

Indiana Civil Engineering Project of the Year:

Consolidation of CSO 034/035 Tunnel Project, Indianapolis, Indiana

The City of Indianapolis recently finalized a combined sewer long term control plan that will largely eliminate combined sewer overflows into White River, Fall Creek, Eagle Creek, Pogues Run and other receiving streams over the next twenty years at a cost of about 1.8 billion dollars. This year's Civil Engineering Project of the Year represents an early and important component of that effort. This project, which includes the City's first-ever large diameter tunnel, will reduce sewage overflows into Pogues Run and, at the same time, remove property from the Pogues Run 100-year flood plain. The project incorporated the elimination of four CSO discharge points to Pogues Run just east of the I-65/I-70 inter-loop just east of downtown Indianapolis.

The project begins at the north end with a new diversion structure at 10th Street where it intercepts flow upstream of CSO 035. Approximately 3,500 ft of 72-inch diameter RCP conveys 68,000 gallons per minute of combined sewer flow from this diversion structure to another diversion structure located at Michigan Street and Dorman Street. During

dry weather, the new Michigan Street diversion structure sends flow to the city's wastewater treatment plant using an existing 48-inch sanitary interceptor. During wet weather, excess flow spills into the new 12-foot diameter tunnel that extends approximately 1,700 ft from the Michigan Street diversion structure to the existing entrance of the Pogues Run culvert at New York Street.

A key element of the project was the design and construction of the 12-ft diameter tunnel that was constructed under soft ground conditions at depths of 35 to 60 ft below the ground surface. An earth pressure balance tunnel boring machine was used to advance the tunnel. This machine was selected because of the high ground water table and the need to protect the structures, roads and utilities located along the tunnel alignment.

This machine allows the advancement of the tunnel below the ground water table, thus requiring isolated dewatering operations only at the three access shaft locations. The tunnel lining system consists of 5-ft long rings, each constructed of six, pre-cast concrete segments.

The project reached substantial completion on December 28, 2006. The result is that combined sewer overflow events will be reduced from the previous 22 to 38 events per year to only 4 events per year. This has significantly reduced combined sewer overflows to Pogues Run, thus improving water quality in the stream.

The owner for this project is the City of Indianapolis Department of Public Works. The design engineer was Clark Dietz, the tunnel contractor was Super Excavators, Inc., and the construction engineer was Christopher B. Burke Engineering, Ltd



Members of the project team of the Indiana Civil Engineering Project of the Year with Annual Meeting Chair Eduardo Calderin.