



## LINCOLN - BOWLING

### **BOWLING LAKE**

#### **Community ...**

**B**owling Lake and park are near NW 48<sup>th</sup> and West Cumming streets, in the northwest corner of the Lincoln Airport. The lake and surrounding property are owned by the Lincoln Airport Authority and leased to the City of Lincoln. The lake was originally constructed for water skiing and recreation by U.S. Air Force personnel who were stationed at the former Lincoln Air Base. It is now used for fishing, picnicking, hiking, wildlife viewing, non-motorized boating, ice-skating and special events.

#### **Challenges ...**

Bowling Lake is isolated by a man-made dike from an adjacent unnamed intermittent stream that drains approximately 750 acres of prairie into Oak Creek. However, this drainage, were it to be diverted into the lake, does not have enough water to maintain the lake at its basic, conservation pool level. That has led to lake water levels being maintained by additional mechanical pumping from nearby Oak Creek. Unfortunately, this pump lacked a screening device to prevent unwanted fish from entering Bowling Lake. Due to the lake's overall shallowness, fish kills had been documented five times. Shoreline erosion from wind-generated waves also inhibited growth of aquatic macrophytes by scouring and shading.

#### **Solutions ...**

The Bowling Lake Aquatic Habitat Rehabilitation Project, coordinated by the Nebraska Game and Parks Commission, was implemented in two phases. Phase 1 involved excavating 120,000 cubic yards of sediment from the lake basin and adjacent pond. Phase 2 involved the excavation

and relocation of 83,000 cubic yards of additional sediment from the lake basin. This was accomplished during the process of reshaping banks to improve angler access, stabilizing shorelines, constructing a second access to the island and further deepening the lake. A fish screen was also installed as part of the new pump system to prevent the introduction of rough fish from the stream.

### **Results ...**

As a result of the two construction phases, 76 acre-feet of sediment were permanently removed from the basin, increasing the lake's volume from a pre-construction total of 125 acre-feet to a post construction total of 201 acre-feet. Further, eight acres of the main lake were now 10 feet or more in depth, and 2.1 acres of the adjacent pond exceeded 10-foot depths. Vegetation coverage was increased to 25 percent of the surface area, average summer chlorophyll concentrations and pH levels were lowered. The project was completed at a cost of \$833,076. Funding sources contributing to the project include Nebraska Game and Parks Commission, Nebraska Environmental Trust Fund, Nebraska Department of Environmental Quality and the U.S. Environmental Protection Agency. Engineering Services were provided by the Flatwater Group, Inc.

