

PLANNING AND ZONING COMMISSION
ADOPTED RESOLUTION
May 12, 2009

Application: Proposed Amendments to the Darien Zoning Regulations and Subdivision Regulations
Application Put Forth by the Darien Planning and Zoning Commission

Proposed Amendments to the Darien Zoning Regulations put forth by the Darien Planning & Zoning Commission. Create a new Section 880 *et. seq.* of the Zoning Regulations. The purpose of these Regulations is to require storm water management plans for certain projects and applications. The Regulations define the applicability of the new Section and establishes components of Stormwater management plans.

Proposed Amendments to the Darien Subdivision Regulations put forth by the Darien Planning & Zoning Commission. Add to Article IV Section I a new #8 requiring that all subdivisions shall comply with the requirements for Stormwater management as outlined within Section 880 *et. seq.* of the Darien Zoning Regulations.

Date of Public Hearing: March 24, 2009 continued to April 28, 2009

Time and Place: 8:00 P.M. Room 206 Town Hall

Publication of Hearing Notices

Dates: March 12 & 19, 2009
April 16 & 23, 2009

Newspaper: Darien News-Review

Date of Action: May 12, 2009

Action: AMENDMENTS TO THE DARIEN ZONING REGULATIONS ADOPTED, WITH AN EFFECTIVE DATE OF SUNDAY, JUNE 7, 2009 AT TWELVE NOON.

AMENDMENT TO THE DARIEN SUBDIVISION REGULATIONS ADOPTED, WITH AN EFFECTIVE DATE OF SUNDAY, JUNE 7, 2009 AT TWELVE NOON.

Scheduled Date of Publication of Action:

May 21, 2009

Newspaper: Darien News-Review

Following careful review of the submitted application materials and related analyses, the Commission finds:

1. The Commission proposes to create a new Section 880 *et. seq.* of the Darien Zoning Regulations. The purpose of these Regulations is to require storm water management plans for certain projects and applications. The Regulations define the applicability of the new Section and establishes components of Stormwater management plans. The Commission also proposes to amend the Darien Subdivision Regulations by adding to Article IV Section I a new #8 requiring that all subdivisions shall comply with the requirements for Stormwater management as outlined within Section 880 *et. seq.* of the Darien Zoning Regulations.
2. These proposals to amend the Subdivision Regulations and the Zoning Regulations are put forth by the Planning and Zoning Commission consistent with the October 24, 2008 Stormwater Management Report and Draft Regulations prepared by Tighe & Bond.

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3. These proposals have been revised compared to the original proposal dated December 19, 2008. That original proposal was presented at the January 2009 public hearing. In response to comments received at that public hearing, department staff worked with Town Counsel and local professional engineers in revising the proposal. The revised proposal dated February 17, 2009 was put forth.
4. At the public hearing on this matter, Craig Flaherty, a professional engineer, explained amounts of rainfall which comprise storm events. He noted that in recent years, an increase in local rainfall depths has modified what comprises a 2, 5, 10, 25, 50 and 100 year storm. In Connecticut, we are experiencing more rainfall than in the past, and that must be considered in analyzing what comprises these storms. He noted that the University of Connecticut recently published the document "Rainfall in Connecticut" which estimates rainfall depths over a 24-hour period using data through the early 1990s. This more recent data from reflects a trend of increasing precipitation that has been observed in Connecticut.
5. A letter of support of this application was received from the State of Connecticut DEP dated March 12, 2009. The Darien Environmental Protection Commission sent comments dated March 18, 2009. The Southwestern Regional Planning Agency (SWRPA) in a letter dated February 24, 2009, noted that the proposed amendments "do not appear to pose inter-municipal impacts."
6. At the April public hearing, staff noted that comments were received regarding the proposal. Also at that hearing, the Commission heard from a professional engineer and local attorney. They suggested modifications to the proposed waiver provision (Section 888 of the Zoning Regulations). The Commission also noted at that time that the burden of demonstrating the appropriateness of the requested waiver should be on the applicant, not on the Commission.
7. Discussion also focused on whether studying and requiring drainage systems to attenuate the 100 year design storm is appropriate. Using the newer, more accurate numbers of how much rain falls during a 100 year design storm is substantially greater than the amount of rain fall that must be accommodated using the old data for a 50 year design storm. The Commission finds that because of higher rainfalls, and the new storm sizes, that studying and possibly designing for 100 year design storms is not appropriate and shall not be required. The Commission believes that the new, more accurate data should be utilized and that a 50 year design storm (using the new data) should be the minimum standard to which the drainage systems are designed.
8. Details regarding the design standards and methods of analysis are contained within the Department of Public Works Drainage Manual. The DPW Drainage Manual must be updated to reflect the comments and policies of the Planning & Zoning Commission. Thus, the Commission will establish an effective date of June 7, 2009 to allow the Department of Public Works to modify their Manual accordingly.
9. The applicable recommendations in the 2006 Town Plan of Conservation & Development, as previously amended, are as follows:

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- Chapter 3 (page 3-3) recommends the following:
 - “Requiring the submission of grading, drainage, and erosion control plans for all construction projects which involve site disturbance.”
- Chapter 3 (page 3-5) recommends the following:
 - Consider revising site and subdivision plan submission requirements to require stormwater management plans.
- Chapter 9 of the Town Plan (page 9-3) includes the following recommendation:
 - “The Darien Zoning Regulations should be amended to specifically require addressing storm drainage as part of development and/or redevelopment of property.”

10. The Commission hereby finds that the proposed Amendment of the Darien Zoning Regulations and the proposed Amendment of the Subdivision Regulations are fully consistent with the 2006 Town Plan of Conservation & Development, as amended.

11. The effective date of these Regulations is June 7, 2009. Section 8-2h of the Connecticut General Statutes addresses the issue of zoning applications filed prior to a change in the Zoning Regulations, and notes that an application filed with the Planning and Zoning Commission shall not be required to comply with any change in the zoning regulations taking effect after the filing of such application.

NOW THEREFORE BE IT RESOLVED that *Proposed Amendment to the Darien Zoning Regulations* and *Proposed Amendments to the Darien Subdivision Regulations* are hereby ADOPTED WITH AN EFFECTIVE DATE OF SUNDAY, JUNE 7, 2009 AT TWELVE NOON, as approved herein:

Amend the Darien Subdivision Regulations:
(Additions in bold, deletions in strikeout)

Add to Article IV Section I a new #8 as follows:

8. All subdivisions shall comply with the requirements for Stormwater management as outlined within Section 880 et. seq. of the Darien Zoning Regulations.

Amend the Darien Zoning Regulations:

Create a new Section 880 et. seq. Also, amend: the inside cover page of the regulations to note the new effective date of the Regulations, the Table of Contents, and Appendix C (Schedule of Amendments) accordingly.

(Additions in bold, deletions in strikeout)

SECTION 880 – STORMWATER MANAGEMENT

Stormwater management is the practice of controlling the runoff of stormwater from a site such that the quantity of stormwater flow does not result in a cumulative adverse impact on

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properties proximate to the site, or cause adverse cumulative impact downstream as a result of the proposed development, while managing the stormwater runoff in a manner that mitigates impacts to water quality. These regulations are intended to improve stormwater management and give reasonable consideration to the restoration and protection of the ecosystem and habitat of Long Island Sound as provided in Connecticut General Statutes 8-2(b), 8-23(a), and 8-35a.

- a. **Conformance to Established Standards.** Proposed stormwater management plans are to conform to the technical guidance and procedures in the Town of Darien Department of Public Works Stormwater Management and Drainage Manual, as may be amended and to the extent not inconsistent with these regulations.
- b. **Applicability.** Proposals for any site meeting one or more of the following criteria shall submit a stormwater management plan conforming to Section 882:

- 1) Construction of 1,000 square feet or more of impervious surface; or
- 2) Demolition and reconstruction or replacement of an existing residential dwelling; or
- 3) Submission of any application subject to review and action by the Planning and Zoning Commission if the activity is within the jurisdiction of that Commission and/or by the Environmental Protection Commission (EPC) if the activity is within the jurisdiction of the EPC.

If the proposed activity does not require the approval of either the Planning and Zoning Commission or the Environmental Protection Commission, then any stormwater management plan shall be submitted to the Zoning Enforcement Officer (ZEO) with an application for a Zoning Permit or Certificate of Zoning Compliance. The ZEO has thirty days to act on the application.

- c. **Impervious Surfaces.** Impervious surface, for the purpose of this section is defined as Building Coverage plus the area covered by driveways, sidewalks, walkways, parking areas, terraces, patios, outside storage areas, loading and unloading areas, and equipment pads.
- d. **Public Emergency.** In order to help alleviate an emergency situation, the Public Works Director may waive the requirement for a drainage analysis in order to protect the health, safety, and welfare of the public, if a public emergency has been declared.
- e. **Exception for Coastal Areas.** If a site is within the Town's Coastal Boundary, and does not require formal review or action by the Planning & Zoning Commission or Environmental Protection Commission, the requirement for a

comprehensive Stormwater Management Plan is waived—the plan need only address water quality impacts and mitigation.

881. Basic Components of Stormwater Management Plans

Comparative hydrology shall document no increase in downstream flooding conditions for the 2, 10, 25, and 50 year storms on properties proximate to the site, or cause adverse cumulative impact downstream as a result of the proposed development.

- a. **Upstream and Downstream Drainage Analysis. Stormwater management plans shall take into account the upstream tributary drainage area and include a downstream impact analysis for proposals which are likely to result in increased runoff, or alter the flow of an existing discharge into a storm drainage system or watercourse. The downstream impact analysis shall include analysis of a confluence point downstream of the site where the area of the site is 10% or less of the area of the upstream watershed and includes an assessment of potential adverse impacts arising from the runoff.**
- b. **Nonstructural Drainage Systems. Stormwater management plans shall include non-structural approaches to controlling runoff to the maximum extent practicable, promoting the infiltration of rainfall into the soil and preservation of existing drainage patterns.**
- c. **Stormwater Runoff Quality. Stormwater management plans shall include measures to minimize, to the extent practicable, discharge of pollutants including suspended sediment from the site through the use of measures that control both the sources and minimize to the extent practicable, transport of pollutants, including suspended sediment.**
- d. **Conveyance System. Conveyance systems for the proposed project must be analyzed, evaluated, designed, and constructed to accommodate existing upstream and off-site runoff onto a site in addition to the on-site runoff from the proposed development.**
- e. **Outlet Locations. The runoff from proposed development sites should utilize existing outlets to the maximum extent practicable, unless it is demonstrated that using the existing outlet would exacerbate downstream flooding or result in adverse impacts to downstream properties or properties proximate to the site. The location of the new outlets is critical to avoid adverse impacts to property(ies) proximate to the site. Such point sources shall be located such that they do not adversely affect nearby property or structures that may be proximate to the site and discharge to natural or manmade drainage systems with adequate capacity to handle the anticipated flow.**
- f. **Maintenance and Operation. Maintenance of drainage facilities and systems constructed or modified as part of a proposed development, is the responsibility**

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of the property owner, unless otherwise dedicated to, or the acknowledged responsibility of, a government agency or other entity.

Stormwater management plans shall include an Operation and Maintenance (“O&M”) plan which shall identify the specific drainage facilities or systems subject to the plan, inspection methods and frequencies, and maintenance methods and frequencies. The plan shall provide for routine maintenance such as minor cleaning usually once or twice a year and insure that the drainage facility or system is unimpeded and operational.

- g. Licensed Professional Engineer. Stormwater management plans, reports, calculations, and O&M plans and schedules shall be prepared, signed, and sealed by a Professional Engineer licensed in the State of Connecticut.**
- h. Exceedance of Minimum Standards. Applicants are encouraged to exceed the minimum drainage standards set forth in these regulations to increase positive impacts in flood prone areas.**

882. Documentation Requirements

Stormwater management plans and reports where required in these Regulations, as defined in Section 880 shall include the following documentation:

- a. Separate topographic contour mapping showing the existing and proposed drainage areas at an appropriate scale.**
- b. Floodplain boundaries and Stream Channel Encroachment Lines as defined by the National Flood Insurance Program and the Connecticut Department of Environmental Protection, respectively.**
- c. Inventory and evaluation of on-site hydraulic structures and watercourses, within or related to areas of proposed impact, including brooks, channels, culverts, bridges, dams, weirs, and dikes, with information on their flow capacity and physical condition. The limiting capacity of existing structures may, at the option of the Director of Public Works, be used to establish the allowable post-development peak flow rate from the site.**
- d. Inventory and evaluation of existing and proposed on-site stormwater storage areas, including impoundments, riverine corridors, swamps, ponds, wetlands, floodplains, and miscellaneous depressions.**
- e. Identification of peak rate of runoff under pre-development and post-development conditions from the site at each design point including those included in the downstream impact analysis as applicable.**

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- f. **Specific documentation in support of stormwater management design shall include, but is not limited to the following:**
- (1) Method used to calculate Stormwater runoff.**
 - (2) Runoff characteristics of the property before and after development.**
 - (3) Watershed calculations used to develop NRCS Curve Number or Rational Method Calculations.**
 - (4) Time of concentration calculations identifying length and slope of various components including overland, shallow concentrated and channel flow. Time of concentration paths shall be shown on the watershed maps.**
 - (5) Hydrologic model input and output files for all storms evaluated.**
 - (6) Subwatershed map delineating all contributing areas to each catch basin in a proposed storm sewer system.**
 - (7) Hydraulic computations for all storm drainage systems. Computations shall show hydraulic grade line elevations and structure rim elevations.**
 - (8) Pond and storage area stage-storage discharge calculations.**
 - (9) Soils information, including depth to seasonally high groundwater and permeability testing and drawdown calculations for proposed infiltration systems.**
- g. **A complete set of construction plans. Where storm drains are proposed in roadways, the plans shall include storm sewer specifications and profiles.**

883. Hydrologic Evaluation

Various methods are available for hydrologic modeling, with some methods more appropriate than others. Most methods are based upon land cover and time of concentration relationships. Hydrologic models should use methods established by the Soil Conservation Service (now Natural Resources Conservation Service) or the United States Army Corps of Engineers. In all cases, the 2, 10, 25, and 50 year storms shall be evaluated for existing and proposed conditions comparative hydrology, with the same modeling methodology used for both conditions. The Director of Public Works may waive the requirements herein if the applicant demonstrates, in writing, why a proposed alternate method of analysis is appropriate and adequate.

- a. **Basis of Existing Conditions Analysis. Existing Conditions Analysis shall account for actual on-site conditions at the time of the proposal, accounting for all depressions, and types of land cover, except for applications involving the**

demolition of an existing residential dwelling or commercial building and replacement of the razed structure with a new structure.

Where an existing residential dwelling or commercial building is proposed to be razed and replaced with a new structure, the basis of existing conditions analysis shall be the site's undeveloped condition if there is no engineered detention system on the existing site. If there is an existing engineered detention system on the existing site, then the actual existing conditions at the time of application shall be used as the basis of the existing conditions analysis. The local land use board or ZEO may require a comparison to undeveloped conditions where warranted.

- b. Detention Analysis. A complete runoff hydrograph evaluation is required for projects utilizing detention methods.**

884. Peak Flow Attenuation

- a. The discharge of stormwater runoff from development sites shall not result in cumulative adverse impacts on properties proximate to the site and shall not exacerbate downstream flooding conditions.**
- b. In all cases, the applicant shall perform a watershed study to document that the proposed development will not cause adverse impacts on properties proximate to or downstream from the site. The limit of this study will be the downstream point at which the site represents 10% or less of the total watershed area. This study shall be done for the 2, 10, 25, and 50 year storms.**

885. Infiltration and Stormwater Quality

Infiltration shall be utilized where appropriate to reduce stormwater runoff rate and volume, to improve stormwater quality, and to recharge groundwater. Runoff from areas with high pollutant loadings, such as gasoline stations shall not be infiltrated. All infiltration practices shall be subject to pretreatment with another stormwater best management practice. The Town of Darien Department of Public Works Stormwater Management and Drainage Manual, as may be amended, shall be used as a guide.

886. Stormwater Detention Facilities

Stormwater detention facilities to temporarily store excess runoff may be used to control peak flow rate and duration of downstream flows when coordinated with the runoff characteristics of the watershed in which they are located and the local site conditions.

887. Certification and Maintenance Agreements

- a. Prior to obtaining a Zoning Permit and/or starting work on a project, an O&M plan or Notice of Drainage Maintenance Plan shall be recorded on the Darien**

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Land Records. The O&M plan either filed in the Land Records or referred to by the Notice of Drainage Maintenance Plan shall stipulate the inspection frequency, maintenance requirements and intervals for all proposed stormwater management practices on the site.

- b. Prior to issuance by the Zoning Enforcement Officer of a Certificate of Zoning Compliance, a Certificate of Occupancy, or use of the site, the following shall be submitted:**
- (1) An improvement location survey prepared and submitted by a Connecticut licensed land surveyor, depicting: pipe inverts, diameters and sizes, structure inverts and elevation, and other information to adequately describe the constructed stormwater management system. The survey shall also indicate the extent of impervious surfaces, and topography of the completed site where changes in grade exceed one foot.**
 - (2) A certification by a professional engineer licensed in the State of Connecticut stating that the proposed drainage system was installed in conformance with the approved plans. If plans were not prepared by a professional engineer, a signed statement by the owner shall be submitted stating that the system was installed in substantial conformance with the approved design.**

888. Waivers

- a. The Planning and Zoning Commission and/or the Environmental Protection Commission may waive one or more of the provisions in Section 880 et. seq. under any of the following circumstances:**
- (1) Based upon the size and/or location of the subject property;**
 - (2) Based upon any unique site characteristics of the subject property;**
 - (3) Due to the scope, nature, and/or amount of work proposed within the application;**
 - (4) Due to any prior applications for the subject property which have accounted for stormwater management, and those drainage structures or facilities are still in place.**
- The burden is upon the applicant to demonstrate why a waiver should be granted.**