Luella Merrett Detention Basin Project

For residents of one neighborhood in Fort Worth, Texas, a storm too often meant a flooded home because of an undersized storm drain upstream. In order to mitigate the situation, the city of Fort Worth teamed up with the Fort Worth Independent School District (FWISD) to create a 9,400-gal detention basin using an open area at Luella Merrett Elementary School.

In exchange for use of the area, the city agreed to create a number of recreational enhancements to the site, including a soccer field, a softball backstop and a basketball court. The two entities also entered into a long-term maintenance agreement similar to the pact that facilitated the development of the Eastern Hills Detention Basin, an SWS Top Projects winner in 2012. The FWISD would provide routine mowing and upkeep of the new recreational facilities, while the city would deal with the basin structure and clean a nearby trash and debris separator. The cost of the project—approximately $1.5 million—was slightly more than half the estimated cost of improving the conveyance system to prevent downstream flooding.

The excavation of the site and the installation of the basin proved to be a logistical challenge. Because the project was still in the planning stage when the 2013-2014 school year ended, it was decided that an on-call contractor would be used instead of conducting a bidding process so work could begin as soon as possible. Primary excavation was completed by the time school was back in session, but the site still needed to be secured to protect students from jobsite hazards. Additionally, the project required the closure of a street that was used for bus loading and unloading at the beginning of the 2014-2015 school year, so the city coordinated with the school district and the Fort Worth police department to establish a new traffic pattern. The project was completed in May 2015.

Oak Glen Creek Bank Stabilization Project

It can be difficult to convince residents of an area in need of rehabilitation that temporary inconvenience can lead to a better future for them and others. Consider the case of Oak Glen Creek in Fridley, Minn. For several decades, the steep ravine containing the creek—which flows into the Mississippi River just upstream of the drinking water intakes for Minneapolis and St. Paul—had been in need of stabilization. Erosion impacted properties along the ravine, and sediment from that erosion found its way into the Mississippi. However, any significant stabilization effort would require unanimous buy-in from all 21 property holders in the affected area, and that proved to be difficult to achieve. But in 2012—after more than 20 years of effort—a breakthrough finally occurred.

"[Fridley] Mayor Scott Lund and engineer Jim Kosluchar, along with the staff of the Anoka Conservation District and Coon Creek Watershed District, were able to get consensus after many, many group and individual meetings with the residents," said Tim Kelly, district administrator for the Coon Creek Watershed District. "In the end, the mayor was critical in persuading the hard to convince property owners that now was the time to fix the creck."

The project utilized a combination of bioengineering and hard-armoring along the 1,400-ft channel, as well as cross vanes in the channel. The slopes of the ravine were thinned of canopy cover and downfall in order to promote the growth of native vegetation. Cedar revetments and brush bundles were added to combat runoff; under-seeded erosion fabric was installed along the toe riprap; and dormant willow and dogwood live stakes were planted above toe boulders and over the adjacent riprap upslope.

The project began in October 2012 and is expected to be completed in June 2016. It is estimated that the project will prevent the introduction of 633,600 lb of sediment per year to the Mississippi.