CURTIS POND DAM CONSTRUCTION REPAIR PROJECT

TO:

TOWN OF CALAIS SELECT BOARD

PLEASE FIND ATTACHED INFORMATION RELATED TO THE REPAIR OF THE CURTIS POND DAM. THE "COMMITTEE TO REPAIR CURTIS POND DAM" HAS BEEN WORKING OVER THE LAST FOUR MONTHS TO PREPARE THE INFORMATION FOR THE SELECT BOARD. THE SELECT BOARD MEETING OF OCTOBER 13, 2003 WILL FACILATE A DISCUSSION OF THE PROBLEM AND THE ALTERNATIVES TO REPAIR THE DAM.

A BRIEF PRESENTATION WILL BE GIVEN SUMMARIZING THE DETAIL INFORMATION PROVIDED IN THE ATTACHED PACKAGE.

THANK YOU FOR THE OPPORTUNITY TO PRESENT THE INFORMATION.

COMMITTEE TO REPAIR CURTIS POND DAM
OCTOBER 7, 2003

CURTIS POND DAM CONSTRUCTION PROJECT

SELECT BOARD SUMMARY

The many stakeholders of Curtis Pond recognize the importance of protecting the water level of the Pond for our current and future users from the Town of Calais, Washington County, and the State of Vermont. The property owners, residents of Calais, boaters, people fishing, and visitors are all stakeholders that enjoy the benefits of the pond. The stakeholders enjoy the opportunities for boating, swimming, observing wildlife, fishing, hiking, and biking around the pond.

As most of you know, a Committee was formed to assure the Dam ownership and repair would occur in a timely manner prior to any damaging consequences that would impact the integrity of the pond. Our committee plans to develop and implement a plan that will assure municipality ownership of the dam, funding to repair the dam, insurance coverage for liability, establishment of a taxing district, and an ongoing committee or organization to manage the current and future dam. **It is important that decisions be made within the next month since the recently identified current owner is going to relinquish and disclaim title in December. The dam title will then pass to the heirs of Elgin Mann. This action will cause significant legal issues in future decisions on needed action to repair the dam.**

There are different approaches allowed under Vermont State Statutes to assume title of the Curtis Pond Dam and assess taxes to finance the budget. The Town of Calais can obtain ownership and treat as other properties in the Town, the Town can take ownership and establish a Special Assessment District, or a Fire District can be created to assume ownership and be responsible for the financing and management of the Dam. The objective of either approach will be to repair and maintain the Curtis Pond Dam.

1) The Town of Calais takes title to the Curtis Pond Dam and budgets the repair and on going expenses via the Town Grand list.

2) A Special Assessment District could be formed by the Select Board with the Town taking title to the dam. Title 24: Municipal and County Government: Chapter 87: Special Assessments of Vermont Statutes (attached) allows the Select Board to create a special taxing district for a specific purpose such as proposed in this letter. The Select Board would appoint a committee of 5 property owners within the Special Assessment District to manage the dam. The committee would be responsible and accountable to the Select Board. The committee would perform the duties delegated to them by the Select Board. This committee would take responsibility for repairing the dam and managing the monitoring and maintenance of the new dam.

3) A Fire District could be formed with all the requirements of a fire district as defined by Title 20: Internal Security and Public Safety: Chapter 171: Fire Districts of the Vermont Statutes. Attached are proposed By Laws for the Curtis Pond Fire District created from information from The Secretary of States office, information from the Vermont League of Cities and Towns, and review of the Vermont Statutes. The Prudential Committee and its elected officials would be responsible for the repairing of the dam and managing the monitoring and maintenance of the new dam. The Fire District requires the creation of a duplicate organization structure similar to a town.

General Liability Insurance Coverage is available from the Vermont League of Cities and Towns at a premium of approximately $1000 per year provided we provide VLCT with an interim plan for monitoring the dam, an Emergency Action Plan, and a Reconstruction Plan. The Curtis Pond Dam is insurable since it is class 2, "significant hazard" dam. A class 1, "High Hazard" dam is not insurable.

We all know the importance of Curtis Pond to all the stakeholders. It is important that we make the right decisions for the protection of this historic and natural resource. Due to the Title issues, it is imperative that a decision be made in the next several weeks.

Thank you in advance for giving us the opportunity to discuss the above information.

Curtis Pond Dam Volunteer Committee

ATTACHMENTS:

I. Preliminary Engineering Phase
Request for Proposal/Quotation Response
II. Proposed limits/boundaries of the District and Tax Assessment approach
III. Curtis Pond Funding Approach
IV. Proposed Curtis Pond Dam District budget.
V. Title 24: Chapter 87: Special Assessment District of Vermont State Statutes.
VI. Proposed By Laws for Curtis Pond Dam Fire District
VII. State of Vermont Dam Safety inspection report of the Curtis Pond Dam dated July 14, 2003
VIII. Projected Property Value/Tax Reduction Based on Dam Removal

ATTACHMENT I

CURTIS POND DAM

DAM RECONSTRUCTION PROJECT

REQUEST FOR PROPOSAL
SCOPE OF WORK

The Curtis Pond Dam in the Town of Calais is classified as a Class 2 "significant hazard" dam by the State of Vermont Dam Safety Engineering Office in accordance with the Corps of Engineers classification system. The dam has shown deterioration over the last 10 years with a wash out occurring during the winter of 2001. At that time, the State of Vermont Dam Safety Engineering area inspected the dam and recommended the dam be repaired and replaced with a new dam.

The objective is to preserve the existing dam and construct a concrete dam on the upstream side of the dam.

Scope of work: **PHASE 1: PRELIMINARY ENGINEERING**

Please submit a proposal to achieve the following Preliminary Engineering items To include:

1. Emergency action plan for interim plan in case of failure.
2. Assessment of current dam
3. Alternatives to reconstruct dam to meet State of Vermont Dam Safety requirements.
4. Evaluate cost for each approach for the following four phases:
   Preliminary Engineering Phase
   Design Engineering Phase
   Engineering Construction Management Phase
   Construction Cost Phase
5. Project Schedule for all phases

Also include any additional items recommended by your firm to be considered as part of the scope of work. Preliminary Engineering Phase is to be completed by November 21, 2003. Please provide a fixed price quotation with the scope of work proposal.

Please find attached the July 24, 2003 State of Vermont Dam Safety inspection report of the Curtis Pond Dam. Additional information can be obtained from Bob Finucane the State of Vermont Dam Safety Engineer.

Robert J. Belisle
46 Harrington Terrace
Burlington, Vermont 05401
802-862-1140

SUMMARY OF QUOTE RECEIVED 9/26/03

DUBOIS AND KING

SCOPE OF WORK

- NEW CONCRETE DAM ABOVE CURRENT DAM
- TEMPORARY COFFER DAM
- DRAIN POND NO COFFER DAM
- OBTAIN AND REVIEW AVAILABLE INFORMATION
- HYDROLOGY AND HYDRAULICS
- EMERGENCY ACTION PLAN
- SUBSURFACE INVESTIGATION
- ALTERNATIVE REPAIR/REPLACEMENT INVESTIGATION
- ENGINEERING AND CONSTRUCTION COST ESTIMATE
- ENGINEERING REPORT
- MEETING TO PRESENT RECOMMENDATIONS

PROFESSIONAL FEES:

PRELIMINARY ENGINEERING $16,000 PLUS BORING AND SOIL TESTING ALLOWANCE (UPSIDE) $6,000.

"ROUGH ESTIMATES"

- PRELIMINARY ENGINEERING	$22,000
- FINAL ENGINEERING PHASE (15% OF CONSTRUCTION)	$30,000
- CONSTRUCTION ENG'G MANAGEMENT	$15,000 TO $30,000
- CONSTRUCTION	$200,000
TOTAL	$267,000 TO $282,000

SCHEDULE: PLACE CONTRACT BY SEPT 30, 2003
COMPLETE BY NOV 19,2003

ACTUAL COMMIT:

CONTRACT PLACED WITH DUBOIS AND KING FOR $20,000 SEPTEMBER 29, 2003

SUMMARY OF QUOTE RECEIVED 9/26/03

DUFRESNE AND ASSOCIATES

SCOPE OF WORK

- CONSTRUCT CONCRETE DAM UPSTREAM WITH TMPORARY COFFER DAM ALTERNATIVES
- EMERGENCY ACTION PLAN
- PREPARE AN EVALUATION REPORT
  - ASSESS EXISTING DAM
  - REVIEW INFORMATION
  - INSPECTION OF DAM
  - LAND SURVEYOR
  - SUSURFACE BORINGS
  - PREPARE BASE MAP
- DEVELOP AND COMPARE ALTERNATIVES FOR DAM RECONSTRUCTION
  - CONCRETE DAM UPSTREAM WITH TEMPORARY COFFER DAM
  - CONCRETE DAM UPSTREAM DRAIN POND
  - CONCRETE DAM DOWNSTREAM NO COFFER RECONSTRUCT STONE DAM BELOW NEW ONE
- COST ESTIMATE FOR ENGINEERING AND CONSTRUCTION
- RECOMMEND ALTERNATIVES
- PREPARE REPORT
- MEETINGS AND PRESENTATIONS

PROFESSIONAL FEES: $19,900 INCLUDING $3500 FOR BORING

"ROUGH ESTIMATE"

- PRELIMINARY ENGINEERING	$19,900
- FINAL ENGINEERING PHASE	31,500
- CONSTRUCTION ENGINEERING MANAGEMENT	27,500
- CONSTRUCTION	200,000
TOTAL	$278,900

SCHEDULE: PLACE CONTRACT BY SEPT 30, 2003
COMPLETE BY NOV 19,2003

DuBois & King inc.

ENGINEERING • PLANNING • DEVELOPMENT • MANAGEMENT

618450X
September 25, 2003

Mr. Robert J. Belisle
46 Harrington Terrace
Burlington, Vermont 05401

SUBJECT: CURTIS POND DAM
PRELIMINARY ENGINEERING EVALUATION

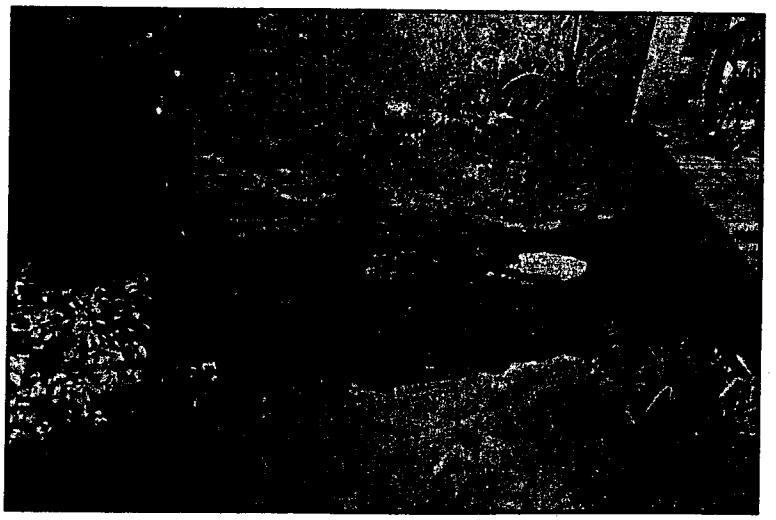
Dear Mr. Belisle:

In response to your recent request, DuBois & King, Inc. is pleased to submit this proposal for professional services relating to preliminary engineering services to the Curtis Pond Dam Committee (Committee) for the Curtis Pond Dam in Calais, Vermont.

The following is a description of our understanding of this project, a statement of the goals and objectives followed by a detailed Scope of Services, which addresses these goals and objectives. Our proposal includes a fixed fee for the professional engineering srvices, our Contract Terms and Condtions, and a signature page authorizing us to proceed if the proposed is acceptable to the Committee. Also enclosed is a summary of our qualifications, list of representative project experience, resumes of key personnel, and references.

PROJECT DESCRIPTION

The existing Curtis Pond Dam consists of a dry laid up stone and earthfill structure. The overall length of the dam is approximately 120-feet and the maximum height is approximately 14-feet. The dam impounds a 76-acre pond. Prior to construction of the dam, there were 2 smaller, natural ponds located further upstream. The dam raised the water level by approximately 7 feet, resulting in a combination of the 2 ponds into the current configuration of Curtis Pond.



The volume of water impounded by the dam is approximately 742 acre-feet. Because the dam impounds over 11.48 acre-feet of water (500,000 cubic feet), it falls under the jurisdiction of the Vermont Department of Environmental Conservation, Dam Safety Section. Any repairs, modifications or replacement will require approval from the Dam Safety Section.

The outlet works consists of a broad crested weir located near the center of the dam. The weir width is approximately 5 feet and its depth is 3.8-feet, as measured down from the top of the dam. A lower level sluice / drain is located below the weir spillway.

The dam is experiences progressive failure, which is evidenced by excessive seepage, movement of the stonewall and piping of the earth / sand backfill through the voids in the wall. Indeed, several sinkholes have appeared along the upstream crest of the dam. There is extensive background regarding the condition of the dam and alternatives to repair or replace it. In addition, there has been a significant effort in the research of the historical and current ownership of the dam. This background is well known to the Committee and is therefore not repeated in this proposal.

PROJECT OBJECTIVES

The Committee's primary objective is to repair the dam such that it safety retains Curtis Pond. Based on our prior conversations and site walkover held last week, DuBois & King understands that in doing so, the Committee would like to retain the current stone dam and its associated historical and visual character that it contributes to the Maple Corner community.

Note: New Concrete Dam Solution

The Committee has decided that a new concrete wall to be constructed along the upstream side of the existing dam is the preferred alternative. DuBois & King agrees with this decision. Indeed, our firm has designed a number of very similar solutions in order to preserve the character of the existing dams and have found them to be a very competent and effective design. The key to this alternative, however, is having experience with the design of these types of structures and an understanding of the geotechnical and hydraulic forces that are applied to them. The new wall could be designed as a stand along dam, which would retain the pond in the event that existing stone dam were to fail.

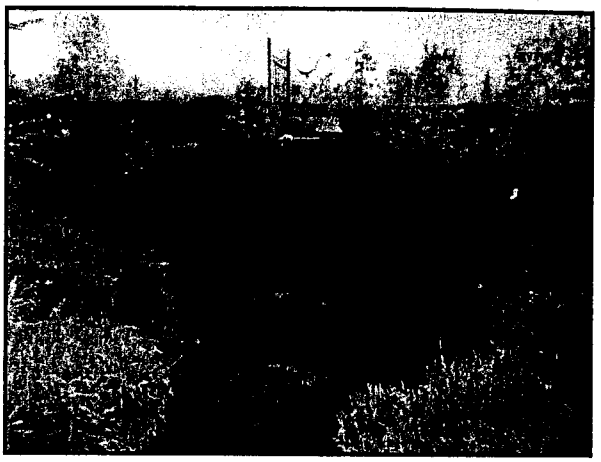
The next step in the implementation of this objective is the Preliminary Engineering. The primary purpose of conducting preliminary engineering is to conduct the necessary engineering investigations, develop alternative designs, quantify the estimated construction cost, identify required environmental and permitting related issues, and develop a budget and schedule for final engineering and construction.

DuBois & King has developed a Preliminary Engineering scope of work that we believe will properly advance this project to the next phase, which is expected to be final design and permitting. The Preliminary Engineering phase will conclude with a recommended solution that will meet the objectives stated above. Included in this phase of work will be the required engineering such as hydrology, hydraulics, and geotechnical investigations. Our cost estimates will account for all project costs , including construction, engineering and permitting.

SCOPE OF WORK

Task 1: Obtain and Review Available Information

DuBois & King, Inc. will collect all relevant available design related information on Curtis Pond Dam. This is expected to include recent and prior inspection reports, design drawings, ground survey and computations, and permits. We will use this information for background information lending insight into the existing condition of the dam.



Downstream face of dam

Note: **Jeffrey W. Tucker, P.E., Senior Dam Engineer, met with Mr. Robert Finucane, P.E., Vermont Dam Safety Engineer on September 23, 2003 to discuss this project. Mr. Tucker reviewed the dam safety files and photocopied relevant information. He also met with Mr. Brian Picotte, Chief of Survey and obtained a copy of the ground survey map that had been previously prepared by the Agency Facilities Division. He discussed the basis of the survey map and its applicability in the advancement in the design of this dam.**

Task 2: Hydrology & Hydraulics

DuBois & King, Inc. will conduct a hydrologic and hydraulic analysis for this project. We will use the U.S. Army Corps of Engineers, HEC-HMS rainfall-runoff simulation model, and the SCS Dimensionless Unit Hydrograph methodology contained therein. This model is most appropriate for the evaluation and design of dams. DuBois & King will:

- Measure and document the watershed parameters necessary to develop the HEC-HMS model, including the drainage area boundary, time of concentration and watershed lag time, land use and SCS curve number and other parameters required.

- Use precipitation values and additional weather service rainfall distribution patters in accordance with the 1995 Atlas of Short-Duration Precipitation Extremes for the Northeastern United States and Southeast Canada and the NWS Hydrometeorological Reports No. 51 and 52. The rainfall-duration relationship that will be used in modeling the PMP storm events will be based on subdivision of the 6-hour PMP to the maximum 1-hour PMP and further subdivision of the 1-hour PMP, as previously discussed with Dam Safety Engineers.

- Prepare Stage - Storage - Discharge relationships for the purpose of routing the inflow hydrographs through the reservoirs. The intent is to utilize the existing stage - storage - discharge relationships in the Dam Safety files, as appropriate.

- Develop inflows into the reservoir for storm frequencies including the average annual event, 100-year, 500-year, 1/4, 1/2, 3/4 and full PMP. The inflow hydrographs will then be routed through the reservoir using the HEC-HMS model. We will summarize the peak inflow, routed peak outflow and the maximum reservoir elevation for each flood event.

Task 3: Emergency Action Plan

DuBois & King will prepare an Emergency Action Plan (EAP) for the dam. This plan will include a Notification Flow Chart, which details the name and telephone numbers of emergency personnel to contact. The EAP will be prepared using Microsoft Word. This will allow updating of contacts over time.

Note: DuBois & King has prepared dozens of EAP's for dam owners throughout Vermont and northern New England. Many of these EAP's has been reviewed and approved by the Vermont Dam Safety Office. We have a clear understanding of the importance of the information contained in the EAP's and of how to prepare them in a useful and clear format.

Included with the EAP will be an inundation map, which will illustrate the approximate limits of flooding resulting from a dambreak. The map will extend along the brook for approximately 4,000 feet, beginning at the dam and ending near the Kent Corners crossing. An enlarged USGS map will be used to illustrate the inundation limits.

Task 4: Subsurface Investigations

Definition of the existing subsurface conditions along the upstream edge of the dam is critical in determining the type, extend and cost of a new concrete wall. DuBois & King proposes that 4 to 5 borings along the upstream edge of the dam be obtained. Each boring will be a standard penetration test with continuous recovery and will extend the boring to a competent foundation (ledge or suitable glacial till). We have assumed that permission will be given by the property owner to enter onto the dam and obtain the borings.

DuBois & King will conduct the investigation as detailed below:

1. Coordinate with the property owner and advise them as the schedule and intent of the boring operation. Obtain permission to enter onto private property and conduct the work.

2. Prepare a boring plan showing the proposed location of each boring. Provide this information to the Vermont Dam Safety office for review prior to conducting the borings.

3. Coordinate with a drilling contractor and arrange for the borings to be obtained.

4. Provide a Dam Engineer to be onsite during the boring operations to provide direction to the driller and to observe the borings. Collect the recovered samples and keep for future evaluation.

5. Review the boring logs provided by the driller and assess foundation type and condition. Select recovered samples and provide to soils laboratory for testing. Obtain testing of 6 recovered samples to include grain size distribution, soil classification and Atterberg limits (if plastic).

6. Utilize the results of the borings and testing to ascertain foundation condition and selection of a new concrete wall footing geometry.

Task 5: Alternative Repair / Replacement Investigation

DuBois & King will evaluate two (2) alternate wall and spillway configurations. The evaluations will be based on the ground survey, hydrology and hydraulic analysis and boring results. DuBois & King will:

A. **Alternative Concrete Walls**

- Determine the most appropriate location for a new concrete wall, including horizontal and vertical limits.

- Set hydraulic control elevations to maintain existing pond water level.

- Evaluate spillway configurations to maintain or increase hydraulic spillway capacity.

- Evaluate footing location and geometry. Give consideration to external loading conditions, such as ice, hydrostatic, uplift and other appropriate hydraulic pressures, seepage, exit gradients, bearing pressures and other fundamental dam design issues.

- Engineering sketches will also be developed for each improvement alternative. The engineering sketches will provide a visual perspective and will also serve as a basis for the construction cost estimate.

B. **Construction Cost Estimates**

Construction cost estimate will be prepared for each concrete wall alternative. Each alternative will include all project related costs, including temporary cofferdams. We will identify all appropriate pay items, measure the associated quantities and select a unit price for each pay item. The construction cost estimate will be summarized on a spreadsheet that clearly illustrates each pay item, unit, quantity, unit price and total cost. Allowances for contingency, permitting and final design will be included in each cost.

C. **Engineering Report**

DuBois & King will prepare an Engineering Report that summarizes the preliminary engineering work. This typed report will summarize the evaluation process and present recommendations for repair or reconstruction, along with the supportive reasoning. A Senior Professional Engineer will prepare the Engineering Evaluation Report with experience in stone, earth and concrete dams.

Task 6: Meeting to Present Recommendations

Our Senior Dam Engineer will attend a meeting (time and place to be determined by the Committee) to present the results of the preliminary Engineering work. We will discuss the recommendations for repair and explain the supporting reasoning. We will also be prepared to answer any questions that the Committee members may have.

PROJECT SCHEDULE

DuBois & King, Inc. is prepared to initiate work on this project immediately upon notification to proceed. We anticipate conducting the borings in early to mid-October and preparing the Engineering Report after that time.

A Draft Engineering Report (Task 5) will be submitted to you by November 10, 2003. We will then be prepared to present the report on November 19th. This schedule is based on receiving authorization (verbal or written) to proceed by September 30, 2003.

PROFESSIONAL FEES AND CONTRACT CONDITIONS

DuBois & King, Inc. will complete the scope of services defined above for the lump sum amount of $20,000. This fee includes professional services and reimbursable expenses, including borings as indicated below.

Drilling and obtaining borings is expected to cost approximately $800 to $1,000 per boring, plus mobilization. DuBois & King will direct this effort and keep the costs within the $20,000 not to exceed price.

We will complete the scope of services provided above in accordance with **our Contract Terms and Conditions,** which is attached hereto and made a part of this Agreement.

ACCEPTANCE

If this Scope of Services and terms outlined above correctly reflects our understanding and is acceptable to you, please sign the enclosed copy of this letter and return it to me. This letter along with our Contract Terms and Conditions will serve as our Agreement.

DuBois & King, Inc., appreciates the opportunity to be of service to you on this important project. If you have any questions, please do not hesitate to contact me at (802) 728-3376.

Very truly yours,

DuBOIS & KING, INC.

Jeffrey W. Tucker, P.E., Vice President
Director, Civil Works Division

Enclosure: Contract Terms and Conditions

ACCEPTED AND AUTHORIZED TO PROCEED

BY: Robert J Belisle

TITLE: CHAIRPERSON

DATE: COMMITTEE TO REPAIR CURTIS POND DAM
OCT. 2, 2003

I:\618450 - Curtis Pond\PreliminaryEngineeringProposal.doc

ATTACHMENT II

PROPOSED LIMITS/BOUNDRIES OF THE DISTRICT AND TAX ASSESSMENT APPROACH

Cost is allocated to all taxpayers based on Grand List (G/L) assessment

OR

Cost is allocated to all taxpayers based on Grand List (G/L) assessment with property owners on pond paying 200% of tax rate for dam incurred cost.

ATTACHMENT III

Curtis Pond Funding Approach

A Progress Summary Report as of September 17, 2003 from the Funding Research subcommittee of the Curtis Pond Dam Repair Project.

At the present, the funds available to this committee consist of $30,000 from the Vermont State Office of Engineers responsible for Dam Oversight. Of this amount, $5,000 was spent for a title search in June of 2003. This leaves $25,000 for the Preliminary Engineering Phase that requires contracting with an engineering firm experienced with dam construction.

Another funding source available to this committee is a contribution of $23,000 from the Maple Corner Community Center. This amount could be applied to the Engineering Design Phase. The remaining amount of funds after the Engineering Phases would be applied to the Construction Phase.

The total estimated cost for the Engineering Phases and Construction Phases is approximately $270,000. This committee is anticipating that approximately $217,000 to $232,000 will be mostly financed through a municipal bond. The financial model/budget used $250,000 for bond cost.

Our committee continues the search for additional funding that would mitigate the above figure. There is the possibility that significant funding can be found other than through a tax assessment. This will depend on the persistence of the Search Committee as well as on the state of the economy. However, in order for us to be eligible for any public or private funding, the ownership of Curtis Pond Dam needs be held by some municipal structure. One member of the committee is taking a grant writing workshop, nevertheless, there is a need for additional volunteers in researching and writing for funds.

The committee is optimistic that at least $15,000 to $20,000 may be raised through other opportunities. Some of these are the following:

- FEMA
- State Legislature
- Preservation Trust of Vermont
- Save American Treasure
- Vermont State Historic Preservation
- Vermont Watershed Grants
- Other private or public grants

	A	B	C	D	E	F
1						
2			ATTACHMENT IV			
3						
4						
5	Curtis Pond Dam Reconstruction					
6	Estimated Budgets - various ownership/assessment					
7						
8						
9				Town -owned		Fire
10				townwide	Sp. Asses.	District
11	Financing assumptions:					
12	Project cost, net			250,000	250,000	250,000
13	Bond issue costs			5,000	5,000	5,000
14	Bond interest rate			4.25%	4.25%	4.25%
15	Bond term (years)			20	20	20
16	Annual debt service			19,200	19,200	19,200
17						
18	Estimated annual expenditures:					
19	Debt service			19,200	19,200	19,200
20	Insurance - dam			1,000	1,000	1,000
21	Insurance - officials' liability			250	250	1,000
22	Tax assessment/collection				500	2,000
23	Board compensation/expenses				200	1,000
24	Legal				1,000	2,000
25	Accounting/Audit				500	1,500
26	Office and Postage				200	1,500
27	Engineering/inspection			500	500	500
28	VLCT dues					300
29	Total			20,950	23,350	30,000

ATTACHMENT V

The Vermont Statutes Online

Title 24: Municipal and County Government

Chapter 87: Special Assessments

§ 3251. Definitions

As used in this chapter:

(1) "Legislative body" means "legislative body" as defined in section 2001 of this title.

(2) "Property" means real estate.

(3) "Sewage system" means "sewage system" as defined in section 3501 (6) of this title.

(4) "Special assessment" means a tax assessed against one or more properties receiving the benefit of a particular public improvement, as distinguished from a tax on the entire grand list of a municipality.

(5) "Water system" means "water system" as defined in section 3341(b)(2) of this title without reference to any determination by the water commission. (Added 1969, No. 170 (Adj. Sess.), § 10, eff. March 2, 1970.)

§ 3252. Purpose of assessments

Special assessments may be made for the purchase, construction, repair, reconstruction or extension of a water system or sewage system, or any other public improvement which is of benefit to a limited area of a municipality to be served by the improvement. (Added 1969, No. 170 (Adj. Sess.), § 10, eff. March 2, 1970.)

§ 3253. Method of apportionment

A special assessment may be apportioned among the properties to be benefited thereby according to the listed value of such properties in the grand list, the frontage thereof, the added value accruing to each property by reason of the public improvement for which such assessment is made, or by any method other than the foregoing which results in a fair apportionment of the cost of the improvement in accordance with the benefits received. (Added 1969, No. 170 (Adj. Sess.), § 10, eff. March 2, 1970.)

§ 3254. Approval of voters

A special assessment under this chapter shall be levied only by vote of a majority of the qualified voters of the municipality voting at an annual or special meeting duly warned for that purpose. However, the question need not be submitted to the voters if all of the owners of record of property to be assessed, or of any interest therein, other than mortgagees or lien holders, consent in writing to the assessment. Either the vote or the consent shall include approval of the method of apportionment of the assessment. (Added 1969, No. 170 (Adj. Sess.), § 10, eff. March 2, 1970.)

§ 3255. Collection of assessments; liens

Special assessments under this chapter shall constitute a lien on the property against which the assessment is made in the same manner and to the same extent as taxes assessed on the grand list of a municipality, and all procedures and remedies for the collection of taxes shall apply to special assessments. (Added 1969, No. 170 (Adj. Sess.), § 10, eff. March 2, 1970.)

§ 3256. Construction with other laws

Nothing contained in this chapter shall prohibit the financing of any of the improvements referred to in this chapter by a tax on the grand list of a municipality, or by other means. (Added 1969, No. 170 (Adj. Sess.), § 10, eff. March 2, 1970.)

ATTACHMENT VI

BYLAWS

OF

CURTIS POND DAM

FIRE DISTRICT NO. 1

CALAIS, VERMONT

ARTICLE I

Name and Purpose

Section 1. The name of the Fire District shall be Curtis Pond Dam Fire District No. 1. The Fire District shall repair and maintain the Curtis Pond Dam and provide water to the local fire departments.

ARTICLE II

Limits of District

Section 1. The limits of the Fire District shall be defined by the Selectboard of Calais, Vermont and includes the following area as defined by the Selectboard:
(To be defined prior to meeting).

Section 2. The limits of the Fire District may be changed by the Selectboard in accordance with the statutory procedures then applicable for the establishment and amendment of Fire Districts and subject to the approval by the voters of Curtis Pond Dam Fire District No. 1 at its annual or a special meeting duly warned.

ARTICLE III

Legal Status of Fire District

Section 1. The inhabitants of the Fire District shall be a body Corporate.

Section 2. Persons residing within the limits of Curtis Pond Dam Fire District who are on the town checklist shall also be on the Fire District checklist. This permits these persons to participate in the Fire District meetings. The Fire District checklist shall be updated prior to any Fire District meeting. The Town Board of Civil Authority shall follow statutory requirements in updating the town checklist prior to the Fire District meetings.

Section 3. The Fire District shall have all powers now or hereafter specified by statute, the certificates of doings of the Selectboard of Calais, Vermont, and these Bylaws and as time to time amended.

ARTICLE IV

Officers and Annual Meetings

Section 1. The Fire District shall have a clerk, a Treasurer, a Collector of Taxes, a Prudential Committee consisting of three persons, and an auditor all of whom shall be elected as specified by statute. Officers shall hold office until the annual meeting concluding their term of office and until their successors are elected. Prudential

Committee members shall be elected for a three year term in rotation, one per year, normally at an annual meeting. All other officers will be elected to one year terms.

Section 2. The annual Fire District meeting shall be held the second Monday in January of each year or at such other time as the District at any regular or special meeting may determine. Warning for the annual meeting shall be given by posting notices in three or more public places, one of which shall be the office of the town clerk, at least 30 days prior to the meeting and by printing at least once in a newspaper of local circulation. Special meetings shall be warned in the same manner as annual meetings, on application in writing presented to the Clerk of the district, signed by three or more voters or five percent of the Fire District checklist whichever is greater. Warnings are signed by the Fire District clerk or, if unavailable, one of the prudential committee.

Section 3. All officers of the District, except the Tax Collector, must be resident voters of the district.

Section 4. No person shall hold more than one office in the District at the same time.

Section 5. The Chairman of the Prudential Committee shall preside at annual and special meetings of the District. In his absence, another member of the Prudential Committee shall preside.

Section 6. The Prudential Committee shall fill any vacancy of office in the district except a Prudential Committee member until the same shall be warned at a duly warned meeting. Prudential Committee vacancies are filled by appointment of the town selectboard until the next annual or special meeting.

Section 7. The Prudential Committee may not spend more money than its electorate has authorized at an annual or special meeting. It shall be the duty of the Prudential Committee to attend to disbursing of all funds, and approving of bills. The Prudential Committee shall have general oversight of the Curtis Pond Dam and shall have the direct charge of repair and maintenance of the Dam. The Prudential Committee meeting shall follow the open meeting law. Prudential Committee meetings are to be properly warned. No binding action can be taken except at a duly warned meeting. Minutes are to be kept of each meeting. These minutes are to be available within five calendar days of the meeting. A majority of the committee is required to meet, and a majority of total members must vote in favor of a motion in order to take binding action. Special meetings require three public postings, notice to each member of the committee, notice to a newspaper or radio station, and to any newsperson who request to receive notice, at least 24 hours in advance of the meeting. Emergency meetings, called to respond to an unforeseen event or occurrence, require some form of notice.

Section 8. It shall be the duty of the clerk to keep a correct record of all meetings and perform such other duties as are usually incumbent upon such office.

Section 9. The treasurer shall perform the same duties as are required of the Town treasurer and have the same power. The collector of taxes shall make complete reports annually.

ARTICLE V

TAX AUTHORITY:

Section 1. The Fire District has a right to levy a tax to meet its responsibilities, subject to a vote at an annual or special meeting of the Fire District.

ARTICLE VI

BYLAW AMENDMENTS

Section 1. These Bylaws may be amended by a majority of those voting at a duly constituted annual or special meeting of the Fire District, provided that the text of the proposed amendment to be voted upon is set forth in full in the warning for such meeting.

ATTACHMENT VII

MEMORANDUM

To: **For the Record**

From: **Edward L. Leonard, P.E., Dam Safety Engineer**

Date: **July 22, 2003**

Subject: **Inspection of the Curtis Pond Dam, Calais.**

On July 14, 2003, Edward Leonard and Emeric Rochford made a routine inspection of the Curtis Pond Dam in Calais, Vermont. The last inspection of this dam was May 16, 2001. A number of photographs and observations were taken.

OVERALL CONDITION

The overall condition of the dam is poor and permanent repairs should be made to the structure.

RECOMMENDATIONS FOR OWNER

Recommendations for the owner include:

1) The dam should be observed daily and any changes should be recorded, such as:
   a) increased leakage
   b) different location of leakage
   c) muddy leakage
   d) enlargement of or formation of new sink holes
   e) movement of the dam

Any observed changes should be immediately reported to the Town or the State Dam Safety Office at (802) 241-3454.

2) The Town should make periodic checks of the dam.

3) Determine the owner of the dam.

4) Develop an Emergency Action Plan (EAP) to warn downstream residents in the event of failure of the dam.

5) Plans should be generated for the reconstruction of the dam.

INSPECTION

The inspection of the dam was conducted on July 14, 2003 between 2:15 and 2:45 P.M. The weather was sunny and warm. The ground was firm and dry. The water level was 0.1 feet above the PK nail. The following was observed:

1. Embankment Section.

a) Upstream Slope. The upstream slope of the embankment was firm, dry, and regular. The upstream face of the dam is lined with a rock wall, which prevents erosion and stabilizes the dam. Sandbags have been placed on the left side of the spillway, to prevent water from passing through the wall.

b) Downstream Slope. The downstream slope of the dam was in poor condition. The downstream slope consists of a rock wall. Portions of the rock wall were covered with moss and some brush, which indicates that water is seeping through these areas of the rock wall. A rock was missing from the wall and water was seeping from many areas on both the left and right side of the spillway, all indicating a possible future failure of the dam.

c) Crest. A sinkhole was located on the left side of the spillway. The sinkhole had been partially filled and sandbags placed upstream from it to prevent further erosion. A piece of plywood had been placed over the hole. A new depression was observed to the right of the spillway on the upstream side along with several other minor depressions.

d) Toe. The toe of the dam was moist with some weeds and plants growing from it on both sides of the discharge channel.

2. Principle Spillway.

a) Weir and inlet. The weir and inlet of the principle spillway was in good condition. There was a small amount of debris, which should be removed. The crest of the principle spillway was uneven.

b) Outlet Channel. The outlet channel was in good condition.

3. Sluice.

a) Structure. The sluice was in poor condition. Discharge was seeping into and around the sluice. The flow out of the sluice appears to have increased from the previous inspection.

Moss and brush was found growing in and around the sluice, an indication of continuous water flow.

HYDROLOGY AND HYDRAULICS

The drainage area at this site is about 917 acres. The pond area at the normal pool is about 76 acres with storage of about 724 acre-feet. At the dam crest, the pool stores 1,000 acre-feet.

DOWNSTREAM CLASSIFICATION

The dam is a Class 2, "significant hazard" dam.

JURISDICTION

Since the dam impounds more that 500,000 cubic feet, any alteration, reconstruction or breaching would require prior approval from the Department under provisions of 10 VSA Chapter 43. Further drawdown of the pond would require approval form the Department under a 1272 Order.

State of Vermont

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
RELAY SERVICE FOR THE HEARING IMPAIRED
1-800-253-0191 TDD>Voice
1-800-253-0195 Voice>TDD

Dam Safety Section
Facilities Engineering Division
103 South Main Street
Waterbury, VT 05671-0407

Edward.Leonard@anr.state.Vt.us

Telephone (802) 241-4240
FAX (802) 241-3273

July 24, 2003

Chairman, Board of Selectmen
Town of Calais
668 West County Road
Calais, VT 05648

Dear Mr. Chairman:

Enclosed is the report of our July 14, 2003 inspection of the Curtis Pond Dam.

The report outlines the condition of the dam, recommendations for the owner, the known history and construction of the dam, and information about the jurisdiction of the Department under the statute on dams (10 VSA Chapter 43).

Please contact me if you have any questions on the report or recommendations.

Sincerely,

Edward Leonard

Edward L. Leonard, P.E.
Dam Safety Engineer

cc: Larry R. Fitch, P.E., Director, Facilities Engineering Division.

ATTACHMENT VIII

CURTIS POND PROPERTY OWNERS

PROJECTED

PROPERTY VALUE/TAX REDUCTION BASED ON

DAM REMOVAL

An analysis was completed to determine the projected reduced property values and associated property taxes to be paid to the Town of Calais by Curtis Pond property owners due to the permanent removal of the dam. Without water frontage for each of the properties, the land value would be comparable to other property land values in Calais with no water frontage. The analysis was completed utilizing the Town of Calais 2002 grand list and the 2003 tax rate.

Curtis Pond Property Owners lot size and values:

There are 48 properties excluding the Rubner property.

Lot sizes:	less than .25 acres	15
	Between .25 and .5 acres	17
	Between .5 and 1.0 acres	10
	Between 1.0 and 2.0 acres	4
	Greater than 2.0 acres	2
Total		48

Current lot land values for 48 properties:

Total lot land values	$2,172,300
Average lot land values	$45,256

Rubner property was excluded due to the difficulty of determining comparable properties for lake frontage impact.

Comparable lot land values of properties in Calais without water frontage:

Analysis of 22 properties:

Lot sizes:	less than 1.0 acre	6
	Between 1.0 and 2.0 acres	13
	Greater than 2.0 acres	3

Current lot land values for 22 properties:

Total lot land values	$378,900
Average lot land value	$17,222

Further analysis indicates lot land values of:

Lots less than 1.0 acre	$10,516
Between 1.0 and 2.0 acres	$19,292
Greater than 2.0 acres	$21,666

Determination of lot land value of property on pond without a dam:

Assumption applied to lot land values of Pond owners:

$10,516 for lot values 1.0 acre or less
$19,292 for lot values between 1 and 2 acres
$21,666 for lot values greater than 2 acres

Total reduced lot land value for 48 properties: $1,579,176
(Difference between current lot land values and projected values)

Town and State Education tax 2003 rate:	$2.72
State education tax rate:	$1.115
Town tax rate	$1.605

Reduced Tax Revenue for Town of Calais due to dam removal:

$1.605 times $1,579,176/100

EQUALS: $25,345

Total tax lost for Calais and State Education:

$2.72 times $1,579,176/100

EQUALS: $42,953