

# **Dredging Project Overview**

Presented to CA Board of Directors  
3/7/2007

**August 2006**, CA staff and consultants made a presentation to the Columbia Association Board of Directors that included several options for sediment removal, staging areas and placement.

**September 2006**, staff made presentations to the Town Center Village Board and Owen Brown Village Board to review options for sediment removal, staging areas and placement based on information to that date.

Based on comments 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.

## **Summary of Research and Results to Date**

### Mechanics of Lake Dredging

There are basically two methods to remove the sediment and two options for handling the sediment.

#### Removal Methods:

- mechanically (scooped out with mechanized buckets)
- hydraulically (sucked out with pumps)

#### Handling Methods:

- mechanically dewatered
- loaded wet into water tight container trucks

**\*\*Note:** the cost for this project is largely energy dependant and the estimates assume a 5% inflation factor for crude oil.

## **Lake Kittamaquundi:**

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

- Northern end of the lake or Vantage Point option
- Crescent property behind Meriweather
- 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 dredged material and will require pumping stations and boring 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 [decision tree](#) you will see the difference in estimated costs between each of the options.

**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.**

### **Hydraulic Dredging and Mechanical Dewatering**

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 boring underneath the South Entrance Rd. as well as approximately 6,000 feet of pipe line with a booster pump. The estimated cost for this staging area is the most expensive at \$1.1 million bring 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 \$600,000 placing the total estimated cost for this option to \$6.1 million

**At this time based on all information and options available the South Entrance Road option using hydraulic dredging and mechanical dewatering at Lake Kittamaqundi seems to be the most viable.**

## **Lake Elkhorn**

Staff and consultants believe that there are 2 viable staging options for Lake Elkhorn.

- Hopewell Park
- Lake Elkhorn Park adjacent to Broken Land Parkway.

The option to place approximately 30,000 yards of mechanically dewatered sediment was presented as an option originally and is still considered viable. Each option will have a different impact on the community and the cost varies greatly in this case both by site requirements and placement options.

The Hopewell Park option is adjacent to a residential community while the Lake Elkhorn Park option is in a more commercial area although there are some residences located in the vicinity.

As you review the [decision tree](#) you will see the difference in estimated costs between each of the options.

**Hauling costs again makes the mechanical dredging and container truck option prohibitively expensive and therefore is not considered a viable option.**

As you review the [decision tree](#) for hydraulic dredging with mechanical dewatering you will see that the cost varies greatly depending both on the site and placement option.

### **Lake Elkhorn Park**

Staging costs at the Lake Elkhorn Park are significantly more expensive than Hopewell Park due to the need to create a level work area approximately 1 acre in size. Significant amounts of fill will have to be brought in to create the level staging area and then removed at the end of the job. If all of the sediment is hauled offsite the estimated cost of this option is \$5.2 million or if the Hopewell Park site is used for sediment placement the cost is \$4.4 million.

### Hopewell Park

Staging costs at Hopewell Park are significantly less expensive because the staging area can be constructed without bringing materials in from offsite. If the Hopewell Park option is pursued and 100% of the material is hauled offsite the estimated cost is \$4.6 million. If the Hopewell Park site is used for staging and sediment placement the estimated cost is \$3.8 million.

**At this time based on all information and options available, the Hopewell Park option for staging as well as the placement of approximately 30,000 cubic yards of sediment seems to be the most viable.**