



CITY OF LODI

COUNCIL COMMUNICATION

AGENDA TITLE: Request for Proposals - Lodi Lake Soil Removal

MEETING DATE: November 3, 1993

PREPARED BY: Public Works Director

RECOMMENDED ACTION: That the City Council approve the request for proposals on the removal of soil at Lodi Lake and authorize advertising for bids.

BACKGROUND INFORMATION: Almost one year ago, the Parks and Recreation Department requested that Lodi Lake be deepened and regraded. They have had problems during boating events with the shallow depth and wanted to see the Lake deepened to 10 feet. They also had other concerns about the condition of the Lake. The Council appropriated \$10,000 toward the project and the Engineering Division has done a number of things on the project.

The Fish and Game Department and Corps of Engineers were contacted to find out their requirements. For the work we contemplated at the Lake, a Corps permit is not needed. We applied for and received a Fish and Game agreement for the work (not in time to do any serious work in 1992/93). We took soil samples and had various engineering and chemical tests conducted. Finally, we surveyed the Lake and researched various publications and reports and prepared a short report, attached as Exhibit A. With regard to the depth issue, the report noted the high cost of excavating and regrading the Lake (\$200,000 to \$400,000). It was noted that we may be able to find someone who wished to use the soil to do the work at little or no cost to the City. That is the focus of this request for proposals.

After that report was written, we received the Fish and Game agreement. Some of their conditions are:

- the bottom be graded such that fish will not be trapped (i.e., eliminate the ponds that form when the Lake is drained)
- any tubes in the way of the grading be transplanted
- no silt be allowed to run into the River

We have also gone through another summer. This time we had fairly high water levels, after last year's wet season which ended the drought, to the point where there was concern by Parks and Recreation staff over the condition of the levee near Pig's Lake.

Given the above, staff feels it is worth the effort to see if there is some interest in excavating the Lake at little or no cost to the City. The main drawbacks to proceeding are the typical construction inconveniences and the wear and tear on the access roads within the Park, which could be significant.

APPROVED

THOMAS A. PETERSON
City Manager



recycled paper

Although the long-term plans for the Lake involve building a land bridge which will need dirt, there should be enough left within the Lake area assuming we can have the Lake bottom below the bottom of the River.

We have prepared a plan and specifications that attempt to be flexible in methods and timing and ask that the proposer outline their basic plan of excavation and cost (or royalty) to the City, if any. The specifications allow for a multi-year contract and waive bonding and other typical contract requirements if the cost to the City is less than \$5,000. Otherwise, it will be a formal public works contract. As of this writing (October 26, 1993), the plan and specifications are not ready for inclusion in the Council packet. The plan and specifications will be ready in time for the November 3 Council Meeting to allow persons to submit a proposal for review by the Council on December 1 and still get some work done on the Lake this year.

FUNDING: Lodi Lake Capital Outlay Fund.



Jack L. Ronsko
Public Works Director

Prepared by Richard C. Prima, Jr., Assistant City Engineer

JLR/RCP/lm

Attachment: Exhibit A, Lodi Lake Report on Operational Problems Summer '92

cc: Parks and Recreation Director
Purchasing Officer

LODI LAKE
REPORT ON OPERATIONAL PROBLEMS
SUMMER '92

Prepared by the City of Lodi Engineering Division, January 1993

Problem

The Parks and Recreation Department has indicated the four problems listed below in operating Lodi Lake:

1. Shallow areas in the east end of the Lake where boat propellers drag the bottom.
2. High bacteria counts in the Lake which required closing the beach swimming area.
3. The presence of floating weeds, a nuisance to swimmers and, to some extent, boaters.
4. The Parks and Recreation Department also voiced the Department of Fish and Game concern that the shallow Lake was too warm to support cold-water sport and migratory fish, such as trout and salmon.

Below is a brief discussion of the four problems. Conclusions and suggestions are detailed at the end of the report.

Depth

Initially, the Parks and Recreation Department felt most of the problems stemmed from the idea that the Lake has silted up several feet over the years and it should be dredged to its original depth. They also thought it would be good to have the Lake be 8 to 10 feet in depth, or more. The current Lake depth is between 5 and 10 feet. *

To determine if the Lake had silted up, the City surveyed the bottom of the Lake. A comparison to a Lake-bottom survey done in 1959 showed little or no change had occurred in the overall depth of the Lake.

Contact with the WID, who controls the water surface elevation of the Lake, showed that during the summer there were occasions when the water surface elevation was as low as 38.5 feet instead of 41.0 feet. ** This means the Lake depths would vary from 2.5 to 7.5 feet rather than the much deeper figures mentioned earlier.

*This is the range of depths when the water surface is at 41.0 feet.

**41.0 feet is the maximum water surface elevation allowed at Woodbridge Dam.

Bacteria

The second problem was high bacteria counts which forced the closing of the beach swimming area. The Parks and Recreation Department thought that a combination of the shallow Lake, warm water and lack of circulation of water from the river were the cause of the problem. In June 1985, an extensive round of bacteria testing in and around the Lake was performed by the Water/Wastewater Division. The results of the tests did not locate a source of the bacteria nor a relationship to temperature or lack of circulation of water from the River. It did show that overall the bacteria counts in the River were higher than those in the Lake. Therefore, circulating more River water through the Lake would not necessarily lower the bacteria count.

Weeds

The third problem identified was the presence of floating weeds. The Parks and Recreation Department first thought these were plants that were anchored and growing from the Lake bottom and that deepening the Lake would discourage their growth. However, examination of the Lake bottom showed no indication of plant life anchored to the Lake bottom other than the tule reeds near the edge. Therefore, deepening the Lake would have little effect on the floating weeds. Page 12 of the Spink report on Lodi Lake covers the factors controlling algae. The Urban Land Institute's Bulletin 72 on Lakes and Ponds, Page 61, covers aquatic vegetation and lake maintenance. Bulletin 72 suggests some stopgap chemical treatments for vegetation control. It also indicates physical removal of the weeds for control. Generally speaking, when the conditions of sunlight, temperature and nutrients in the Lake are proper, plant life will grow.

Fish

The fourth problem is really stated as a question, "Is the Lake too warm to support cold-water fish?". The Federal Energy Regulatory Commission (FERC) EIR on the Lower Mokelumne River Project indicated that the whole river area near the Woodbridge Dam was too warm for several summer months in hot and dry years. This report also indicates remedial alternatives which do not involve Lodi Lake.

Conclusions and Suggestions

1. Shallow Areas - It has been fairly well established that the Lake has not silted up to any large extent and the shallow area was created by the low water levels of a 6-year drought. Though this condition may occur again from time to time, the cost to deepen this shallow area and remove the 4,000 cubic yards of dirt could be as high as \$200,000 to \$400,000, at \$5 to \$10 a cubic yard. These prices would apply on a contract for removal of soil. We are also exploring the possibility of having the excavation done in exchange for the value of the dirt. This would be a performance-type contract and

would have to give the contractor great latitude in when and how much material is to be removed. Tests of the lake-bottom soil for street or fill purposes showed a range of values from good to fair. However, Department of Fish and Game requires permits for this type of excavation. With this and the heavy rains, it is unlikely that any work could be started before the Lake is filled again in March.

2. High Bacteria Counts and Beach Closings - This multipurpose lake is hardly the ideal location for a swimming area. The water is subjected to contaminants from the storm drains that empty into the Lake, from ducks and geese that live on the Lake, from wastes from the cattle operation on the river adjacent to the Lake, and likely contamination from the swimmers using the beach. It was thought that the Wading Pool, which is drained daily into the Lake, may also be a source of contamination. Though it is still drained daily, it is generally kept chlorinated. Any or all of these could be contributing to the problem.

To minimize the amount of days the beach is closed, all of the above mentioned sources of contamination may need to be eliminated or at least minimized.

3. Floating Weeds - Occasional blooms of floating plants can be controlled with chemicals and then physical removal of the plants. Proper identification of the plants and a recommendation of treatment should be from experts in this field.
4. Warm Water and Fish Mortality - No recommendation will be made here. The problem is not isolated to Lodi Lake but is a problem of the entire river system and the solution to the overall problem may not even involve the Lake itself.

Materials Sited

- Feasibility Report/Lodi Lake Modification, The Spink Corporation, April 1974.
- Lakes and Ponds, Technical Bulletin 72, The Urban Land Institute, 1976.
- Lodi Lake Bacteria Testing, Frank Beeler, Senior Laboratory Technician, 1985.
- Proposed Modifications to the Lower Mokelumne River Project, California, Draft Environmental Impact Statement, Federal Energy Regulatory Commission, Project #2916-004, October 1992.