

Regulations

Stormwater retention on private properties

Some types of lot development transform land (i.e., permeable surfaces) to paved and asphalted surfaces (i.e., impermeable surfaces), that do not allow water to drain. As a result, during precipitation, water flows directly to sewer lines. Peak flows increase drastically which may cause flooding or backflow.

Obtaining a permit is necessary to carry out any work related to stormwater retention on private properties. The request must be made at the time that a construction project permit or an authorization certificate request is submitted.

Stormwater retention plans must be to scale, and designed by an engineer who is a member in good standing of the Ordre des ingénieurs du Québec. These plans must bear the signature and seal of the engineer responsible.

Process

At the time a construction permit is requested, the permit issuing officer will inform the applicant if a stormwater retention permit request is also required.

Costs

Additional fees are required to process a request.

Applicability

A stormwater retention permit is mandatory for any of the following construction or extension projects:

- Multifamily housing (5 dwellings and more)
- Institutional building
- Commercial building
- Industrial building
- Parking area
- Loading/unloading area

Exemptions

The following construction projects are not subject to retention permit requirements:

- Single-family housing
- Two-family housing
- Residential multiplex (3 or 4 units)

Flow rate

The following table indicates the maximum flow rates authorized by drainage basin:

Drainage basin	Maximum natural flow (litres/second/ha)
Notre-Dame-de-Grâce	12.4
Leduc	10.0
F-est	24.7
F-ouest-01	39.5
F-ouest-02	17.3
F-ouest-03	14.8
Pitfield	30.0
Toupin	24.7

Drainage basin	Maximum natural flow (litres/second/ha)
Décarie-Raimbault	12.4
Petite Rivière Saint-Pierre	12.4
Meilleur Atlantique	12.4

Volume

Stormwater retention on a private property requires volume to be calculated using intensity-duration-frequency curves of real rainfall as recorded in Dorval by Environment Canada, increased by 10%. The rational method is used with the runoff coefficients indicated below.

Surface type	Coefficient of runoff
Asphalt concrete	0.95
Cement concrete	1.0
Grass	0.5
Building roof	0.95
Surface reserved for future expansion	0.95

Piping

Only the following types of pipes can be used:

- Reinforced concrete, minimum diameter: 20 cm
- Class 4000 cast iron, minimum diameter: 15 cm
- Polyvinyl chloride (PVC or HDPE), diameter: between 15 cm and 60 cm inclusively

Slopes

Sewer pipes must have gradients as indicated below:

Diameter (cm)	Minimum slope (%)	Maximum slope (%)
15	1	12
20	0.5	8.5
25	0.4	6.5
30	0.3	5
37.5	0.25	3.5
45	0.2	3
52.5	0.15	2.5
60	0.12	2

Stormwater retention mechanisms

The following methods and locations must be used to retain stormwater:

- 1 • On the roof of a building
- 2 • In an underground pipe (see "Piping" section)



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3 • On a paved surface

During the winter season, on-surface retention of precipitation from a storm with a once-in-5-year frequency-of-occurrence is not permitted. This water must be stored in underground reservoirs.

Automobile parking spaces

Retained runoff water must not reach a height greater than 15 cm above drain covers.

Truck loading/unloading areas

Retained runoff water must not reach a height greater than 45 cm above drain covers.

4 • Surface storage basins

Retained runoff water must not reach a height greater than 45 cm above the bottom of the basin with 15 cm freeboard for a once-in-50-year frequency-of-occurrence storm.

Surface storage basins must be designed to maintain the aesthetic and safety features of the site.

4.1 *Location*

- Side yard and side setback
- Back yard and rear setback

4.2 *Site design*

- The minimum distance allowable between the basin and the street line is 1 m.
- The minimum distance allowable between the basin and any street is 4.6 m.

4.3 *Materials*

Only the following materials can be used for the exterior walls of a retention basin:

- Prefabricated concrete slope-block
- Pressure-treated sleepers
- A layer of stones at least 45 cm thick
- Cast-in-place reinforced concrete

4.4 *Vegetation*

Surface storage basins can be planted as long as minimum volumes are respected.

5 • In underground reservoirs

The following materials can be used to construct underground reservoirs:

- Reinforced concrete pipes
- Reinforced concrete
- Plastic securely installed on a concrete slab to prevent reservoir uplift

Additional provisions

- Pipes, openings and pumps must be watertight and installed in conformance with the Borough of Saint-Laurent special specifications.
- Openings and pumps must respect the minimum height of 30 cm between the bottom and the apron of the discharge pipe and must be only in reinforced concrete.
- Retention ways must be maintained in good operating condition by the owner.

Flow limit devices

Only the devices listed below can be used:

- Vortex flow regulator: for flows of 20 l/s and less
- Orifice plate
- Controlled-flow roof drains
- Electric pump with generator

Trials, verification and inspections

Upon the request of the Division des permis et des inspections, a report detailing leak testing of rainwater retention pipes and their accessories must be provided

Requirements

- Leak testing must be performed after trench backfill and for each area between 2 openings.
- Pipes and accessories must not be filled until the inspector has verified and approved the facilities. If they do not conform, new conforming infrastructure will have to be installed.



Information: 311 – ville.montreal.qc.ca/saint-laurent/infosheets

Legal framework:

Règlement sur la rétention des eaux pluviales sur la propriété privée n° 1047
Règlement sur les tarifs n° RCA14-08-1

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