

## NELIGH PARK LAKE

### Community ...

**N**eligh Park Lake is in western West Point. It was formed from a tributary to the Elkhorn River and lies in Neligh Park, which hosts baseball diamonds, camping and picnic areas, Cuming County Fairgrounds and Cuming County Historical Society displays. The 3.5-acre pond has been well used by residents for fishing, ice-skating, swimming, annual youth and senior fishing tournaments, and annual canoe races by the Cuming County Ag Society.

### Challenges ...

Sediment flowing into the pond from stormwater drainage through the park and from developing urban areas over many years decreased pond depth to about four feet. Overflow from the nearby Elkhorn River would backflow through outlet pipes constructed in the flood control levee, inundating the park with water, sediment and debris. As pond depths decreased, fish became virtually non-existent. In addition to being shallow, the pond was high in nutrients, lacked aquatic vegetation and exhibited poor clarity. All this adversely impacted aquatic life and overall aesthetics of the entire park.

### Solutions ...

Over the last 10 years, West Point implemented measures to address water quality impacts on the pond. These included installing flap gates on floodwater overflow pipes, and stormwater drainage projects to reduce watershed surface area. In 2002, funds to restore the lake were received through the CLEAR program. The

primary project component was the removal of 50,000 cubic yards of sediment, increasing maximum depths from four feet to at least 12 feet over 30 percent of the pond. Other project components included replacing inlet and outlet structures, shoreline restoration and stabilization, vegetation barriers and handicap access. After project completion the pond was stocked with largemouth bass, bluegill and channel catfish.

### **Results ...**

In addition to enhancing pond aesthetics, the project resulted in significant water quality improvements. The largest was in water clarity, which increased from six inches to over 36 inches. Reductions in nutrient concentrations were also achieved — phosphorus decreased 87 percent and nitrogen dropped 82 percent. Reductions in nutrient concentrations led to a 78 percent decrease in algae biomass. Improvements to water clarity has allowed for aquatic vegetation, which provides habitat, nutrient uptake and shoreline stabilization. The one-year project was completed at a cost of \$390,632 with CLEAR providing \$286,693; the city, \$93,409; and the Nebraska Game and Parks Commission, \$5,265. Engineering services were provided by Gilmore and Associates.

