

# **COLUMBIA ASSOCIATION'S PRESENTATION TO THE TOWN CENTER VILLAGE BOARD**

**APRIL 11, 2007**

In August of 2006, Staff and Consultants make a presentation to the Columbia Association Board of Directors that included several options, based on information to that date, for sediment removal, staging area and material placement for the dredging of Lakes Kittamaqundi and Elkhorn.

Subsequently, in September of 2006, staff made presentations to the Town Center Village Board and the Owen Brown Village Board to review the options presented to the board and to receive resident comments.

Based on the comments that staff heard from both the CA Board and respective Village Boards, staff pursued alternate methods of sediment removal, staging areas and placement. In addition, staff considered construction techniques that would minimize the disruption to residents including restricting the days and hours of operation. At this time staff would like to bring forward the results of that research as well as associated budgets.

I would like to spend just a few minutes reviewing the mechanics of lake dredging before moving on to each lake.

There are basically two methods to remove the sediment and two options for handling the sediment. The sediment can either be removed mechanically (scooped out with mechanized buckets) or hydraulically (vacuumed out with pumps). Before trucking, the sediment is handled at what is commonly referred to as a staging area. At the staging area the material is either mechanically dewatered or loaded wet into water tight container trucks. Staff believes that the handling cost precludes mechanical dredging at either lake, but this option was sufficiently researched to provide estimates.

Now I'll review the staging and placement options for Lake Kittamaqundi. I'll begin with staging options and then placement opportunities as well as the construction cost estimates. I would like to note that the cost for this project is largely energy dependant and the estimates assume a 5% inflation factor for crude oil.

At this time consultants and staff believe that there are three possible staging

areas: Northern end of the lake or Vantage Point, the Crescent property behind Meriwether and the South Entrance Road property. Each option will have a different impact on the community and different set-up or staging costs. All three options require tree removal-either to create the staging area, haul road or pipeline access. Appropriate site restoration will be required as part of the permitting process. Vantage Point Road is immediately adjacent to a town home community and the only viable access will require the creation of a substantial haul road. The Crescent property is several thousand feet away from the dredging operation and will require a pipeline approximately 6,000 ft with a pumping station and burying the pipeline underneath the South Entrance Road. The South Entrance Road Property is adjacent to the South Entrance Road and while this site requires some sediment transport piping, staging costs are the lowest for this option.

If we take a look at the cost estimation flow chart you will see the difference in estimated costs between each of the options.

Note that the Design & Project Management cost is the same regardless of the method of dredging chosen.

Also note that the estimated cost of the actual dredging is consistent regardless of the staging area selected. The project cost difference can be found in the "Staging Site Development and Restoration" costs.

Mechanical Dredging with wet haul off is only viable at either the Vantage Point Road site or South Entrance Road because direct access to the lake is necessary. Although the staging cost using mechanical dredging are lower than for Hydraulic dredging, haul off and disposal costs bring the total estimated cost to at least \$8.4 million therefore staff does not recommend considering mechanical dredging.

Moving to Hydraulic Dredging and Mechanical Dewatering, you again see that the estimated cost of hydraulic dredging is the same for each staging option.

Vantage Point Road: Although the Vantage Point Road staging area has the best access to the lake the cost of a haul road brings the cost of using this option for staging to almost \$1 million dollars and the total estimated cost to 6.5 million dollars.

Crescent Property: This site is the furthest from the dredge area and will require pipeline boring underneath the South Entrance Road as well as approximately 6,000 feet of pipeline with a booster pump. The estimated cost for this staging area is the most expensive at \$1.4 million bringing the total

estimated cost for this option to \$6.8 million.

South Entrance Road: This staging is the least expensive to develop and has good access to Rt. 29. The estimated cost for this staging area is \$700,000 placing the total estimated cost for this option to \$6.1 million.

Staff believe that COST makes mechanical dredging prohibitive, and that Hydraulic dredging is the desirable approach for Lake Kittamaquidi.