



**PROJECT:**

# Drahos Northwoods

Leading the way with sustainable solutions

## LOCATION

**Crow Wing County,  
Minnesota**

## PROJECT TYPE

**Residential Wastewater**

## COMPLETION DATE

**2008**

## WASTEWATER DESIGN

**Small diameter gravity sewer, 2 horizontal flow wetlands, denitrification reactor, infiltration bed system**

## NEED

Drahos Northwoods is a 48 home development in Crow Wing County, Minnesota along North Long Lake a few miles north of the City of Brainerd. The development is a cabin community with a focus on environmentally sustainable building practices. Because sewer services from the city were not available, a community wastewater collection, treatment and disposal system to serve the development was needed and a permit had to be obtained from the Minnesota Pollution Control Agency (MPCA).

## SOLUTION

A wastewater treatment system to manage an average wastewater flow of 17,000 gallons per day was provided. A small diameter gravity collection system transfers the wastewater from the homes to the treatment and disposal area. The treatment system consists of the following: 1,000 gallon stilling tank, two horizontal flow wetland cells with a total surface area of 12,288 ft<sup>2</sup>, and a denitrification reactor. The disposal system will include 10 equally sized infiltration beds with a total infiltration area of 43,200 ft<sup>2</sup>.

## BENEFIT

Jacques Whitford NAWE brings multiple disciplines together to create a comprehensive design solution. Disciplines including hydrology, soil science, engineering design and permitting expertise have been utilized for this development. Jacques Whitford NAWE provides science, engineering and operations solutions from the inception of a project through final implementation.



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