

Capture **First Flush**

First Flush is the **First Inch of Rain** after a dry spell.

This is the most important water to capture in your landscape. The first rainfall washes away pollution that has gathered on hard surfaces during the dry spell, and it needs to be filtered by the healthy soil and root zones of plants before it goes anywhere else.

Calculate How Much Water Comes Off Your Roof

The shape of your roof doesn't matter in the calculation of water it produces. A pitched roof and a flat roof have the same footprint and the same amount of rain falls on the total roof area. Just measure the outside edges (the footprint) and calculate the square footage as you would any landscape area.

Area of a Rectangle = length of side A x length of side B

Some roofs are flat, and therefore easy to calculate. For complicated roofs, divide the area into squares and add up the area of each square.

Once you know the total area of the roof, you can figure out the amount of rainfall that it generates in gallons. 0.62 is a constant that converts square foot inches into gallons.

Rainfall (in Inches) x Roof Area Square Feet x 0.62 = Gallons of Rain Water From Your Roof

You can use these calculations to determine how much water comes off any hard surface (patio, driveway, sidewalk, etc.).



Tom Rau, Mar Vista



How Much water per downspout?

First figure out how much water is coming from the whole roof, and then divide the roof into sections and calculate the particular amounts falling from each downspout:

Rainfall (in Inches) x Roof Area Square Feet x 0.62 = Gallons of Rain Water From Your Roof

If your roof is 1,000 square feet (SF), here's how much water runs off it:

- 1" (rainfall) x 1,000 SF x 0.62 = 620 gallons
- 10" (typical coastal total rainfall) x 1,000 SF x 0.62 = 6,200 gallons
- 30" (typical foothills total rainfall) x 1,000 SF x 0.62 = 18,600 gallons

It adds up quickly, even in dry areas. Try to save as much as you can in your landscape sponge!

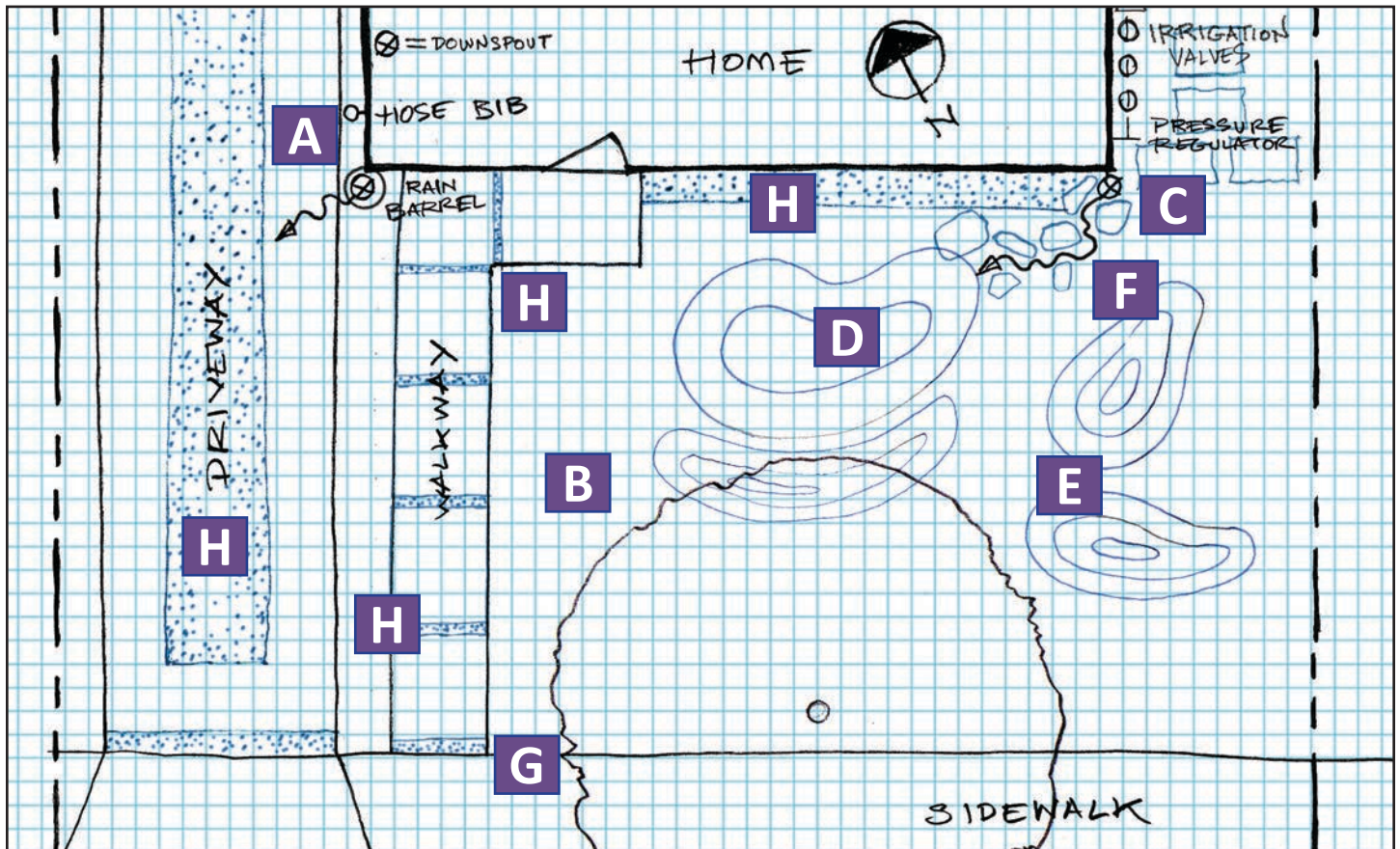
Imagine the water from your garage roof splits into two downspouts and Your Total Roof Area is 20' x 50' = 1,000 SF

If half of the water goes into each downspout, then the roof size for one downspout is: 1,000 SF ÷ 2 = 500 SF

Now calculate how much water that is in gallons from each inch of rain coming from one downspout:

1" x 500 SF x 0.62 = 310 gallons of water per inch of rain per downspout.

Plan to Detain the Rain



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- A Downspout Redirected Into Rainbarrel** and away from the foundation of the residence. Overflow from rainbarrel slows down into gravel in the middle of driveway.
- B Healthy Soil** is being created with Sheet Mulching using 4" - 6" of mixed leaf and bark tree trimmings covering the whole yard (see p. 26).
- C Downspout Diverted Into A Catchbasin** which is connected by underground pipe into the swale area of the landscape. This should eliminate the pooling and erosion caused by the downspout.
- D A Slight Depression**, or swale, has been dug out in the middle of the yard in the area where water always pooled. This swale is only 6" - 12" deep in the middle and covers approximately 150 sq. ft. for every 1,000 sq. ft. of roof area (see p. 28).
- E Relocate Soil As Berms** when digging out the swale and the driveway area. Relocated soil becomes raised or mounded areas (berms) on either side of the depressed area. The berms become places for plants that like fast drainage (see p. 28).
- F Stones And Boulders**, most typically no more than 12" - 18" in diameter, are used to retain the edges of the swale and provide visual interest in the landscape.
- G Overflow** of excessive rain should be directed through the garden and out to the street, not on to neighboring properties.
- H Concrete Removed and Gravel Installed** in middle and end of driveway and across the front of the residence. The 18" wide gravel area reduces erosion under roofline. Horizontal cuts made in the walkway are filled with 1/4" - 1/2" crushed gravel. These are not eligible for a rebate.

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Rainbarrel with overflow into planter or permeable driveway

Sheet Mulch of leaf and wood tree trimmings builds healthy soil

Downspout diverted into swale area through catchbasin and underground pipe

Slight depression, berms, and boulders of a typical swale