Lake Lemon Conservancy District
Dredging Study Group (DSG)
LLCD Office
January 11, 2014

DREDGING STUDY GROUP MEMBERS PRESENT: TIM SPECHT, DIRECTOR; PAM DUGAN, DIRECTOR; TINA THRASHER, DIRECTOR; NORM HOLY, FREEHOLDER; LES WADZINSKI, FREEHOLDER; BOB MADDEN, DISTRICT MANAGER; JAMES VAN TASSEL, LAKE BIOLOGIST; LEVI WARTHAN, DREDGER. ABSENT: GREG MCATEE, FREEHOLDER; JEFF HARTMAN, FREEHOLDER.

I. Call Meeting to Order/Chairpersons Remarks

II. Approval of August 24, 2013 Meeting Minutes

THE DREDGING STUDY GROUP BY CONSENSUS APPROVED THE AUGUST 24, 2013 DREDGING STUDY GROUP MINUTES.

III. Proposal: Bathymetric/Sedimentation Study – Dr. Jeff Ehman, Image Matters (Madden)

a. Madden introduced and thanked Ehman for attending the meeting.

b. Ehman presented a Draft Scope of Work for a Bathymetry/Sediment Survey Update.

c. Objectives

i. Collect water depth (bathymetry) and sediment depth data in lake areas with depth <6 feet.

1. New hydroacoustic sonar technology is capable of taking water depth and sediment depth measurements with correct calibration.

2. DSG decided with the new technology the survey should measure sediment depth around the entire reservoir, and not just in <6' water depth.

ii. Update existing contour database and produce revised bathymetry for entire lake.

1. A new bathymetric and sediment map will be produced. In addition overlay maps will be produced showing the level of changes for the different parameters.

iii. Evaluate change in water volume for entire lake.

iv. Evaluate change in both water depth and sediment depth for entire lake.

d. Data collection, bathymetry and sediment synthesis

i. Identify and analyze options for water and sediment depth collection.

1. Subcontract to specialized firm to collect data and provide documentation.

2. Contractor team, with operational support from LLCD in collecting data.

e. Presentation of options to DSG and LLCD Board

i. Ehman will return to the DSG with subcontracting information and cost along with a finalized scope of work and total lump sum cost of project.

f. Presentation on project and deliverables to DSG and LLCD Board for review.

g. Revise draft deliverables as necessary and deliver final products.

h. Deliverables

i. Bathymetry data, metadata, and maps for the entire lake

ii. Sediment depth data, metadata and maps for key areas.

iii. Report with detailed collection and data processing and analytical methods, executive summary, maps and tabular information and summary statistics for both entire lake and key areas.

IV. Possom Trot Creek Potential Weir Design

a. The DSG looked into preventative measures for sediment deposition in the Lake Lemon Reservoir.

b. Possom Trot was selected as a key area of sedimentation input, thus was chosen as an appropriate potential weir design study.

c. The LLCD received a proposal from Bledsoe Riggert Guerrettaz, a surveying and civil engineering firm, for a Preliminary Feasibility Study

to address sediment deposition in Lake Lemon near the mouth of Possom Trot Creek

d. Proposed approach

    i. Site evaluation and historic data assessment

    ii. Preliminary hydrologic/sediment analysis

    iii. Indentification of potential solutions

    iv. Assessment of permitting requirements and agency involvement

    v. Identification of stakeholders

    vi. Preliminary cost estimates

    vii. Final recommendation

        1. A single solution chosen based on ease of implementation (potential permitting and stakeholder support), construction cost, overall lake/environmental impacts, and required maintenance.

e. Deliverables

    i. A report summarizing all findings, assessments, and analyses as outlined above. The report will include illustrations and/or schematics as may be applicable.

    ii. Final report will be presented to the LLCD Board of Directors.

V. Smaller Barge Discussion

a. The LLCD staff has looked into designing a smaller barge. It was concluded the LLCD and DSG does not have the expertise to design a barge.

b. Warthan stated there are many aspects to barge design that go sight unseen. For example the steel dimensions are different for the sides, front, top deck, bottom deck, and mud box. Braces need to be put in place to support the mud box and excess sediment weight. Excavator, mud box, and spud anchor placements are vital to the operation.

c. The LLCD staff researched marine architects and barge designers and concluded the only qualified local contractor is Dick Payne Excavating.

i. The LLCD's current barge was designed by Dick Payne Excavating.

ii. Dick Payne Excavating has extensive knowledge of Lake Lemon through his three years of contracted services for the LLCD doing SRP and his experience in designing three barges that have successfully operated on Lake Lemon.

iii. Dick Payne Excavating's proposed fee would be 15% of the barge cost. The barge is estimated to cost around $50,000.00. This yields a fee of $7,500.00 for the designer.

d. Barge Design

i. Design process with the contracted designer needs to begin by early summer 2014. The build process would begin the last quarter of 2014. Three months is the expected build time. This would make the barge available the second quarter of 2015 and thus available for SRP for the 2015 season.

VI. Final Recommendations to the LLCD Board

a. Bathymetric Map

i. The DSG met with Dr. Jeff Ehman, Image Matters LLC, and discussed the scope of work for performing a sediment depth assessment and bathymetric study/map for Lake Lemon. The DSG recommends to the Board the LLCD Staff apply for a DNR LARE Grant for a Sediment Depth Assessment and Bathymetric Study/Map totaling $15,000.00. The LLCD is required to make a 20% cash match ($3,000.00).

b. Sediment Weir/Basin

i. The DSG reviewed a proposal from Bledsoe Riggert Guerrettaz, surveying and civil engineering company, pertaining to a feasibility study to address sediment deposition in Lake Lemon near the mouth of Possom Trot Creek. Estimated cost of the feasibility study is $7,200.00. The DSG recommends to the Board the LLCD Staff apply for a DNR LARE Grant for an Engineering Feasibility Study totaling $8,000.00. The LLCD is required to make a 20% cash match ($1,600.00).

c. Smaller Barge Design

i. The DSG discussed the size and design of a smaller barge. It was concluded the expertise needed to design a barge will require assistance from an outside consultant. The LLCD's current barge was designed by Dick Payne Excavating. The LLCD Staff has spent numerous hours researching potential barge designers and has been unsuccessful in identifying a suitable vendor. It was concluded that Dick Payne Excavating, a local contractor, through his knowledge of Lake Lemon, the SRP program, and his experience in designing three (3) barges that have successfully operated on Lake Lemon is best qualified to assist the LLCD in designing a smaller barge. At this time the DSG recommends to the Board to consider hiring Dick Payne Excavating as a consultant/designer for the construction of a smaller barge. Payne's fee will be 15% of the barge cost estimated to be around $50,000.00 ($7,500.00).

VII. Additional Comments/Concerns

VIII. Adjournment

Submitted By:

James Van Tassel

Lake Biologist