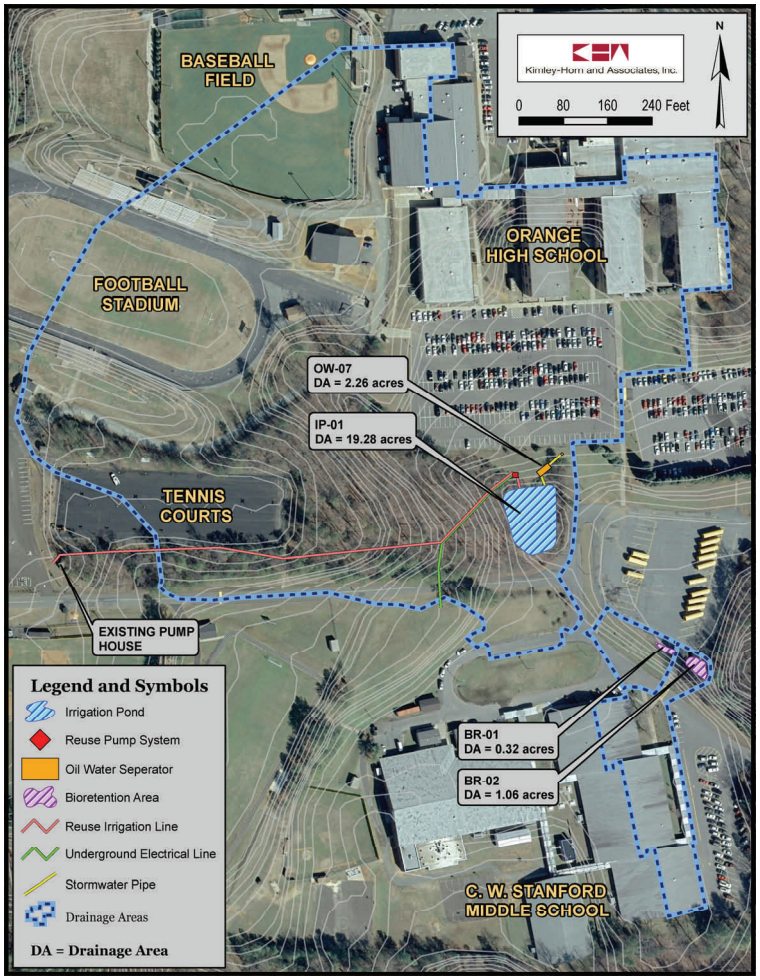
CW Stanford Stormwater Treatment and Reuse Project

The C.W. Stanford Stormwater Treatment and Reuse Project was developed to reduce stormwater runoff impacts from the C.W. Stanford Middle and Orange High school campuses. The idea stemmed from C.W. Stanford's Eco-Classroom project. By installing stormwater treatment, the Eco-Classroom project team believed water quality not only could be improved but also countless environmental education opportunities could be provided to students from both schools and ultimately the school district could save money.



The Eco-Classroom project team partnered with Piedmont Conservation Council to obtain an N.C. Clean Water Management Trust Fund grant to design and construct the stormwater project. The grant was awarded in October 2011, and construction was completed in May 2012. Kimley-Horn and Associates designed the project, and Fluvial Solutions Inc. constructed it. The project includes the following components:

Bioretention Cells—"engineered rain gardens" that filter stormwater runoff from portions of the middle school by utilizing plants and microbes within the special soil media to remove pollutants.

Stormwater Retention Pond and Irrigation Pump—to collect stormwater runoff from approximately 19 acres of the school campuses. Pollutants are reduced by chemical and microbial processes occurring in the pond. Collected stormwater further is filtered through a sand filter built into the irrigation pump. The stormwater then is used to irrigate athletic fields on both campuses.

Oil/Water Separator—to remove oil and grease carried by stormwater runoff from Orange High's student parking lot before the runoff enters the stormwater pond.

Trash, sediment, and hydrocarbons from the student parking lot that previously discharged from the high school campus now are being treated by the oil/water separator and stormwater retention pond. Sediment, fertilizers, high-velocity flow, and hot runoff from the two campuses' more than 19 acres now are treated by settling in the retention pond. Roof and parking lot water from the middle school is being treated by the bioretention areas before discharging to the ephemeral stream overlooked by the outdoor classroom.

According to engineering models, the pond will reduce nitrogen runoff from the school by 48 to 72 pounds and phosphorous runoff by 5 to 10 pounds annually. These reductions can be used to help offset reductions required by the state's Falls Lake stormwater rules. The engineering models also project that use of the pond will replace more than 3 million gallons of irrigation water per year, reducing the need for potable water and saving the school district approximately $15,000 per year. Because the fields drain back to the pond, it is expected that less fertilizer will need to be applied to the fields, which may result in further cost savings. Thanks to the educational opportunities, projected cost savings and reduced impacts to the environment, this project is truly a benefit to our community.

For more information, contact:

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Town of Hillsborough Stormwater Management Division

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