB has been fairly successful in preventing flood losses along the Winnipesaukee River by limiting discharges from Lakeport Dam to 2,600 cfs. The Winnipesaukee River can pass this flow without major flood damages. This discharge has only been exceeded once since the flood of 1936. During the June 1984 flood, discharges from Lakeport Dam equalled approximately 3,000 cfs. *Page 13*

...With the lake at elevation 504.3 NGVD*, only a 7 inch rise in stage (equivalent to 1.4 inches of runoff over the drainage area) is available before initial flood damage stage is reached.

*NGVD = National Geodetic Vertical Datum = mean sea level of 1929 *Page 14*

If the lake could be maintained at a lower level, it would provide added flood storage throughout the year. The danger... is that if controls on development are not implemented recreation interests would again gravitate toward the water and shoreline, duplicating the present flood damage potential at a lower lake level. *Page 22*

(But development controls have been implemented!)

Hydropower interests fear that a decrease in lake levels would limit the amount of water available during the summer, fall, and winter months. If the lake was lowered, marinas that have the minimum amount of clearance for navigation would require deepening... *Page 23*

Channel modifications along the Winnipesaukee River would eliminate this flooding, but would do nothing to reduce flooding on Lake Winnipesaukee, which is where the majority of flood losses have occurred in the past. *Page 29*

Modifications to the present regulation of Lake Winnipesaukee can be implemented at no cost. *Page 38*

(Estimated benefits = 85% of total project benefits [see page 48 citation] = over $2.6 million annually.)

...Estimated operation and maintainence costs, included herein, are provided for economic analysis only and are not included in project first costs. The local sponsor(s) should be aware that their responsibility includes future funding of all operation and maintainence items and should be budgeted for accordingly. *Page 39*

Channel excavation will provide greater access by canoe for hunting, fishing, and general enjoyment of the natural environment. *Page 41*

(A proposal to dam the Grand Canyon also touted greater access. The Sierra Club asked: "Should we flood the Sistine Chapel so tourists can get closer to the ceiling?)

Gradual draw-down and fill-up of Lake Winnipesaukee will provide more uniform releases from Lakeport Dam for greater hydropower generation.

...Proposed channel modifications may result in the possible removal of a portion of the archaeological resources in the Lochmere Archaeological District. *Page 41*

...Local interests are required to provide all lands, easements, rights-of-way, utility relocations, and bridge modifications necessary for the construction of structural measures such as proposed channel work. Local interests are also required to provide 20% of the total first cost of all nonstructural measures such as proposed floodproofing, in accordance with section 73 of PL 93-251. In addition. local interests are responsible for all costs in excess of the Federal cost limit... *Pages 44 - 45*

(The Corps never examined the alternative cost-benefit ratios of computerized modeling for lake management.)

In fact, 85% of the total benefits that are expected to result from implementation of the recommended plan, are attributed to non-structural changes in the present regulation of Lake Winnipesaukee. *Page 48*

From the Corps' Environmental Assessment, October 1984:

There does not appear to be any major environmental problems, conflicts or disagreements that would result from construction activities. Implementation of the proposed project will not have a significant impact on the human environment and, therefore, will not require an environmental impact statement.

(State and federal agencies, towns, and environmental organizations disagreed — see next page.)

From the January, 1985 Chas. T. Main, Inc. report to the NH Water Resources Board concerning Lake Winnipesaukee Levels:

The 1984 spring season... reached the long-term average lake level by April 25, and remained at the normal... [504.32 feet] until May 7. The first two weeks of May produced over three inches of rain at Lakeport and lake levels rose to 504.70 feet.... On May 28 a stalled surface front... stagnated over New England to produce six days of rainfall totalling nearly eight inches on the Winnipesaukee Basin.... Although the 24 hour rainfall totals were not greater than the ten year return period, the event was considered greater than a fifty year flood at the Tilton Gage Station. *Page 5*

A 2600 cfs release at Lakeport will lower Lake Winnipesaukee only 1.3 inches per day. This, combined with high volume rainfall, can produce up to 5.1 inches of lake rise per inch of runoff and it is quite clear why maintaining a high pool or slightly above June 1 target of 504.32 ft. can be very critical to flood storage capabilities of the lake. *Page 7*

[The]... Corps report extensively studied the possibility of improving the hydraulic conditions in the ...river ... for a higher discharge (4000 cfs). While this scheme would definitely add flood protection to the downstream reaches of the Winnipesaukee River, this higher discharge could not be released due to hydraulic limitations until the lake, itself, is at or above damaging levels. A detailed study should be made to help monitor and predict these rapid lake level rises and to develop drawdown modes for predicted storage requirements, keeping in mind the recreational needs... These studies would include basin surface-groundwater relationships, soil moisture monitoring, and improved climatologic-meteorologic predictions to recognize the likelihood of high volume rainfall events. This information could also be made available to hydropower interests.

The multiple use and complex cause and effect nature of the Winnipesaukee watershed should be sufficient cause for implementation of an on-line computer model which could automatically assemble all relevant parameters described above. *Page 8*

From the Draft US Army Corps of Engineers Winnpesaukee River Basin Report, November 1984, Supporting Documentation:

"...for short duration high volume runoff events, increasing peak outflows from 2,600 to 4,000 cfs would have little effect on the resulting peak stage of the lake..." *Page 1-19*

"Historically, flooding at Lake Winnipesaukee has occurred as a result of high volume rainfall and/or snowmelt runoff at times when the lake was initially or nearly full....Therefore, any improved lake regulating guidance or flood runoff forecasting procedure that would reduce the probability of premature filling of the lake should serve as a flood reducing measure for Lake Winnipesaukee." *Page 1-22*

(In other words, dredging won't help but forecasting and improved management will.)

Comments to the Corps of Engineers:

Governor John Sununu, March 12, 1985:

The intent to participate in this project is conditioned upon the Corps' satisfactorily addressing the concerns presented by state agencies. Particular attention should be focused on the following:

- A clear presentation on non-structural alternatives and how the Corps evaluated such options;
- Historic preservation and archaeological concerns as summarized in the Historic Preservation Office's letter received March 6, 1985;
- A review of the estimated cost of moving utility structures within the Winnipesaukee River Basin regional sewer disposal system; and
- Careful consideration of the concerns raised by the Fish and Game Department

DRED Commissioner Ralph Brickett, March 6 1985:

...There will be direct and adverse impacts to the Lochmere Archaeological District.

NH Fish & Game Director Charles Barry, February 25, 1985:

The Department is opposed to the dredging of... the Winnipesaukee River in Reaches #2, #3A, #4 and excavation of areas not previously permitted as it would have a significant, lasting, adverse impact on fish and wildlife and their habitats. The Department also maintains that no amount of mitigation will rectify or balance damage to fish and wildlife habitat incurred by channel or stream dredging.

U.S. Fish and Wildlife Service New England Supervisor Gordon Beckett, January 30, 1986:

In our opinion, the limited flood control benefits accounting for only 15 percent of the total, are far outweighed by the direct, indirect, and cumulative environmental consequences of the channelization proposal. Therefore, we reaffirm our previous recommendation that the Winnipesaukee River Basin Flood Control Plan be limited to non-structural measures only.

U.S.E.P.A Asst. Director for Environmental Review Elizabeth Higgins, February 10, 1986:

...Upon review of the final documents and the substantive comments of our sister agencies, we concur with the USFWS and NHFG's comments and believe that portions of this project if implemented could have significant adverse impacts on the aquatic environment.

Audubon Soc. of NH Director Les Corey, February 13, 1985:

...We would like to reiterate our opposition to the channelization portion of this project. . . Lake level management alone should be tried prior to embarking on the channelization downstream.

New Hampshire Natural Heritage Program Coordinator F. E. Brackley, February 13, 1985:

We are concerned about the possible impact of downstream channelization and therefore support the statement submitted to you by the Audubon Society of New Hampshire.

Merrimack River Watershed Council Pres. Nathan Tufts, Jr. February 8, 1985:

We support the proposed modification of Lake Winnipesaukee's ... fill-up and ...draw-down schedules... However, we would oppose the wholesale dredging of large sections of the natural streambottom of the Winnpesaukee River in order to artificially increase its capacity.

Town of Belmont Selectmen, January 21, 1985:

The Board of Selectmen... have unanimously voted to oppose the project as presently planned.

Town of Sanbornton Selectmen, September 26, 1984:

... the Selectmen have unanimously voted to be opposed to this project...

Tilton Conservation Commission, February 13, 1985:

We found that the Environmental Assessment was without substance and included conflicting information.... We are not in favor of the proposed channel modifications.