

Revisions to the Manual

Summary of 2023 Revisions

The practice of stormwater management, the scientific understanding of water quality impacts of stormwater runoff, and the state and federal regulatory environment have evolved substantially since the original Connecticut Stormwater Quality Manual was released in 2004 and then the LID Appendix in 2011. The primary objectives of the 2023 revisions to the Manual were to:

- Incorporate updated information on structural stormwater BMPs based on the current understanding of BMP selection, design, construction, and performance.
- Resolve conflicts and improve consistency between the Connecticut Stormwater Quality Manual and the Connecticut Guidelines for Soil Erosion and Sediment Control for more effective integration of construction-phase and post-construction stormwater management.
- Update the Manual for consistency with the CT DEEP stormwater general permit programs, in particular the post-construction stormwater management requirements of the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 General Permit), the General Permit for the Discharge of Stormwater from Department of Transportation Separate Storm Sewer Systems (CTDOT MS4 General Permit), and the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Construction Stormwater General Permit).
- Incorporate climate change and resilience considerations for stormwater management design and implementation.
- Enhance the usability of the Manual from the perspective of project designers and reviewers.

¹ The Natural Resource Conservation provides additional information specific to agriculture and stormwater control: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/water/?cid=nrcs144p2_027171

The 2023 revisions to the Connecticut Stormwater Quality Manual were made in conjunction with revisions to the [Connecticut Guidelines for Soil Erosion and Sediment Control](#). This parallel process was initiated to ensure these two documents provided consistent and complementary guidance.

The 2023 version of the Connecticut Stormwater Quality Manual incorporates revisions that include but are not limited to:

- Update and streamlining of the stormwater management standards and performance criteria ([Chapter 4 - Stormwater Management Standards and Performance Criteria](#)) for consistency with the post-construction stormwater retention and treatment requirements of the CT DEEP stormwater general permits, including incorporation of permit concepts such as on-site retention of runoff and disconnection of Directly Connected Impervious Area (DCIA). The updated manual also includes a process for demonstrating compliance with the stormwater management standards and performance criteria, incorporating use of the EPA stormwater BMP performance curves for demonstrating compliance with pollutant-specific pollutant load reduction targets when retention of the applicable water quality volume is not achievable.
- Consistent with the CT DEEP stormwater general permits and stormwater management approaches adopted by other states within EPA Region 1, greater emphasis on retention of stormwater as the preferred strategy for reducing stormwater pollutant loads (pollutant concentrations and volumes) and for restoring and maintaining pre-development site hydrology with respect to groundwater recharge and the volume, flow rate, duration, and temperature of runoff.
- Development of a new chapter ([Chapter 10 - General Design Guidance for Stormwater Infiltration Systems](#)) on the design of stormwater infiltration systems, which is the primary means of achieving the retention standard. This section provides updated guidance on site suitability, soil evaluation methods, sizing methods, and other design requirements for stormwater infiltration systems.
- Update and consolidation of the LID section of the 2004 Manual and the 2011 LID Appendix into a new chapter ([Chapter 5 - Low Impact Development Site Planning and Design Strategies](#)) on LID site planning and design strategies. The updated chapter provides additional guidance on the LID site planning and design process, LID hydrologic analysis, and criteria/credits for reducing DCIA through simple disconnection and other non-structural site planning and design techniques.
- Recategorization of structural stormwater BMPs based on function, replacing the previous “Primary and Secondary Treatment Practices” terminology and framework from the 2004 Manual.
- Update of design storm precipitation to incorporate available precipitation-frequency data for Connecticut for more resilient stormwater management designs. This includes updates

to design storm precipitation for stormwater quantity control ([NOAA Atlas 14](#)) and an updated water quality design storm (90th percentile 24-hour rainfall) based on updated rainfall data for Connecticut as of the development of this Manual.

- Incorporation of other climate resilience considerations including sea level rise and coastal considerations in the selection and design of stormwater BMPs in coastal areas, as well as design considerations for mitigating the potential negative impacts of climate change on stream temperatures and nutrient loads.
- Updated structural stormwater BMP selection criteria and matrices, as well as a new stormwater BMP selection flowchart to guide designers and reviewers in the selection of appropriate structural stormwater BMPs for a given project and site ([Chapter 8 - Selection Considerations for Stormwater BMPs](#)).
- An updated section on stormwater retrofits ([Chapter 9 - Stormwater Retrofits](#)), reflecting the importance of retrofits to the success of municipal stormwater management programs in achieving the DCIA disconnection goals of the CT DEEP MS4 General Permit. The updated stormwater retrofit guidance in the Manual also incorporates and/or references information from a regional stormwater retrofit manual that has been developed for New England.
- Updated section on the appropriate use of proprietary stormwater BMPs ([Chapter 11 - Proprietary Stormwater BMPs](#)), as well as new or emerging technologies, including criteria for evaluating the use of such systems and recommended third-party performance programs.
- Updated design guidance for specific types of structural stormwater BMPs with a focus on practices that are most used to meet the retention and treatment standards in the revised Manual ([Chapter 13 - Structural Stormwater BMP Design Guidance](#)).
- Greater emphasis on integrating construction and post-construction phase stormwater management, particularly how construction activities should be integrated with LID site planning and design strategies or can impact the effectiveness of post-construction stormwater controls such as infiltration systems.

Updates and Future Revisions

Technical information regarding updates to the Manual will be available at:

<http://www.ct.gov/deep/stormwaterqualitymanual>

Future versions of the Manual will reflect the technical updates found on the website. Notices regarding future revisions of the Manual will also be posted at this website.