MEMORANDUM

FROM THE

LAKE CHAMPLAIN BASIN PROGRAM

To: **Erik Beck** - IJC Contract Officer's Representative **25 November 2008**
U. S. Environmental Protection Agency
New England Region

From: **Bill Howland**, Manager
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cc: **Willem Brakel**
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Re: **LCBP/NEIWPCC Deliverable 1: Final Workshop Plan**

Please accept the *Final Workshop Plan*, appended below, as the deliverable for Task 1 Subtask 1 (9.3.1.1.1), referenced in the IJC-NEIWPCC contract number 1042-800734. Do not hesitate to contact me with any questions.

Lake Champlain Basin Program

Missisquoi Bay Basin Project:
Identification of Critical Source Areas of Phosphorus Pollution

Workshop Plan
November 25, 2008

Background

The Lake Champlain Basin Program will convene a series of workshops and meetings to address the objectives specified in Task 1 of the IJC-NEIWPCC contract. A workgroup consisting of representatives from the Vermont Agency of Natural Resources, the Vermont Agency of Agriculture, the Natural Resource Conservation Service, the LCBP Technical Advisory Committee and QC Ministry of Sustainable Development, Environment and Parks assisted in the design of the workshop series. This workgroup will continue to help develop the workshop series and distill the information from the workshops in the small workgroup meetings detailed in the outline. Additional experts and representatives also will be invited to join the small workgroup meetings as appropriate.

Dates, locations and presenters are yet to be determined. The planning workgroup will continue to provide guidance as the LCBP proceeds in planning and conducting the meetings.

Workshop and Meeting Outline

Workshop 1: Tributary Monitoring

December 15, 2008
A one day workshop will be held at the Gordon Center House, Grand Isle, VT.

This workshop will identify and prioritize both short and long-term tributary monitoring needs. The workshop will be a small group meeting that will include technicians, managers and researchers working in the Missisquoi Basin. Prior to the meeting, LCBP will obtain information on stream segments that have been identified as impaired and on the locations of current and previous sampling sites. LCBP also will prepare a hydrologic map of the Basin to aid the discussions. Following the workshop LCBP will meet with working group members as necessary, and will disseminate requested information to the group.

Draft Agenda:

- **Review the current monitoring efforts in Vermont and Quebec**
    - Presentations on monitoring programs and their results
    - Discussion on transboundary monitoring coordination

- **Discuss where monitoring stations should be located and highest priority parameters to be monitored for both a short-term monitoring program and long-term needs.**
    - Discuss information needs and define the purpose of the monitoring
        - Discuss monitoring needs for phosphorus, nitrogen and sediment data
        - Consider what data would be most useful for model validation and calibration.
        - Consider what information would be the most useful for understanding processes at work in the watershed
        - Consider the need to understand the transboundary pollution loads
        - Consider the importance of precipitation and rainfall intensity data
    - Discuss how monitoring sites could be used in a critical source analysis

- **Develop a draft monitoring program and workplan**
    - Identify potential stream sampling sites, parameters to be measured and optimal sampling periods and intervals.

Workshop 2, Critical Source Areas: Definitions

January 22 and 23, 2009 (dates to be confirmed)
A two day workshop will be held. Attendees will include watershed group leaders, technicians, managers, and interested public.

This workshop will focus on definitions of critical sources and critical source areas, the optimal spatial scale of critical source area analyses, and how the information will be utilized by managers working in the Basin. The information from this workshop will be used to inform and prepare presentations for future workshops. In addition, the information will help guide the approach to identifying critical source areas by developing the working definition and identifying management information needs.

Prior to the workshop, LCBP will accumulate a list of established critical source area definitions and the context in which those definitions were used. This information will be circulated to participants before the meeting or be available at the meeting, to help guide the discussion.

Draft Agenda, Day 1:

- **Welcome and Introductions**

- **Short presentation about the IJC-funded project**
    - The presentation will include:
        - background information on the Missisquoi Basin
        - the need for information about critical source areas
        - information on transboundary issues, such as the current sources of phosphorus and the allocated reductions

- **Panel Presentation on the definitions of critical source areas (for phosphorus, nitrogen and sediment)**

- The panel will consist of at least three members, each tasked with representing a different definition of critical source area such as:
  - Critical source areas identified by landscape features
  - Critical source areas identified by landuse types
  - Critical source areas identified by land management practice
- Each panel member will present his or her definition in a 20 minute presentation that will include the spatial scale examined
- A facilitated discussion and comment period will follow the panel presentations
- All discussion and comments will be recorded

- **Panel Presentation: Why is critical source area information needed? How would the information be used?**
  - The panel will consist of at least 5 members, and will include field staff, managers, policy makers, farmers and citizen advocates. Panel members will represent different technical expertise, including stormwater, fluvial processes and agriculture
  - Panel members will give 5-10 minute presentations that identify the type of information that would be useful and the format in which the information would be most valuable.
  - A facilitated discussion and comment period will follow the panel of presentations.
  - All discussion and comments will be recorded

- **Next Steps and Adjourn**

Draft Agenda, Day 2:

- **A small working group meeting will distill the information from the previous day.**
  - The workgroup will advise the LCBP on choosing the definition to be used for this critical source area project
  - The workgroup will help guide the future workshops by preparing a list of questions to be addressed in presentations on potential modeling approaches. This will be done to assure the presenters include information pertinent to this critical source area identification project.

Workshop 3. Approaches to Understanding Phosphorus Pollution.

February 9 and 10, 2009 (dates to be confirmed)
A two day workshop will be held. Attendees will include watershed group leaders, technicians, managers, and other interested parties.

The focus of the workshop will be to explore research that has been done or is being pursued in the basin as well as potential new approaches to modeling critical source areas. The workshop will identify important task outcomes and recommend a general approach to modeling critical source areas. The discussion also will consider how previous research will assist in the effort. .

Draft Agenda, Day 1

- **Welcome and Introductions**

- **What is a critical source area?**
  - Brief presentation on the definition of a critical source area and specific information to be obtained by the project

- **What research is being done locally in the Basin?**
  - 20 minute presentations from local researchers followed by a question period.
    - *Missisquoi Areawide Plan*
    - Critical source area modeling completed in Quebec (SWAT model)
    - Phosphorus Accounting Project (UVM)
    - Fluvial process models
    - Water quality impact of agricultural tiling
    - The Vermont P-Index
    - Indicator of risk of water contamination by phosphorus (IROWC – P) approach and results in the St. Lawrence/Great Lakes
    - Additional research presentations TBD

Draft Agenda, Day 2 (full day workshop)

- **What approaches could best be used to identify critical source areas in the basin?**
  - Presentations from individuals who have used models to identify critical source areas including the following models**:** HSPF, SWAT, SPARROW, BASINS, WMS. In addition to presentations on the models, a presentation on spatial analysis tools may be included if deemed helpful based on the information obtained in the previous workshop.
  - 30 minute presentations with 15 minute question periods
  - Presentation content will be guided by the information obtained in workshop 2, and will focus on the context in which the models were used, the capabilities of the models, and special data requirements.

- **What special conditions need to be considered when identifying critical source areas in Missisquoi Bay?**
  - Presentation to examine the possible role of spring runoff and flooding on phosphorus pollution
  - Discussion of other conditions that need to be considered and additional data on spring runoff and flooding that should be obtained.

- **Panel: Could the models address special conditions?**
  - A panel composed of the presenters of the potential modeling approaches will be asked to address various models' capability of providing critical source area information, given the likely conditions in the Missisquoi Basin.
  - A facilitated discussion on the models' strengths and weaknesses.

Workgroup Meeting

February 17, 2009 (date to be confirmed)
Following workshop 3, a small workgroup will be convened by LCBP to discuss the information obtained. The goal of the workgroup will be to identify the best possible approach to identifying critical source areas that fits the needs of managers working in the basin. The workgroup will be invited to identify certain elements to be included in an RFP. This meeting will exclude any potential RFP respondents in order to avoid possible conflicts of interest.

Workshop 4: Data Needs

February 24 or 25, 2009 (date to be confirmed)
A one-day workshop will be held at the Gordon Center House, Grand Isle, VT. Attendees will include technicians and managers, members of the small workgroup and other invited guests.

The purpose of the workshop will be to consider the available data and data needs to support the critical source area identification project. The workshop will consider the transboundary conditions and needs in the Basin, when evaluating the data. The data exploration will be based on the information obtained in the previous workshops, including the working definition, information needed by managers, and best possible approach.

Draft Agenda

- **Welcome and Introductions**

- **Presentation on the desired outcomes and likely best approach/approaches to identifying critical source areas**
    - This presentation will be based on the distilled information and conclusions from workshops 2 and 3.

- **Discussion of elements of the Missisquoi Areawide Plan that would be useful in the identification of critical source areas.**
    - NRCS will be asked to present elements and data from the *Missisquoi Areawide Plan* that will assist in the identification of critical source areas.

- **Identify and characterize the availability of key data, including transboundary data, needed by the preferred modeling approach, and that is available for Vermont and Quebec**
    - A discussion, based on information on the projects currently and previously conducted in the basin
    - Discussion on the available hydrography datasets in Quebec and Vermont, and what would be needed to make a more unified dataset.
    - Discussion on other datasets that are available in both Quebec and Vermont that could be unified to support the critical source analysis and transboundary examination.
    - Possible presentations from researchers

- **Explore what additional data is likely needed to obtain the desired outcomes of a critical source area identification.**
    - Based on the desired outcomes and the potential best approach/approaches that could be used to identify critical source areas, as determined in workshop 3, participants will identify what additional data is needed

Workgroup Meeting

March 5, 2009 (date to be confirmed)
This small workgroup meeting will review the results of all the workshops and discuss the optimal means to compile and analyze information to characterize critical source areas. This workgroup also will consider the influence of spring runoff and flooding. The workgroup will be charged with identifying key data needs and RFP elements. Any potential respondent to the RFP will be excluded from this meeting.