



# City of South St. Paul Wakota Arena Stormwater Retrofit



Before

**Project:** Stormwater runoff from the existing site entered the city storm sewer system and discharged into the Mississippi River without treatment. Over 2,100 square feet of snowmelt treatment areas and two bioretention cells with a combined area of 2,075 square feet were integrated into a parking lot renovation project to provide quality treatment for 5.46 acres of roof and parking lot surfaces.

**Practices:**

- Snowmelt Treatment Areas
- Infiltration Areas (Bioretention)

**Project Benefits:**

- Runoff volume reduction
- Reduction in TSS and Phosphorus

**Watershed:**

Mississippi River

**Partner:**

Minnesota Board of Water and Soil Resources



SE Bioretention Cell with Snowmelt Area

NW Snowmelt Area

NE Bioretention Cell with Snowmelt Area



After

**Funding:**  
 Total Project Cost \$60,395  
 Clean Water Fund \$33,150  
 Landowner \$27,245

**Location:**  
 South St. Paul  
 Minnesota

**Construction:**

2010



Clean Water Fund:  
 Protecting and restoring  
 Minnesota's waters  
 for generations to come.



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The existing parking lot drained to catch basins leading to the Mississippi River



The cells were over-excavated and clay lined to prevent side hill seepage to bluff



6" subdrains were installed. Backfilled with 70% coarse washed sand/30% compost



Native shrubs, metal edging, wood mulch and perimeter sod were installed



NW Snowmelt Area

The NW snowmelt area is a 12" deep basin with compost amended in situ soils, 6" subdrains, and hydro seeded grass turf provides infiltration for volume reduction and treatment for arena ice shavings and snowmelt.



NE Bioretention Cell with Snowmelt Area

The NE and SE cells have a 3 foot depth of sand/compost media and 6" subdrains to provide biofiltration treatment. Temporary pool depths are limited to 12 inches maximum.



SE Bioretention Cell with Snowmelt Area

The grass turf areas adjacent to the cells are snow storage areas. The boulders prevent snowplow damages and snow storage within the cells.