Chapter 9 – Stormwater Retrofits

Introduction

This chapter provides guidance for retrofitting sites that are already developed to reduce the adverse impacts of existing stormwater runoff. A “retrofit” is a project that modifies an existing developed site for the primary purpose of improving the quality of and reducing the quantity of stormwater discharge. This is primarily achieved through disconnecting, and therefore reducing, Directly Connected Impervious Area (DCIA), as defined in Chapter 2 - Stormwater Impacts. Stormwater retrofits can be used to disconnect DCIA by converting impervious surfaces to pervious surfaces, redirecting runoff from impervious surfaces to adjacent pervious areas, and adding new or modifying existing structural stormwater Best Management Practices (BMPs) to infiltrate or reuse stormwater runoff from impervious areas.

This chapter describes the reasons for and benefits of stormwater retrofits, various retrofit approaches and types, identification and design of stormwater retrofits, quantifying retrofit benefits (i.e., crediting), and common retrofit applications. Additional guidance on stormwater retrofits can be found in the information resources at the end of this chapter.

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

What’s New in this Chapter?

- Consistency with stormwater retrofit requirements in the CT DEEP stormwater general permits
- New guidance on retrofit planning approaches
- Updated information on stormwater retrofit types and applications
- Use of stormwater retrofits for DCIA disconnection and reduction
- Use of EPA stormwater BMP performance curves for retrofit sizing and crediting
- Updated information on other resources and tools for stormwater retrofit planning and design

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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.