Performance Criteria and are designed in accordance with the guidance contained in this Manual.

- **Standard 1 – Runoff Volume and Pollutant Reduction (for each design point)**
  - LID Site Planning and Design Credit Calculations
  - Impervious area and Directly Connected Impervious Area (DCIA)
  - Water Quality Volume, Water Quality Flow, and Required Retention Volume
  - Structural Stormwater BMP Sizing Calculations
    - Static and dynamic sizing methods (infiltration systems)
    - Drain time and groundwater mounding analysis (infiltration systems)
    - Required versus provided design volumes
    - Pollutant specific load reductions (BMP performance curves) where Standard 1 cannot be met by retention alone

- **Standard 2 – Stormwater Runoff Quantity Control (for each design point)**
  - Stormwater Runoff Calculations for Pre-Development and Post-Development (with and without stormwater BMPs) Conditions
    - Design storm depth and duration, recurrence interval, and rainfall distribution
    - Runoff volume and peak flow rate (2-year, 10-year, and potentially the 25-year, 100-year, 24-hour storms)
    - Runoff Curve Number
    - Time of Concentration (and associated flow paths)
  - Routing analysis for proposed stormwater BMPs including drainage routing diagram
  - Conveyance protection (including flow velocity calculations and outlet protection sizing) and emergency outlet sizing calculations
  - Downstream analysis hydrograph routing calculations
  - Storm drain system conveyance calculations

**Design Drawings**

Design drawings should be prepared by designing qualified professional, as defined in the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. Design drawings should be signed and sealed by the appropriate design professionals (landscape architects and/or professional engineers) responsible for the project design and consistent with their areas of expertise, including LID site planning and design elements and structural stormwater BMPs. The following design drawings should be included with a Stormwater Management Plan.

- **Existing (Pre-Development) Conditions Plan**
  - Location of existing man-made features on or adjacent to the site, such as roads, buildings, driveways, parking areas, other impervious surfaces, drainage systems, utilities, easements, septic systems, etc.
  - Surveyed locations of property boundaries and easements
o Drainage systems and sanitary sewers should include rim and invert elevations of all structures and sizes and connectivity of all pipes
o Vegetative communities on the site, including locations of tree canopy
o Site topography (2-foot contours based on aerial or field survey), slopes, drainage patterns, conveyances systems (swales, storm drains, etc.), drainage area boundaries, flow paths, times of concentration
o Locations of existing stormwater discharges
o Areas of steep (25% or greater) slopes
o Perennial and intermittent streams
o Inland wetlands and watercourses (and associated regulatory setbacks) as defined by a soil scientist in the field and flags located by a licensed land surveyor
o Locations of vernal pools
o Locations of 100-year floodplain, floodway, and flood elevations from current FEMA mapping
o Locations of soil types as identified by USDA NRCS mapping or soil scientist, test pit and soil boring locations, and field infiltration testing locations
o Areas of site contamination
o Location, size, type of existing structural stormwater BMPs and conveyance systems
o Limits of developable area based on site development constraints
o Coastal Jurisdiction Line (CJL) for properties fronting coastal, tidal, or navigable waters

➢ Proposed (Post-Development) Conditions Plan
  o Location of proposed man-made features on or adjacent to the site such as roads, buildings, driveways, parking areas, other impervious surfaces, drainage systems, utilities, easements, septic systems, etc.
  o Surveyed locations of property boundaries and easements
  o Drainage systems and sanitary sewers should include rim and invert elevations of all structures and sizes and connectivity of all pipes
  o Vegetative communities on the site, including proposed limits of clearing and disturbance
  o Site topography (2-foot contours based on aerial or field survey), slopes, drainage patterns, conveyances systems (swales, storm drains, etc.), drainage area boundaries, flow paths, times of concentration
  o Locations of proposed stormwater discharges/design points
  o Perennial and intermittent streams
  o Inland wetlands and watercourses (and associated regulatory setbacks) as defined by a soil scientist in the field and flags located by a licensed land surveyor
  o Locations of vernal pools
  o Locations of 100-year floodplain, floodway, and flood elevations from current FEMA mapping
Locations and results of on-site soil evaluation (test pits/soil borings and field infiltration testing)
- Areas of site contamination
- Development envelope and areas of site preserved in natural condition
- Location, size, type of proposed structural stormwater BMPs and conveyance systems. Structural BMPs should have rim, invert, and contour elevations and pipe sizes and construction material.
- Locations of soil erosion and sedimentation controls
- Locations of non-structural source controls

- LID Site Planning and Design Opportunities and Constraints Plan
- Structural Stormwater BMP Design Details and Notes
- Coastal Jurisdiction Line (CJL) for properties fronting coastal, tidal, or navigable waters

**Soil Erosion and Sediment Control Plan**

Consistent with Standard 3 of this Manual, project proponents must develop and implement a Soil Erosion and Sediment Control (SESC) Plan in accordance with local and/or state regulatory requirements, the Connecticut Guidelines for Soil Erosion and Sediment Control Guidelines, as amended (Guidelines), and the requirements of the CTDEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. The SESC Plan should, at a minimum, demonstrate the methods and designs to be utilized during construction and stabilization of the site following completion of construction activity. Erosion and sediment control measures should be included on the plans with sufficient detail to facilitate review of the design by the reviewing authority and proper construction of the measures.

**Operation and Maintenance Plan**

As required by Standard 4, project proponents must develop and implement a long-term Operation and Maintenance (O&M) Plan, which identifies required inspection and maintenance activities for structural stormwater BMPs. Chapter 13 - Structural Stormwater BMP Design Guidance of this Manual contains operation and maintenance guidelines and recommendations for each type of stormwater BMP. Appendix B contains maintenance inspection checklists.

Recommended elements of an O&M Plan include but are not limited to:

- Detailed inspection and maintenance requirements/tasks
- Inspection and maintenance schedules
- Parties legally responsible for maintenance (name, address, and telephone number)
- Provisions for financing of operation and maintenance activities
- As-built plans of completed structures
- Letter of compliance from the designer
- Post-construction documentation to demonstrate compliance with maintenance activities