



Retail Center Development

INITIAL REDEVELOPMENT PHASE—WINONA, MINNESOTA

28 ACRE LAND PARCEL

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

Project Highlights

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 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, partially filled with foundry sand and in need of additional fill before construction can take place.



Environmental Assessment:

Pinnacle conducted Phase I and II Environmental Site Assessments (1/27/2000), and an Environmental Assessment Worksheet (1/27/2000) 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 modified dredge permit for the City to remove additional dredge sand for use on the development property. An estimated 200,000 cubic yards of dredge sand was brought in to bring the site up to grade to match the surrounding developed properties.

Wetland Delineation and Mitigation:

Pinnacle 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.

Geotechnical Investigation:

Pinnacle's Geotechnical investigation of the site confirmed soft soil, consisting primarily of organic silt, clayey silt, and silty clay, to be present under the entire proposed building area. Since these soils are weak and compressible, and not suitable for conventional shallow footings without correction, Pinnacle recommended that the building pad areas be surcharged with up to 10 feet of fill in order to preload the soft soils prior to construction.

The developer proceeded with development plans of the retail center.

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

