Why Retrofit? – Objectives and Benefits of Stormwater Retrofits

The objective of stormwater retrofitting is to improve the water quality mitigation functions of existing developed sites either lacking or having insufficient stormwater controls. In Connecticut, prior to the 1970s, site drainage design did not require stormwater detention for controlling

[66] Impervious area with a direct hydraulic connection to a storm drainage system or a waterbody via continuous paved surfaces, gutters, drainpipes, or other conventional conveyance and detention structures that do not reduce runoff volume is referred to as "Directly Connected Impervious Area (DCIA)." DCIA includes impervious surfaces that contribute stormwater runoff to a stream, other waterbody, or wetland. Impervious areas that are not directly connected to a storm drainage system, receiving waterbody, or wetland are considered "disconnected" and therefore not considered DCIA. DCIA can be disconnected through retrofits that retain and/or treat the appropriate portion of the Water Quality Volume as described in Chapter 4 - Stormwater Management Standards and Performance Criteria.

post-development peak flows. As a result, drainage, flooding, and erosion problems are common in many older developed areas. Furthermore, local and state stormwater regulatory requirements and the resulting stormwater designs in the 1980s and 1990s focused on detention and controlling peak rates of runoff, without regard for the quality of runoff, runoff volume, groundwater recharge, or other hydrologic impacts. Therefore, much of the existing, older development in Connecticut still lacks adequate stormwater controls.

Retrofits can be used to achieve stormwater and water quality objectives such as reducing pollutant loads to impaired water bodies and meeting pollutant load reduction targets in Total Maximum Daily Loads (TMDLs). Other related benefits of stormwater retrofits, particularly those that incorporate green infrastructure and Low Impact Development (LID) techniques, include:

- Recharging groundwater to support streamflow and drinking water supplies.
- Reducing flood risk by reducing runoff volumes.
- Mitigating impacts of climate change (increased precipitation, flooding, drought, and higher temperatures).
- Providing habitat.
- Improving community aesthetics and overall quality of life.

The CT DEEP MS4 General Permit requires regulated municipalities, CTDOT, and other state and federal entities to implement stormwater retrofits to disconnect and reduce DCIA and track the progress of their DCIA reduction efforts relative to specific reduction goals. Permit holders and/or municipalities can also identify stormwater retrofits as part of an off-site mitigation program for new development and redevelopment projects that are unable to fully comply with stormwater management requirements on-site.