

## Real-Time Monitoring and Notification of CSO Events

**Who:** Newburgh, NY

**Problem:** To provide the City of Newburgh, NY staff and public real time notification of CSO events. To prepare for increased regulatory requirements for annual reporting and notification.

**Details:** The prior telemetry system utilized pressure sensors that were required to be located at the bottom of the influent channel, in direct contact with the flow, and in the combined sewer regulator environment where they would be regularly impacted and damaged or displaced by debris. On numerous occasions under high flow conditions, several entire units were swept away down the CSO and lost at the outfall. The prior sensors required expensive calibration equipment and a proprietary consultant to perform the annual calibration of the telemetry system at each installation location. The prior telemetry system utilized a dedicated phone line for each telemetry station with only a single point of access and control which was located at the wastewater treatment plant. These hard lines were expensive, had regular loss of communication, and were very difficult or impossible to locate by the utility company when service was required.

**Results:** All the above problems were avoided. The SmartCover Systems wireless satellite connectivity proved more reliable than land phone lines, and at a lower cost. Any computer, tablet or smartphone with internet access can communicate with the telemetry system. There is little calibration needed. When calibration or sensor relocation is required, in-house staff can easily perform the required task with basic tools. The sensor is not in contact with the water, avoiding damage.

The new sensors are generally installed hanging from the manhole cover above. At some installation locations, some initial erroneous readings resulting in the discovery that in some locations within the sewer, plugs of air can cause the sensors to swing. At these locations, a restrained installation of the sensor is required. This has been accomplished in-house with stainless steel angle brackets and associated hardware. In some sites, initial erroneous readings were caused by low flows with a large distance from the influent channel to the sensor above. This challenge was overcome with the installation of replacement long range sensors.