Winding Trails Low Impact Development Retrofit Project

Background

Winding Trails is a private membership organization providing year round recreational and educational activities. Winding Trails is dedicated to the conservation and stewardship of the natural woodlands and waterways.

In 1995 Winding Trials commissioned a design firm to develop Parking Areas, Soccer and Ball Fields, Tennis and Basketball Courts, Bocci Ball and Volley Ball, and Covered Picnic Pavilions (see Winding Trails Recreation Area Maps Attached). The design firm did not use any LID principles or techniques when designing or constructing the new recreation facilities and parking areas.

Scenario

Stormwater is currently being collected and conveyed directly to Dunning Lake with a system of catch basins and underground pipes (see attached maps). The current stormwater conveyance networks leaves no opportunity for polluted storm water to be slowed, infiltrated or renovated of pollutants before reaching the lake.

WT staff regularly test the water quality in the swimming area of Dunning Lake. They have documented a steady decline in water quality with nutrients and bacteria being the most problematic. Winding Trails management believes that the degradation of the water quality in the lake is being caused by polluted runoff from the recreation areas and parking lots (see LID Project Area delineated on attached maps).

Winding Trials has hired your consulting team to design and retrofit LID techniques into the existing recreation area and parking lots in an effort to improve the water quality in Dunning Lake. Winding Trails is concerned that if the water quality in Dunning Lake continues to degrade, there may be times during the summer when recreational swimming may need to be suspended due to health concerns. Be prepared to explain to the client why the current stormwater system in the Recreation Area is not working to renovate pollutants from stormwater, and why your plan will rectify the situation. In addition, WT is interested in exploring rain water harvesting to minimize the use of ground water for ball field irrigation.

Site Conditions to Consider

- 1) The soils of the recreation area are all sands and gravels well suited for stormwater infiltration.
- 2) Polluted stormwater runoff is generated by parking areas, tennis and basketball courts, soccer and baseball fields and the roofs of surrounding buildings.
- 3) The irrigation system for the athletic fields draws from groundwater wells.

Relevant Resources to Consider

- 1. <u>Low Impact Development A Design Manual for Urban Areas</u> University of Arkansas Community Design Center, 2010 (text provided to each team)
- 2. 2004 Connecticut Stormwater Quality Manual (CT DEEP, 2002) http://ct.gov/dep/cwp/view.asp?a=2721&q=325704
- 3. <u>Jordan Cone Urban Watershed Project</u> Interactive DVD (provided to each team)
- 4. UCONN Cooperative Extension Rain Garden Manual www.sustainability.uconn.edu/landscape/05-rain_gardens.html
- 5. CT LID Inventory by NEMO http://clear.uconn.edu/tools/lid_reg/
- 6. University of New Hampshire Stormwater Center 2009 Biannual Report http://www.unh.edu/unhsc/pubs-specs-info
- 7. Low Impact Development Center http://www.lowimpactdevelopment.org/publications.htm
- 8. Tolland CT LID Design Manual (revised 2010), http://www.tolland.org/wp-content/uploads/2008/02/lid-design-effective-2-1-2008.pdf

If Your Are Planning to Visit Winding Trails Before the Field Day in May

Winding trails is a membership recreation facility with an employee often stationed at the entrance gate house. Usually only members are allowed access. However, Winding Trail has graciously allowed teams to gain access if they choose to visit the site before the field day event. Just tell the gate keeper that you are registered for the CT Envirothon Field Day Event that will be held at their facility and that you are there to visit the ball fields / recreation area.