



Water

Water Resources

Client
City of Sioux Falls

Location
Sioux Falls, SD, USA

Sioux Falls Stormwater BMP Master Plan

Project Highlights

- Provided the ability to meet stormwater quality regulations through a regional stormwater BMP network
- Provided cost opinions to determine fee level impacts to developers, stormwater utility rates, and other cost recovery measures
- Reduced potential permitting schedule by providing screening information to streamline the permitting process for: wetlands; archeological sites, and threatened and endangered species
- Facilitated planned growth within Sioux Falls

Project Description

CH2M HILL developed the regional stormwater BMP Master Plan for 64,000 acres of new development in Sioux Falls, South Dakota. The Master Plan used a watershed approach to determine strategic regional BMP siting locations based on minimizing wetland and other resource impacts and maximizing BMP coverage. The driver behind the BMP Master Plan was to address water quality regulatory requirements on a watershed basis.

To identify potential permitting requirements, the project inventoried existing natural resources, such as wetlands, threatened and endangered species, and cultural resources.

CH2M HILL developed hydrologic and hydraulic models using HEC-HMS software to simulate stormwater runoff and to design 28 detention ponds to match 5-year and 100-year post development peak flows with predevelopment peak flows. Water quality was addressed by determining a water quality capture volume for frequent storms based upon upstream impervious area.



Preliminary design was completed for five of the BMP sites. This included selecting the type of BMP used at each design location and the development of preliminary plan and detail drawings for the construction of the BMP.

The CH2M HILL team provided public education of the Master Plan by holding three public meetings, three separate meetings with the development community, and an educational seminar about BMP design targeted at the local engineering community.

CH2M HILL also developed cost estimates of the BMPs and an implementation plan with funding suggestions to assist the City with bringing the plan into action.

CH2M HILL completed the project within a 6-month timeframe on budget and on schedule.

Permitting related to items such as: wetland permitting, threatened and endangered species, and archeological resources were reviewed to streamline the future permitting process. To address the Section 404 permitting process, the project provided a wetland impact screening analysis



to demonstrate wetland avoidance and impact minimization. An archeological review conducted by the local expert screened new development areas to identify locations more or less likely to harbor archeological resources. Threatened and endangered species were reviewed to determine potential habitat types and the applicability to Master Plan BMP sites.

With CH2M HILL's input, Sioux Falls determined future stormwater utility and land development rates based upon the preliminary design cost opinions developed during the Master Plan process. Sioux Falls will implement the Master Plan improvements over the next 10 years (2004 to 2014).