City of Peterborough Rain Garden Subsidy

2021 Application Guide

City of Peterborough | 500 George St. N., Peterborough, ON K9H 3R9

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1.0 Introduction

The following guide will provide you with details related to the Rain Garden Subsidy application process. There are some key steps that must be completed as part of your application.

1.1 Key Steps

1. Attend GreenUP informational session (optional).
2. Complete the pre-approval application online by answering a questionnaire and completing a roof area calculation to receive your subsidy estimate.
3. Attend a GreenUP workshop (mandatory).
4. Determine the slope of the place where you wish to place your rain garden. Write it down on the included Design Sketch Template (page 14).
5. Conduct a drainage test at the location you would like to place your rain garden and complete the Drainage Test Table on your Design Sketch Template (page 14).
6. Submit your application for full approval either in person at City Hall or electronically on our website.
7. Once your application has been approved, install your rain garden.
8. Take progress photos and keep receipts of all materials (excluding tools) used to install the rain garden.
9. Submit your progress photos and receipts either in person or electronically and receive your subsidy cheque.

The City of Peterborough requires all submissions in metric units.

Imperial to Metric conversions

1 foot ≈ 0.30 metres

1 metre ≈ 3.281 metres

To help guide you through the application process, this document provides detailed instructions on how to complete all necessary application tasks. Below are instructions and examples for each component of your application. Please be advised all applications will need to be approved prior to installing the rain garden. Given the limited subsidy funding available, approvals will be awarded as a first-come, first-serve basis.

1.2 Contacts

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2.0 Application Instructions

2.1 Attend GreenUP Informational Session and Workshops

For all residents interested in finding out more information about the Rain Garden Subsidy program, GreenUP will facilitate one informational session as a commitment-free opportunity to learn more about the program and ask any questions.

For those residents interested in applying and who have qualified through the pre-approval application for the Rain Garden Subsidy, you are **required** to attend one of two Rain Garden Workshops also facilitated by GreenUP.

The workshops, offered twice a year, will provide personal support on how to design, prepare, and install a rain garden; provide help with the application process; and aid in the building of knowledge and skills. Participation in one of the two Rain Garden Workshops is **mandatory** for qualifying homeowners that would like to proceed with the installation of a rain garden on their property. After successful completion of a GreenUP Rain Garden Workshop you will receive a GreenUP certification of completion for your records and Rain Garden Subsidy application.

For information about upcoming rain garden events and workshops, please visit https://www.greenup.on.ca/events/. Please pre-register for upcoming events and workshops online or by contacting GreenUP.

2.2 Aerial Photo Measurements

Once you have completed the pre-approval questionnaire you will be directed to the subsidy estimate page. [https://forms.peterborough.ca/Rain-Garden-Subsidy-Pre-Approval-Application]

The Aerial Measurement Tool included on the subsidy estimate page will allow you to provide an aerial view of your property including the measurements of the roof area you are capturing and your proposed rain garden dimensions. [https://webmap.peterborough.ca/raingardensubsidy/]

Instructions on how to use the online aerial tool are available directly on the aerial tool web page. Assistance with this tool is available upon request. The aerial should include:

- A view showing the entire house and at least a portion of each neighbouring home and your street.
- The location and approximate **rectangular** dimensions of your rain garden, regardless of the proposed shape.
- The roof area that flows to the downspout you intend to direct towards the proposed rain garden.
- The location of the existing downspout or roof drain that will be directing water to your rain garden site.

When deciding on the location of your rain garden, please ensure the following:

- The rain garden is installed in an area of your property that will capture water from an existing disconnected downspout (i.e. a downspout that flows onto the ground), preferably one that currently drains toward the street.
- The rain garden site is at least three metres away from any building foundations.
- The rain garden will be installed on a relatively flat section of the yard (1% - 5% slope).
- The rain garden is located away from any underground systems (e.g. cable lines, sprinkler systems). Note that you will need to obtain information about underground utilities through Ontario One Call which can take one to two weeks.

  [www.ontarioonecall.ca/]
- The rain garden does not prevent a neighbouring property from draining properly, and water can safely overflow away from your rain garden during heavy rainfall. Water should not not be directed towards an adjacent home.

Once your rain garden Aerial is complete, print a paper copy or save an electronic copy (if submitting digitally) to include in your submission package. Refer to Figure 1 for an example of a complete aerial.

Figure 1: Complete aerial photo showing downspout locations, roof area, garden locations and all associated dimensions.

2.3 Detailed Subsidy Estimate

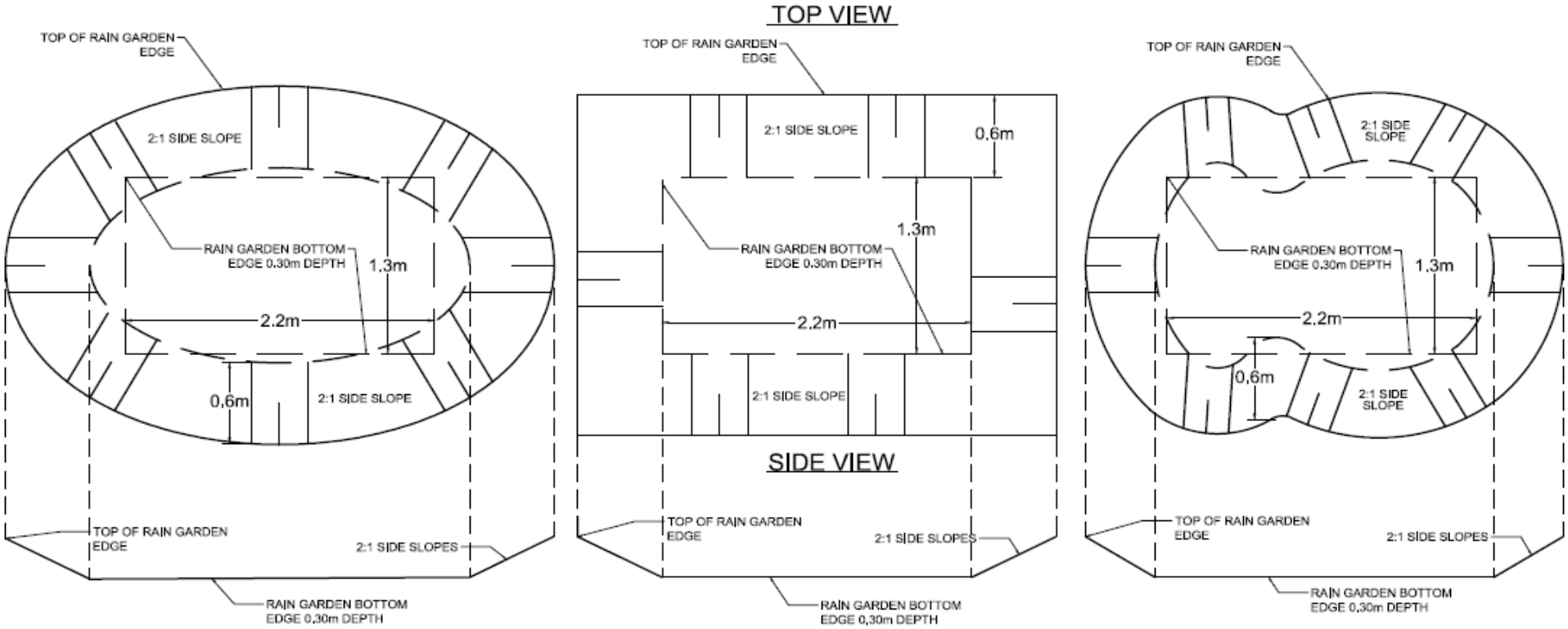
Once you have completed the aerial image section of the pre-approval process, you can fill in the subsidy estimate calculator. This will provide an estimate of how much subsidy funding you may qualify for.

Please note, this tool provides only an estimate. The City reserves the right to modify subsidy amounts based on the information you submit in your application.

You can make your rain garden in any shape. Figure 2 shows some examples of rain garden shapes.

For the purposes of inputting the rain garden dimensions in the subsidy estimate tool please enter the approximate square dimensions of the bottom edge of the rain garden regardless of shape. The example gardens in Figure 2 would all be entered as 1.30m x 2.20m

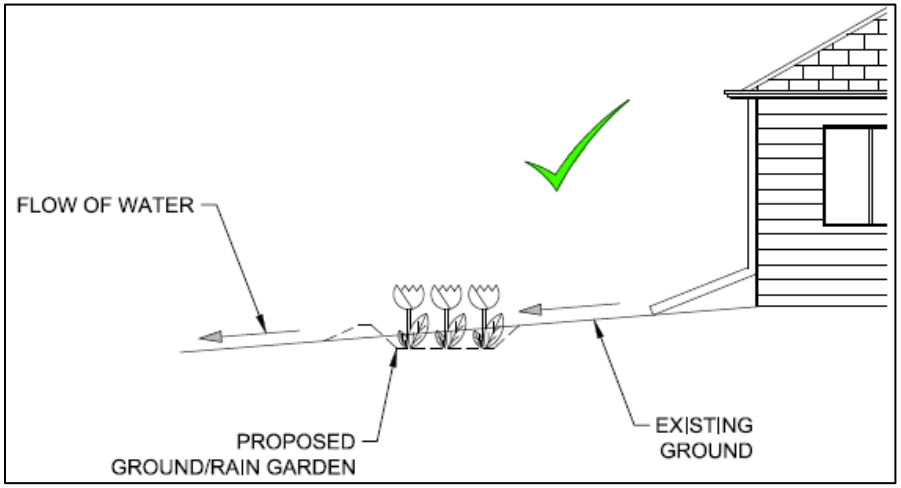
Figure 2: Rain Garden Shape Examples



2.4 Slope on Your Property

Knowing how and where water is flowing on your property will help you to determine where your rain garden should be installed. The easiest way to observe how water flows from a downspout (roof drain) on your property is to go outside during heavy rain and watch how water moves across your yard from the downspout. If there is no rain in the forecast, pour a full bucket of water at the base of the downspout and note the direction the water flows. This will show if the slope on your property is directed toward your house or away from your house, and to what location the water flows on your property. Water should drain **away** from your house and into the rain garden to prevent flooding. Water should also be directed **away** from any neighbouring homes to prevent flooding or nuisance ponding on neighboring properties. In major rainstorms where the garden overflows, water must continue to spill away from your house, preferably towards the street. Refer to Figure 3.

Figure 3: Correct slope configuration for rain garden location

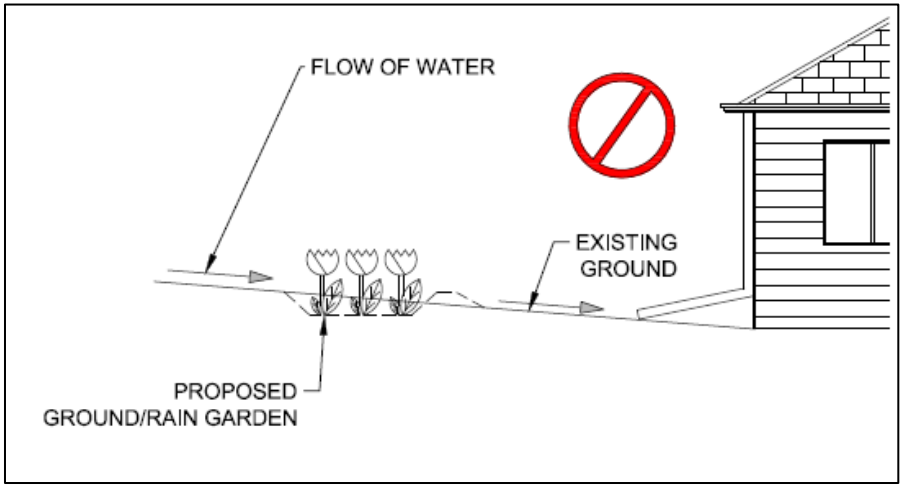


Assessing Ground Slope

Please note on Figure 3, the flow of water is draining away from the house into the rain garden. In the case of a major rain event where the water overflows from the rain garden, it continues to spill away from the house. This is the correct sloping configuration when identifying where you should place your rain garden.

Figure 4 has water flowing towards the house. The rain garden will not capture water from the roof drain, as intended. Water that does spill over the rain garden will then spill towards the house that could lead to pooling around the foundation and cause flooding.

Figure 4: Incorrect slope configuration for rain garden location.



Calculating Slope Exercise

1. Set a metre stick or string line (measured out to 1 metre) in the location of your rain garden, and place one end at the high point of the proposed rain garden location, and the other end towards the low end. Ensure the direction of your measurement best represents the slope of land where your rain garden will be located.
2. Make sure the metre stick or string line is as flat as possible by using a level.
3. Take your ruler or tape measure and at the measured 1 m distance (low end), measure the height from the ground to your metre stick or string. The measurement in the example below is 5 cm or 0.05 m over a span of 100 cm or 1 m. Using a simple rise divided by run calculation you can determine slope.
4. Once you have the slope percentage in the proposed location of your rain garden, write it down to include this number in your design sketch. Draw an arrow from the top of the slope to the bottom of the slope.

You will need:

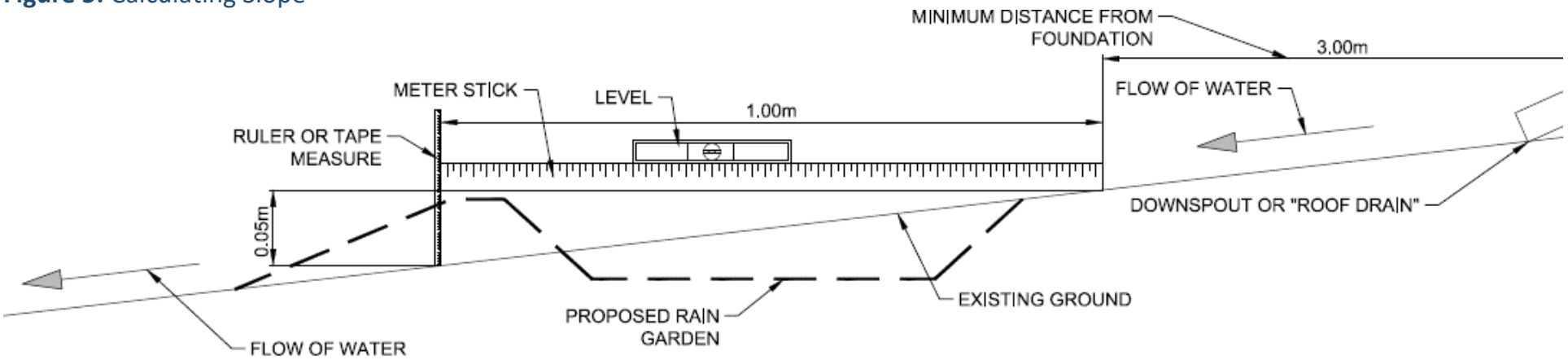
- **a metre stick or string line measured out to one metre**
- **a level**
- **a ruler or tape measure with a metric scale**

How to Calculate Slope:

Rise ÷ Run = % slope

Figure 5 example:
5 cm (rise) / 100 cm (run) = 0.05 (5% slope)

Figure 5: Calculating Slope



2.5 Soil Types and Conducting a Drainage Test

Soil Types

Generally, soils can be classified into three categories:

1. **Clay**

   Clay is a soil that is mostly fine particles with a gel-like substance and becomes sticky when wet. This type of soil holds water and is not good for drainage.

2. **Sand**

   Sand is a granular material composed of fine rock and mineral particles. It is defined by size, being finer than gravel and coarser than silt. This soil type is good for drainage and does not hold water.

3. **Loam**

   Loam is a mixture of soil that is ideal for growing plants. It is a combination soil, normally equal parts of clay, silt, and sand, which gives the benefits of each with few of the disadvantages.

Ideal Soil Conditions for a Rain Garden

A mix of sand and loam soils where water drains quickly, yet also supports plant growth, is the ideal soil type for a rain garden. Areas that are rich in clay do not provide enough drainage to allow for a properly functioning rain garden. In the case with clay, the garden may need to be dug out completely and replaced with a more suitable soil to allow for proper drainage.

Other areas that are not suitable for a rain garden include:

- areas with a near-surface groundwater table;
- areas where bedrock or significant shale exist near the surface; and
- areas where contaminated soil may be present.

Loam and sandy-loam are the most common soil types in the city of Peterborough. Both soil types are well-draining and will support rain garden plants.

In order to determine your soil type please conduct a Drainage Test (page 11).

Drainage Test Instructions

Steps

1. CALL BEFORE YOU DIG! 1-800-400-2255. Ontario law requires that you have your utilities located before you dig, to avoid hitting a gas or other utility line. Before putting a shovel in the ground, ensure you have located all underground utilities. It can take one to two weeks before you receive the utility locates, so factor in this time before conducting your drainage test.

2. Dig a hole deeper than the intended depth of your rain garden. Dig the hole at least 0.30 m (30 cm) wide.

3. Measure from the bottom of the hole to the top of the hole and record this measurement.

4. Fill the hole with water to the top and allow to drain completely. This saturates the soil so that you will get a better drainage reading.

5. Fill the hole with water to the top a **second time**, measure the depth of water.

6. Return to the hole after two hours and measure the water depth again, recording the measurement.

7. Fill out the Soil Drainage Test section of the Design Sheet Template. Refer to Figure 6 (below) for a drainage test diagram for a visual example.

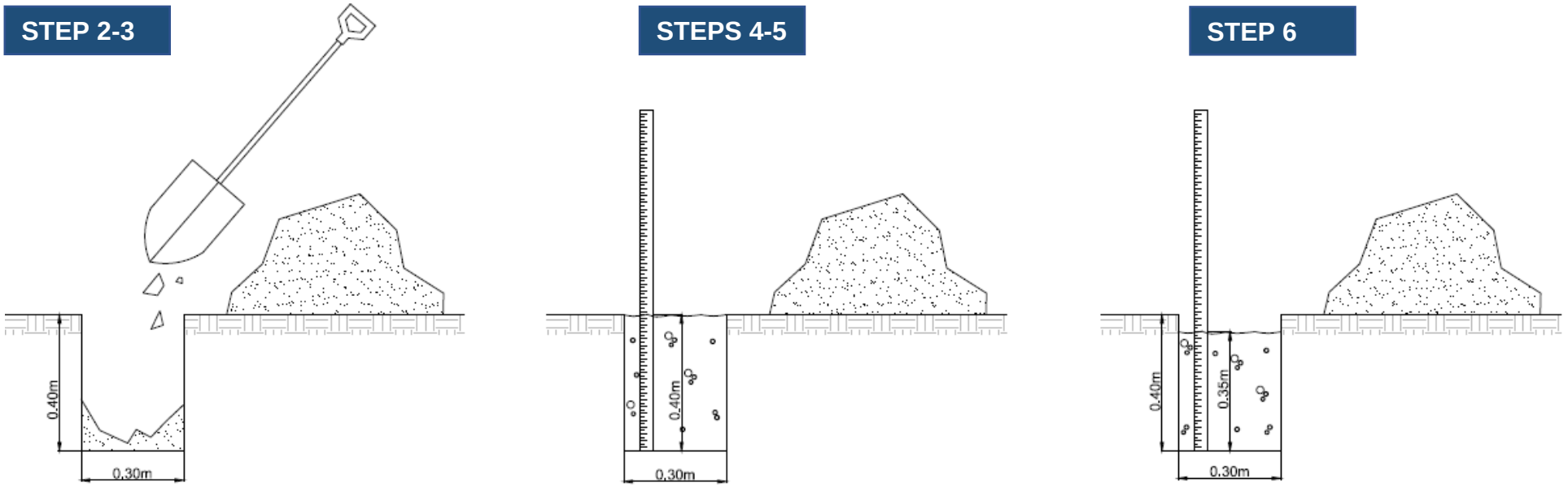
You will need:

- a shovel
- a metre stick or tape measure
- a bucket of water or hose

STEP 1

ON1CALL
CALL BEFORE YOU DIG
www.on1call.com
1-800-400-2255

Figure 6: Drainage Test Diagram



Soil Drainage Table (fill this information out on the bottom right of your design sketch template page)

Initial height of water (2nd fill)	400 mm (A)
Height of water after 2 hours	350 mm (B)
Measured depth difference	400 mm (A) – 350 mm (B) = 50 mm (C)
Time between measurements	2 hours
Infiltration rate per hour	50 mm (C) / 2 hours = **25 mm/hr**

STEP 7

Soil Type Drainage Chart:

Soil Type	Basic Drainage Rate (mm/Hr)	Type Of Soil	Drainage Time (Hrs)
Sand	30+	Excellent Drainage	Less than 2
Sandy loam	**20-30**	**Very good Drainage**	**2-6**
Loam	10-20	Good Drainage	6-10
Clay loam	5-10	Satisfactory Drainage	10-16
Clay	1-5	Unsatisfactory Drainage	16-24

2.6 Design Sketch

As part of the Rain Garden Workshop organized by GreenUP, you will learn how to design your rain garden.

Using the Design Sketch Template you will create a sketch of your rain garden. This sketch will help you to envision what the garden might look like, what plants and materials you would like to include, and will help in estimating the costs of constructing your rain garden.

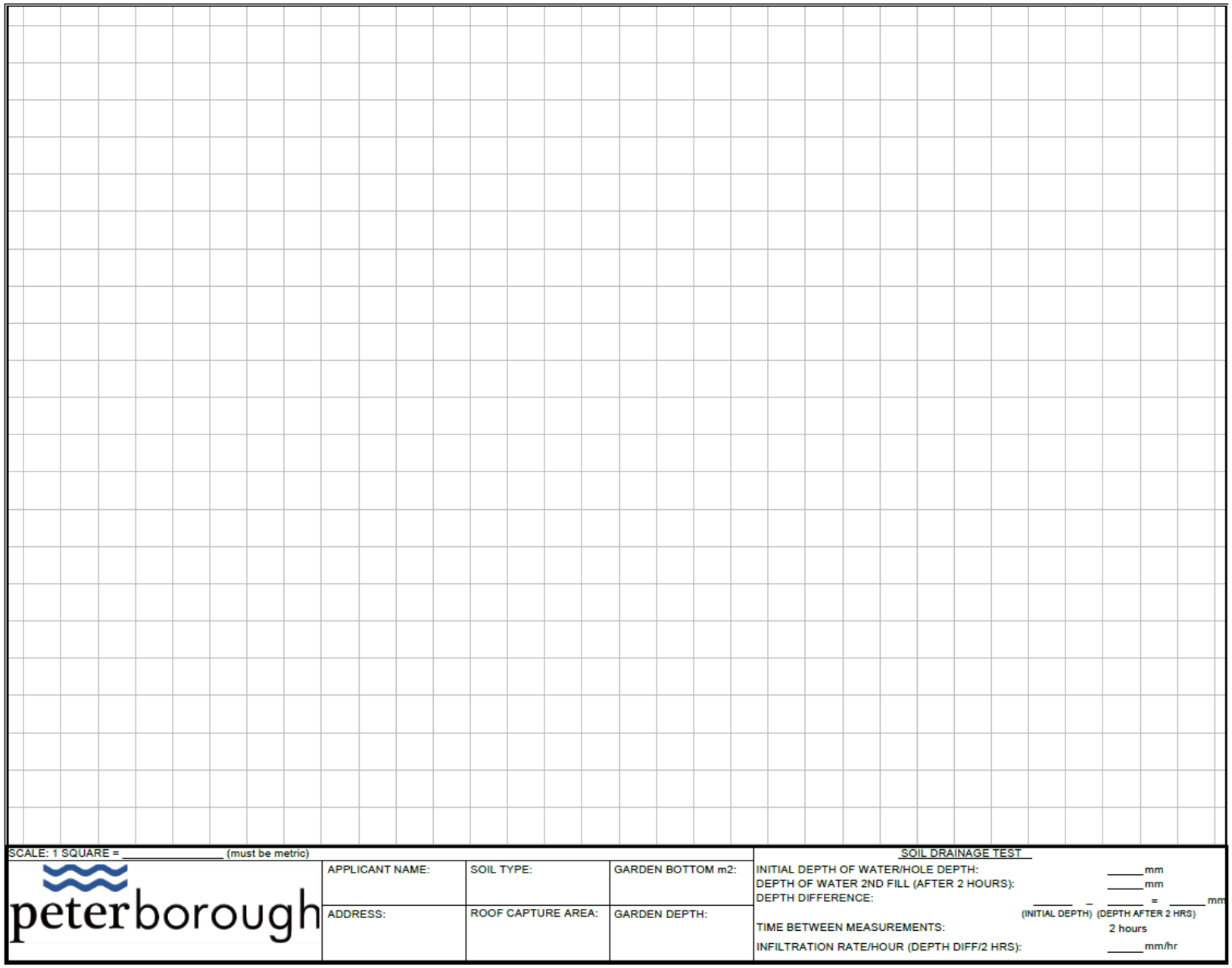
Your design sketch must include the following minimum details. You may, however, wish to include additional items, such as your plant species and locations.

IMPORTANT: The proposed depth of your rain garden is the finished grade elevation. You will need to dig out the rain garden deeper than the finished grade elevation and backfill with loose material. Details on how deep the sub-grade of the garden will need to be dug out will be provided during GreenUP's mandatory installation workshop.

Required details for the Rain Garden Subsidy Program:

- Draw out the rectangular area and dimensions of the base of your rain garden (refer to examples in Section 2.3). We use this information to approximate the area of your garden to be used in calculating the subsidy amount.
- Draw the outline and shape of the garden base and indicate top of the garden's slope. If your rain garden is 0.30m deep, the top of the garden's slope would be 0.6m from the base edge, creating a minimum 2:1 slope (refer to examples in Figure 2, Section 2.3).
- Indicate the location of your downspout relative to the garden site, where water will enter the garden, and the location where water can safely exit the garden during a heavy rain event.
- Include the slope of land (e.g. 5% slope) where you are proposing to install your rain garden. The steps to determine slope are provided in Section 2.4. Include a directional arrow showing which direction water flows.

Figure 7: Design Sketch Template



2.7 Application Approval and Installing Your Rain Garden

Before you move forward with installing your rain garden, please submit the following documents as part of your application submission for approval by the City of Peterborough. Once reviewed and accepted, the City or GreenUP will notify you that you can install the rain garden.

Application submissions can be made online by uploading your rain garden design sketch, or by dropping off hard copies at City Hall, 500 George St. N. Instructions on how to submit applications electronically will be emailed to qualifying applicants.

Please refer to the following checklist to confirm that all application requirements have been met:

- ✓ Completed pre-approval form (questionnaire, aerial, estimate) (online) and received confirmation of your eligibility
- ✓ GreenUP Workshop Certification
- ✓ Slope calculation (identified on Design Sketch, for reference refer to Figure 5 on page 9)
- ✓ Soil drainage test results (identified on Design Sketch, for reference, refer to Figure 6 on page 12)
- ✓ Rain Garden Design Sketch (for reference, refer to Figure 7 on page 14)

3.0 Reimbursement & Special Considerations

3.1 Reimbursement Requirements

Once your rain garden has been installed please make sure that all items in the following checklist are complete and submitted to the City of Peterborough for review and reimbursement either online or in person at City Hall 500 George St. N. Peterborough ON.

- ✓ All receipts for materials used are to be submitted to the City after rain garden installation for reimbursement. Copies of receipts are acceptable original receipts are not required.

  IMPORTANT NOTE: Reimbursement will be for **materials only** (i.e. sand, topsoil, plants, stone etc.). Tools such as shovels, rakes, and wheelbarrows **are not** included in the subsidy reimbursement program.

- ✓ At least three progress photos. One of the rain garden location before excavation, one after excavation, and one of the finished product complete with vegetation.

  Note: Photos should include background reference points for location verification (e.g. your house in the background)

3.2 Special Considerations for Installation

Things to consider when installing the rain garden:

- Please ensure that all project tasks are completed with safety as the number one priority. Keep workspaces clear of clutter and debris and use proper ergonomic form to prevent lower back injuries when digging.

- **CALL BEFORE YOU DIG!** Before conducting any excavation work on your property whether it be planting a tree, building a deck or installing a rain garden make sure you call before you dig to request locate services at 1-800-400-2255. It usually takes one to two weeks for Ontario One Call to get back to you with the utilities located, so be sure to leave enough time for this step.