Pinnacle Engineering

Lake Winona Dredging and Industrial Park Development

28 Acre Land Parcel—Winona, Minnesota

In early 2000, Pinnacle began work on the development stages of a 32-acre retail center, one of the last remaining large commercial properties in Winona. Pinnacle's work in the areas of environmental assessments, dredging permitting, soil and groundwater investigation and remediation, wetland delineation and mitigation, and geotechnical investigation were instrumental in getting this large development project completed.

Project Highlights

The closure of this site and the preparation of the site for development were completed with over 400,000 cubic yards of material that was dredged from Lake Winona.

The Challenge: The property had formerly been used as a fill site by a local foundry company since the early 1980's. The property owner was in violation of solid waste rules per the MPCA for "landfill" on the site, and at the same time, was attempting to sell the property to a developer. In order to satisfy all the parties involved and minimize potential impact to the underlying groundwater, Pinnacle conducted a detailed site investigation and risk assessment at the site and developed a Response Action Plan involving the construction of the retail development over the top of the former foundry sand landfill. The MPCA VIC and Solid Waste programs accepted the development plan as an alternative for landfill closure.

The Issues:

- The development site consisted of over 12 acres of wetlands.
- The site is situated within in the historical floodplain of the Mississippi River, underlain by up to 20 feet of soft, clayey soils with relatively high organic content.
- The development site is situated in a topographically low area and in need of additional fill before construction can take place.
- The site required in excess of 400,000 cubic yards of fill to become usable.
- The project required extensive assessment and permitting to assure Lake Winona would be enhanced by this extensive dredging project.

Environmental Assessment:

Pinnacle conducted Phase I and II Environmental Site Assessments on the properties, and completed a Environmental Assessment Worksheet to ensure that all environmental aspects of the project were assessed. Pinnacle coordinated site remediation through the MPCA VIC program and prepared a Response Action Plan that involved the use of dredge sand from Lake Winona as additional fill for the building site. Pinnacle obtained a dredge permit for the City to remove dredge sand from Lake Winona for use on the development

Maple Grove, MN ph. 763-315-4501
email: pinnacle @pineng.com
1-800-366-3406

Rochester, MN ph. 507-280-5966
email: rochester@pineng.com
web: www.pineng.com

property. An estimated 400,000 cubic yards of dredge sand was utilized to bring the site up to grade to match the surrounding developed properties.

Wetland Delineation and Mitigation:

Pinnacle identified and delineated over 12 acres of wetland that needed to be filled during the development activities. In compliance with Minnesota rules, Pinnacle developed a wetland replacement plan on 25 acres of farmland near Kellogg, Minnesota, as well as assisted the client in securing a conservation easement for the newly created wetlands.

Dredging Issues:

Lake Winona is a shallow weed choked eutropic lake. The sediments at the bottom of the lake are underlain by highly permeable sand deposits.

Pinnacle completed sediment surveys of Lake Winona and successfully convinced the MDNR that this project was beneficial to Lake Winona. Pinnacle was responsible for obtaining all relevant environmental permits for this project and also provided geo-technical services to accommodate placement and settlement of the dredged materials.

Project Team:

Eric Hansen, P.E. —V.P. Environmental Engineering/Geotechnical
Mike Hultgren, P.G. —Project Manager
Scott Thelen, Matt Bartus —Wetland Services
Eric Simonson —Field and Geotechnical Services
Jim Holland, P.E.—Principal-In-Charge