

Lake Nepahwin Sediment Plume Removal



Request For Decision
City Council – November 10, 2005

Lake Nepahwin Sediment Plume Removal

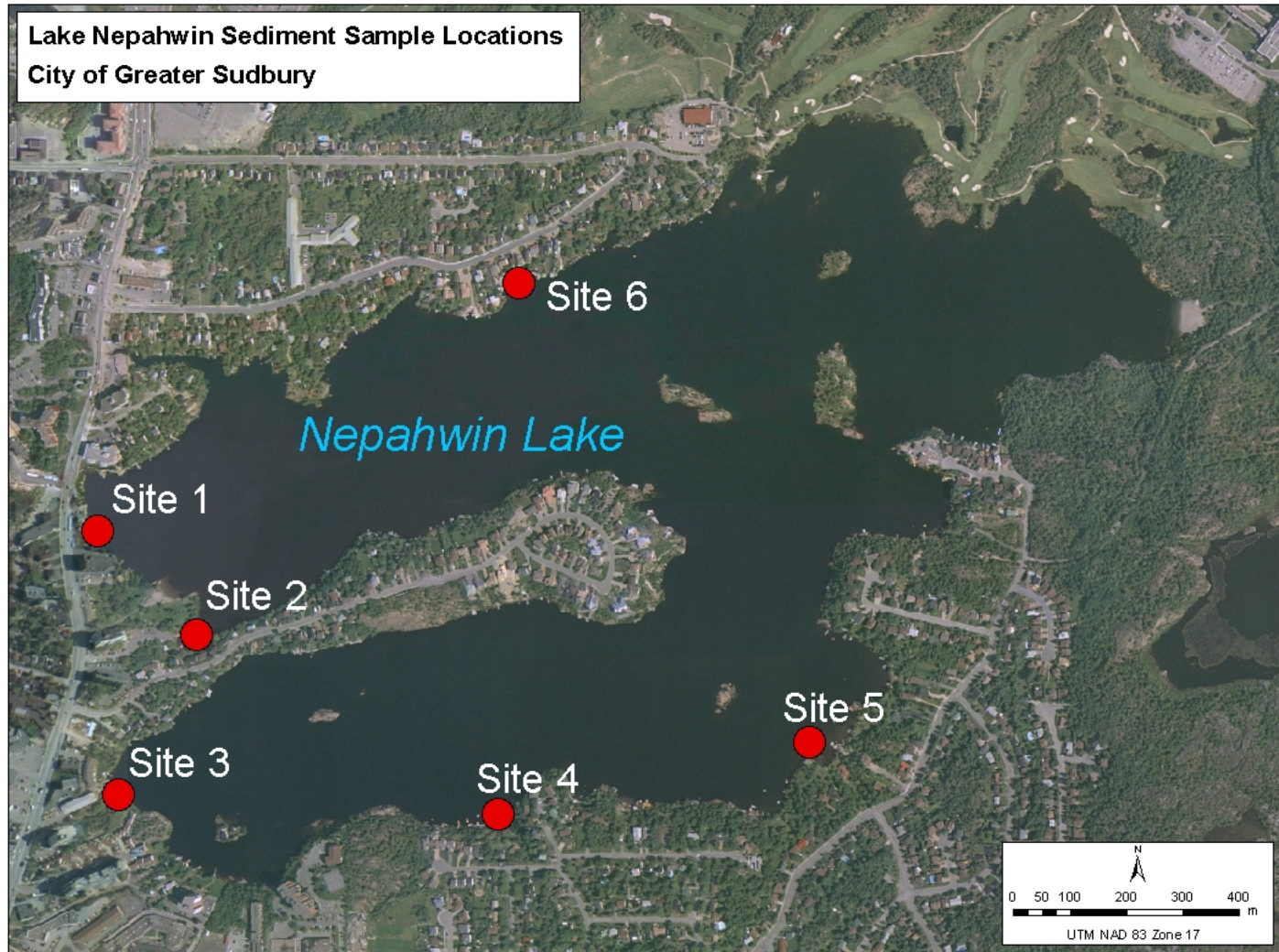
RECOMMENDATION THAT:

- Dominion Divers (2003) Ltd. be awarded a contract to carry out an underwater inspection and report on 6 sediment plumes in Lake Nepahwin for a cost of \$11,025.00 plus applicable tax
- THAT Dominion Divers (2003) Ltd. be awarded a contract to remove sediment from one sediment plume site for an upset cost of \$55,713.00
- THAT a total budget of \$96,000.00 be approved for the Lake Nepahwin sediment plume removal pilot project and that funds for said work be taken from the Drainage Envelope for the 2005 Capital Budget.

Lake Nepahwin Sediment Plume Removal Background

- Lake Nepahwin is a small urban lake of approximately 134 hectares in the South End of the former City of Sudbury. This lake drains an approximate 700 hectare watershed that extends from the south west by-pass to Walford Road and to the Laurentian University.
- There are 6 major storm sewer drainage systems which outlet to the Lake. These systems are underground pipes which accept surface drainage from roads, institutional properties, commercial industrial properties and residential properties.
- Over the past 30 to 40 years, within the Lake Nepahwin drainage area, silt, sand and small gravel have entered the storm sewer systems and been washed into the lake creating plumes or deltas of sediment. Many of these plumes are now visible to the eye above or below the water surface.

Plume Map



Lake Nepahwin

Sediment Plume Removal *Background*

- In 1999, the Region of Sudbury had a stormwater management study completed on Lake Nepahwin which concentrated on the “four corners drainage shed” and the Rumball Terrace 60 inch diameter storm sewer outfall.
- This report recommended the installation of 11 storm sediment interceptors on roads or adjacent parking lots at a total cost of \$500,000.00 in 1999 dollars. To date, these installations have not been made.
- Since this report, the CGS has required the installation of stormwater management control on new commercial/multi-residential developments within the watershed area.

Lake Nepahwin

Sediment Plume Removal *Background*

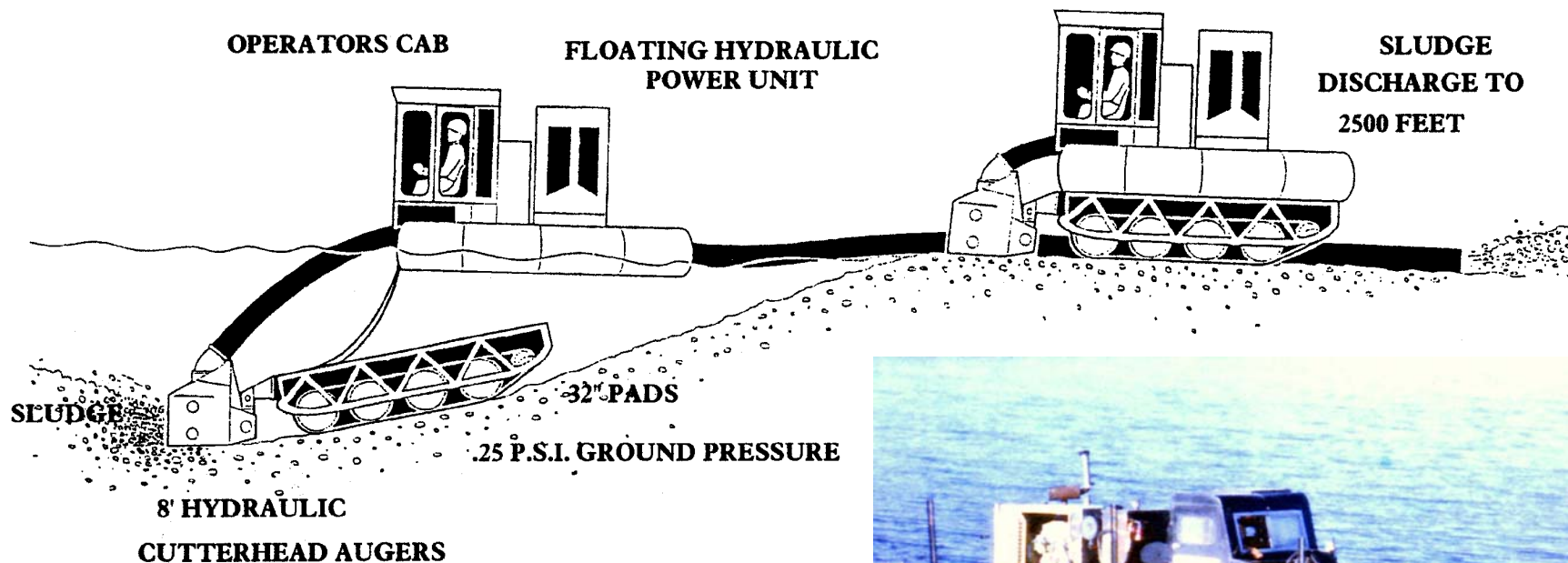
- In February of 2005, the DFO advised the City that the existing sediment plumes at the six major storm sewer outlet sites were impacting fish habitat and must be removed to satisfy the requirements of the Fisheries Act.
- As a first step, the City in association with the Laurentian University Lakewater ecology unit had an underwater survey completed to establish the surface profile of the 6 sediment plume locations.

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Three Potential Methods for Removing Sediment

- **Backhoe Excavation to Trucks**
 - Cost \$400k - Not acceptable by DFO & unable to get to all sites
- **Excavation on a Marine Barge**
 - Cost Site #4 alone \$265k approx cost for 6 sites in excess of \$800K – Not acceptable by DFO
- **Sub Cat Removal Method**
 - Cost 6 sites approx. \$643K

Subcat Removal



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Recommendation: Sub Cat Removal Method

The cost of sediment removal is substantial.

Our recommendation is to award Dominion Divers of Manitoba a limited contract with an upset limit of \$66,738.00, to deal with the sediment of site number 1 and any additional work that can be accomplished within the operational upset limit.

The award will be subject to the development of a contract agreement with terms and conditions satisfactory the City and the contractor.

The City will provide work support to Dominion Divers by providing trucking of filled filter bags to the landfill and any access related costs. The budget for this aspect of the work is \$29,262.00.

Therefore a pilot project cost of \$96K

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Questions?