PLAN YOUR GARDEN PROJECT

1. Make a site plan

Start by measuring your property. Measure your house and other buildings. Draw it out on graph paper or use a computer. Make several copies.

Think about how you and your family want to use the space, and how the sun and rain affect your garden.

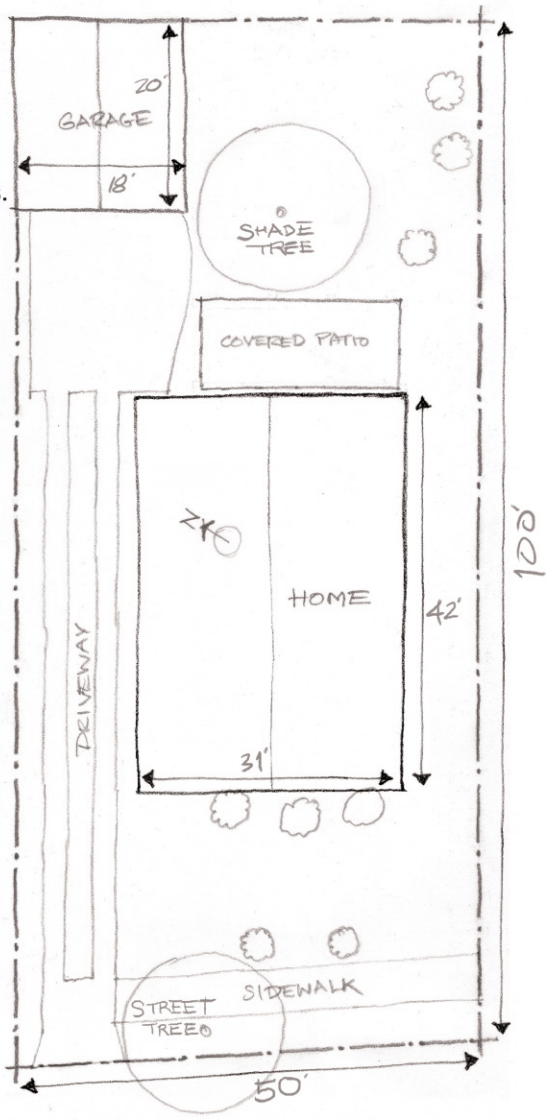
INCLUDE THESE ITEMS ON YOUR SITE PLAN:

- Dimensions of the site (round up to the nearest foot or 6 inches)
- Orientation — North arrow (or mark East and West)
- Buildings (house, garage, neighbor's houses if nearby)
- Other structures (carport, porch, arbor, shed)
- Large landscape features (ponds, streams, swimming pools, driveways, patios)
- Large trees or shrubs

Walk around your garden with a copy of your site plan, and mark any of these that are relevant:

- Hillsides, slopes, or other major grade changes
- Areas of erosion or obvious soil compaction
- Low areas that are commonly wet
- Exposed rock
- Shallow soils
- Areas where the soil abruptly changes texture or structure

Later, you can note your soil type and places where you conduct your soil and compaction tests. You also will be making notes for irrigation.



site your home on your property:

BingMaps (bing.com/maps) gives you a good birdseye view of your roof for calculating square footage.

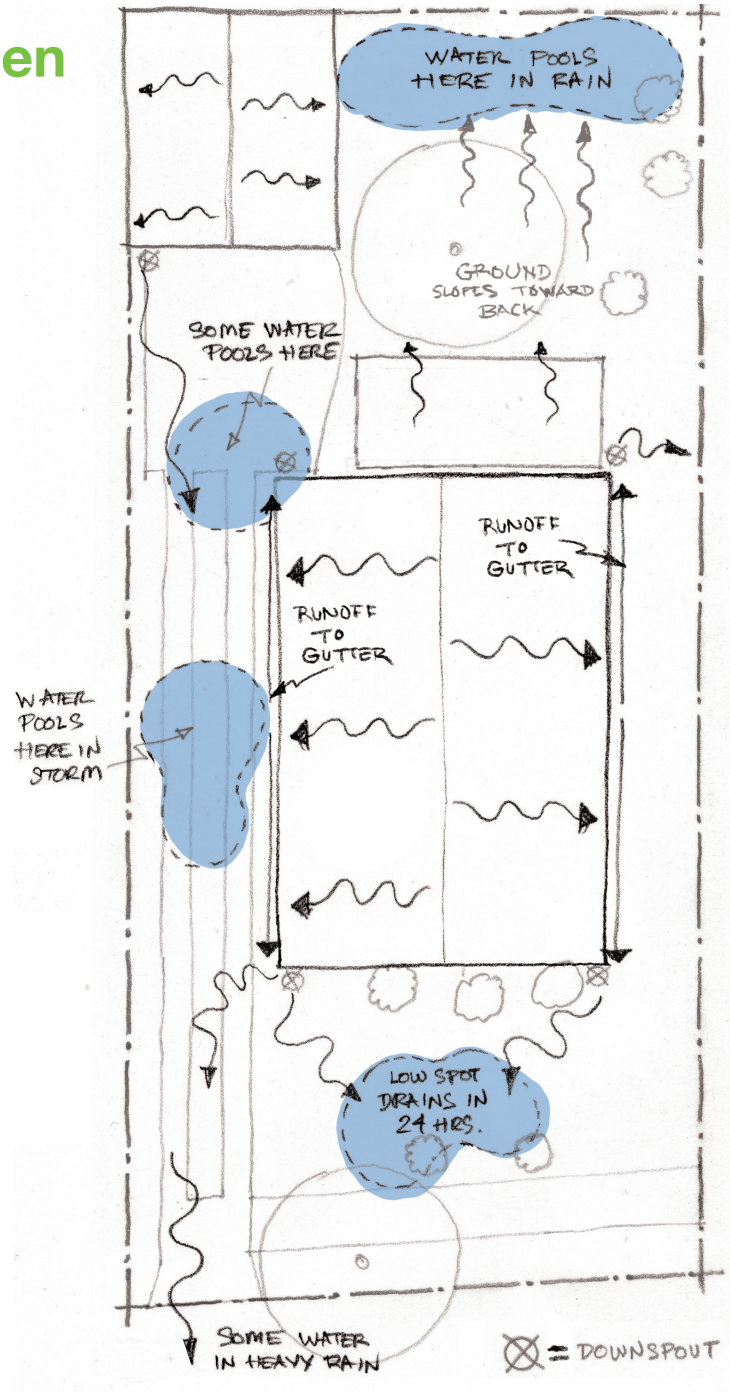
LOOK at Google Maps (maps.google.com) for help placing buildings and trees on your property.
Just type in your address, zoom in, and use the Satellite view.

2. Water in your garden

It's important to know where water flows into your garden, how it moves around, where it stays, and how it leaves your garden. Walk around your garden with another copy of your site plan, and note this information:

INCLUDE THESE ITEMS ON YOUR SITE PLAN:

- If you don't have roof gutters and downspout, then mark the edges of your roof where water sheets down to the landscape.
- Mark your roof gutter downspout, if you have them, and follow the path of the water in them out to the street.
- Which part of the roof drains into each downspout, and estimate the dimensions of that portion of roof.
- Draw arrows to indicate the direction water moves through your garden.
- Note areas where water pools when it rains.
- Locate where rainwater runoff is concentrated and eventually leaves your garden (i.e. driveways, drainage pipes, storm gutters etc).
- Mark which areas are impervious surfaces, where water can't get into the ground (i.e. driveways, solid patios, areas covered by a roof, etc).



photos: Pamela Berstler

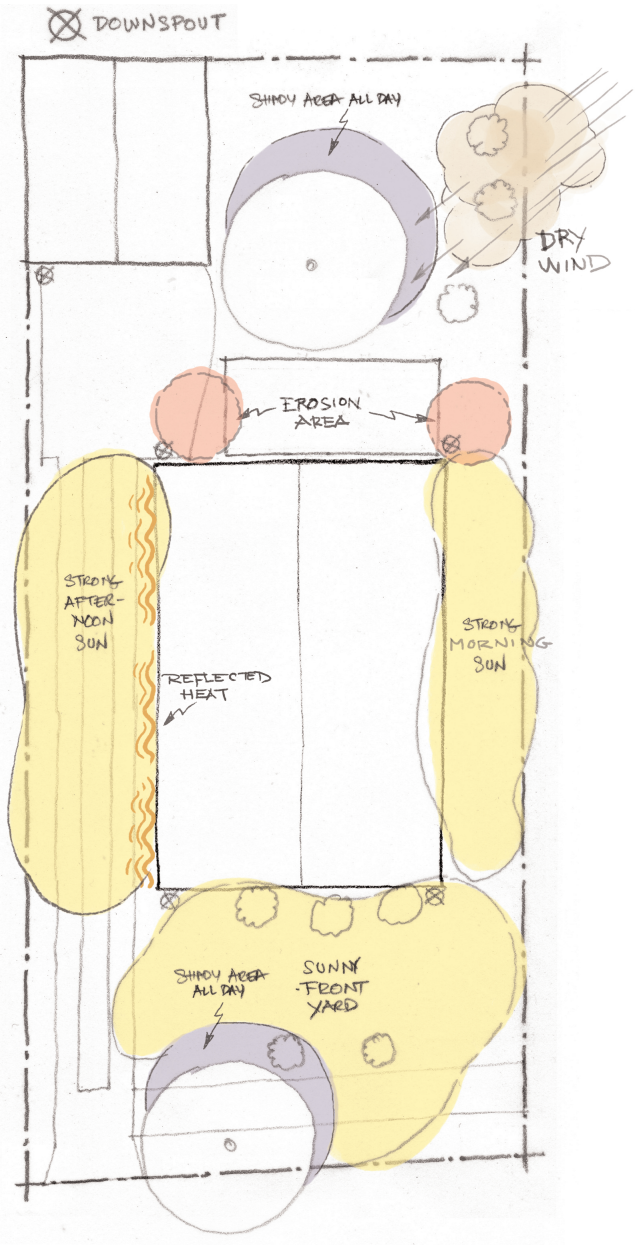
3. Plants and sunlight

On a copy of your site plan, locate large trees, shrubs, lawn and other significant vegetation. Outline the canopy area of each plant and note with the name, general size and health of the plant. If you don't know what the plant (or tree is), take pictures (or samples) of its leaves, fruit and bark to your local nursery for help with identification

Every garden has areas where plants will grow well and others will die. Structures, walls, fences, and other plants all can affect the amount of sun and shade in a garden. And every garden is completely different. There will be hills and hollows in your garden that may collect cold air or, because your property is sloped, you don't get frost when neighbors do. These climate factors that are particular to your garden are called microclimate, and they may differ significantly from the general climate of an area. Note on your site map any microclimate you think your garden might have.

Outline the sun and shade patterns of the site. Mark areas that receive sun all day and areas that are shaded all day. Also note which areas receive only partial sun, maybe just a few hours of direct sun in the morning, mid-day or in late afternoon. When you choose your plants make sure to select those that are appropriate to the sunlight pattern in your garden. Plants marked as “full sun” will not be happy in full shade.

Look closely at the plants you have, and note which are dry climate appropriate and which aren't. Many plants can be dry climate appropriate if they're well established, with deep healthy roots (old rose bushes, for example). Decide which plants will work well in your new garden and which you should plan to remove.



dry climate appropriate characteristics of plants

There are four characteristics shared by many dry climate appropriate plants that will allow you to find them in a crowded nursery. Sometimes you will find plants with three or four of these adaptations at one time - they're really drought tolerant!

STIFF, LEATHERY LEAVES These leaves hold on to water, and represent many of our evergreen native plants.

SILVERY OR HAIRY LEAVES Light colored leaves reflect sunlight, cooling the plant. Hairy back sides of leaves hold moisture longer which cools the leaf.

TINY LITTLE LEAVES Like the solar panels they mimic, it is easier to keep small surfaces cool than it is to cool down one large hot surface.

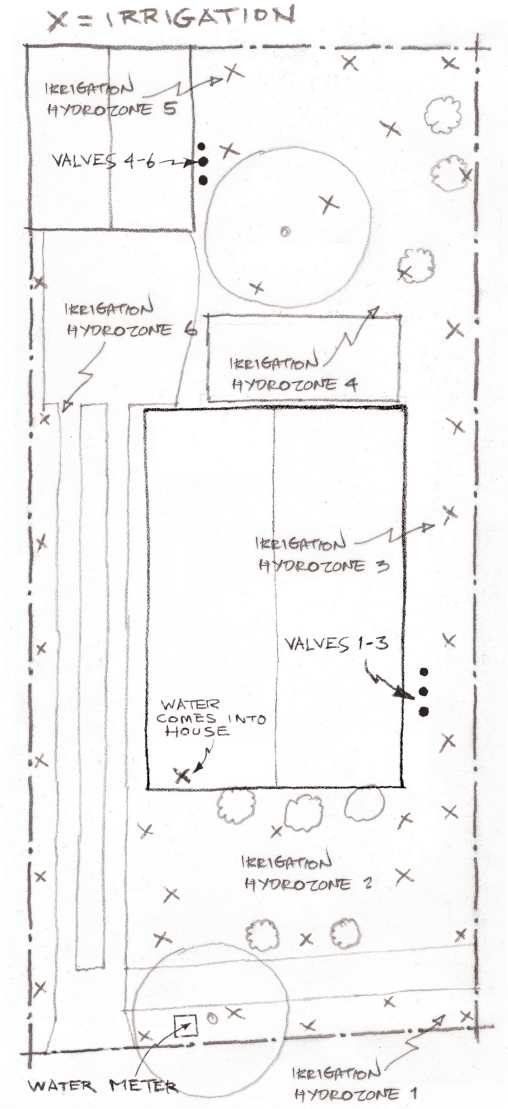
SOLAR TRACKING LEAVES In the middle of the day these leaves will appear to be standing at attention, straight up and down. As the day progresses, or if you see the same plant in the early morning, you will find that the leaves are more horizontally oriented. This plant is moving its solar panels throughout the day to minimize exposure during the hottest part of the day (smart, huh?). Many of the native manzanitas utilize this adaptation.

4. Check your irrigation

If you have an irrigation system installed, chances are that it is a spray emitter system with an automatic irrigation controller. Locate all of the sprinkler heads on your property and mark their location on a copy of your site plan. Note the location of your controller, where the water comes on to your property from the street (the main line), and the location of every valve that controls the various irrigation zones.

RUN YOUR IRRIGATION SYSTEM & OBSERVE WHAT'S HAPPENING

- Which sprinkler heads go on at the same time and what kind of plant material are they irrigating? Color code the groupings of sprinklers on your site plan on the next page. We will explore these groupings or hydrozones and figure out how best we can match the irrigation with the various plants' water needs.
- Does water spray on the hard surfaces surrounding the garden?
- How quickly does water run off the landscape?
- Are there any broken or missing heads?
- Make notes of all of the things you observe when you turn on your irrigation.



sprinkler data chart

Head Type	# Heads or Emitters	Pressure at Hose Bib	Approx. Gallons Per Minute (GPM)	Total GPM or GPH(# Heads x GPM or GPH)
1/4			0.50 - 0.65	
1/2			0.90 – 1.30	
Full			1.80 – 2.60	
3/4			1.35 – 1.95	
Side (4' x 30')			0.89 – 1.21	
Bubblers			2.00 – 5.00	
Impact Spray/Rotors			2.00 – 3.00	
Drip On-Line			0.50 – 2.00 GPH	
TOTALS				

Fill in chart: Range is based on PSI at Hose Bib:
Low 15 PSI, High 30+ PSI Spray heads spaced at 12' unless otherwise noted.

Spray Heads Annual Water Use For The Zone =
TOTAL GPM x Minutes/Zone x Days/Week x Weeks/Year =

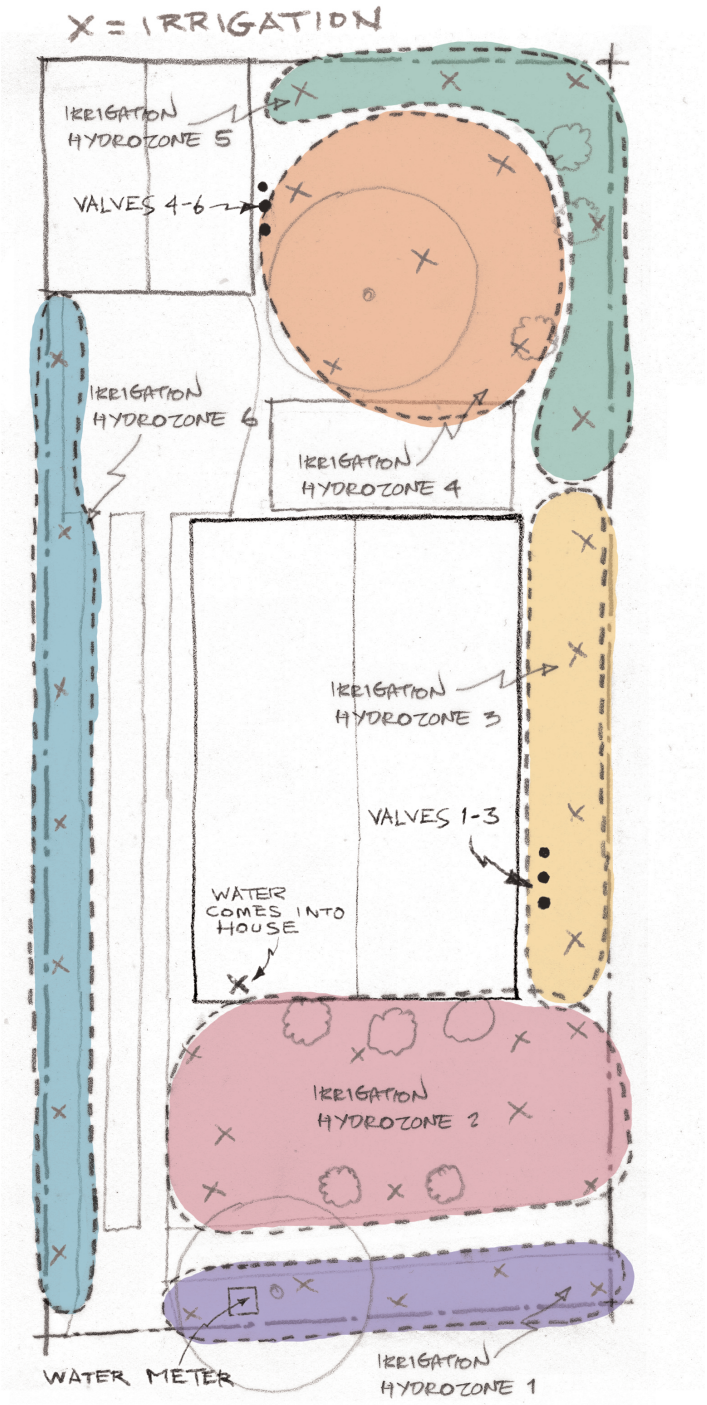
Drip Emitters Annual Water Use For The Zone =
TOTAL GPH ÷ 60 x Minutes/Zone x Days/Week x Weeks/Year =

5. Group plants into hydrozones

Once you've reviewed your irrigation, make a note of which sprinkler heads go on at the same time. Color code the groupings of sprinklers on your site plan.

Now compare the colored zones with your microclimates (see p.2). Are sun and shade areas combined on the same valve? Are lawn and planter beds combined on the same valve? If so, the irrigation zones will have to be altered to correlate with plants that need similar things. Groupings of plants by water need are called hydrozones.

Remember that you want plants that require the same amount of irrigation to be grouped together; otherwise, your garden will not thrive and thirsty plants will dehydrate or dry plants will drown. The colors on our site plan indicate different hydrozones.



sprinkler test

Ingredients:

CUPS, BOWLS OR JARS, STOPWATCH, RULER, PEN AND PAPER

① Collect your containers (they all need to be the same size).
② Spread them around so they are spaced about 5' apart.
③ Get your stopwatch ready and start it as you turn on your sprinklers.
④ At 2 minutes, turn the sprinklers off. Hold ruler upright and note how deep the water is in inches.
⑤ Get ready and start again, for 3 more minutes this time, and record your results.
⑥ One more time, this time for 5 more minutes.
Note: Measure at 5, 10, and 15 minutes for drip systems.
• Different depths of water in different containers means your sprinklers are not watering evenly. Get new heads that emit the same amount of water at once (matched flow rate). Note that each head has a different spray pattern; full circle, half, quarter or adjustable.
• See how much water your section emits at 2 minutes, 5 minutes (2+3), 8 minutes (5+3), and 10 minutes (5+5) for drip then at 5, 10, 15, 30 and 45 minutes.
• Now you can give your plants just the water they need.