

WaterSense® created the Water Budget Tool as one option to help builders, landscape professionals, and WaterSense irrigation partners meet the criteria for the *2009 WaterSense Single-Family New Home Specification*. The following guide provides step-by-step instructions. Detailed instructions and background information are also available on the [WaterSense website](#). The water budget tool is comprised of three sections (Part 1, Part 2, and Part 3), each on its own worksheet:

Part 1 Baseline & LWA: Collects basic information and calculates the landscape water allowance (LWA).

Part 2 LWR: Calculates the landscape water requirement (LWR) or how much water the landscape will need.

Part 3 Results: Displays the results of the tool.

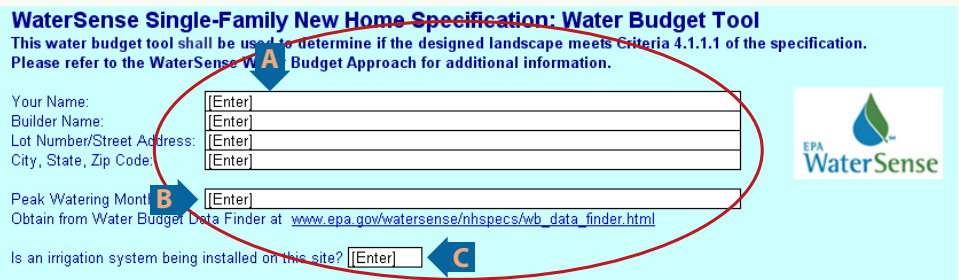


Part 1—Baseline & LWA (Landscape Water Allowance)

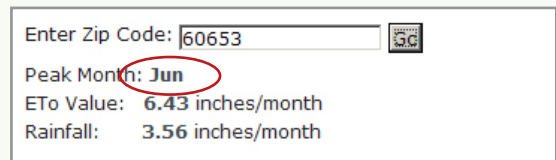
Basic Information

To begin, you will need to enter basic information in the white boxes at the top of the worksheet titled Part 1—Baseline & LWA.

A. Fill in the information for the landscape in the white boxes at the top of the sheet.



B. Visit the [Water Budget Data Finder](#) on the WaterSense website. Enter the zip code where the landscape is located and click the “Go” icon. The tool will give you three pieces of information: peak watering month, evapotranspiration (ETo) value, and rainfall. Enter the **peak month** (June in the example at right) in the water budget tool in the white box labeled “peak watering month.” Record and save the other pieces of information (ETo and Rainfall) as you will need these later in the tool.¹



C. Use the drop down menu to select whether or not an irrigation system is installed on this site.

¹ If your zip code returns the message “There are no values matching your search criteria,” consult the Water Budget Approach document at http://www.epa.gov/watersense/docs/ws_water_budget_approach508.pdf or contact the WaterSense helpline at (866) WTR-SENS (987-7367)

Part 1—continued

This information will populate automatically throughout the tool, and you will not have to enter it again. Now, proceed through the following steps.

Step 1

Step 1A: Determine the area of the landscape. The landscaped area includes the front yard minus any hardscaped areas (concrete driveways, walkways, and decks or porches). It includes all areas that are improved upon by features such as turf, water features, irrigation systems, pools or spas, and other permanent vegetation. Areas outside the front yard, which have temporary stabilization measures such as straw or mulch, do not need to be included in this area. Septic drainage fields and public rights-of-way should also be excluded from the landscaped area. Consult Section 4.1 of the [2009 WaterSense Single-Family New Home Specification](#) for information about areas that may be exempt from the landscaped area.

Step 1B: Enter the “ETo Value” you obtained from the Water Budget Data Finder (6.43 in the example at right).


The tool will automatically generate two “output” values once you have completed Step 1. They are:

Output: The **monthly baseline** is the amount of water a typical landscape would use during the peak watering month at your site (49,219 gallons/month in the example at right).

Output: The **monthly landscape water allowance** represents an efficient allotment of water that the landscape may be designed to use during the location’s peak watering month (34,453 gallons/month in the example above).

To calculate the Baseline and LWA for a site, enter the designed landscaped area and average monthly reference evapotranspiration for the site's peak watering month. (Enter data in white cells only.)

1A	STEP 1A - ENTER THE LANDSCAPED AREA (A)
	<input type="text" value="12,280"/> Area of the designed landscape (square feet)
1B	STEP 1B - ENTER THE AVERAGE MONTHLY REFERENCE EVAPOTRANSPIRATION (ET _o)
	<input type="text" value="6.43"/> Average monthly reference ET (inches/month) for the site's peak watering month
	<small>Obtain ETo from Water Budget Data Finder at www.epa.gov/watersense/nhspecs/wb_data_finder.html</small>
<hr/>	
OUTPUT - BASELINE FOR THE SITE	

Enter Zip Code:	<input type="text" value="60653"/>	
Peak Month:	Jun	
ETo Value:	6.43 inches/month	
Rainfall:	3.56 inches/month	

<hr/>	
OUTPUT - BASELINE FOR THE SITE	
<input type="text" value="49,219"/>	Monthly baseline (gallons/month) based on the site's peak watering month
<hr/>	
OUTPUT - WATER ALLOWANCE FOR THE SITE	
<input type="text" value="34,453"/>	Monthly landscape water allowance (gallons/month) based on the site's peak watering month

You are now ready to proceed to **Part 2 – LWR** on the next worksheet.

Part 2 – LWR (Landscape Water Requirement)

In Part 2, you will be entering more specific information about the landscape. The Water Budget Tool will calculate the amount of water the landscape will require during the location's peak watering month.

Step 2

Step 2A: Enter the value you received from the Water Budget Data Finder for rainfall (3.56 in the example).

Step 2B: Enter details about the landscape in Table 1. This will enable the tool to estimate the landscape water requirement, or how much water the landscape will actually require during the peak watering month.

1. For each hydrozone, or group of plantings that have similar needs for watering, enter the area in square feet that it covers.

2. Select the plant type or feature from the list that best describes each hydrozone.²

3. If an irrigation system is installed, select the type of irrigation being used on each hydrozone (refer to Table 4 in the tool to ensure you are using an allowed type of irrigation for each zone). **Irrigation systems are not required. If irrigation is not installed, you will still need to select a form of irrigation to approximate the zone's peak water use. Use Table 5 (see below) to select the permitted irrigation type for each zone's plant type or landscape feature.**

Output: The tool will automatically calculate the amount of water your landscape will require during the peak watering month at your site (in this example: 34,439 gallons).

To calculate the LWR for the site, enter the information requested below for the site's peak watering month. (Enter data in white cells only.)

STEP 2A - ENTER THE AVERAGE MONTHLY RAINFALL (R) AT THE SITE FOR THE PEAK WATERING MONTH IDENTIFIED IN PART 1

3.56 Average monthly rainfall (inches/month) for the site's peak watering month

Obtain from Water Budget Data Finder at www.epa.gov/watersense/nhspeccs/wb_data_finder.html

Enter Zip Code: 60653



Peak Month: Jun

ETo Value: 6.43 inches/month

Rainfall: 3.56 inches/month

Table 1. Landscape Water Requirement

Zone	Hydrozone/Landscape Feature Area (sq. ft.)	Plant Type or Landscape Feature	Landscape Coefficient (K _L)	Irrigation Type	Distribution Uniformity (DU _{L0})	LWR _{ij} (gal/month)
1	7,150	Turfgrass - High water requirement	0.8	Fixed Spray	65%	29,168
2	2,200	Shrubs - Medium water requirement	0.5	Drip - Standard	70%	4,555
3	2,030	Groundcover - Low water requirement	0.2	Drip - Standard	70%	716
4	900	Nonvegetated Softscape		No Irrigation	NA	-
5						-
6						-
7						-
8						-
9						-
10						-
11						-
12						-
13						-
14						-
15						-
Total Area =	12,280					Landscape Water Requirement for the Site (gal/month) 34,439

Table 5. Appropriate Irrigation Types - Landscaped Areas without Irrigation Systems

IF THE PLANT TYPE OR LANDSCAPE FEATURE IS:	THEN THE IRRIGATION TYPE SHALL BE:		
	Drip - Standard	Fixed Spray	No Irrigation
Trees, Shrubs, or Groundcover with Low Water Requirements (K _L = 0.2)	x		
Trees, Shrubs, or Groundcover with Medium or High Water Requirements (K _L > 0.2)		x	
Turfgrass with Low, Medium, or High Water Requirements (K _L > 0.2)		x	
Pool, Spa, or Water Feature		x	
Permeable Hardscape			x
Nonvegetated Softscape			x

*Please see additional information in the WaterSense Water Budget Approach for landscapes installed without irrigation systems.

OUTPUT - WATER REQUIREMENT FOR THE SITE

34,439 Monthly landscape water requirement (gallons/month) based on the site's peak watering month

2 Refer to local resources such as plant guides, nurseries, and extension services for help on how to classify specific plant types as high, medium, or low water users.

Part 3 – Results

Part 3 displays the results for the landscape and requires no new information to be entered.

1. The LWA (landscape water allowance) is the amount of water the landscape is permitted under section 4.1.1.1 of the *2009 Water-Sense Single-Family New Home Specification*.

STEP 3A - REVIEW THE LWA AND LWR FROM PART 1

LWA 34,453 (gallons/month) LWR 34,439 (gallons/month)

STEP 3B - REVIEW THE TOTAL AREA OF TURFGRASS* IN THE DESIGNED LANDSCAPE FROM STEP 2B

The designed landscape contains 7,150 square feet of turfgrass.* This is 58% of the landscaped area.

*This includes the area of any pools, spas, and/or water features, designated by WaterSense to be counted as turfgrass.

OUTPUT - DOES THE DESIGNED LANDSCAPE MEET THE WATER BUDGET?

YES NO

If YES, then the water budget criteria are met.
If NO, then the landscape and/or irrigation system needs to be redesigned to use less water.

The designed landscape water requirement is a 30% reduction in water use from the baseline calculated in Part 1.

2. The LWR (landscape water requirement) is the amount of water the landscape would need during the peak watering month for your location.
3. Displays the total area of turfgrass in the landscape.
4. Displays the percent of the total landscape that is comprised of turfgrass.
5. If the output shows:
 - “YES” - Congratulations! You have met the criteria.
 - “NO” - You will need to make adjustments to your planned landscape in Table 1 of Part 2. Reducing the size of the hydrozones with highest water requirements (LWR_H) or changing to lower water use plants are good places to start.³
6. Shows the expected reduction in water use during the peak watering month for the landscape when compared to the landscape of a typical single-family new home.

Print or save a copy of the tool for your records.

³ If you are using the tool on an existing landscape, the YES/NO output may or may not be an appropriate measure. WaterSense recommends you try maximizing your percent reduction (output 6) to achieve as water-efficient a landscape as possible.