

# DETECT TO PROTECT

By Bob Rutemiller

*The beautiful city of Zephyrhills, Fla., is known for its cattle ranches, citrus groves, poultry farms and the Zephyrhills bottled water company. In this quiet community of 12,000, MultiTrode was able to provide a simple yet pragmatic storm water application.*

## Florida town adopts new, low-maintenance storm water pump controls

Zephyrhills is located in Pasco County on a ridge that divides the Hillsborough River Basin from the Withlacoochee River Basin. Lake Zephyr, an integral part of the city's storm water drainage system, eventually flows south to the Hillsborough River.

Although most of the city is drained by surface swales, their structural drainage system includes two retention ponds with pumps, emergency generators and force mains. The larger pond is east off US 301 and north of Sixth Avenue. The smaller pond is west of First Street and south of 14th Avenue. Both ponds are almost completely utilized.

The larger storm water pond acts as a reservoir, temporarily collecting surface water runoff from surrounding streets. Two large pumps transfer the water to Lake Zephyr, located approximately 2 miles from the collection area.

Recently, level switches controlling the two 40-hp pumps failed. As a result, the water level rose high enough to cause flooding in surrounding streets and a fire station.

### A Call For Help

The municipal public works street department is responsible for maintaining the city's storm water and drainage systems. Rob Funnell, supervisor of the street department, contacted MultiTrode looking for a more reliable level sensor and pump control system.

Funnell wanted a simple method of detecting water levels that required no moving parts and minimal maintenance. MultiTrode was able to assist the city with this challenge.

Jamie Saxe, MultiTrode regional sales manager, suggested the installation of two independent Simplex pump controllers (a MultiTrode Relay [MTR] with two single sensor probes) for each pump.

### Put to the Test

A few weeks after installation, Zephyrhills experienced heavy rain. To be precise: 2 in. of rain fell within an hour. Funnell noticed that the streets were

flooding and rushed to the pump station. He was happy to find the pumps running just fine.

Later, he discovered that the storm water drains had been clogged by new landscaping mulch, which had floated into the drains. Imagine his relief when he saw both pumps operating exactly as MultiTrode had specified.

### Moving Forward

As part of their regular maintenance procedure, Funnell's staff members test the pump operation by dropping the high-level (pump on) single sensor probe into the water, and the pump starts. Each Simplex pump controller (MTR) has an on-delay setting of 15 seconds, so ripples in the water do not cause a premature pump start.

The probes are easy to maintain. Unlike the city's original float switches, MultiTrode probes do not have moving parts, so they are not subject to failure.

Proven to be a reliable and cost-effective liquid level sensor, the probe used was designed for the tough and turbulent conditions encountered in sewerage, and it works in any conductive liquid. No electronics and no moving parts means there is nothing to fail, which is why the company provides a 10-year warranty.

The MTR provides pump control in combination with the conductive probes. The MTR has been proven in several applications, including wastewater, storm water, industrial effluent and sillage pits.

Adjustable conductivity settings and delays give the MTR the flexibility that other simplistic relay systems lack. The MTR controls one pump in a fill (pump up) or empty (pump down) application. [www](http://www.multitrode.com)

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Zephyrhills municipal public works staff was relieved when the new sensor and pump control system performed effectively in a flash flood just weeks after installation.