

Date: _____

Project: _____

Reviewer: _____

STORMWATER/LID REVIEW CHECKLIST

Part 1: General Information

*Definitions for terms used throughout this document can be Found in the *2004 CT Stormwater Quality Manual*

1. Development Details

- Redevelopment of existing developed footprint. (no increase in impervious surface)
- Redevelopment of existing developed site with expansion of developed footprint
- New proposed developed site

2. Development Type

- Residential Commercial Industrial Mixed Use Other _____

3. Proposed Site Development:

Acreage of site: _____ ac.

Acreage of existing impervious surfaces: _____ ac. _____ % of site

Acreage of site proposed to be disturbed: _____ ac. _____ % of site

Acreage of total impervious surfaces: _____ ac. _____ % of site

4. Waterbody and Watershed Information:

Named waterbodies on or adjacent to the site: _____

Regional and subregional watersheds site is located in: _____

Are any waterbodies included on the CT Impaired Waters List? _____

If yes, name the impairment _____

and possible identified cause(s) and source (s): _____

Part II: Site Planning and Design

1. Stormwater Objectives for Surface Flows (check all that apply)

- Water Quality Treatment
- Run-off volume reduction
- Peak flow control
- Stream channel protection

2. Stormwater Objectives for Groundwater Recharge (check all that apply)

- Run-off volume reduction
- Stream channel protection
- Peak flow control
- Maintain groundwater resources

Storm event(s) used for #1 and #2: _____

2. Proposed site planning and Low Impact Design concepts used to minimize stormwater impacts: (check all that are addressed)

Development Designed to Minimize Impacts to Natural Features

- Preservation of large areas of land in a natural vegetated state
- Vegetated buffers have been provided and enhanced.
- Designed to fit the terrain. Natural drainage patterns maintained
- Stormwater treatment designed to reduce the impact on natural wetlands and vernal pools.
- Stormwater management conducted at multiple locations
- Designed to limit land disturbance/impervious surfaces.
 - reduced parking
 - reduced or zero lot line setbacks
 - shared driveways
 - cluster/open space subdivision
- Conservation and/or restoration of native soils. Compacted soils addressed.
- Creation of steep slopes has been minimized.
- Landscaping practices promote native/drought resistant/non-invasive plantings
- Lawn areas are minimized and use of organic lawn care practices promoted.

Development Reduces and Addresses Stormwater Impacts

- Impervious areas have been reduced and infiltration increased
 - Reduced street widths and lengths
 - Alternative cul-de-sac design and parking lot islands
 - Reduced parking lot size
 - Elimination or reduction of sidewalk widths or placement on only one side
 - Driveway alternatives incorporated; (shared, two track, permeable)
 - Removal or breaks in curbing where feasible
 - Use of permeable materials on roads, parking lots, sidewalks, driveways and patios
 - Use of vegetated green roofs
 - Infiltration of run-off through use of dry wells, infiltrators and permeable surfaces
- Impervious surfaces disconnected where possible; roof drains, pipe flow, curb openings
- Development has been designed to diffuse flow concentration by sheet flow, curbless design, perimeter swale/level spreader, etc.
- The Water Quality Volume (WQV) has been identified and appropriately treated.
 - Treatment of "first flush", 1" of rainfall
 - Incorporation of rain gardens
 - Soil amendments/filters
 - Use of Bioretention
 - Manmade wetland systems
 - Tree box filters
 - Grassed swales
 - Shallow vegetated depressions
 - Other initiatives/emerging technology_____
- Source controls and pollution prevention measures have been incorporated to minimize pollutant levels. Oil, grease and debris traps/separators have been used where needed.
- Methods for the control of increases in the peak flows, volume and flood control addressed.
- Use of cisterns and/or rain barrels for rainwater harvesting

Short and Long Term Best Management Practices Addressed

- Site maintenance for stormwater treatment controls during and post construction included.
- Maintenance access for all stormwater treatment practices included.
- Responsible party for implementation, maintenance and correction of stormwater treatment practices has been designated and appropriate contact documentation submitted.
- Treatment practices designed to minimize the potential for nuisance insects and vectors.
- Incorporation of additional barriers, collection and treatment systems for regulated substances or other uses of concern; (dumpsters, loading docks, service areas)
- Water quality monitoring of stormwater treatment practices addressed

3. Critical Resources and Details Included: Existing and proposed resources and details, on or adjacent to the site, affecting stormwater treatment and design which are included on the plan and/or in support documentation as appropriate (*check all which are addressed*)

Existing and proposed modifications to Natural Features

- Wetlands, streams, ponds, vernal pools, shorelines and coastal resources
- Flood hazard, flood zones and flood ways
- Surface and groundwater quality classification of on-site and adjacent water bodies
- Site vegetative patterns, existing and proposed (including native tree cover)
- Site topography
- Soils as defined by USDA/NRCS web soil surveys, including names and descriptions

Existing and Proposed Development, Infrastructure and Utilities

- Existing development and neighboring land uses
- Sub-grade walls, retaining walls, underground utilities and filled or excavated areas
- Wells, aquifers and public drinking water supplies
- Septic tanks and leach fields

Setbacks and Overlay Zones

- Regulated setbacks overlay zones, critical areas and greenways established by authorities

Stormwater

- A summary narrative explaining; overall stormwater management plan, changes to pre-and post-development peak runoff rates, volume and water quality for the site is provided.
- Drainage patterns and flow paths
- Watershed divides (pre and post) on map with associated acreages
- Impervious area and run-off coefficient
- Time of concentration flow paths and impervious coverage in each watershed are included.
- Deep test holes, soil borings, infiltration percolation and/or permeability tests used for the design of bioretention/infiltration practices have been conducted and data/findings included.
- Potential pollutant sources (including erosive soils, landscaped area, commercial operations)
- Type of anticipated stormwater pollutants and removal percentages
- Other stormwater management infrastructure

Waivers

- Waivers from local commissions for any stormwater and Low Impact Development (LID) practices have been identified. Include details: _____

Municipal Comments:

Additional LID practices that should be considered:

Additional stormwater design information required:

Additional site plan information that should be submitted:

Additional information necessary:

Part III: Stormwater Treatment Practices

1. Provide a diagram of the treatment train showing the practices used, their location, and how they are connected. Attach and label a separate sheet to checklist.

A. Practices Used <i>(check all that apply)</i>	
Primary Treatment	Secondary Treatment
<input type="checkbox"/> Stormwater Pond	Conventional
<input type="checkbox"/> Micropool extended detention pond	<input type="checkbox"/> Dry detention basin
<input type="checkbox"/> Wet pond	<input type="checkbox"/> Underground detention facilities
<input type="checkbox"/> Wet extended detention pond	<input type="checkbox"/> Deep sump catch basins
<input type="checkbox"/> Multiple pond system	<input type="checkbox"/> Oil/particle separators
<input type="checkbox"/> Pocket wetland	<input type="checkbox"/> Dry wells
<input type="checkbox"/> Stormwater Wetlands	<input type="checkbox"/> Permeable pavement
<input type="checkbox"/> Shallow wetland	<input type="checkbox"/> Vegetated filter strips
<input type="checkbox"/> Extended detention wetland	<input type="checkbox"/> Grass drainage channels
<input type="checkbox"/> Pond/wetland system	Innovative/Emerging Technologies
<input type="checkbox"/> Infiltration Practices	<input type="checkbox"/> Catch basin inserts
<input type="checkbox"/> Infiltration trench	<input type="checkbox"/> Hydrodynamic separators
<input type="checkbox"/> Infiltration basin	<input type="checkbox"/> Media filters
<input type="checkbox"/> Filtering practices	<input type="checkbox"/> Underground infiltration systems
<input type="checkbox"/> Surface sand filter	<input type="checkbox"/> Alum injectors
<input type="checkbox"/> Underground sand filter	
<input type="checkbox"/> Perimeter sand filter	
<input type="checkbox"/> Organic filter	
<input type="checkbox"/> Bioretention	
<input type="checkbox"/> Water Quality Swales	
<input type="checkbox"/> Dry swales	
<input type="checkbox"/> Wet swales	

1. If no primary treatment practice is used, explain why.
2. If treatment is not provided for all stormwater run-off, explain why.
3. Are other innovative emerging technologies proposed that are not listed? If yes, please describe technologies and provide appropriate information.

C. Stormwater Pollutants Generated and Removed <i>(check and report rates on all that apply)</i>	
Type of Pollutant Generated	Percent removal expected per treatment train (attach additional sheets if necessary)
<input type="checkbox"/> Sediment	
<input type="checkbox"/> Phosphorus	
<input type="checkbox"/> Nitrogen	
<input type="checkbox"/> Metals	
<input type="checkbox"/> Hydro-carbons	
<input type="checkbox"/> Bacteria	
<input type="checkbox"/> Other; specify	

Source(s) of removal rates: