

August 6, 2021

To: Proposal Department:

Subject: Request for Proposal, develop an engineering and construction estimate for Silver Lake Management District, Waushara County WI

Topic: Evaluate 1997 Storm Water Runoff preliminary estimate for Silver Lake Sanitary District. Provide updated Order-of-Magnitude (OOM) estimate for implementation of the project.

Big Silver Lake (WI State Highway 21 & State Highway 73) is investigating methods to relieve storm water runoff pressure on the watershed. Silver Lake is a seepage lake where water input consists of inflow culverts, storm runoff, and natural springs. In periods of heavy rain events the lake receives much surface water runoff from the Highway 21 and 73 corridors east of the Wautoma WI. A heavy rain events results in standing water on Hwy 21 & 73 along with full drainage ditches along the highway corridor. Water from Booth's marsh also flows into the lake via a 24" culvert under WI State highway 73, just southeast of the highway 21 & 73 intersection. When water levels in the lake reach certain levels, water also flows into Silver Lake from the Highway 21 culvert between Silver Lake and Lake Irogami. Water from Silver Lake flows into Lake Irogami only when Silver Lake is ½ to 1 foot over Ordinary High-Water Mark (OHWM) of elevation 867.0 feet.

Lake Irogami has a weir which moves water downstream into Lake Alpine and Bruce/Thorstead creek watershed. The Silver Lake Sanitary District (SLSD) maintains and operates the weir in cooperation with Lake Irogami Management District. The WI DNR permit for the weir has a maximum flow of 10 cfs. The flow was close to this maximum in the fall of 2019 when Silver Lake was approximately 2 feet over the OHWM (Elevation 868.85 ft).

The board of Silver Lake Management District (SLMD) has been reviewing archives of prior storm water management proposals. A 1997 Storm water runoff plan and cover letter to Vic Bartel (former Silver Lake Sanitary District, Chairman) was uncovered. The plan was developed by Waushara County Land Conservation and Zoning department. The cover letter referenced a fully developed engineering plan and construction estimate. SLMD contacted Todd Wahler, Land Conservation & Zoning director) to see if such a detailed engineering build was on file. Waushara County had no further information other than the Order of Magnitude estimate and plan which is attached. The 1997 cover letter had an order of magnitude estimate of \$440K. Using a consumer price index calculator ([https://www.bls.gov/data/inflation\\_calculator.htm](https://www.bls.gov/data/inflation_calculator.htm)) , this equates to \$723.5K for 2021 implementation costs.

Silver lake Management District (SLMD) has reviewed the prior project and desires a few alterations. We would like your engineering firm to provide an estimate for developing an Order of Magnitude (OOM) for construction and implementation using the original 1997 project with the requested modifications below:

1. An evaluation of the original 1997 plan. Waushara county land conservation refers to the original Order-of-Magnitude (OOM) as being a conceptual project only.
  - a. Is the path and route feasible with the current land contours?

- b. Can existing Silver Lake Sanitary District easements be utilized?
  2. Add a flow control gate on the 24" culvert under Highway 73 from Booth's marsh into Silver Lake (Refer to attachment 3 for location).
    - a. Slide gate must have a ratchet and locking mechanism to allow setting at different elevations. Gate must be able to be locked to prevent unauthorized raising and lowering and changing the flow.
    - b. What is the optimum elevation to reverse flow of Booth's marsh into new drainage route into the White River? Is the elevation 868 ft or higher?
  3. Is it feasible to bore a culvert under Highway 21 to connect the north and south drainage ditches along highway 21 and 73?
    - a. Does the surface elevation lend to the culvert under the highway being placed approximately by:
      - i. Milty Wilty restaurant, or
      - ii. ShangriLa Lane? Or
      - iii. Across from Hillside Court
    - b. Include the cost estimate for boring or surface installation of culvert connecting the north and south drainage ditches. Include repairing the highway. I believe the highway was reconstructed in adherence with 50-year federal highway standards,
    - c. Any regrading of the drainage ditches north of the Hwy 21&73 corridor to flow water into the south drainage ditches. Surface water runoff would then flow into Booth's Marsh under the 1997 conceptual proposal.
  4. Your firm's proposal response should include a contract with cost estimate to provide a preliminary engineering study and Order-of-Magnitude (OOM) for the above project. The revised OOM is needed to help SLMD board determine which path to pursue to mitigate storm water events. The revised OOM Needs to include the following and SLMD desires these estimates to be separated out in the project total:
    - a. Ditching estimates for the path to get Booth's Marsh to flow into the White River watershed.
    - b. Flow control structure on Highway 73 Culvert (from Booth's Marsh into Silver Lake currently).
    - c. Boring or surface construction of culvert connecting Hwy 21 & 73 North and south drainage ditches.
    - d. Any rework necessary on the current Hwy 21 & 73 drainage ditches east of the Wautoma Shell and Bughs Lake Road.
    - e. Culverts and gravity piping necessary where land contours do not lend to drainage ditch creation. The 1997 conceptual plan included 1 mile of gravity pipe with manhole and flow control structure.
    - f. Cost estimate for a full-scale engineering and construction plan.
      - i. Include project contingency account.
      - ii. Any permits or agency fees required.
    - g. Agencies which would need to be involved in the planning, design and project approval. As a minimum SLMD believes the following agencies would have some approval or permitting process.

- i. Waushara County Land Conservation and Zoning
  - ii. State of WI Highway department.
  - iii. WI Dept of Natural Resources (DNR)
  - iv. US Army Corp of Engineers, Storm, and floodwater management.
  - v. White River flowage management district
  - vi. Silver Lake Sanitary District.
- h. Any grants or funding sources which may be available to aide in implementation of the project?
  - i. Is it possible to estimate any land easement acquisition costs when applicable when current right of ways cannot be utilized?

Your response should be sent to:

Silver Lake Management District  
 Attn: RFP Drainage Response  
 PO Box 302  
 Wautoma, WI 54982

Questions may be directed to  
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Attachments:

1. WaushLandConser\_Drainage\_1997.pdf (1997 Storm Water Runoff OOM).
2. 1997Plan\_Wahler\_040920\_Resp.docx (Correspondence inquiring on full engineering 1997 engineering plan and clarification on requested modifications).
3. Silver\_Lake\_Inflow\_Points.docx (Compiled by SLMD board members for input into 2022 Silver Lake Management Plan which will be developed by Onterra, Inc).
4. Hwy21\_Culvert\_Weir\_Elevations.pdf (Reference of Highway 21 culvert elevations, outflow from Silver Lake occurs in extreme high-water conditions, such as in 2019 when Silver Lake was at 868.85 ft or 1.85 ft over OHWM of 867.0).
5. WI\_Wautoma\_20181109\_TM\_geo.pdf and  
 WI\_Spring\_Lake\_800617\_1961\_2400\_geo.pdf (USGS 1:24,000 contour topo areas of 1997 conceptual plan path)
6. Cumulative\_Silver\_Lake\_Levels.xlsx. (Historical water levels for 4 lakes within Silver Lake Sanitary District: Silver Lake, Irogami Lake, Little Hills Lake, Deer Lake. Lake Alpine is man-made lake, elevation is constant due to Bruce/Thorstead creek inflow and dam outlet.
7. HighWater\_Recap.pdf (Reference, presentation to Silver Lake Owners in 2019 high water crisis and no wake conditions implemented)

