

PROTECTION OF EXISTING RIPARIAN VEGETATION

INTRODUCTION

This Design Guide was assembled in order to provide more detail on protection of native riparian plants. The sections that follow provide more detail on how to best implement these requirements. They also serve as helpful guidelines for single family home owners involved in landscaping and revegetation projects.

THE IMPORTANCE OF RIPARIAN VEGETATION

Riparian vegetation plays a vital role in maintaining stream stability, providing valuable wildlife habitat, and moderating downstream flooding. In addition, the presence and/or absence of riparian areas is directly correlated to water quality as the riparian vegetation serves to filter pollutants from stormwater, such as oil and grease from roadways, fertilizer runoff from lawns, and excess sediments from upstream.

Due to the importance and relative lack of riparian vegetation in Santa Clara County, particularly in urban areas, one goal of any planning project is **to avoid removal of any native riparian vegetation and to prevent the types of conditions that would threaten or degrade existing riparian habitat and/or contribute to soil loss** critical to the continued health and regeneration of riparian trees. To this end, all development activities need to be outside this riparian corridor where at all possible. Any exceptions to this rule need to be justified and mitigated.

VALUE OF ESTABLISHING RIPARIAN BUFFERS

The amount and condition of the riparian habitat has been significantly reduced in Santa Clara County over time, primarily due to channel encroachment and modification. This has led to incised channels, as well as a lowering of the water table, loss of riparian vegetation, decline in water quality and most beneficial uses, as well as increased risk of erosion, bank failure and flooding. To stop and reverse this trend, an additional buffer area should be established between the edge of the existing riparian zone and any development, where feasible. This buffer should be planted with native vegetation in order to better protect the riparian corridor and the watercourse. The goal is to eventually establish and increase the riparian buffer area all along the riparian corridor. The value of riparian buffers areas has been well documented, in addition to reducing flash runoff and improving water quality, they provide supplemental foraging resources and corridors for wildlife to access the streams and even increase streamside property values.

This Design Guide describes standard criteria for determining how far from existing riparian habitat to locate construction and development activities in order to help ensure its protection. The Design Guides that follow provide more detail on the types of plants to use in landscaping and revegetation of areas, in or adjacent, to riparian areas. For more information on design of trails in specific, see Design Guide number 16.

CALCULATING RECOMMENDED TREE PROTECTION ZONES

Calculation of the recommended distance between an existing riparian tree and closest construction, staff need to consider the following variables:

1. Evaluate the species tolerance of the tree: good, moderate, or poor.
2. Identify tree age: young, mature or overmature.
3. Using the table below, "GUIDELINES FOR OPTIMAL TREE PRESERVATION ZONES", find the distance from the trunk that should be protected per inch of trunk diameter.
4. Multiply the distance by the trunk diameter to calculate the optimum radius (in feet) for the tree protection zone.

If excavation occurs inside the identified "Tree Protection Zone", roots will be severed, the tree's health will decline, the incidence of insect and diseases will increase and people may be endangered by eventual failure of the destabilized tree. Where there are other site constraints, anticipated encroachment within the recommended tree protection zone, an arborist should be consulted to determine the appropriate protection measures or alternative setbacks.

GUIDELINES FOR OPTIMAL TREE PRESERVATION ZONES

Species Tolerance	Tree Age	Distance from trunk feet (per inch trunk diameter)
Good	Young*	.05'
	Mature*	.75'
	Overmature*	1.0'
Moderate	Young	.75'
	Mature	1.0'
	Overmature	1.25'
Poor	Young	1.0'
	Mature	1.25'
	Overmature	1.5'

*Young (<20% life expectancy)

*Mature (20-80% life expectancy)

*Overmature (>80% Life expectancy)

EXAMPLE TREE PROTECTION ZONES

Western Cottonwood (*Populus fremontii*): Poor Tolerance

The Western Cottonwood has a poor tolerance to root disturbance. The tree protection zone for an overmature tree is 1.5' per inch of tree diameter or a 45 foot radius for a 30 inch diameter tree. Other trees with a poor tolerance include the black cottonwood and bigleaf maple.

Western Sycamore (*Platanus racemosa*): Moderate Tolerance

A Western Sycamore has a moderate sensitivity to impacts around its roots. The tree protection zone for an overmature tree measured from its trunk is 1.25 feet per inch of trunk diameter. A 30" diameter mature Western Sycamore needs a tree protection zone with a 37.5' radius. Other species with a moderate tolerance include the valley oak, California bay and willows.

Coast Live Oak (*Quercus agrifolia*): Good Tolerance

The Coast Live Oak has a good tolerance to disturbance. The species is sensitive to the addition of fill around its trunk and does not tolerate frequent summer watering. The tree protection zone for a mature tree is one foot per inch of trunk diameter. A 30 inch diameter tree needs a protection zone with a 30 foot radius. Other trees with a good tolerance include alders, box elders, and California buckeye.