

Redesign of Door County Beaches

Project Information:

Client Name: Door County Soil and Water Conservation Department

Project Location: Door County, Wisconsin

Miller re-designed ten beaches in Door County, Wisconsin to reduce bacterial and non-point source contamination under an agreement with the Door County Soil and Water Conservation Department. All of these beaches had been experiencing frequent closures due to elevated bacteria levels in the water. The physical characteristics of each beach were surveyed and analyzed to produce specific designs for each to reduce *E. coli* contamination, improve stormwater quality, reduce runoff, and make the beaches more aesthetically pleasing while deterring birds. Selected for their “naturalized” design concepts and experience in sustainable design, Miller Engineers & Scientists worked closely with the Door County staff and Dr. Greg Kleinheinz, UW Oshkosh bacteriologist, to provide environmentally sound and economically viable options to minimize the challenges facing each beach while maintaining the natural beauty of the surroundings.

With the history of water quality monitoring already in hand, the Door County beach improvement process began with the physical surveys and analysis of storm water characteristics of each beach. A variety of conceptual alternatives were then developed for each, which were presented to the County. After public presentations to each community, final designs were developed. Three of the communities proceeded to execute the designs in 2009, and several more are expected to in the near future. This design work received the ACEC Engineering Excellence State Finalist Award in 2010, and was featured in Land and Water Magazine for its innovative and naturalized design techniques.



Project Highlights:

- Re-design of 10 beaches throughout Door County to minimize closures and alerts due to *E. coli* contamination.
- Naturalized site designs reduced storm water impacts at each location while maintaining or improving the aesthetics of the beaches in response to tourism concerns.
- WDNR Biofiltration Mix Standard was improved upon by Miller Engineers & Scientists. The new Standard mix specifications have been tested by UW-Oshkosh and show better than 85% effectiveness.
- Project designs won the American Council of Engineering Companies Engineering Excellence State Finalist Award in 2010.

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