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MEETING MINUTES

Wednesday September 15, 2021 at 6:00 PM
Via ZOOM
Call SLC Planning Office (315-379-2292) for ZOOM information

Action items in bold italics / Motions underlined

1. **Call to Order:** In the absence of the Chair, Vice-Chair Rau called the meeting order at 6:05 pm.

2. **Land Acknowledgement:** Tenbusch read a Land Acknowledgement, with permission from Tony David, Director of the Environment Division, SRMT.

   a. Rau asked for staff send the text of the Land Acknowledgement to EMC members; it states:
   "As we meet today, let us first give thanks and acknowledge that the land upon which we are gathered is part of traditional indigenous territories, including the Rotinonshionni (Low-dee-no-SHOO-nee), the People of the Longhouse, also known as the Iroquois Confederacy; and the Kanienkehaka (Ga-nyun-geh-HA-gah), the People of the Land of Flint, also known as the Mohawk Nation."

3. **Roll Call, Determination of Quorum.** A quorum was established after the presentation by Dr. Glenn Johnson.
   Members present: Herb Bullock; Lucas Hanss; Richard Marshall; Sue Rau, Vice-Chair; Lance Rudiger; Tiernan Smith; Rod Tozzi; Brian Washburn Pat Whalen, Secretary.
   Members absent: Catherine Bennett, Chair; Dustin Bowman; Joseph Brant; Steve Manders; Nicole Terminelli, BOL Liaison.
   Guests: Glenn Johnson, SUNY Potsdam; Emily Sheridan, DEC.
   Staff: Dakota Casserly; John Tenbusch.

4. **Acceptance of Order of Business, Items for New Business, Items for Unfinished Business**
   a. Accepted by consensus.

5. **Comments from the Public**: Dr. Glenn Johnson, Professor of Biology at SUNY Potsdam and a former member of the EMC (2007-2011), spoke about "Conservation Efforts for Blanding's Turtles in NYS."

EMC: Everybody Must Care!

Dr. Johnson reported that NYS has only 12 species of non-marine turtles; only 4 turtle species are found in the Adirondacks. Worldwide, there are 284 turtle species. Local turtles include Common Snapping Turtles, Painted Turtles, Spotted Turtles, Common Musk Turtles (aka Stinkpot Turtles), Map Turtles, Wood Turtles; and Blanding's Turtles.

Blanding's turtles are large (12" across the top of the shell) with a bright yellow throat and chin. They are distributed around the Great Lakes, with separate populations in Massachusetts, Nova Scotia, Iowa and Nebraska. In NYS, they are found along eastern Lake Ontario / the St. Lawrence River, with other locations in the Hudson Valley, Saratoga County, and historical populations along Lake Erie/Niagara River area.

Blanding's turtles' core habitat includes shrub/scrub wetlands. They live a long time (80 years or more), and mature late (14-20 years). Mating occurs from March – May; clutch size around 8-10 eggs. When laying eggs, females prefer well-drained sites with loose substrates (sand/gravel) and plenty of sun. Blanding's turtles are semi-aquatic, so they spend significant time on land.

Johnson reported that, in 1997, his research team found the first Blandings turtles in St. Lawrence County. He has continued to investigate them ever since. Through the years, Johnson's students have collaborated with Clarkson students, supervised by Dr. Tom Langen.

Conservation issues for Blanding's turtles include:

- Conflicts between human and turtle land use;
- Roads are barriers to turtle movement;
- Loss of adult females from the breeding population (due primarily to road kills);
- High nest mortality from raccoons and skunks.

Johnson and Angelena Ross (DEC) developed a Conservation Plan for NYS Populations of Blanding's Turtles, which set goals to achieve and maintain self-sustaining turtle populations.

Road crossings were seen as a major issue; barriers/fences can be used to keep turtles off roads, but barriers are hard to maintain. Underpasses can also be used in some places. Turtle-crossing signs may be useful, but Johnson has not seen positive changes in road kill numbers.

Johnson discussed efforts to create appropriate nesting habitat for Blanding's turtles, so they wouldn't need to cross roads; work included removing vegetation, bringing in additional sand, creating berms, installing nest protector devices, etc. In 2007, 75% of turtle eggs in a prepared nesting area hatched; this compared with 76% of turtle eggs hatching in a natural nesting area. Predator control remains a significant issue.

Discussion included questions about vegetation management at nesting sites; different types of materials that could be used for turtle fences along roads; additional nest protection; more effective signage re: turtle crossings; funding for more turtle work;

Rau thanked Dr. Johnson for his presentation.

6. Approval of the Minutes of the May, July, August 2021 EMC Meetings
On a motion by R. Marshall (Bullock), minutes of the meetings were approved unanimously.

7. Report by the Representative of the Board of Legislators Nicole Terminelli reported:

a. BOL has expressed an interest in dealing with aquatic invasives. In August, the Board approved funding for mowing watermilfoil on Black Lake. A floor motion was passed declaring a moratorium on other requests for funding until further guidance is received from the EMC, DEC or other resources.
b. Terminelli has spoken with Lee Harper; he would be willing to be part of an ad hoc committee to develop a response to milfoil.
c. Terminelli also spoke with Tony David, SRMT Environment Division, who shared some resources about aquatic invasives.
d. Terminelli reported that Lee Harper recommended concern about water chestnut, since it spreads so quickly. She will forward her notes to staff.

8. Report of the Committees

a. Executive Committee

b. Conservation of Resources Committee

i. Tenbusch gave the report; see attached.
ii. Herb Bulloch reported that North Country 350.org is willing to lend materials to the EMC if the EMC decides to do informational picketing re climate change.
iii. S. Rau reported on 5 Climate Smart communities in the County.

c. Environment & Economy Committee

i. Smith gave the report; see attached.
ii. Smith reported on a conversation with TLAS, who will make a presentation to the Committee in the next 2-3 weeks.
iii. Casserly had sent out a draft Public Service Announcement that is proposed for delivery to BOL; on a motion from Herb Bulloch (R. Marshall), it was agreed to forward the PSA to the BOL when editorial comments are complete. See attached letter.

d. Invasive Species Committee and Watershed Management Committee (joint)

i. Tenbusch gave the joint report; see attached.
   a) Brian Washburn spoke about the proposed E-DNA collection project. The project seems disorganized.
   b) Black Lake: meeting with Joe Lightfoot was held on Sept. 10th.
      (i) Tenbusch will present to BOL Operations/Services on 9/20.
      (ii) There will be a meeting for Black Lake stakeholders in October.
ii. Tenbusch reported on a format for a comprehensive report on invasive species.

9. Report of the Staff

a. Household Hazardous Waste collection program will be held in Canton on Saturday Sept. 18th. Volunteers are needed.
b. Coastal Lakeshore Economy And Resiliency (CLEAR) project has completed a draft plan. A presentation will be made on Sept. 21st at 6 PM.
c. Casserly reported on the redistricting process for County legislative districts.
d. Sue Rau asked about a protective order that had been referenced in the CPO Staff Work Report for August. Casserly will find the information and send it out.

10. Unfinished Business

11. New Business

12. Announcements

a. Bullock reported on Village of Canton tree projects. This will be referred to the Conservation of Resources Committee

13. Message to Board of Legislators

a. Tenbusch will present the EMC's message to the BOL when he makes a presentation to the BOL about Black Lake on Sept. 20th.

14. **Adjournment.** On a motion from Washburn (Hanss), the meeting was adjourned at 8:13 PM.

Respectfully submitted by:

Patrick Whalen

Patrick Whalen, Secretary

Minutes drafted by John Tenbusch

St. Lawrence County Environmental Management Council
Conservation of Resources Committee Meeting
Wednesday September 8, 2021

Overview of the *Conservation of Resources Committee.*

- "Conservation" can mean "saving" or "effective/efficient/wise use".
  - Thus, "conservation of resources" might include topic areas including solid waste management; household hazardous waste management; recycling; energy efficiency; wise use of natural resources of St Lawrence County
- "Conservation" might also mean "preservation", as in preservation of endangered/ rare/ significant flora (plants) or fauna (animals/creatures).
- "Conservation" also means addressing issues such as the climate crisis that threatens environmental devastation for our region.

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Present: Sue Rau, chair; Herb Bullock. John Tenbusch attended as staff.

The meeting began at 4:48 PM.

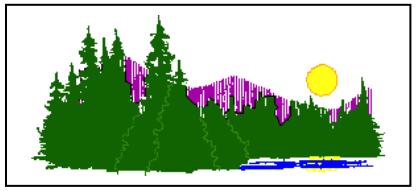
Report of August Meeting. No comments were made.

Priority Projects:

- Climate Crisis. Tenbusch reported that NYS will observe "Climate Week" Sept. 20 – 26 (https://www.dec.ny.gov/energy/50399.html)
  - Will there be local observances? Bullock will check with Ginger Storey-Welch, Chair of the North Country 350 Alliance (https://northcountry350.org/)
  - Tenbusch will draft a Press Release for publication during that week.
  - Rau suggested that the EMC invite representatives from the Climate Smart Communities (https://climatesmart.ny.gov/) in the County to present to the EMC
  - Rau also suggested preparing a map showing the locations of electric car charging stations in the County.
    - Bullock noted that there are current Web sites, and apps for smart phones, that provide this information.
- Flora and Fauna
  - Tenbusch reported that Dr. Glenn Johnson of SUNY Potsdam has agreed to present at the September EMC meeting. His topics will include Blanding's turtles, and Spruce Grouse. Lucas Hanss had made the invitation to Dr. Johnson.

The meeting was adjourned at 5:15 PM.

Meeting report prepared by John Tenbusch



SLC EMC: Agenda for Environment + Economy Committee

Members: Herb Bullock, Tiernan Smith (Chair), Rod Tozzi
Staff: D. Casserly **Guest(s)**:
Meeting Date: Monday, September 13, 2021 **at 5:00 PM** via Conference Call

Time	Item	Outcome	Responsibility	Next Steps
5:00 PM	Meeting starts	Call 1-605-475-2090 Access: 1197050#	Committee members MUST CALL IN	
5:05	Review Report of Last Committee Meeting (August)		All	
5:30	Priority Projects for 2021			
	Fish Ladders/Passage Project on the Grasse and Oswegatchie Rivers.	TLAS Conference Call (Smith) PSA (see below)		
	SMRT fish studies	Update (Smith)		
	Ogdensburg dam FERC relicensing	Update (Casserly) • Active license expires 5/31/2027 • Relicensing begins 5/31/2022		
	DEC Deer Management Program	Assemble available resources.		
5:45	Discuss speakers for EMC meetings	DEC Deer Management Program • Joe Lydon (DEC), 1/19/21 (scheduled)	All	
5:50	Develop Pub. Service Announcements	This Committee will develop 3 PSAs per year on E+E topics (at least 1) • Draft fish passage letter for Ogdensburg and Madrid dam.	All	Who will draft PSA? Do we send draft to muni officials before public posting?
5:55	Set date/time for next meeting	**October 11, 2021 @ 5pm**		
6:00	Adjourn			

Recap of picnic, Bullock and Casserly provided. They said that Legislator Lightfoot talked about temporary funding for milfoil management on Black Lake and how the EMC can be involved going forward.

- Smith asked about level of involvement. Bullock responded that the EMC will figure this out.
- Tozzi asked about what the plan is going forward and what happens if you do nothing. Casserly replied that Tenbusch will provide an update at Wednesday's meeting.

- Casserly provided an additional update on Black Lake projects (watershed management and invasive species)

TLAS Conference Call

- Smith is still working on coordinating.

Fish Ladders PSA

- Bullock provided the 1st draft.
- Tozzi said that he liked the layout and logic of 1st draft. He would like to make sure that fish ladder location is emphasized i.e., within the riverbank constraints; no additional land is needed; no real impact to dam.
- Bullock asked about who the PSA should be sent to/shared with.
    - Tozzi replied to ask Nicole Terminelli for advice and on what she thinks about the 1st draft.
    - Bullock said to share with full EMC for feedback and on where to send (Tozzi and Smith agree).
    - Tozzi said that DEC officcials be on the share list: Dick McDonald and Jana Lantry.
- Smith said that a fish ladder would represent the lowest (minimize) risk of invasive species threat, when compared to fish passage or dam removal.
    - Fish passage or dam removal are not being considered at either location and the PSA should reflect this.
- Tozzi and Smith said that we should share before Wednesday's full EMC and discuss during committee reports.
- Casserly will incorporate comments from this committee, edit 1st draft, and share with EMC.
- Tozzi asked about DEC economic data on Pulaski. Casserly will share with the committee.

SMRT fish studies

- Smith said that funding challenges could impact fish studies. He will keep the committee updated as this progresses. He anticipates salmon and sturgeon monitoring on St. Regis River tributaries this fall.

Ogdensburg dam FERC relicensing

- Casserly shared relicensing info.

DEC Deer Management

- The committee would like to explore deer harvesting on ag lands and how to share with food pantries.
- Smith asked about harvest data, when is it available, and digital location.
    - https://www.dec.ny.gov/outdoor/42232.html

Speakers

- DEC deer management staff, Joe Lydon, scheduled to present for Jan '22 meeting.
    - Tozzi asked about that we make sure the speaker is clear with the committee's interest in nuisance permits and a connection to local food pantries.
    - Bullock asked if there is room for organized hunts from other groups on ag lands.
    - Bullock asked about current process and operation, is it above board, where can it be approved.

Adjourn @545pm

September 2021

Potential boards or agencies:
SLC Board of Legislators (William Sheridan (chairman), Nicole Terminelli)
Ogdensburg City Board (Mayor)
Massena Village Board (Mayor)
Madrid Town Board (Supervisor)
Canton Village and Town Boards (Mayor, Carol Pynchon
NYSDEC, Region 6, (Jana Lantry)
Etc.

Public Service Announcement:
The St. Lawrence County (SLC) Environmental Management Council's (EMC) Environment and Economy Committee's project regarding potential fish ladders at the Madrid Dam on the Grasse River in the hamlet of Madrid, NY, and at the Ogdensburg Dam on the Oswegatchie River in Ogdensburg, NY.

It is with historical perspective that nationwide interest in dam removal to restore rivers back to their natural or historical form is taking place. Removal of dams is not a new concept and is being hailed in many parts of the West, especially in California and the North West. Dam removal is often on Tribal Native lands, with the intention of the restoration of many natural fish species, especially salmon. New York State is supportive of certain stockings of native and non-native fish, including the most noted location around Pulaski, NY. The Pacific Salmon on the Salmon River has become quite famous nationally. Most noteworthy are the huge economic and recreational benefits of similar restoration possibilities in St. Lawrence County. The timing now seems appropriate for discussions of fish ladders since the Ogdensburg dam, which is currently producing electric power, is coming up for FERC (Federal Energy Regulatory Commission) relicensing soon. It is suggested that during this relicensing approval process, the idea of introducing a fish ladder and the associated costs might be incorporated into that process. The dam in Madrid is not power producing, but the timing there for adding fish ladders might be possible through NYS DEC grant applications. It is only recently that the dam on the St. Regis River has been removed, and current studies on the effectiveness of that project are now taking place and have been part of the EMC's discussions.

It seems, after much discussion by the EMC for nearly a year, that dam removal and/or fish by-passes might not be well accepted by the local populations and are overly expensive as compared to fish ladders.

It is mostly anecdotal information that Native Atlantic Salmon were plentiful in the Grasse River as recently as the early 1900's, but have been blocked from migration by the dam at Madrid. Salmon in particular are a migratory fish, and are noted jumpers, so a properly designed fish ladder would allow jumping fish only to pass over the dams. Fish ladders also might have certain benefits over dam removal or fish by-passes in that fish ladders are only passable for

jumping type of fish like salmon. This concept of "jumpers only" has the added benefit of minimizing the risk of aquatic invasive types from moving upstream.

Therefore, it seems worthy of further discussion and study/analysis to better understand the concept of adding fish ladders at either or both dams.

It should be noted that this public service announcement, at this time, is only informational in nature and has the intent to inform local invested governmental boards and agencies in St. Lawrence County to take into consideration the installation of fish ladders in either or both locations.

We, the SLC EMC, are supportive of and are willing to become more involved with taking a "next step," either with local informational meetings to help gain support, or with the appropriate agencies to help gain their support as well. If there are questions or need for further information as to next directions, please contact John Tenbusch and/or Dakota Casserly at the St. Lawrence County Planning Office (315.379.2292 and www.stlawco.org/Departments/Planning).

St. Lawrence County Environmental Management Council
Invasive Species Committee /
Watershed Management Committee
Joint Meeting
Tuesday September 7, 2021

Meeting started at 1:05 PM.

Present: Sue Rau, Chair, ISC; Brian Washburn, Chair, WMC. Dakota Casserly and John Tenbusch attended as staff.

Review Previous Committee Meeting Reports. No comments.

Discussion of e-DNA Sampling Workshop

- Purpose of the sampling project is to see if two species of forage fish (whitefish and cisco) are using tributaries for breeding purposes.
- Washburn attended workshop at Nicandri Nature Center on Sept. 2. He wrote a report on the workshop. See attached.
    - If the project sponsors (TNC, SLELO PRISM) come up with equipment, etc. in a timely manner, EMC members may still be able to take water samples at 6 sites in St. Law. Co. These include:
        - Oswegatchie River; Sucker Brook; Brandy Brook;
        - Grasse River; Raquette River; St. Regis River.
- At present, the project appears to be undoable unless/until TNC/SLELO PRISM can figure out logistics.

Discussion of Upcoming meetings re Black Lake Project

- There will be a meeting with County Legislator Joe Lightfoot on Friday Sept. 10th.
    - ***NOTE:*** The meeting was held on 9/10. Attending were Mr. Lightfoot, Michelle Gallagher from the Black Lake Association, Sue Rau and Brian Washburn of the EMC, and Dakota Casserly and John Tenbusch of the Planning Office. There was discussion of:
        - the progress made in cutting milfoil in the Lake;
        - Mtg with BOL Operations Committee on September 20th
        - Mtg with stakeholders in Black Lake community, to be scheduled in October.

Discussion of BOL request to develop comprehensive plan to deal with invasive species

- Washburn reported a Web site (http://NYSi-Mapinvasives.org ?) that shows the incidence of various invasive species across the County / across the State
- Washburn reported that no one has done a phosphorus and nitrogen study for Black Lake since 1972.
- Tenbusch proposed that the Planning Office will contact DEC, work with DEC, PRISMS, and others to develop a list of significant invasive species threatening St. Lawrence County, and prepare a report detailing prevailing management strategies for the top five (top ten?) pernicious invasives.

Discussion of Draft Outline for Development of Black Lake Watershed Management

- Washburn prepared a "Draft Outline for the Development of a Black Lake Watershed Management Plan". See attached.
- This document will be discussed at the next committee meeting.

The meeting ended at 1:55 PM.

eDNA Sampling Workshop

Nicandri Nature Center, Massena, NY

Thursday September 2, 2021

Report to the SLC EMC

Brian Washburn

Project Goals: To determine the presence of Whitefish and Ciscoe species in the tributaries of eastern Lake Ontario and the St. Lawrence River by eDNA. Project funded by a $95,000 grant from the Arconic Foundation.

Participants:

- Three grant employees from Nature Conservancy (TNC) and one TNC volunteer
- Brian Washburn, SLC EMC
- Two employees from the Thousand Islands Park Agency
- A Massena area resident possibly associated with Massena Central School since STEM was mentioned.
- A resident of Lowville, NY
- Director of the Nicandri Center (Do not know if he was a registered participant or just there because the workshop was at the center.)

Activities:

- Sampling procedure presented
- Exercise was designed for a citizen or community scientist participation. The sampling technique is very simple and easily followed.
- Each volunteer participant provided a sample bottle. When sampling begins volunteers will be provided with a tote containing all the materials for a sampling.
- Participants walked to St. Lawrence River where a staff member demonstrated a possible sampling technique using a grab pole.
- Each volunteer collected a water sample
- Samples were processed according to the procedures outlined in the handout
- Some questions were addressed during the sampling exercise and the session ended with a question/answer session

Logistics Issues/Questions from Brian Washburn:

- TNC was hoping to start sampling in late August or September. However, the TNC has not been able to acquire the needed supplies or equipment including the required filter paper. The filter paper used for the exercise had a diameter greater than that of the vacuum filter apparatus and was entirely useless as any vacuum filtration requires a specific diameter filter paper. Ironically no one from the TNC bothered to check if the appropriate filter paper had already been placed in the vacuum apparatus. Filter paper was already in place and when participants with one

exception (guess who) tried to filter their samples it took a significant amount of time to filter the water sample. The hope is to begin sampling in late September.

- Volunteers are to receive a tote with all required materials.
    - Question: How are the volunteers to get the sampling totes? Answer: Good question. We haven't figured that out yet.
    - How is the sampling equipment going to be disinfected? Answer: There will be a pail with a 50% bleach solution to disinfect the equipment. There is no such 50% bleach solution. What do you mean? Answer: the bleach solution is a 1:1 dilution of household 5% bleach. Will the tote have at least 2 gallons of household bleach? Answer: Good question.
    - Will one tote be provided for what has been termed "sampling clusters" with the volunteers disinfecting the equipment between sampling sites or will there be a separate tote for each sampling site to ensure sample integrity? Answer: Good question.
    - Are volunteers going to be provided with grab poles? Answer: Good Question.
- There are six sampling sites in St. Lawrence County; Oswegatchie River, Sucker Brook, Brandy Brook, Grass River, Raquette River, and the St. Regis River. Questions:
    - There appear to be two "sampling clusters"; one for the Oswegatchie, Brandy Brook, and Sucker Brook and one for the Grass, Raquette, and the St. Regis. The first cluster has sites within 10-15 miles of each other and sampling should take less than two hours. The same can be said for the Grass and Raquette sites. Has either participation of the SRMT or permission to sample the St. Regis been obtained? Answer: No
    - Are entire clusters to be sampled on the same day and transported to SUNY Oswego the day of sample collection and by whom? Assuming that sample collection takes place early in the day the minimum travel time to SUNY Oswego will approximately be between 2.5 and 3.5 hours for the two clusters. How will the samples from both clusters be combined for only one transport to SUNY Oswego? Any reimbursement for the transport of samples to SUNY Oswego? Have arrangements been made for the receipt of samples at SUNY Oswego? Answers: Samples should be transported the same day and by whom to be determined. Logistics as to how samples are transported to SUNY Oswego TBD. There is no reimbursement for sample delivery in the grant. Arrangements for sample receipt have not been determined.
    - Do all sampling sites have public access? Answer: Yes. When will the sites be specifically identified? Answer: You will receive specific site locations in September.
    - Is SUNY Oswego the only site with the PCR technology to run samples or is there another institution nearer the two St. Lawrence River clusters? Answer: No. Have TNC actually contacted any of the four colleges in St. Lawrence County as to whether they have the PCR technology and are willing to participate? Answer: No.

Opinion

From the questions and TNC responses this project is in its infancy as far as the logistics needed for project success. The previous webinars had less than 20 total participants including TNC and PRISM staff. If one looks at the attendance at the workshop there are really only five individuals with the possibility of doing the sampling: the TIPA staff, the person from the Massena area, the Director of the Nicandri Center, and myself. I doubt the individual from Lowville will travel the 100+ miles to sample the

St. Lawrence tributaries. There was no mention of a similar workshop in the Jefferson/Oswego area. It is my opinion that the TNC staff member responsible for all the logistics is pretty “green”. He appears to be very young and did not have a lot of experience making a presentation. He seemed fixated on the purchase of a RUV (Remote Underwater Vehicle) which has nothing to do with this project. With the exception of the TNC volunteer none of the staff seems to ever been in northern St. Lawrence County. This opinion is based on their comments and questions with respect to the area. What is the name of the city across the river from Massena was a common question?

Draft Outline for the Development of the Black Lake Watershed Management Plan

Brian Washburn

SLC Environmental Management Council

The following outline follows the Outline of a Typical Watershed Management Plan found on page 273 of the Diet for a Small Lake. Questions and data are also contained.

I. Executive Summary
II. Introduction
    a. Organizational structure (how will this be determined and by whom?)
    b. Public participation efforts and results (surveys and by whom?)
    c. History of efforts to address environmental issues within the Black Lake watershed including the Indian River watershed.
    d. Discussion of the recommendations and cost estimates for the control of Eurasian watermilfoil contained in the 2008 Eurasian Milfoil Management Plan (EMMP))
III. Watershed description
    a. Physical and natural features (EMMP)
        i. Should include shoreline gradients and specific shoreline geology. Is there sufficient soil depth for private waste water systems, do percolation tests results indicate sufficient land area for effective waste water treatment, and if soil depth is sufficient is there a significant groundwater flow gradient towards the lake?
    b. Land use and land cover (requires a new assessment and comparison to the EMMP)
    c. A description of the Indian River watershed upstream from Black Lake (might be informative)
    d. Demographic characteristics (requires a new assessment and comparison to the EMMP)
        i. Population statistics
        ii. Number of shoreline property owners
        iii. Number of shoreline residential property owners
        iv. Percentage of residential property owners that are seasonal
        v. Number and identity type of commercial enterprises primarily along the shoreline and on both sides of County Route 6.
        vi. Economic impact - Suggest developed independent of any organization within the watershed. This effort would likely improve external funding efforts.
        vii. Organizations with documented history of interest in the health of the watershed. Is there documentation of their efforts?
    e. Watershed Conditions
        i. Latest CSLAP summary with emphasis on the historical trends
        ii. NYSDEC WI/PWI report (lake should be due for a new assessment)
        iii. Eurasian Watermilfoil density map (The EMMP did a density determination on at least a portion of the lake. Based on interviews the perception is the condition has worsened. A current assessment of milfoil density is needed.
        iv. Additional water quality assessments
    f. Water quality standards

i. NYSDEC WI/PWI standards including the classification of the lake and its principle tributaries.

IV. Pollutant source assessment

a. Point sources to include:
   i. all municipal waste water treatment in the Indian River watershed
   ii. Any MS4's within the watershed
   iii. Any CAFO's with in the watershed
   iv. Evaluation of the above with respect to required compliance

b. Non-point sources to include:
   i. Private waste water systems
      1. How many?
      2. Percentage constructed predating current NYSDOH criteria
      3. Percentage with updated waste water systems
      4. Number of participants in SLC waste water system grant program
      5. Any data evaluating waste water system effluent entering the lake. SLC SWCD?

c. Principle environmental issues primarily deal with invasive flora and fauna and the conditions attributing to their expansion within the watershed
   i. Eurasian watermilfoil (present)
   ii. Dresienna species (present) (what is the distribution?)
   iii. HAB's (present)
   iv. Other invasive flora and fauna (potential)
   v. Due to the topography/morphology of the lake the potential for submergent invasive flora expansion is heightened. Historic phosphorus and nitrogen loading is suggested as significant contributors to invasive flora expansion.

V. Pollution loads

a. TP, TDP, TN, TDN levels have been historically reported in CSLAP reports during the reporting time periods. TP levels are required components of all MWTS SERQ reporting.

b. There has not been any reported annual TP, TDP, TN, TDN loading determinations since the National Eutrophication Survey (NES) in 1972 as part of the initial stage of the implementation of the Clean Water Act of 1972. From 1972-1973 members of the NES team along with NYSDEC and the New York National Guard conducted the survey. The working paper No 148 is titled Report on Black Lake, St. Lawrence County, NY and can be found at http://nepis.epa.gov. With the survey being 49 years old it would be expected changes may have occurred with respect nutrient loading. The report did not identify any point sources of pollution. Since the survey numerous villages in the Indian River watershed possess MWTS facilities. The village of Hammond MWTS using Black Creek as a discharge point violated its discharge permit and had to take corrective actions to meet its discharge permit. The report's focus was on the influx of phosphorus and nitrogen via the three largest tributaries to Black Lake; the Indian River, Black Creek, and Fish Creek and did not address direct runoff from agriculture or private waste water systems. Some useful data is still available in the report as seen in the following tables:

Tributary	Annual P loading	% of the total
Indian River	76,640 lbs./year	64.1
Black Creek	11,450	9.6
Fish Creek	21,640	18.1
Minor Tributaries	8480	7.1
Direct Precipitation	1,300	1.1
Output	91,720	
Net P Accumulation	27,790	

A logical conclusion derived from the above table is the overwhelming majority of phosphorus is entering Black Lake from the Indian River watershed.

Tributary	Annual N loading	% of the total
Indian River	1,413,820 lbs./year	66.6
Black Creek	172,530	8.1
Fish Creek	327,890	15.5
Minor Tributaries	128,030	6.0
Direct Precipitation	80,460	3.8
Output	2,046,510	
Net N Accumulation	76,220	

A logical conclusion derived from the above table is the overwhelming majority of the nitrogen is entering Black Lake from the Indian River Watershed. Another useful data is the relative inflow of water to the lake by the three tributaries evaluated.

c. Total annual loading for phosphorus derived from both actual measurement and modelling was reported in the Journal of Environmental Engineering, volume 114, no. 2 (1988) in a submission by Anthony Collins and Thomas Young of Clarkson University. The abstract of the submission indicates the most significant fraction of annual phosphorus loading is not annual anthropogenic sources including agricultural runoff and private wastewater systems but rather resuspension and distribution of benthic phosphorus accumulated for decades. The conclusion was based on the low hydraulic retention time of approximately 36 days and virtually aerobic benthic conditions through out the lake. The latter is supported by the 2018 CSLAP Report Site Visit Profile indicating dissolved oxygen levels exceeding 7 parts per million at a depth of 4 meters. Additionally with a mean depth of 8 feet, Black Lake likely will not temperature stratify during the summer months and will likely not stratify based on light penetration (no delineated limnetic or profundal zonation. The majority of the lake will likely be totally littoral.
d. Phosphorus levels reportedly have been evaluated for a period of time in the vicinity of the Indian River inlet and the Black Lake discharge to the Oswegatchie River by Robert Kirkey of Clarkson University. Comparison to the input and outflow may support the results of the 1972 NES. No journal articles by Dr. Kirkey have been located on the research. Where is the data and its evaluation?

VI. Watershed goals
a. Revitalization of the Black Lake Association to include committee structure to address invasives
b. Preparation of a biannual State of the Lake Report

c. Reduction in Eurasian watermilfoil density to _____% to facilitate increased recreational use of the lake
d. Address sediment buildup on the southern side of the two causeways separating the lake. NYSDOT is responsible for the causeways.
e. Surveillance efforts to detect the presence of other invasive flora and fauna species
    i. Invasive flora and fauna identification fact sheets prepared and distributed.
    ii. NYSDEC presumptive testing for the presence of HAB's.
f. Continued water quality monitoring through CSLAP or the efforts of organizations or educational institutions.
    i. The CSLAP reporting program evaluates the water quality at two-week intervals throughout the late spring to early fall months. The Black Lake Association as the participant in the CSLAP program should possess the equipment necessary to continue the non-chemical analysis portion of the CSLAP program as well as the water sample collection equipment. Review of the historic CSLAP reports indicates changes is phosphorus and nitrogen parameter levels from late spring to approximately mid-July to early fall. If CSLAP funding is not available, limited sampling in the late spring, mid-July and early fall may suffice in evaluating nutrient levels. Determination of nutrient levels, conductivity, pH could be determined by relatively inexpensive available testing kits or instrumentation. Agreements could be reached with local analytical laboratories to perform nutrient level determinations. CSLAP also determined algal conditions on the lake. Once a year temperature, dissolved oxygen, pH, and conductivity profiles were determined.
    ii. Temperature, pH, and conductivity profiling is easily determined while dissolved oxygen is not. Continued monitoring of water temperature, pH, and conductivity can be monitored inexpensively.
    iii. An effort should be made to develop research relationships with the Associated Colleges of the St. Lawrence Valley.
g. Increase political action activities
h. Educational activities within the watershed to reduce nutrient loading and activities contributing to the introduction and spread of invasive flora and fauna species.
i. Expansion of public access to the lake. Currently there is only one public access in the southern portion of the lake operated by the Thousand Island Park Commission. Additional access and recreational development may have a positive effect on the economic impact of the watershed.

VII. Identification of management strategies
a. Existing management strategies
    i. Currently there does not exist a watershed wide set of management strategies. The Black Lake Association has historically been the sole organization with established management strategies for the lake. The Black Lake Association as a member of NYSFOLA participated in CSLAP water monitoring program from 1988 until 2018. The results of the CSLAP reports led to the 2008 Eurasian Watermilfoil Management Plan requested by the Invasive Aquatic Plant Committee of the Association and funded by St. Lawrence County. None of the

recommendations of the plan were implemented and no further mechanical harvesting took place until 2019. In 2019 the Association secured funding for a limited two-mile mechanical harvesting of the main channel in the northern portion of the lake. In 2021 the Association secured $2,500 from towns bordering the lake and $27,500 from St. Lawrence County to mechanical harvest an eight mile stretch of the main channel in the northern portion of the lake.

b. Additional strategies needed
    i. The 2008 EMMP estimated elimination of milfoil by various methods would cost in excess of 26 million dollars. The possibility of ridding the lake of the milfoil is unlikely leaving management as the only alternative. Once the desired milfoil density percentage goals are established and a 10-year action plan is created a funding strategy must be created and should include:
        1. External funding from grants either regionally or nationally to assist in the action plan. One organization would need to have this responsibility with the assistance of the St. Lawrence County Planning Department. Additionally, the watershed plan should coordinate with any research activities at colleges and universities.
        2. Defined annual minimum budgetary allocations from the six townships bordering the lake. Several factors may influence the respective allocations including shoreline property assessments and economic activity within each township. Could unspent monies from the towns be escrowed for future activities or is the allocations to be on a need basis only?
        3. Annual contributions from organizations, businesses directly benefiting from expanded lake usage, and shoreline property owners.
        4. With NYSDEC either taking over the operation of the existing boat launch or the creation of the possible second boat launch at the northern end of the lake an agreement to support the action plan is needed.
        5. Annual contributions from non-residents who utilize the lake.
        6. An agreement with St. Lawrence County to provide funds to complete the action plan if other resources do not cover the cost.
        7. The development of a marketing plan for the lake to include a number of revenue-generating activities to support the action plan. Fishing tournaments both during the summer and winter months are one possibility. What has the Black Lake Chamber of Commerce done?