Release date July 10, 2002

Lake Champlain Basin Program Announcement

Request for Proposals

Demonstrating Innovative, Low-Cost Methods for Controlling Pathogens in Agricultural Runoff

The Lake Champlain Basin Program (LCBP) is pleased to announce a Request for Proposals (RFP) for projects addressing agricultural sources of disease-causing pathogens such as bacteria and viruses found in surface waters. The project will support the goal of protecting humans from water-related health hazards, as outlined in the Lake Champlain's long-term management plan, *Opportunities for Action: An Evolving Plan for the Future of the Lake Champlain Basin.*

The risk of adverse human health impacts is increased with exposure to pathogens in animal waste from farm animals, in surface waters through swimming and other contact recreation. Portions of some streams in the Lake Champlain Basin are listed as "impaired" because bacteria levels routinely exceed the allowable maximum set by water quality standards. Despite improvements in management of both animals and their wastes, agricultural activities may be a significant source of pathogens to surface waters. The Lake Champlain Basin Program is seeking proposals for projects that will investigate the relative contribution of pathogens from agricultural sources and demonstrate innovative, low-cost pathogen control practices.

The RFP is available from the Lake Champlain Basin Program website. Look for the link on our homepage at www.lcbp.org. To receive a copy of the RFP via US Postal Service, contact the Lake Champlain Basin Program office at (802)372-3213 or toll free at (800)468-LCBP in New York and Vermont.

To facilitate the review process, applicants must submit proposals in both paper and electronic format. Please see the RFP and the attached proposal format information for complete details.

DEADLINE NOTICE:

Hardcopy (8 copies) and electronic versions (no facsimiles) of proposals must be RECEIVED by the Lake Champlain Basin Program office by the close of business:

Monday, September 16, 2002

LATE OR INCOMPLETE PROPOSALS WILL NOT BE CONSIDERED

Lake Champlain Basin Program

Request for Proposals

Demonstrating Innovative, Low-Cost Methods for Controlling Pathogens in Agricultural Runoff

I. Background

The Lake Champlain Basin Program is a partnership between state, provincial, and federal government agencies, as well as many local community and business groups, all working together to protect and enhance the environmental integrity and the social and economic benefits of the Lake Champlain Basin. In 1996, the Lake Champlain Basin Program completed *Opportunities for Action: An Evolving Plan for the Future of Lake Champlain,* a comprehensive management plan for Lake Champlain, addressing a range of issues from water quality to cultural heritage protection. The highest priorities in the plan are reducing phosphorus pollution, protecting human health, reducing pollution from toxic substances, and controlling nonnative aquatic nuisance species.

Opportunities for Action calls for protecting human health by controlling the sources of disease-causing pathogens, such as bacteria and viruses, to surface water in the Lake Champlain Basin. The risk of adverse human health impacts is increased with exposure to pathogens in animal waste from farm animals, in surface waters through swimming and other contact recreation. Portions of some streams in the Basin are listed as "impaired" because bacteria levels routinely exceed the allowable maximum set by water quality standards (NYSDEC, 2000 and VTDEC, 2000). Despite improvements in the management of both animals and their wastes, agricultural activities may be a significant source of these pathogens to surface waters. Conservation practices, such as riparian buffers and filter strips, may reduce the amount of pathogens in agricultural runoff, but the effectiveness of these practices can be limited in cases where there is direct conveyance of runoff through constructed or natural channels draining agricultural fields (Hughes *et al*, 1999).

It has been suggested that a multiple-barrier approach is needed to effectively control pathogen proliferation and transport (Rosen, 2000). Control points include pathogen introduction to the farm, proliferation on the farm, waste management practices, and pathogen export. For maximum effectiveness, these control points must be addressed as part of a coordinated management program. Example pathogen control programs using this approach include those in the New York City water supply and Skaneateles Lake (NY) watersheds. Detailed information about these examples can be found at the following websites:

Skaneateles Lake www.cce.cornell.edu/onondaga/watersheds/skanhome.htm
NYC Watershed www.nycwatershed.org

II. Demonstrating Practices for Reducing Pathogens in Agricultural Runoff

The Lake Champlain Basin Program (LCBP) is seeking proposals for projects that will demonstrate innovative, low-cost control methods for controlling agricultural sources of pathogens, measured as fecal coliform and *E. col*i from farm animals, in surface waters. The LCBP is especially interested in tests of the multiple barrier approach as described on the previous page (see also Rosen, 2000). Traditional single treatments, such as riparian buffers and fencing cattle out of streams, are not candidates for funding unless they are elements of such a multiple barrier approach. The successful proposal will address the following specific elements:

- The project will summarize the available information on the varying environmental, seasonal, and agricultural conditions and practices, such as high flow stormwater runoff events and varying manure and pasture management practices, that influence the export of pathogens from agricultural land. This review should inform and provide context for the demonstration project that is selected.

- The project will design and test innovative methods for reducing pathogen loads to surface waters, focusing on the multiple barrier approach. The techniques must be simple and inexpensive enough to be implemented and maintained by individual landowners, while minimizing the removal of land from agricultural production. Traditional single treatments, such as riparian buffers and fencing cattle out of streams, will not be considered unless they are elements of a multiple barrier approach.

- The demonstration project must include appropriate pre- and post-implementation monitoring to assess the effectiveness of the controls.

- Proposals that leverage additional resources by developing partnerships with related water quality and natural resources management initiatives, including sharing project sites, sampling crews, etc., will be evaluated more favorably.

III. Summary of Other Requirements for the Selected Proposal

- To be eligible, the selected project is required to show a non-federal match equal to 25% of the total project cost (i.e., award plus match – see Section VI for more information).

- For the selected proposal, an approved workplan will be required before a grant agreement can be executed and the work begun.

- A Quality Assurance Project Plan (QAPP) must be submitted and approved by the US Environmental Protection Agency before data collection begins. Project schedules should allow at least eight weeks from the time of QAPP submission for review and approval.

- The consultant will be required to prepare brief quarterly reports documenting progress on each objective and task in the project (see attached Proposal Format Requirements). A final report describing all data, methods, results, and Quality Assurance and Quality Control procedures, and fully documenting the project's results will be required at project completion.

- When approved, the final report will be edited for content and style in consultation with the consultant and published as part of the Lake Champlain Basin Program's Technical Report Series. The author(s) also is(are) encouraged to submit one or more articles resulting from the project for publication in a peer-reviewed scientific journal.

- The consultant will be required to present interim and final project results to the appropriate Lake Champlain Basin Program committees, such as the Technical Advisory Committee and/or the Lake Champlain Steering Committee, for their review.

IV. Eligibility

Eligible organizations include colleges, universities, nonprofit organizations, for-profit companies, and government agencies.

V. Proposal Evaluation and Selection Criteria

Proposals will be judged according to how well they address the following points:

1. Demonstrated understanding of the agricultural and water quality issues and management programs in the Lake Champlain Basin, especially those concerning pathogens.

2. Demonstrated knowledge of control methods for agricultural nonpoint source pollution, including pathogens.

3. Technical merit and feasibility of the proposed methods to assess the importance of agricultural activities as a source of pathogens to surface waters in the Lake Champlain Basin, as described in Section II.

4. Technical merit and feasibility of the proposed methods to design and test practical techniques for reducing pathogen loads to surface waters, as described in Section II. The methods for evaluating the effectiveness of each potential pathogen control technique must be innovative, clear, and statistically appropriate. Traditional single treatments, such as riparian buffers and fencing cattle out of streams, will not be considered, unless they are elements of a multiple barrier approach.

5. Extent to which the proposed project leverages additional resources by developing partnerships with other projects, as described in Section II.

6. Technical credentials of the investigators.

7. Potential for the project to enhance the technical capabilities and infrastructure within the Lake Champlain Basin.

8. Provision of a public education element (at minimum, a project summary intended for lay audiences is required).

9. Clarity, conciseness and adherence to the attached proposal guidelines.

10. Demonstrated ability to create documents and products that are accessible to and can be used by local natural resource managers.

VI. Available Funds and Match Requirements

A total of $50,000 is available for this project. A 25% match ($16,667) of the total project cost (award + match) is required, either as funds or in-kind services. Budget proposals should clearly document the intended use(s) and source(s) of matching contributions. Federal funds may not be used as a source of matching funds.

VII. Period of Performance

Work is to be completed within 24 months of the execution of a grant agreement.

VIII. Schedule and Requirements for Proposal Submission

- Please follow the format outlined in the attached Technical Proposal Format Requirements.

- Eight (8) paper copies of each proposal must be RECEIVED by the LCBP office by the close of business on **Monday, September 16, 2002.** Please submit paper copies bound only with a single staple or binder clip.

- In addition, please submit an ELECTRONIC VERSION of your proposal, either on diskette or via e-mail. Electronic versions must also be RECEIVED by close of business on **Monday, September 16, 2002.**

IX. Contact Information

Direct all proposals and other inquiries:

Michaela Stickney
Vermont Lake Champlain Coordinator
Lake Champlain Basin Program
PO Box 204
54 West Shore Road
Grand Isle, VT 05458
(802)372-3213

IX. References

Hughes, J.W., W.E. Jokela, D. Wang, and C. Borer. 1999. *Determination and Quantification of Factors Controlling Pollutant Delivery from Agricultural Land to Streams in the Lake Champlain Basin.* Lake Champlain Basin Program Technical Report # 35, LCBP, Grand Isle, Vermont.

New York State Department of Environmental Conservation, 2000. *New York 2000 State Water Quality Report as required by Section 305(b) of the Federal Clean Water Act*. NYSDEC, Albany, New York.

Rosen, B. 2000. *Waterborne Pathogens in Agricultural Watersheds.* US Department of Agriculture, Natural Resource Conservation Service Watershed Science Institute, School of Natural Resources, University of Vermont, Burlington, Vermont.

Vermont Department of Environmental Conservation, 2000. *State Of Vermont 2000 Water Quality Assessment 305(B) Report.* Vermont Agency of Natural Resources, Department of Environmental Conservation, Water Quality Division, Waterbury, Vermont.

Technical Proposal Format Requirements

Proposals should adhere to the following format and should not exceed a 10 page maximum length (font size 12), NOT including budget information, references cited and investigator resumes.

TITLE: - Concise and descriptive.

POINT OF CONTACT: Name, organization, address, telephone, fax and email.

ABSTRACT: Brief description of proposed work.

INTRODUCTION: Overview of what the project is, how it relates to past projects (in the Basin and elsewhere), and what it will accomplish in relation to the RFP.

OBJECTIVES AND TASKS: List the project's objectives and describe in detail the tasks that will be performed relative to each objective, including methods and approaches.

> Note: If the selected proposal involves environmental data collection, the investigator(s) must submit a Quality Assurance Project Plan (QAPP) to the US Environmental Protection Agency (USEPA). The QAPP must be *approved* prior to the start of data collection. The QAPP review may require 8 weeks or more to be completed once it is submitted to USEPA.

DELIVERABLES: Detailed description of the planned products from each task of the project. Quarterly progress reports and a final report are required deliverables.

SCHEDULE: Timeline showing anticipated dates for completion of the major tasks and deliverables. Quarterly progress reports are due on the last day of December, March, June, and September. Work is to be completed within 24 months after the execution of a contract or grant.

DETAILED BUDGET JUSTIFICATION: Cost breakdown by major budget categories (i.e. personnel, equipment), linking costs to specific tasks/deliverables wherever possible. Breakdown should show costs to be covered by the LCBP award and other sources (if applicable), as well as the required match amounts and totals. A non-federal match equal to 25% of total project costs is required, either in funds or in-kind services (e.g. for $30,000 the match equals $10,000 which is 25% of $40,000). (1 page, not included in the 10 page maximum total for the proposal).

TECHNICAL REFERENCES CITED: List all references used for the proposal (not included in the 10 page maximum total for the proposal).

CURRICULUM VITAE/RESUME OF PRINCIPAL INVESTIGATORS: Include up to 5 references for publications pertinent to proposed project. Please limit to one page per investigator, not included in the 10 page maximum total for the proposal.