

SURFACE DRAINAGE PROBLEMS

INFORMATION GUIDE

Introduction

The Surface Drainage Bylaw No. 11501 came into effect on July 2, 1997. This bylaw regulates lot grading and surface drainage on public and private lands, and is enforceable for any property within the City of Edmonton.

Most neighbourhoods in the City of Edmonton do not have engineered Lot Grading plans. Problems that develop over a period of years can become evident after a major rainstorm or during snow melt in the spring. Re-grading or re-development (in-fill housing) of lots can create new drainage problems or highlight existing problems. These events can lead to flooded basements, property damage and disputes between neighbours.

The Surface Drainage Bylaw and the Lot Grading Guidelines were developed as a response to problems that were observed over the years in the older neighbourhoods.

When complaints originate in areas of the City that are not covered by approved surface drainage plans, the Lot Grading Inspectors must take practical considerations into account when deciding to enforce the bylaw.

Building a City Drainage System that guarantees protection against flooding is not possible. All property owners are responsible to develop and maintain their lot grading, without causing a negative impact on adjacent properties.

The City does not provide any funding to rectify surface drainage problems.

Definition

Lot grading is the reshaping or sloping of the land in such a way that surface drainage from rainstorms, snowmelt or groundwater is directed away from the buildings and is controlled in a manner that eliminates or minimizes the impact on adjacent properties.

Purpose

The purpose of lot grading is to provide good drainage away from buildings for the benefit of property owners.

The purpose of the Surface Drainage Bylaw is to regulate lot grading and surface drainage requirements within private and public lands.

FREQUENTLY ASKED QUESTIONS

Question: I have a problem with my neighbour's downspout and/or sump pump discharging on my property causing flooding on my yard and/or my basement.

Answer: Examine your own grading and be prepared to make changes to ensure that your foundation grading will direct surface drainage away from your house. Evaluate the existing drainage pattern and discharge locations with your neighbour to determine the best point of discharge for downspouts or sump discharge hoses. Discharge points must not be less than 15 centimeters from the property line. All property owners are responsible to grade their lot in a manner that promotes surface drainage away from buildings and towards the public right of way.

Question: My neighbour had his downspout (roof drain) connected to a service inside the house, but now it is disconnected and it drains on to my property.

Answer: Many homes in older areas had their downspouts connected to the storm sewer system inside the house. Some basement flooding occurred during heavy rainstorms when the storm sewer system was flowing at peak capacity, causing the system to back up. Disconnecting the downspouts from the storm system allows the roof drainage to flow onto the ground before reaching the catch basin in the street. The City can support these disconnections, provided the resultant surface drainage does not impact adjacent private property or environmentally sensitive locations. In many cases, the existing surface grading will require improvement to ensure compliance with the Surface Drainage Bylaw.

Examine your own grading and be prepared to make changes to ensure that your foundation grading will direct surface drainage away from your house. Evaluate the existing drainage pattern and discharge locations with your neighbour to determine the best point of discharge for the downspouts. Discharge points must not be less than 15 centimeters from the property line. All property owners are responsible to grade their lot in a manner that promotes drainage away from buildings and towards the public right of way.

Question: I live in an older neighbourhood and my neighbour has built a new house. It is higher in elevation compared to mine, and other neighbours.

Answer: There is no surface drainage design for properties developed prior to 1989. However, the Alberta Building Code and the Surface Drainage Bylaw provide requirements for all homes to have a 10% slope away from the foundation walls. In the case of in-fill housing, the owner's must submit certificates and obtain grade approval to ensure conformance to the provisions of the [Surface Drainage Bylaw](#) and the lot grading guidelines.

To avoid surface drainage problems:

Review and repair your foundation grading to re-establish the slope away from your home.

Ensure that you have downspout extensions or splash pads to convey surface water at least two meters away from the house.

Consult with the owner's of the new home to create a drainage plan that can work for both properties.

For an evaluation of your grading contact Drainage Services at 780-944-7777 for an opportunity to participate in the [Flood Prevention Home Check-up](#) Program.

Question: My neighbour re-graded his lot higher than mine and now my basement will get flooded.

Answer: If your neighbour has re-established his foundation grading to provide the required slope of 10% away from his house without changing the existing grade at the property line, then you should examine your own lot grading and be prepared to make changes to ensure that your foundation grading will also direct surface drainage away from your house. If you have poor or negative grade, surface water will flow towards your foundation wall and increase your risk of basement flooding. Evaluate the existing drainage patterns. Consult with your neighbour over common drainage issues.

If the re-grading has resulted in directing surface drainage from the neighbour's roof or foundation directly on to your property, there may be a bylaw violation.

Call 780-496-5576 or e-mail: lot.grading@edmonton.ca to contact to a drainage representative.

Question: My neighbour built a sidewalk that it is at a higher elevation and the water runs into my yard.

Answer: Effective side-lot drainage requires the co-operation of both property owners. Check your own foundation grading and lot drainage. All property owners are responsible to grade their lot in a manner that promotes drainage away from buildings and towards the public right of way. Surface grading changes that promote the flow of surface drainage from the roof or the foundation directly onto adjacent private property may be a bylaw violation. Consult with your neighbour over common drainage issues.

Answer: Call 780-496-5576 or e-mail: lot.grading@edmonton.ca to contact to a drainage representative.

Question: I am calling to check the status of a property and I want to know if Rough or Final Grade Approval was issued.

Answer: If you are a lawyer or a realtor working on behalf of a vendor or purchaser, we can provide that information under the [Freedom of Information Policy](#) (FOIP). Provide a written request, including property address and legal description, to Drainage Services and we will generally respond within two working days.

Address:

City of Edmonton

Asset Management and Public Services

Drainage Services, Lot Grading
Main Floor Century Place
9803 – 102 A Avenue NW
Edmonton, AB
T5J 3A3

Email: lot.grading@edmonton.ca

Phone: 780-496-5576

Fax: 780-496-2865

Question: I have a commercial business and during heavy rainstorms my parking lot floods around the catch basin.

Answer: All new commercial and multi-family properties have on-site storm water management. The parking lot is designed to store rain water on the surface, which will slowly drain into the storm system through a reducer in the catch basin. This is intended to prevent surcharging the storm sewers. All commercial and multi-family properties must contain surface drainage within the property (on-site).

Question: I own a building in an older industrial area and my neighbour built a new business site that is higher in elevation compared to mine, and other neighbours.

Answer: All new commercial and multi-family properties are required to have on site storm water management. A lot grading plan must be provided, indicating the proposed on-site drainage. The builder of the new development must control their site grading, and storm water management. Retaining walls may be needed to achieve this.

You should look at your own site grading. Adjustments to the site grading may be required to provide a better level of protection from rainfall and snow melt.

Question: I live in a condominium project and several units including my own have been flooded.

Answer: Maintaining the site grading is the responsibility of the Condominium Association. If the project was built after 1993, there should be an approved lot grading plan for the project. This plan can serve as the basis for solving surface drainage issues. Problems in projects constructed prior to 1993 must be solved utilizing common sense, good grading principles, and the provisions of the Surface Drainage Bylaw with the lot grading guidelines.

Question: I heard about the Flood Prevention Program. How can I participate?

Answer: Maintaining good drainage on your residential property is an important part of the flood prevention equation. A flooded yard or basement can cause serious damage to your property, and cost you, the homeowner, time, money and inconvenience. Our home flood prevention check-up service brings a drainage specialist to your home, for a free one-on-one interior and exterior drainage assessment. The service is available to any residential homeowner in Edmonton. However, preference for booking an

appointment is given to homeowners that have a history of flooding.

Call **780-944-7777** and schedule your complimentary appointment. All bookings are based on a first come, first served basis. Follow this link to the [Flood Prevention Home Check-up](#) web page.



LOT GRADING REQUIREMENTS

Downspout and Sump Pump Discharge

Rain and snow melt from the roof are collected by the eavestroughs and channeled to the ground, or to a storm sewer service, by the downspouts. Sump pumps are used in most new homes and multi-family buildings (condominiums and townhouses) to discharge groundwater from the weeping tile system to the surface or to a foundation sewer service. If there is insufficient grade away from the building, water discharged onto the ground can drain directly back down the foundation wall and overload the foundation drainage system. Placing a concrete splash pad on the ground below the sump discharge, or a downspout, can minimize or eliminate water draining back to the foundation drainage system. Hinged downspout extensions are not recommended as they can be easily damaged or left in the up-position; however they are acceptable provided they do not extend onto an adjacent property (See Diagrams A and B).

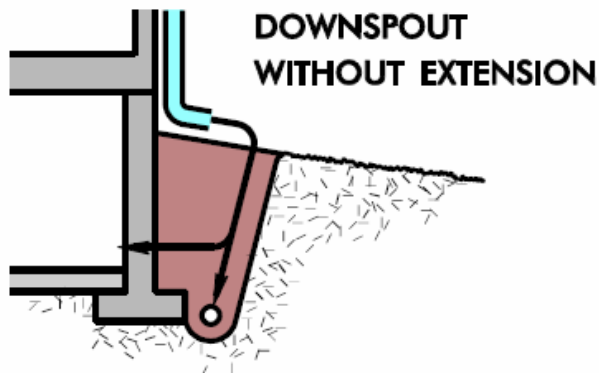


Diagram A

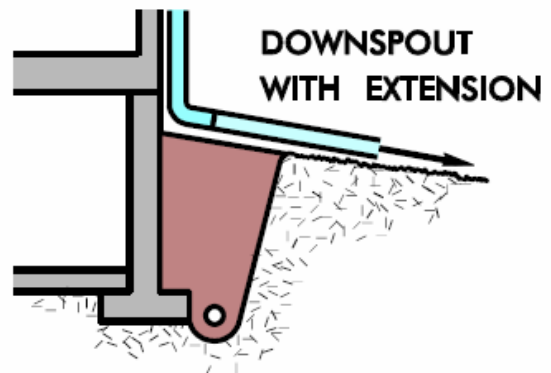


Diagram B

If a flexible hose is utilized to carry foundation drainage away from the building, the discharge point must still be on the property. Do not directly discharge onto City right-of-ways or neighbouring properties. The minimum distance for a discharge location is 15 cm from an adjacent private property and 30 cm from a City right of way.

In the winter months, the hose should be disconnected and the water discharged onto a splash pad.

Storm Sewer and Foundation Sewer Drainage

It is the builder's responsibility to ensure that the roof leaders (downspouts) and the foundation drainage systems (weeping tile) are draining according to the approved engineering plans. To determine if a property has a sewer service connection for downspouts or foundation drainage, please contact the Water and Sewer Servicing section at 780-496-5444. Wherever a storm sewer service exists, all downspouts and the sump discharge must be directly connected to the service, and wherever a foundation service exists, the sump pump discharge or weeping tile must be directly connected.

Beginning in 2006, all new developments involving single detached, semi-detached or duplex houses must provide "foundation drain discharge collection systems". These properties must connect the sump discharge outlet to the foundation service.

Minimum Grade from Foundation Walls

A sloped surface is required to effectively drain water away from all foundation walls including areas under decks and steps. This greatly reduces the risk of surface water entering the basement in residential and multi-family properties or the floor slab of commercial properties during rainfalls or snow melt.

The following are the minimum slope requirements for lot grading:

- 10% for first 2.0 meters – Minimum 20 cm drop for final landscaping or a 15 cm drop on side lots that are less than 2.0 m (See Diagrams C and D below).
- 0.75% for concrete, asphalt or other impervious surface treatment, to within 15cm of the property line. Example: a concrete sidewalk along the side of the house and/or garage. And/or 0.75% for 2.0m from a foundation wall at any other location.



Diagram C

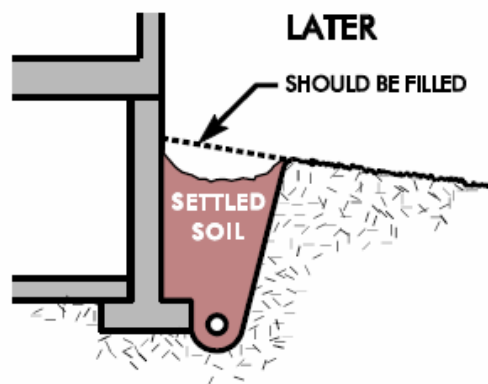


Diagram D

Drainage Swales

Drainage swales are shallow sided, sloped channels intended for the conveyance of surface runoff to the nearest street, lane, dry pond or storm water management lake.

On lots that drain from rear to front, a swale is located in the back yard where the forward slope of the lot meets the rearward slope of the foundation grading. A rear internal swale directs surface drainage to one, or both, of the side lot swales.

Due to the topography of some areas, lot-to-lot drainage may occur.

Where there is no approved lot grading plan, look at the existing surroundings and create an appropriate plan to drain the lot. The most effective way is to cooperate with neighbours so that both lots can drain to a street or a back lane via a common swale. There are two common surface drainage types, *Rear to Front Surface Drainage* (Diagram F) and *Split Surface Drainage* (Diagram G).



Diagram F



Diagram G

Otherwise, create an internal drainage swale so the surface water does not impact the neighbour's lot. This consideration should be used when constructing a new house in an older neighbourhood (in-fill housing) (See Diagrams G and H below).

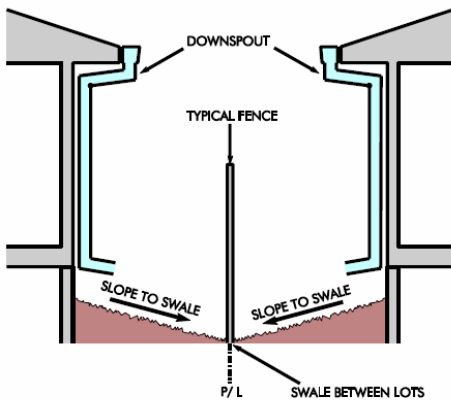


Diagram G

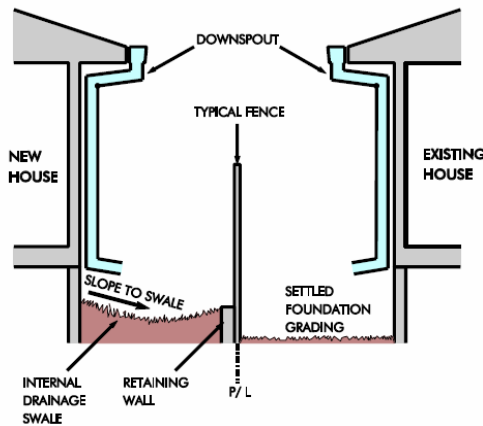


Diagram H

- Each swale should provide, within a property, a minimum of 15 cm of unobstructed width.
- The minimum slope for a grass drainage swale is 1.5%
- The minimum slope for a concrete drainage swale is 0.75%

Lot Grading Certificates and the Inspection Process

Where there is an approved lot grading plan, and for In-fill housing development, a Lot Grading Certificate is required for grading approval.

The Lot Grading Certificate shall have the following information:

- Certification by an Alberta Land Surveyor, Professional Engineer or a Registered Architect
- Name of the Company that produced the Certificate
- Property Information: Legal Description and Municipal Address
- Surface Condition of the Lot: i.e. Clay, Topsoil, Sod, or Landscaped
- Note indicating that the Grading is subject to the approval of the Local Authority
- Design and existing elevations referenced to metric geodetic datum, with an asterisk designating existing elevations that exceed the grade tolerance
- As-built elevations of structures such as: retaining walls, sidewalks, driveways, fences
- As-built elevations of the adjacent property, if landscaped, at the design elevation locations
- Foundation grade elevations with an additional elevation 2-3 metres from the back of the house
- As-built property-line (swale) elevations opposite the corners of the building, for locations that are more than 3 meters from a design point
- Elevation of as-built high point on split grade lots, if location is different from the design
- Date of Survey
- Scale of drawing
- House layout
- North Arrow
- Drainage Easements and Right-of-Ways
- Detailed Surveys for lake lots require the location and elevation of structures or features within the Maintenance and Overflow Area
- Lot Orientation is Portrait, with the rear of the lot at the top of the page and the “FRONT” of the lot labeled
- Name of the applicant and the information required to send inspection reports or grading approval i.e. Mail, fax number or e-mail address

When Grade Approval is issued, the owner will be notified of the approval. The Lot Grading Inspector issues Grade Approval based on the site conditions at the time the inspector was present and it is the property owner’s responsibility to maintain approved surface grades in perpetuity. The City of Edmonton may, at any time, require maintenance or repairs to the lot grading if alterations or settlements result in surface drainage problems.

WHAT YOU SHOULD DO?

Most problems can be resolved with open communication. Adjacent property owners have an equal interest in effective drainage of surface water. The City’s representatives (Lot Grading Inspectors) are not mandated to act as dispute arbitrators, but are available to investigate surface drainage problems and enforce the provisions of the Surface Drainage Bylaw.

- Check your own surface drainage.
- Talk to your neighbours to work out solutions. They may not realize there is a problem.
- Contact a professional. For example: landscapers or foundation drainage experts.
- To try Mediation, contact the following organizations:
 Alberta Arbitration and Mediation Society, Phone: 780-433-4881, Web Site: www.aams.ab.ca
 Mediation and Restorative Justice Centre, Phone: 780-423-0896, Web Site: www.mrjc.ca
 Mediation and the Civil Courts, Phone: 780-427-2721, Website: www.albertacourts.ab.ca/mediation

If attempts to find solutions with adjacent property owners have not resulted in satisfactory drainage arrangements, you can contact the City to investigate. A Lot Grading Inspector will examine surface drainage conditions on both properties, and make recommendations for improvements. A Letter of Non-Compliance or a Notice to Comply will be sent for infractions of the Surface Drainage Bylaw No. 11501. Property owners must then take steps to bring their property into compliance with the bylaw.

FOR MORE INFORMATION

Bylaws

- [“Surface Drainage Bylaw No. 11501”](#)
- [“Sewers Use Bylaw No. 9675”](#)
- [“Sewers Bylaw No. 9425”](#)

Pamphlet Series

- **“Lot Grading Inspections”**
- Residential Properties
- **“Lot Grading Inspections”**
- Final Grade Stage
- **“Sump Pumps”**
- An Information Guide
- **“Lot Grading In-fill Housing Development”**
- An Information Guide
- **“Lot Grading Lake Lots and Top of Bank Lots”**
- An Information Guide
- **“Flood Proof – Flood Prevention Program”**
- The Homeowner’s Guide to Flood Prevention
- Sump Pump Guide
- Flood Prevention Tips for Homeowners
- **“Living Near Urban Lakes”**
- An Information Guide
- **“Treat it Right Storm Water”**
- *Teachers Guide*
- **“Treat it Right Wastewater”**
- *Teachers Guide*

CONTACT INFORMATION

Telephone Numbers

- ❑ Asset Management and Public Works Department, Drainage Services
780-496-5576 – Lot Grading Information and Assistance (8:00 am - 4:30 pm Monday to Friday)
780-496-5563 – Main Floor Reception
780-496-2865 – Lot Grading Fax
780-496-5444 – Water and Sewer Servicing Information
780-944-7777 – Flood Prevention Program
311 – Drainage and Sewer Trouble, Re-Inspection Request, General Inquires (24 Hours)

Mailing Address

- ❑ City of Edmonton
Asset Management and Public Works
Drainage Services
Lot Grading
Main Floor, Century Place
9803 – 102A Avenue
Edmonton, Alberta, Canada
T5J 3A3

Internet Addresses

- www.edmonton.ca
- www.edmonton.ca/floodprevention

E-mail

- Lot.Grading@edmonton.ca

