

## Calculation Guide

The Waterscape Rebate Program uses the roof area captured by your project to estimate your rain harvest volume during a typical San Diego storm. Once you've estimated your rain harvest volume, you can use it to determine the size of your project and maximize your rebate. Experienced water harvesters may be able to complete these calculations independently. Waterscape Rebate Program staff are available to assist with calculations, as needed.

### Step 1: Measure your roof area

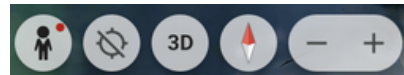
**1 Go to [google.com/earth](https://www.google.com/earth).**



**2 Find your property.**

Click on the search bar and enter your home address.

**3 See your house from a bird's eye view.**



Click on the 2D/3D button on the bottom right to remove 3D view. You can zoom using the scroll wheel or your mouse and pan to your house using the left click. Press the "r" key to look directly down on your house.

**4 Find the measurement tool.**

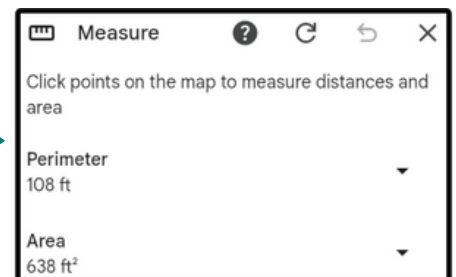
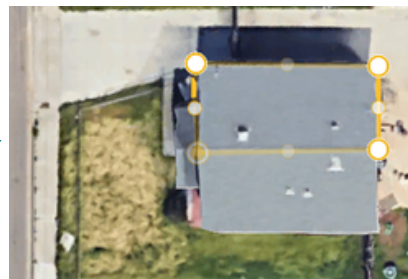


Click on the ruler tool. Make a test measurement and confirm the units are set to feet. Click the dropdown arrow to change units if needed.

**5 Measure your roof area.**

Center your cursor on a corner of your roof and click. Move to the next corner and click. You will see a yellow line connecting the corners. Keep clicking until you have outlined the part of your roof that drains to your downspout. The box on the right side of the screen will show the perimeter and area of your selected roof section (make sure the units are in square feet).

If you are implementing multiple Rain-Saving projects (such as a rain garden on one side of your house and containers on the other side), you will need to calculate each area captured separately.



**6 Write down your total roof area and the roof area(s) that will drain to your container and/or rain garden on your application.**



# COUNTY OF SAN DIEGO WATERSCAPE REBATE PROGRAM

## Step 2: Use your roof area to estimate your rain harvest volume

Rebate amounts are based on the rain harvesting capacity of your project. To qualify for a rebate, your container or garden must at least be large enough to store all rainwater that runs off from a 110-sq.-ft. area during a typical San Diego storm (0.75 in. or 0.063 ft. of rainfall depth).

Use the formula below to calculate the rain harvest volume for your roof so you can maximize your rebate. Note that there are 7.48 gallons in a cubic foot (ft<sup>3</sup>):

$$\text{Roof area (sq. ft.)} \times \text{Rainfall depth (ft.)} \times 7.48 \text{ gallons/ft}^3 = \text{Capture volume (gallons)}$$

Here's how you can use the above formula to calculate the rain harvest volume for a 1,000-sq. ft. roof:

$$1,000 \text{ sq. ft.} \times 0.063 \text{ ft.} \times 7.48 \text{ gallons/ft}^3 = 471 \text{ gallons}$$

## Step 3: Use the rain harvest volume to determine your project size

Now that you know how many gallons you can capture to maximize your rebate, you can decide how big to make your rain garden or rock garden.

- Rain gardens filled with soil can capture 1.90 gallons per cubic foot of volume (surface area x depth).
- Rock gardens can capture 2.50 gallons per cubic foot of volume.
- Most rain and rock gardens also have a ponding area on top, which can capture 7.48 gallons per cubic foot of volume.

You could build a rain garden that covers 248 sq. ft. and is 1 ft. deep to capture 471 gallons. If you have less space available, you could capture the same volume with a 188-sq.-ft. rock garden that is 1 ft. deep (not counting ponding area). **That's a \$1,000 rebate!**



Rock garden capturing rainwater

### Example: Capturing a 0.75-in. storm from a 1,000 sq. ft. roof area (471 gallons).

<b>Rain garden size needed</b>	$471 \text{ gallons} \div 1.9 \text{ gallons/ft}^3 = 248 \text{ ft}^3$
<b>Rock garden size needed</b>	$471 \text{ gallons} \div 2.5 \text{ gallons/ft}^3 = 188 \text{ ft}^3$
<b>Rain barrel size needed</b>	471 gallons

## Bonus: Earn a bigger rebate with upgrades!

A standard Rain-Saving rebate pays \$1.00 per sq. ft. of roof area captured. You can increase your rebate to \$1.50 per sq. ft. by:

- Increasing the storage volume of your project to capture a storm that is 50% larger (1.13 in. or 0.094 ft. of rainfall depth) — for an **extra \$0.25 per sq. ft.**
- Capturing runoff from at least 90% of your total roof area — for an **extra \$0.25 per sq. ft.**