

**City of Evanston
Public Works Department
Engineering & Transportation Services Division
Administrative Policy 201, January 2000
Private and Public Development, Detention Requirements**

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All commercial, industrial and multi-family zoned developments, regardless of size shall include provisions for storm water holding facilities. All single-family residentially zoned developments one (1) acre or larger and any institutional use such as a school or church, in a single-family zoning district shall include provisions for storm water detention.

Storm water holding facilities are not permitted in the rear yards of any lots zoned single-family residence. All storm water detention facilities other than roof tops, parking lots and/or underground storage shall be located not less than twenty-five feet (25') from any building or structure to be occupied.

Design Requirements

All detention basins shall be designed in accordance with requirements of IDOT, MWRD and the City Code.

The allowable release rate from the detention facility shall not exceed the runoff rate from the subject area in its natural undeveloped state. Such release rate shall be based on a runoff rate of no greater than 0.15 cubic feet per second (cfs) per acre.

Detention basin discharge structures shall be designed such that they have sufficient capacity to discharge the allowable release rate from the development and any storm water flowing through the property from all tributary area outside of the development.

For the purpose of designing such storm water drainage systems, it shall be assumed that the runoff rate from a rainstorm of a three (3) year frequency at a runoff rate coefficient of 0.15 in cases where there are retention basins in the upstream drainage area. Whenever upstream detention facilities have a release rate that is less than 0.15 cfs per acre, the allowance shall be made for such reduced runoff rate in calculating the capacity of the drainage system or structure.

Whenever detention facilities have not been provided and are not required to be provided for any part of the upstream land in the drainage area, then the by-pass flow rate for subdivisions and developments for which storm water detention facilities are required by this policy shall use a runoff coefficient of not less than 0.35. The determination volume required shall be that necessary to store the runoff of a 100-year rainfall, for any and all durations, from the fully developed drainage area tributary to the reservoir, less that volume discharge during the same duration at the approved release rate. The runoff coefficients used to determine the runoff from the 100-year storm shall not be less than $c = 0.95$ for impervious areas and $c = 0.50$ for pervious areas.

Detention Basins

Dry detention basins shall be designed with side slopes not steeper than four (4) horizontal to one vertical. The basin floor shall have a slope of not less than two percent (2%). In order to prevent soil erosion and weed problems and to provide for usable active recreational areas during dry weather, the detention basin shall be landscaped including sodding and/or hydro-seeding of the basin as required.

The basin shall also have a low flow underdrain consisting of a minimum ten inch (10") storm sewer or perforated drain tile.

Detention basins with permanent ponds shall be graded such that the area one-foot (1') above the normal water level to two feet (2') below normal water level has a slope of three (3) horizontal to one vertical.

The area from one foot (1') above normal water level to two feet (2') below normal water level shall have shore line protection consisting of rip rap with a minimum twelve inch (12") diameter.

At the point three feet (3') below normal water level ledge five feet (5') wide shall be constructed. From the edge of this five foot (5') ledge the ground shall slope at two (2) horizontal to one vertical for an additional three foot (3') depth. If fish life is to be sustained in the basin an area equal to twenty five percent (25%) of the normal water surface area shall be a minimum of twelve feet (12') deep.

The ground above one-foot (1') above water elevation shall have a slope not be steeper than ten (10) horizontal to one vertical for minimum horizontal distance of twenty feet (20'). Above the elevation, the slopes within the basin shall be steeper than six (6) horizontal to one vertical.