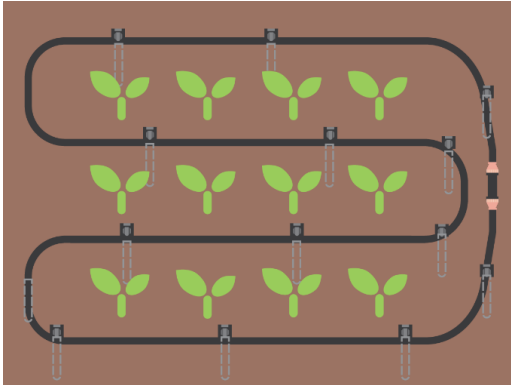


SMART IRRIGATION PROGRAM APPLICATION



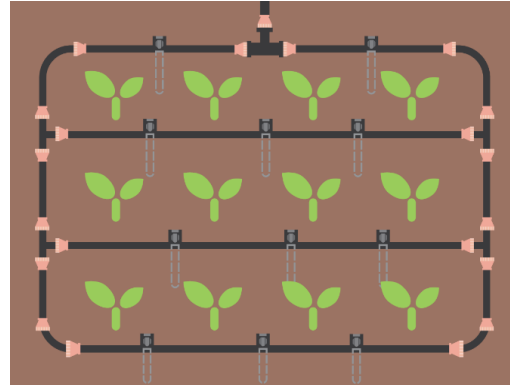
Long Beach Water
LAWN-TO-GARDEN PROGRAM

APPROVED LAYOUT DESIGNS



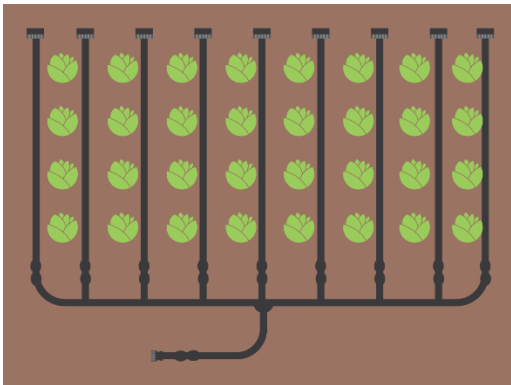
Layout 1

This fully enclosed design is optimal for widely spaced plants that are placed in gardens with odd shapes and sizes. Scattering plants to represent a natural environment is quite feasible with a design in this fashion. Layout 1 is a more simple design to install as it requires whole drip tubing segments and less connection fittings.



Layout 2

Illustrated is another fully enclosed design that is efficient with widely spaced plants. Keep in mind that enclosed layout designs only have one manual flush valve. This could lead to premature clogging if the drip tubing is not flushed periodically. Most drip irrigation projects will utilize a grid system as illustrated above. It allows the irrigation system to follow the contours of a yard while still providing enough water, making it a highly common and recommended method.



Layout 3

Open-ended drip irrigation designs are efficient when dealing with high density plant coverage. Incorporate layout 3 into the project if linear structures are a primary design element. They also allow for multiple flush valves which can deter any clogging within the drip line as long as they are manually operated on a routine basis. Open-ended layout designs do require additional components compared to a fully enclosed layout design. Each drip tube ending must be securely plugged.

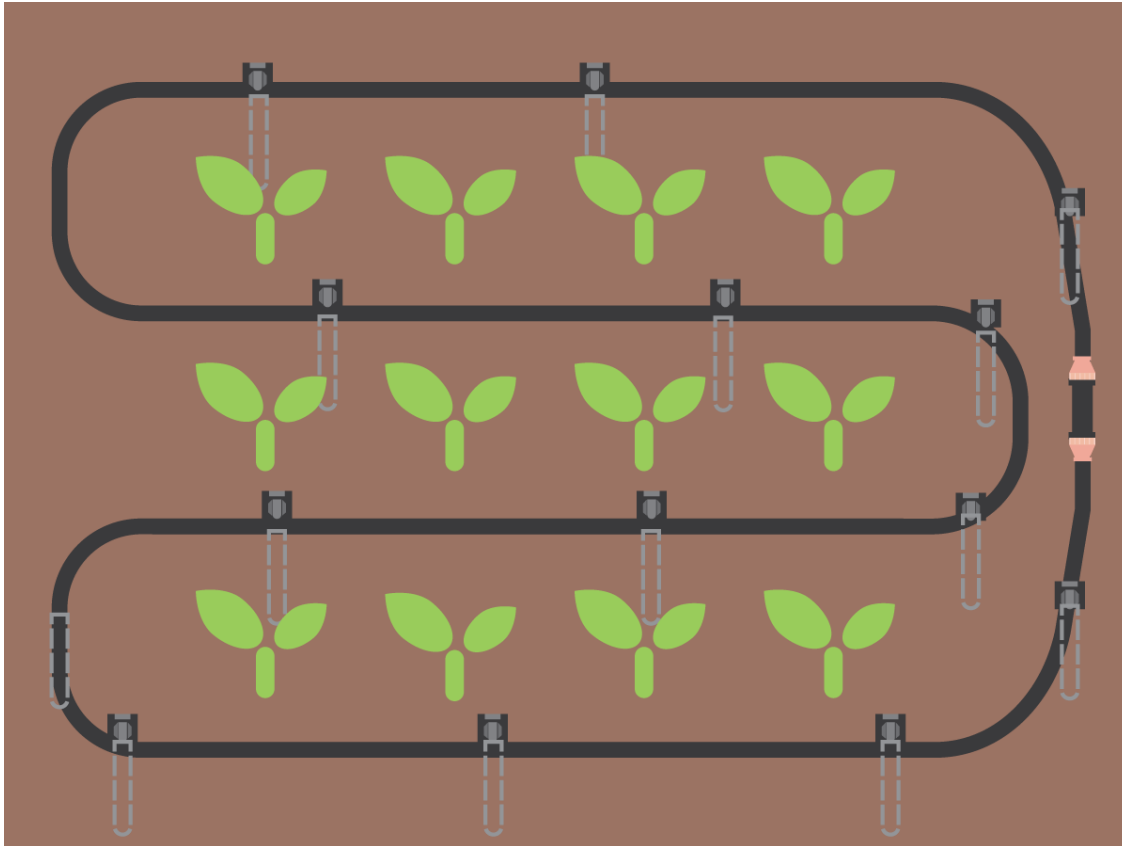


Layout 4

Drip irrigation settings often require multiple layout designs. The design in this picture demonstrates a point source and a line source method. When necessary, utilize a combined layout design if a garden includes a variety of plant types such as trees, shrubs, and ground cover.

SMART IRRIGATION DESIGN

TEMPLATE 1

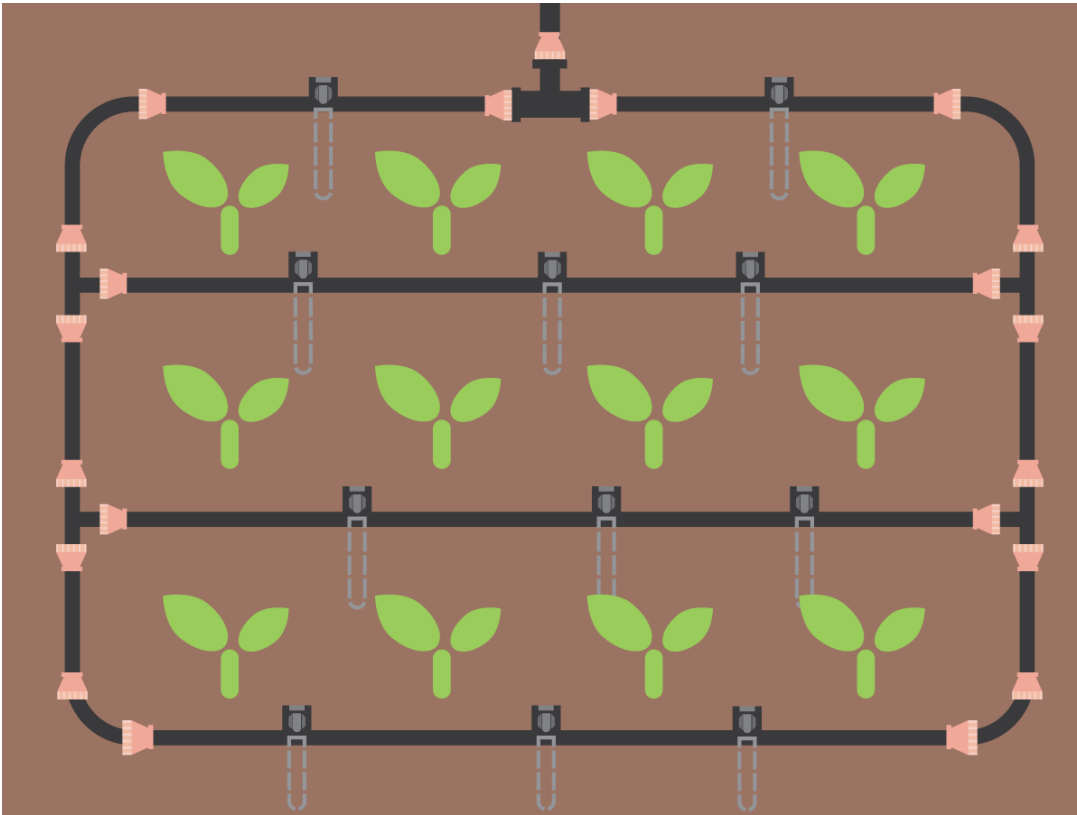


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SMART IRRIGATION DESIGN

TEMPLATE 2

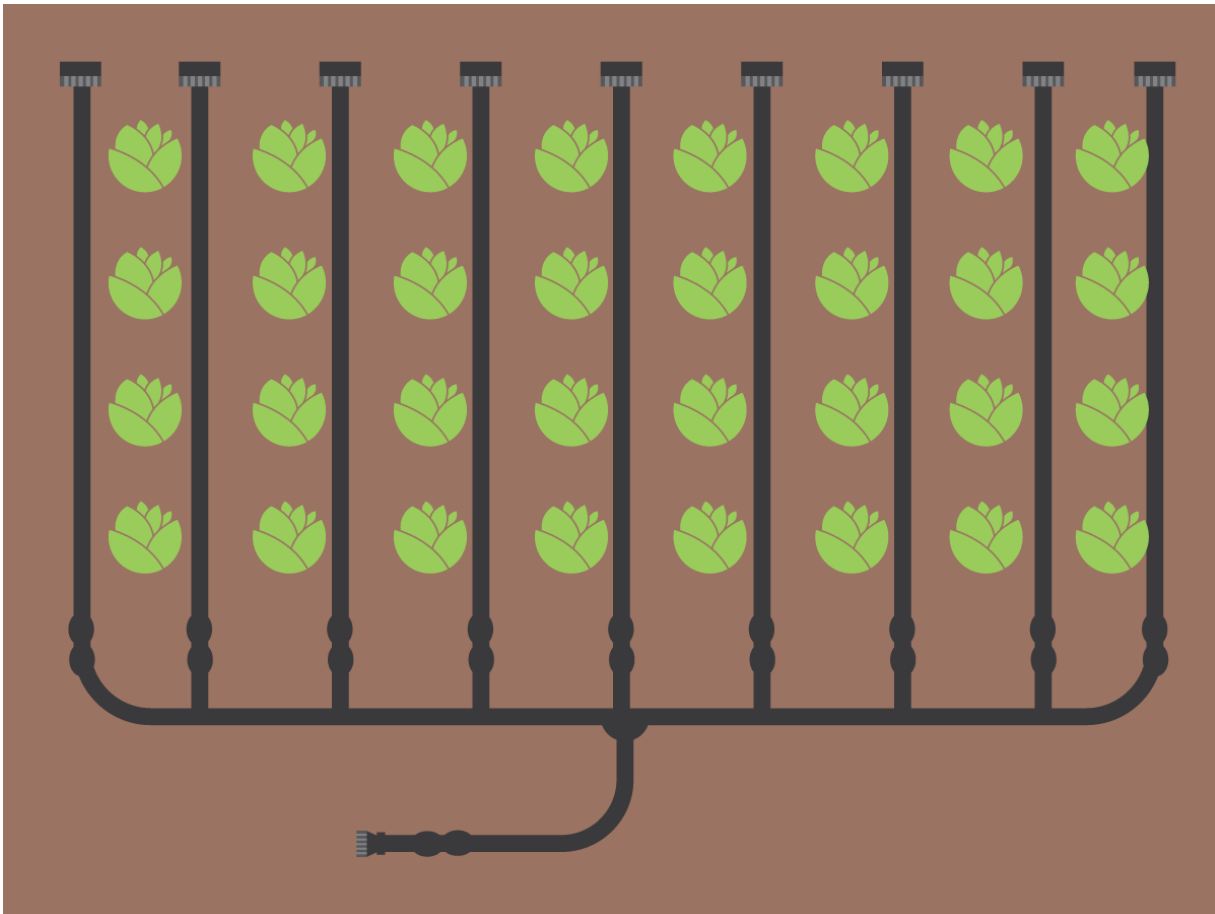


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SMART IRRIGATION DESIGN

TEMPLATE 3

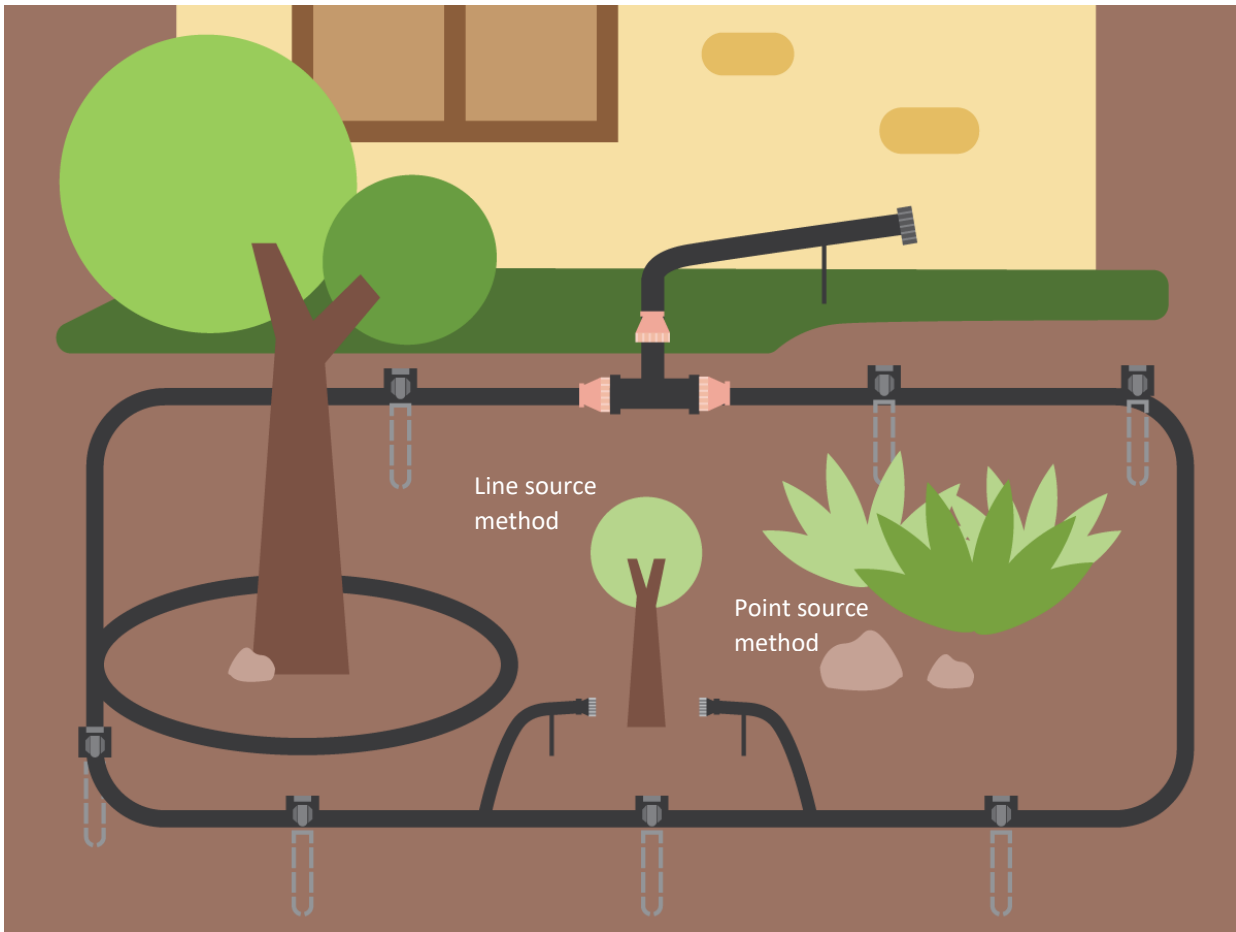


Layout 3

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SMART IRRIGATION DESIGN

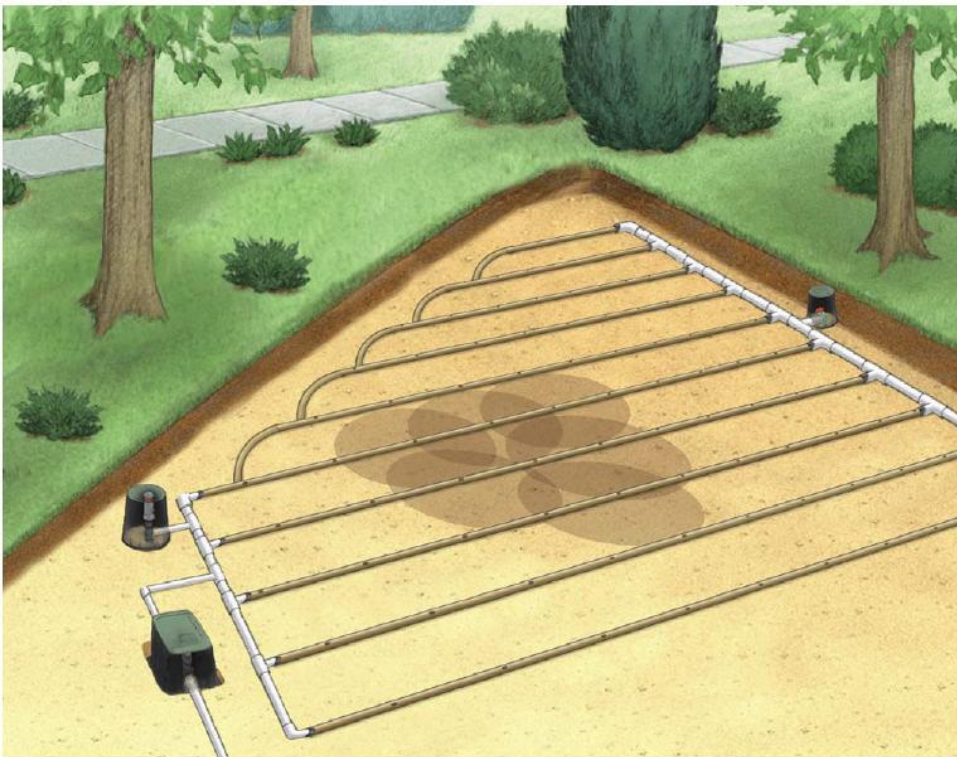
TEMPLATE 4



Layout 4

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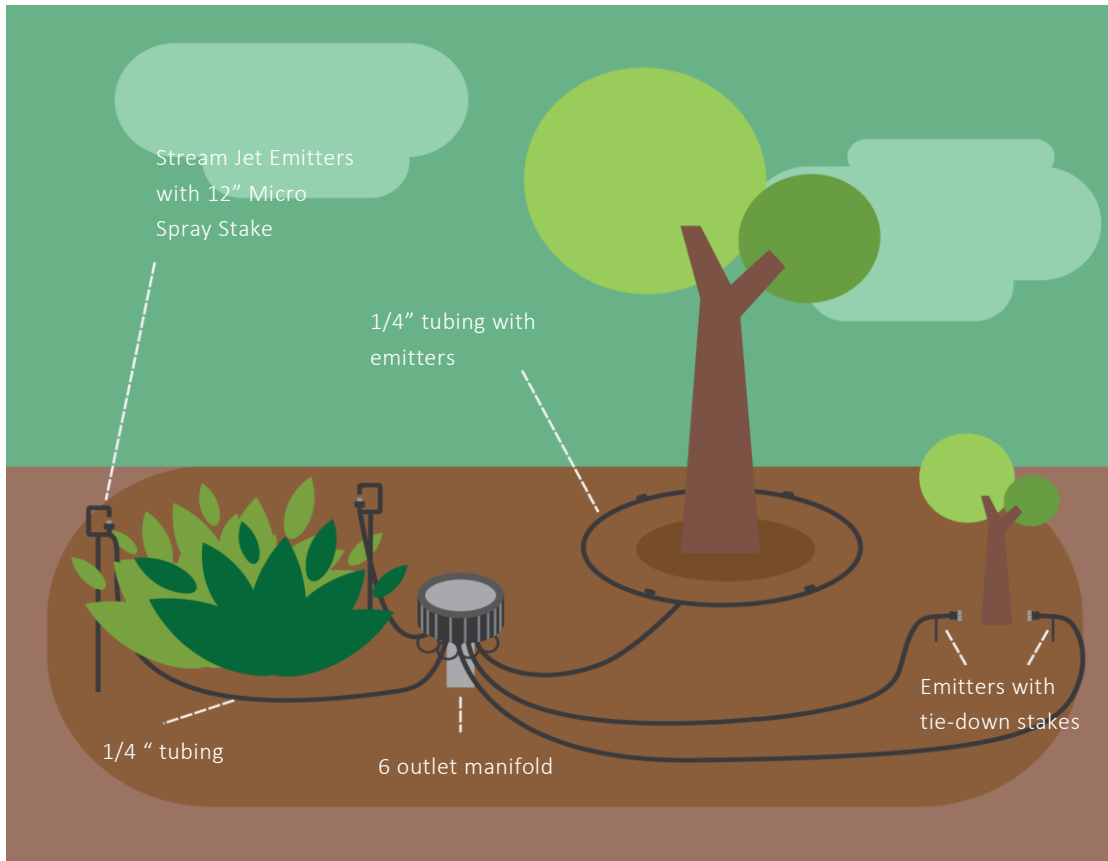
SMART IRRIGATION DESIGN TEMPLATE 5



Layout 5

Drip tubing allows the design to accommodate for obstructive objects or oddly shaped yards. People installing drip irrigation may find they need to taper the design in one direction. This is a common method in a drip irrigation project and is an accepted layout in the program for reasons that it maintains a grid pattern, and avoids excessive usage of drip material.

SMART IRRIGATION DESIGN TEMPLATE 6



Layout 6

Layout 6 is another plant-to-plant drip irrigation design. Using a manifold device is accepted within the program as long as it is watering an appropriate amount of plant material. Plant-to-plant coverage and a manifold should be utilized in a widely spaced garden when there is larger but fewer plants. Additionally, a manifold component can be used to water larger trees and shrubs. It should not however, be used simultaneously with standard drip tubing designs. A garden will either require a common layout design such as a grid system or a manifold design depending on the plant coverage.