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1995

## Lake Winona dredging, 1995

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180,700

8. Place 2.0', 180,000 cubic yards of organic ooze on top of sand, dry to 1.0', dredge out 14 acres west of hospital, deepen Lake from 8' to 16'.

Rec by Lake Winona Committee, ready to meet as resource.

9. Will end up with approximately 1/2 of East Lake to 16' or greater.

10. February 22 - from ice:  
Five test holes were drilled, samples had to be split for second lab analysis.

Tested according to Corps requirements

Confirmed that 1986 sounding plan was accurate.

- Test for:
- Volatile solids
  - 11 heavy metals
  - Chlorinated hydrocarbons
  - DDT
  - Pesticides
  - PCBs

Split sample for second lab analysis

Schedule

11. Submit test data to required agencies
12. Go through environmental assessment
13. Obtain permits
14. Develop Financing plan

DREDGING LAKE WINONA  
MARCH, 1995

*additional  
270,900  
plus 129,000 yd<sup>3</sup>  
to fill 10-acre  
ooze hole?*

Cost Estimate

1.	Dredging sand (pay on in place volume)	1,300,000 cy @ \$2.10/cy	\$2,730,000
2.	Dredging silt and organic ooze to be placed on top of sand 2.0' deep	180,700 cy @ \$2.00/cy	361,400
3.	Clearing	81 acres @ \$500/AC	40,500
4.	Grub Bruski Drive and street East of Bruski (3700 x 70/43,560) = 6.0 AC @ \$2,000/AC		12,000
5.	Mobilization (60% up front)		100,000
	<i>mitigation?</i>	Engineering & Testing	200,000
		<b>TOTAL COST</b>	<u>\$3,443,900</u>

Use 3.5 million

Cost Benefit to Riverbend Industrial Park

Value without permits	81 acres @ \$500/acre	\$ 40,500
Value with permits	81 acres @ \$5,000/acre	\$ 405,000
Value filled with utilities, etc.	81 acres @ \$25,000/acre	\$2,025,000

*+ 350  
~~479~~,000 yd<sup>3</sup> for } benefit to  
Schain & parks } Schain IP*

DESIGN NOTES - 1995  
 DREDGE 1,300,000 CY OF SAND  
 NEED 950,000 CY TO FILL 81 ACRES

Depth of sand in Lake 14.4'  
 Depth of silt and organic ooze in Lake 7.2'

I. Sand area to be dredged  

$$\frac{1,300,000 \times 27}{14.4} = 2,437,500 = 55.9 \text{ acres} = 56 \text{ acres}$$

II. Silt and organic ooze to be dredged from sand area - 25%  

$$\frac{2,437,500 \times 7.2' \times 0.25}{27} = 4,387,500 \text{ ft}/27 = 162,500 \text{ cy}$$

Pile 10' depth

$$\frac{4,387,500}{10 \times 43,560} = 10 \text{ Acres in Riverbend}$$

Pile 350,000 cy of sand + 43,560 x 10 AC x  $\frac{8}{27}$  depth  
 = 129,000 cy

$$350,000 + 129,000 = \underline{479,000 \text{ cy}}$$

Pile 20' high

$$\frac{479,000 \times 27}{43,560 \times 20} = 14.8 \text{ acres}$$

III. Area to be covered with 2.0' of silt and organic ooze  

$$81 \text{ AC} - (14.8 + 10) = 56 \text{ Acres}$$

Silt and organic ooze - Fig. 2.0' Depth

$$56 \text{ AC} \times 43,560 \times \frac{2}{27} = \underline{180,700 \text{ cy}}$$

IV. Area of silt and organic ooze to be dredged  
 Dredge 8' depth to 16'

$$\frac{180,700 \text{ cy} \times 27}{43,560 \text{ sf/ac} \times 8} = 14 \text{ Acres} + \frac{56}{70} \text{ Acres}$$

Dredge 70 Acres

479,000

950,000 to fill 81 acres  
350,000 to fill Schain I.P. & Lake Park  
~~129,000 to fill ooze hole~~  
1,429,000 total sand dredged

included in the 950,000

950,000  
350,000  
1,300,000

200,000 to fill 21 acres  
350,000 to fill 25 from I.P. & Lake Park  
125,000 to fill 11 1/2 acres hole  
Total sand dredged 775,000

L.W. DREDGE

200,000  
350,000  
125,000  
775,000

Feb 7, 95

Mundall

Bill Huber - DNR

12" dredge better than 16" -  
less H<sub>2</sub>O

Brennan } Ken Manning  
              } Victor Bur

81  
76 acres

Bruce Norton - Corps  
Dan Krumholz -

River bend

1 M sand

8' deep  
front area hauled in 15 acres

Nick Gullen  
Bob Bollert -

muck - fluffs to twice its volume  
must dry

hard to go over 30' ft without better  
pump on dredge  
25 ppm unrealistic turbidity

5% sand  
5% fill will contain 5% fines (silt etc)  
no problem because between grains  
more other fines will roll ahead & will be  
mixed.

then muck will be pumped on top  
to cap it.



Generally - a poor report  
cant read - binding cut off

Mar 31, 95  
Braun report

only <sup>del boring</sup> collected at 5 locations - the map  
shows 7 locations

map  
pts  
in this  
area - } why manganese so high, <sup>high</sup> TH-3, TH-4,  
is " bad? <sup>low</sup> TH-5, TH-6  
low - TH-7

Braun Intertec not very precise  
as compared to ATAS

~~legend~~ on table 1 is list  
of Corps specs? If so,  
why doesn't legend say so? Or  
were these just method Braun etc used?  
Why were tests like naphthalene

many of Braun's test limits were  
higher than specs.