



STORMWATER MANAGEMENT REQUIREMENTS AND GUIDELINES

Revised 2018-04

Stormwater management requirements for projects that require a Site Development Plan approval from the Village of Irvington Planning Board. This revision supersedes previous requirements dated September 20, 2010 and March 3, 2011. These requirements are provided to address the concerns discussed with the Village which include the following:

- Minimum requirements for soil testing prior to Planning Board approval.
- Reduce potential flooding impacts to the Barney Brook, Sunnyside Brook, and Riverview Road Brook.
- Mitigate stormwater runoff from the project area to downstream property owners.

This document includes general requirements, to be followed by various development conditions.

General Design Requirements:

1. The method used for determining runoff and sizing must be clearly identified. The NYS Stormwater Design Manual or Westchester County Best Management Manual may be used to size the stormwater management system unless otherwise noted.
2. Design points and tributary areas should be identified.
3. A detailed description of existing runoff patterns, stormwater infrastructure and receiving watercourses shall be provided.
4. The site must have zero net increase in runoff volume and peak flow from existing to proposed conditions at all design points for the 24-hr, 1-yr, 10-yr and 100-yr storm events.
5. The hydrologic soil groups of the site shall be identified. Existing and proposed curve numbers (CN) shall be identified.
6. The 24-hr rainfall depths and the Type III rainfall distribution shall be used as follows:

Return Period (Year)	Rainfall Depth (inch)
1	2.8
2	3.5
5	4.5
10	5.1
25	6.5
50	7.5
100	9.0

*The rainfall events shown above should be used for both sizing methods.

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7. Pre-treatment prior to all infiltration systems must be provided. Also required by NYSDEC, pre-treatment is necessary to prolong the lifespan of the infiltration system. It allows larger sediment and debris to be collected and removed prior to entering the infiltration system. Acceptable pre-treatment methods include catch basins, sedimentation basin or other methods specified in the NYS Stormwater Management Design Manual.
8. Catch basins must have a minimum 24” sump. Catch basin outlet hoods should be considered. Hoods shall not decrease the capacity of the receiving pipe.
9. Pipe sizes, inverts and slopes must be provided.
10. Structure dimensions and elevations must be provided.
11. An emergency overflow for retention systems must be provided above the required storage volume. The emergency overflow may be an overflow outlet, surge pipe with splash block, etc.
12. The following details shall be provided on the site plans as applicable:
 - a) Section(s) of the infiltration system(s) which includes the unit material, ¾ inch stone, geotextile fabric, and emergency over flow.
 - b) Any drainage structure (catch basin, manhole, junction box, weir, etc.).
 - c) Pre-treatment system.
 - d) Emergency overflow system.
 - e) Inspection/access port(s) with the following note (or equivalent): “Infiltration system access ports shall be shown on the “As-Built.””
13. Maintenance notes shall be provided on the site plans.
14. The area of the proposed infiltration system should be protected from compaction during construction. The area should be fenced off during construction.

Re-development:

- Re-development shall mean the disturbance and reconstruction of existing impervious coverage, such as enclosing or replacing impervious coverage. Re-development shall not include existing pervious areas that are proposed to be impervious.
- New development is existing pervious coverage that is proposed to be impervious.
- Areas of existing impervious coverage being changed to pervious coverage shall be considered restoration.
- On sites with re-development activities, the areas of re-development, new development and restoration should be identified, delineated, and the square footage noted.
- Refer to the NYS Stormwater Management Design Manual for additional information on re-development projects.

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Soil Testing Requirements:

- Soil tests (deep test pits, soil percolation tests, soil borings, etc.) shall be conducted in the immediate vicinity of the proposed infiltration system.
- The depth to groundwater must be determined and shown. A minimum of 2 feet of separation must be provided between the water table and the bottom of the infiltration units.
- The depth to rock should be identified. A minimum of 2 feet of separation must be provided between the rock and the bottom of the infiltration units.
- The percolation rate must be determined by performing a soil percolation test as described in the NYS Stormwater Management Design Manual (latest edition) or the Westchester County Best Management Manual (as specified in the referenced manual). The bottom of the percolation hole should be 6 inches below the bottom elevation of proposed practice. The method of testing the infiltration rate must be consistent with the design manual used for stormwater calculations.
- The location of percolation hole(s) and deep test pit(s) shall be shown on plan.
- Soil test results and information (date, size, elevation, etc.) shall be provided.
- A percolation rate greater than 12 inches per hour shall not be used to size stormwater practices.
- The Village should be noticed 48 hours notice prior to testing.

Substituting Impervious Areas:

If collecting runoff for treatment from the newly created impervious area is proven by the licensed professional to be impractical, an equivalent amount of runoff from an existing impervious area can be substituted, if approved by the Village Engineer. For example, if it is determined that runoff from a proposed patio cannot be collected without damaging a tree which the Planning Board determines is worth saving, a retention system can be used to treat a portion of an existing roof in lieu of a proposed patio.

For this to be acceptable, the following conditions should be met:

- a) Both areas leave the site at the same location.
- b) The amount of area is not decreased.
- c) No stormwater system exists for the existing impervious area.
- d) The substitution must be approved by the Village Engineer prior to submitting to Planning Board for approval.

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Design Conditions:

Below are four design conditions. The requirements for Conditions 1 and 2 are intended to relieve the residents of the need to perform soil testing under certain conditions for smaller projects, while maintaining adequate drainage for the Village.

Condition 1: Re-development up to 1,000 SF with no change to runoff patterns.

- If a retention system exists and the applicant can demonstrate that the existing system is functioning as designed, no additional system is required.
- Projects that only include patios, sidewalks, or utility pads up to 250 sf do not require stormwater mitigation.
- No soil testing shall be required if infiltration is not accounted for in the storage volume.
- If no retention system exists or an existing system is not functioning as designed, a new system may be required. The new retention system shall be sized for the amount of new runoff from the 24-hr, 100-yr storm event for 1/2 of the proposed impervious coverage plus any additional area tributary to the system.
- When infiltration is not accounted for in the design, the proposed runoff depth shall not be less than 4.8 inches (100 yr storm, CN-pre 59, CN-post 98), unless verified by the design professional.
- If the proposed re-development alters hydrologic runoff conditions from sheet flow to point discharge (e.g. a structure with a roof leader is proposed on an existing paved surface), then considerations must be taken at the discharge location to mitigate erosion.
- If changes are made to the site's runoff patterns (e.g. rooflines and downspout locations are altered), additional mitigation may be required.

Condition 2: New impervious coverage up to 1,000 SF with no change to runoff patterns.

- Projects that only involve patios, sidewalks, or utility pads up to 250 sf do not require stormwater mitigation.
- If an existing retention system is functional and the licensed professional has demonstrated that there is sufficient capacity (using the rainfall data provided in these guidelines), then the existing system may be used to treat new impervious surfaces. All calculations shall be provided.
- No soil testing shall be required if the retention system is sized to store the entire amount of runoff with no credit for infiltration.
- When infiltration is not accounted for in the design, the proposed runoff depth shall not be less than 4.8 inches (100 yr storm, CN-pre 59, CN-post 98), unless verified by the design professional.
- If soil testing is performed, credit for infiltration may be used.
- If changes are made to the site's runoff patterns (e.g. rooflines and downspout locations are altered), additional mitigation may be required.

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Condition 3: New impervious coverage over 1,000 SF with soil disturbances under 1 acre.

- If an existing retention system is functional and the licensed professional has demonstrated that there is sufficient capacity (using the rainfall data provided in these guidelines), then the existing system may be used to treat new impervious surfaces. All calculations shall be provided.
- Soil testing performed by the licensed professional shall be required during site plan review.
- The retention system shall be sized for the increase in runoff from the 24-hr, 100-yr storm event from the proposed impervious coverage plus any additional area tributary to the system.
- Credit for infiltration may be used.

Condition 4: Soil disturbances 1 acre or greater.

- The requirements and sizing methodology must comply with the most recent NYSDEC Stormwater Management Design Manual and the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity. Westchester County Stormwater Design Manual is not acceptable.
- A Stormwater Pollution Prevention Plan (SWPPP) must be prepared.

References and Precedence

- The Village of Irvington, Village Code.
- NYSDEC Stormwater Management Design Manual (latest edition).
- NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (latest edition).
- Westchester County Best Management Manual (1984).
- In instances where one manual conflicts with another or with these requirements then generally the more conservative will take precedence. The design engineer may direct any conflicts to the Village for clarification.