



# Stormwater *case study*

## ***New Successful Method to Regulate and Divert Stormwater Flow for the City of Indianapolis***

There are a number of ways to eliminate combined sewer overflow events. These methods include building a new wastewater treatment plant, expanding an existing plant, building a deep tunnel to capture stormwater, building flow equalization or retention basins to handle peak flows, or better utilizing the storage capacity of the existing collection system.

The alternative that the City of Indianapolis investigated and eventually selected was better utilization of the storage capacity of the existing collection system. To accomplish this, the City selected a 72" pinch valve manufactured by Red Valve Company, Inc., Carnegie, PA.

### **Reasons for Selecting Pinch Valve Installation**

The City selected this alternative for two reasons:

1. The pinch valve vault and control structures could be rebuilt around the existing live interceptor.
2. When the valve was delivered onsite, the contractor could cut a section of the existing interceptor away and slip the valve in place. This resulted in approximately 12 hours of bypass pumping during valve installation. The installation took place during evening hours and did not impact the local customers in any significant manner.

The use of this technology is innovative for several reasons. First, using pinch valves to control flow within interceptors is a new use for this technology. Secondly, pinch valve technology allows the City to regulate the amount of flow diverted. Instead of technologies that divert all or no flow, the City modulates the pinch valve to utilize the capacity of the diverted flow to an interceptor to use its full capacity. Excess water is allowed through the other interceptor by modulating the inflation pressure of the pinch valve. Operating in this manner, the City of Indianapolis makes full use of the capacity of the existing interceptor system.

### **Performance and Cost-Effectiveness**

This innovative use of existing technology has proven its ability to modulate flow and consequently reduce the volume of overflows at 15 locations around the City. According to CDM, the City's data modeling vendor, pinch valves at McCarty and 10th Streets are reducing overflows

at a combined rate of approximately 720 million gallons per year. Furthermore, according to Zbigniew (Zig) Resiak, vice president and engineer at Triad Engineering Inc., installation of inflatable dams in live interceptors require additional resources as compared to pinch valves. "It takes approximately two weeks of additional labor and dewatering, as well as equipment, material and construction methods to install inflatable dams as compared to pinch valves," said Resiak. "We found them (pinch valves) to be very cost effective for the projects in Indianapolis, saving the City anywhere from \$150,000 to \$300,000," he added.

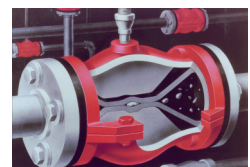
### **Conclusion**

Pinch valves have proven that they are an excellent innovative solution to the control of wastewater flow and, consequently, the reduction of overflows for the City of Indianapolis.

According to Carlton Ray, Senior Project Manager and an Environmental Engineer with the City of Indianapolis, "To our knowledge, this is the first application of pinch valve technology as applied to controlling flow. It has proven to be a reliable, cost-effective solution. It is a true honor to share this successful idea with the rest of the Public Works community."



*The 72" Type A Megaflex being installed in the interceptor vault.*



*The Megaflex closes drop tight on entrapped solids.*

Large Diameter