



Thornton Composite Reservoir

Location: Thornton, Ill.
Owner: Metropolitan Water Reclamation District of Greater Chicago
Designer: Black & Veatch Corp. Inc., MWH Americas Inc.
Contractors: F.H. Paschen/Cabo Construction Corp., Joint Venture, Walsh/II in One, Joint Venture
Manufacturers: Medora, SteelFab Inc., Eaton, Sorenson, Quincy, Hubbell
Cost: \$429 million
Size: 7.9 billion gal



Thornton Composite Reservoir is the largest combined sewer overflow (CSO) facility in the world. The 2,480-ft-long, 1,580-ft-wide, 300-ft-deep reservoir can hold almost 8 billion gal of CSO—4.8 billion gal from the Calumet, Ill., deep tunnel system and another 3.1 billion gal for overbank flooding from Thornton Creek.

Although the reservoir is new to the area, Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) president Mariyana Spyropoulos said its impact has been immediate.

"When we at the Metropolitan Water Reclamation District of Greater Chicago envisioned creating the largest combined sewage reservoir in the world, we knew we were facing many challenges known and unknown to us," Spyropoulos said, "but after seeing the dramatic decrease in combined sewer overflows in the Calumet area, we quickly learned in one year that the reservoir is providing instant impacts and protecting our water environment."

The first step in creating the reservoir was receiving approval from the Illinois Environmental Protection

Agency for its groundwater monitoring plan. It detailed how groundwater would be sampled to ensure the CSO did not enter neighboring groundwater sources. A 9,800-in-ft double-row grout curtain along the reservoir's perimeter prevents that contamination.

The Thornton Composite Reservoir is located in an old limestone quarry. An active quarry to the south is separated from the reservoir by an interstate and a specially constructed roller-compacted concrete gravity dam. The dam—84 ft wide at its base and 36 ft wide at the top—filled a gap in a stone haul road for the old quarry. At 112 ft tall, the dam is one of the largest in Illinois.

"This majestic Grand Canyon of the South Suburbs we call the Thornton Composite Reservoir is more than an engineered chasm of limestone. It is functionally keeping our communities dry and our water clean," said Barbara McGowan, vice president of MWRDGC. "The reservoir's impact is equal to its size and stature. It protects 556,000 people in Chicago and 13 suburban communities from flooding and reduces pollution in our waterways." ☺