Lake Osakis PAS Alternative Workshop

Time: 10am-2pm, Location: Osakis VFW

Attendees: Natalie, Peter, Jim, Joe, Steve, Drew, Brett, Mike, Paul, Mark, Emily, Terry, Stephanie, Janice, Ken, Bruce, Troy, Jason, Jerry, Randy, Beth, Joe, Susan, Danielle, David, Garret, Lucas, Adam, Tom, Gary, Shawn, Mike, Amber

Agenda

1. Introductions
2. PAS Study Background
    a. Collaboration with USACE developed from project teams
    b. Material accumulation focus in the area
    c. Recent work
        i. Houston engineering – assembled data that was gathered
        ii. Sub-bottom profiler was taken last summer
        iii. Fair amount of phosphorus within the sediment
    d. Lake Response Model
        i. Model can be used to show existing condition but also evaluate the alternatives
        ii. Helps predict what will happen within the alternatives developed at the meeting
        iii. Hydrodynamic and water quality model
        iv. QUESTION – Can the model look at pollutants impact on fish for fish consumption?
            1. Can add in data to the model, won't be able to tell the level of pollutants in the fish
        v. Elevated E-Coli being looked at to add to the model
        vi. QUESTION – Can model look at highwater levels?
            1. Yes, but need the data in order to input into the model.
3. Location
    a. Are the problems that we are seeing unique to specific portions of the lake?
        i. Sedimentation is an issue throughout the whole of Lake Osakis, but seeing specific issues in Miller's Bay, the Sed Ponds/JD2 system.
    b. Where are the main concerns you are seeing?
        i. Miller's Bay
        ii. Northern arm of the lake, erosion
        iii. Full Southern side of the lake, City and golf course are affected
        iv. Faille Lake, sedimentation
        v. Eastern side – erosion
4. Goals
    a. Water quality and sedimentation – Get off Impaired Waters List
        i. JD2 authority – Feasibility study in works
        ii. Will need time, money and cooperation
        iii. QUESTION – Can internal loading itself be enough to get lake off impaired water list?

    b. Restore hydrology from altered state
        i. Maintain water control level, rapid fluctuations
    c. Increase water storage and restore lake (15 ac-ft of storage as 10-year goal)
    d. Inlet restoration
    e. Sewer system drainage updated and checked, inspected
        i. Too many campers
        ii. Septic system compliance
    f. Control of invasive species
    g. Restore Crooked Lake – Improve health of watershed/uplands
    h. Voluntary Compliance
5. Problems
    a. Septic system compliance
        i. Sewer system around whole lake needs to be updated and checked
        ii. Compliance is on the pumpers
    b. Farming Practices/Fertilizers feeding into the lake
    c. Construction done by private entities
        i. Receive initial compliance information, but may not follow through
    d. Peat bog
        i. Digging sediment ponds in peat bogs – elevation of the lake = Peat sediment coming into the lake
    e. Reproduction of Walleye
        i. Spawning is decreasing within the lake
    f. Ravine erosion
6. Objectives
    a. Lake Elevation/Water Storage
    b. Water Quality
    c. Inlets
        i. Ravines
        ii. Crooked Lake
        iii. Peat bog
    d. Invasive Species
    e. Aquatic Life
7. Constraints
    a. Drainage Law
        i. Need to be compliant with state drainage law 101E
        ii. Would impact the work on JD2
    b. Funding
    c. Capacity of resources
        i. Technical staff, contractors, engineers, etc
    d. Public Waters
        i. Laws and permit needs in order to make modifications to lake and outlet
    e. Land owner buy-in
    f. Public Perception
        i. Disconnect between who pays for the project and who benefits from the project

        ii. Property owners on lake need to be aware and understand their influence/practices impact the lake

8. Opportunities
    a. SRWD/OLA education on different types of fertilizers that have lower water quality impacts
    b. 103E Statute – Drainage Law
        i. Alternative repair without needing to go through full improvement process
        ii. Channel rehab
    c. Future/alternatives to the Sed Ponds
    d. Pencil Reeds
        i. Reestablish in Miller's Bay and on southern end
    e. Redetermination of benefits and costs
        i. Redistribute the costs of the project
9. Measures
    a. Please reference filled-in PowerPoint (Slide XX) for full list of measures
    b. Please reference the attached Excel document for the alternatives array and the measures identified as "priority" to include in alternatives.
    c. Structural
        i. Restoring wetlands, creeks, drain tile
        ii. Restoring Crooked Lake
        iii. JD2 Ditch - two-stage ditching,
        iv. Sed Ponds - stabilizing, expanding, abandonment
        v. Lake outlet
        vi. Remaindering of ditch systems - primarily JD2
        vii. Alternatives to
        viii. Stormwater management (City of Osakis)
        ix. Shoreline stabilization
        x. In-Lake treatments
        xi. Structural BMP for Ag owners - buffer strips, sed basins,
        xii. Sanitary pump station and holding tank
        xiii. Restoration of Smith Lake, Nelson
    d. Non-Structural
        i. Cover crop - Ag land
        ii. Public education
        iii. Signage
        iv. Inventory/monitoring of septic systems
        v. Conservations easements
        vi. Feasibility study for sanitary system around lake
        vii. Public education for cost-share opportunities with SWCD
        viii. Education on shoreline management - including farmers
        ix. Education on Best Management Practices (BMPs) for individual land owners - land owners not going through proper permitting process to do work on land
        x. Additional resources for County and SRWD staff to help enforce rules
        xi. Lakeshore certification
    e. Priority Measures Identified
        i. Lake Outlet Modification

        ii. Shoreline Stabilization
        iii. Wetland Restoration
        iv. Septic and Sanitary
10. Data Needs
    a. Shoreline survey – help see level of shoreline erosion occurring
    b. Stormwater runoff
    c. Septic inspections
        i. Failure rate by county
    d. Management of Wastewater System
        i. Should be City data
        ii. City has set up a way to help work the issues
        iii. Agricultural impact on water quality
        iv. Sed Ponds functionality
        v. Inventory of all inlets
        vi. Core sample study review
11. Next Steps
    a. Additional data gathering
    b. Input additional data and refine model
    c. Analysis of Alternatives Array