

# Heritage Meadows Village Center

Plainfield, IL



## **Client**

Servicestar Development

## **Scope of Services**

Hydrologic/Hydraulic Analysis

Storm Drainage Design

Stormwater Management

Commercial Site Design

BMP Design

Dam Permitting

Cost Estimating

## **Project Duration**

2004-Ongoing



The Heritage Meadows Village Center project demonstrates our successful site design including implementation of BMPs for commercial/retail development. In fact, the site has been showcased on a tour given by land planners in Plainfield, Illinois to local interest groups concerned with watershed revitalization in association with land development.

In the existing condition, a significant portion of the site was inundated by the 100-year floodplain of Wolf Creek. To provide additional area for the commercial development, Wolf Creek was relocated to the western edge of the property and reconnected with the original creek to the south of the property. A detention basin was also designed to detain runoff from the commercial site and provide compensatory storage for fill within the previously existing floodplain limits. The detained runoff is separated from Wolf Creek by a berm set at the 10-year frequency flood elevation.

Hydraulic modeling of Wolf Creek was performed utilizing flow rates published in the Federal Emergency Management Agency Flood Insurance Study report for Wolf Creek at the project location. A channel was also added upstream of the Wolf Creek location along with a re-designed culvert at the road crossing at the northern portion of the site. This revised structure also required a Dam Safety permit from the State of Illinois. All changes were made in the proposed conditions hydraulic model and analyzed to ensure that downstream flood elevations did not increase. In addition to the detailed stormwater management design, several Best Management Practice measures were incorporated with the site design. The detention basin was constructed with a wetland planted bottom for water quality improvement and plunge pools at the outlets to serve as sediment basins to protect the wetland plantings. Fish riffles were also incorporated into the re-design of Wolf Creek to provide habitat for fish and improve water quality through aeration. Native planting seed mixtures were prescribed for the channel banks and overbank areas to ensure habitat and plant function previously provided by Wolf Creek was replaced. The designs for this unique and challenging project provided a benefit to the client while also providing a watershed benefit to Wolf Creek.