



642 Lincoln Road
Sauk Centre MN 56378
Phone: (320)-352-2231
Fax: (320)-352-6455
Web: www.srwdmn.org

US Army Corps of Engineers (USACE) PAS Alternatives Analysis

Osakis area residents,

There are some exciting updates for the work being done in the Lake Osakis watershed! Survey work for the USACE Planning Assistance to States (PAS) Alternatives Analysis will begin in June. The major partners involved in these efforts are Houston Engineering, Inc. (HEI), the Osakis Lake Association, and the St. Croix Watershed Research Station (SCWRS). This alternatives analysis study involves a **bathymetric survey** of Lake Osakis (using sonar to map the topography of the lake bottom and depth of infilling material compared to legacy material), and collecting **sediment core samples**. Our objective is to support the understanding of the overall function of Lake Osakis and its watershed, set goals for the lake, and identify project-based actions that will make a difference for the better.

Beginning on June 17th, a pontoon survey crew for HEI's efforts will be on Lake Osakis to conduct the bathymetric work and sediment core sampling. To establish the current bathymetric depths and sediment accumulation rates, this survey will be compared with historic analyses that have been done in the past. Some sediment cores will provide insight on the types of materials in the lake bottom and the amount of nutrients, namely **phosphorus**, these materials can release into the lake. For example, increases in inorganic material indicate an increase of land development (residential, urban, or agricultural) at the time which the sediment was deposited into the lake. Several **sediment core samples** will be collected across the lake, 3 of which will be from Miller Bay specifically to complete sediment core dating. One sediment core will also be collected from the Judicial Ditch #2 (JD2) sediment retention pond. This will help the researchers understand the sources of sediment within the watershed and how the accumulation of materials has changed over the years. This study work will involve two 60-hour weeks on the lake. In addition, an aquatic invasive species (AIS) survey will be conducted since certain species can impact the assessment of materials in Miller Bay. All lab analysis will be completed by the SCWRS.

What is the purpose of all of these efforts? The USACE will develop their alternatives analysis, which will allow the Sauk River Watershed District (SRWD) to identify priority areas for reducing sediments and nutrients. A survey of JD2 will also be carried out to estimate the annual loading of sediment and phosphorus to Lake Osakis from near-channel sources. Potential projects and data will be entered into a **Lake Response Model** to predict how different management practices will impact the lake and surrounding watershed. The SRWD will be able to conduct up to **50 alternatives** (scenarios) for potential projects to be included in the Comprehensive Plan. The top 10-20 ranked alternatives will be evaluated through a field survey. Outreach will be conducted to determine landowners' willingness to participate in a given project. All of this is to reach our final goal of implementing projects that most effectively improve the health of Lake Osakis and de-list it from the Environmental Protection Agency's 303D Impaired Waters List. We are striving to accomplish these goals in the most fiscally-responsible way so that completed projects provide the highest return on investment in regards to public funding and environmental improvements.

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