Silver Lake Estates Board of Trustees

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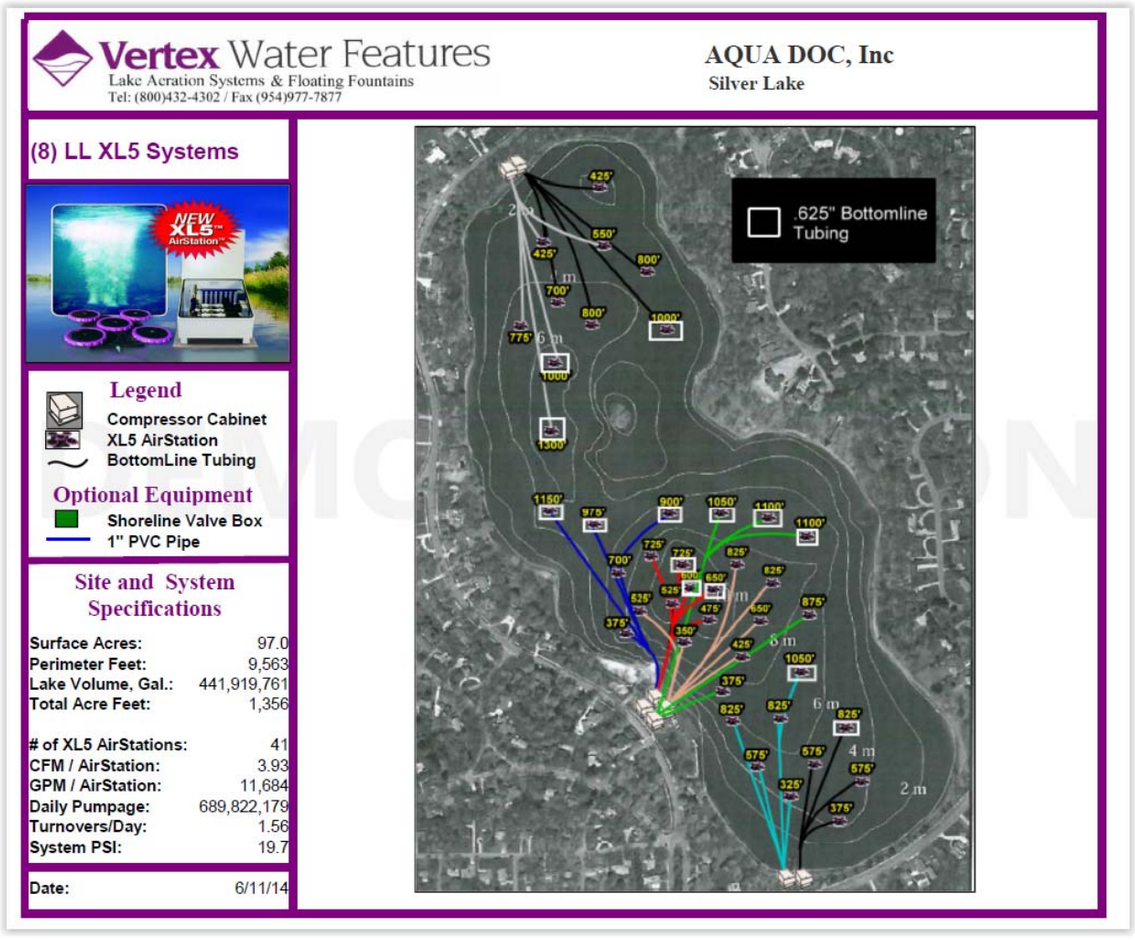
The SLE Board of Trustees, following its 2012 lake study by EnviroScience, extensive due diligence, reviewing multiple designs / bids - have decided to replace our 33 year old lake aeration system to improve water quality. When SLE installed its lake aeration system in 1981, it was considered the state of the art and 20 years ahead of its time regarding lake restoration. Installation of the replacement aeration system with micro bubbles from numerous diffusers will occur this summer.



BACKGROUND

98% of the health organizations only measure fecal coliforms levels to determine the *relative* water quality (safety) for recreational water use. No lake, river or ocrean can be said to be 100% safe. Summit County traditionally had a water safety standard: one fecal coliform reading over 400 OR any three (3) readings over 200 was the level that it recommended a *health advisory notice*. While this was not a requirement it was a recommendation to advise people to swim at their own risk. A couple years ago Summit County Health Department revised is advisory level to any one reading over 235. The fecal coliforms readings SLE and Summit County Health Department have taken in 2014 were all good except for one reading immediately following the 200 year rain when millions of gallons of lawn and storm sewer run off flowed into Silver Lake. Silver Lake removed 4 boat loads and 2 truck loads of debris that washed into the lake including tires, furniture, toys, etc. The most recent Summit County Health Department fecal coliforms reading for Silver Lake was 7. Based on government health standards Silver Lake is considered to be excellent for recreational use.

Since 2009 there is an emerging science to also measure blue-green algae levels in recreational waters. Since 2012 SLE has been testing lake water for fecal coliforms AND algae levels. Unfortunately Summit County, State of Ohio, US Federal government and private lake management groups have not published any standard for acceptable algae levels. The only public report was by the WHO (World Health Organization) that had some ‘suggestions’ for safe

algae level for drinking water (assuming 2 liter /day consumption per person) and another standard for recreational water use. Some lake biology professionals believe the WHO recommended algae standard is ultra conservative and off by a factor of 10. These industry experts believe that reasonable guidlelines would be 10X those suggested by the WHO. Lacking any authoriative standards the industry proferssionals state they cannot provide SLE any guidance on when to post a health advisory.

SLE is trying to be 100% transparent by sharing its water quality test results on its website www.silverlakeestates.com and by posting the readings at the boathouse. While our fecal coliforms number has been very good to excellent, our algae level have occasionally been higher than we like ---- based on the ultra conservative WHO suggested standards. After some discussion a *health advisory sign* was posted earlier this summer just to be safe even though there was no requirement to do so. It was frustrating that the the government health officals and our own consulting firm could not provide a straight anwer on what is a safe level of blue green algae. **The recommended precautions dealing with lake, river or ocean water are: (1) do not drink the water and (2) shower after recreational use (both just common sense and common practice).**

It is estimated that 90% of the (public) Silver Lake Village's storm water is fed into (private) Silver Lake. Based on a recent survey from Summit Soil and Water Conservation District (SSWCD) there is also storm water entering Silver Lake from part of Stow and Cuyahoga Falls. Silver Lake is therefore being used as a retention basin for multiple communities with no consideration to SLE for the past 94 years.

Silver Lake has had numerous water quality studies over the years including two Masters theses. SLE had a major water quality study in 1980 and another major study done in 2012.

DUE DILIGENCE PROCESS

SLE has had a number of water quality workshops and mailings to educate all SLV residents about the root causes of algae growth. This community education has been done in coperation with the Village of Silver Lake, Summit Soil and Water Conservation District, Ohio EPA and the Ohio Lake Management Society. *A key element of alge growth is the influx of nutrients into the lake – principally PHOSPHORUS from land fertilizers.*

SLE developed a matrix of all the known actions that may be considered to improve water quality. Some of the measures like dredging or diverting SLV stormwater away from Silver Lake are cost prohibitive (costing millions of dollars for we the SLV residents). Other common water quality solutions involve chemical treatments that: (a) generally have negative long term side affects (b) have a diminishing affect over time and (c) are expensive (i.e. $25K per treatment). Some area lakes have given up spending $40,000 per year for chemical treatments and are moving towards an aeration system. Another so called water quality solutions lack any documentation to support their sales claims. Guided by EnviroScience, local universities, government officals and other lake owners, the more **natural solution of artificial aeration is the safest and most cost effective in-lake management solution.** While SLE's 1981 aeration system is not perfect by todays standards, it was the right decision in 1981 based on the guidance of international water quality expert Dr. Dennis Cooke from Kent State University.

GOALS

Over time, the new aeration system will help mother nature improve our water quality in a number of ways. We look forward to less algae, better water transparency and a healthier body of water for recreational use. A bonus of having fully oxgenidated water and no thermoclines is better fishing.

A MULTI-PHASE APPROACH NEEDED

- Less nutrients entering Silver Lake as a result of storm water filtering and lake shore property buffer zone (higher grass, native plants and maybe wild flowers)
- In-lake improvement via replacement aeration system
- Better storm water management by Silver Lake Village
- Support and guidance from Summit Soil and Water Conservation District
- Community based Storm Water Management Committee formed. Investigation into storm water management grants to help defray some of the expenses
- On-going education of Silver Lake Village lot owners about storm water run off and improved storm water options available.
- Regular monitoring of lake water quality
- Your assistance with water quality efforts

CONCLUSION

A healthy and attractive Silver Lake affects the quality of life within our Village, protects our families and protects our property values. Your cooperation in our water quality efforts and your help to educate your neighbors is needed and appreciated.

Comments or questions can be submitted to Richard G Lubinski at rick@think-energy.net