

Executive Summary

Main Pump Station Flow Meters and Access Platform Category F

The Allegheny County Sanitary Authority (ALCOSAN) initiated a Clean Water Plan and Wet Weather Plant Expansion Program to improve water quality and reduce combined sewer overflows in the Ohio River Basin. Johnson, Mirmiran & Thompson, Inc. (JMT) completed the Main Pump Station (PS) Flow Meters and Access Platform as a pivotal portion of the Woods Run Treatment Plant expansion. The project purpose was to install six 54-inch magnetic flow meters on the pump discharge lines in the existing Main PS that receives all wastewater flow entering the ALCOSAN plant. The flow meters will allow ALCOSAN to monitor all flow treated within the plant and allow for operations staff to measure the pumped flow into the existing headworks and future wet weather headworks systems.

The Main PS receives incoming flow via tunnels approximately 120 feet below the ground surface. The magnetic flow meters were designed at approximately mid-depth below ground. The Johnson, Mirmiran & Thompson, Inc. team developed a structural steel platform system to allow for safe access to the new meters for operation and maintenance. The installation of the six flow meters was strategically sequenced to allow for only one pump to be out of service at all times, ensuring that plant operations could function during all weather conditions. Additionally, remote transmitters were designed to allow reading of the flow rates from the ground level.

A 3D model of all improvements was developed which included the new steel platforms, flow meters and mechanical upgrades, concrete corbels, electrical improvements, and lighting.