

Roads and Trails

Roads and trails alter natural drainage patterns and have the potential to contribute sediment, chemicals, and nutrients to streams and waterways. In general, the effect of roads and trails on water quality is a function of their size, density, level of use, design and maintenance and location on the landscape. Reducing the density of road and trail networks through proper closure of unneeded, problematic, and high-risk roads and trails, and modifying remaining roads and trails to make them more stable and less likely to concentrate runoff and transport it to waterways, are key concepts for conservation practices for roads and trails. Use of simple road designs, such as outsloping and rolling dips, to provide adequate grade and drainage can result in low-maintenance roads and trails, greatly reducing erosion and transport of contaminants to drinking source water. Individual landowners should conduct inventories of their road and trail networks and develop a road and trail plan to reduce the risk of erosion and contaminant transport.

Septic Systems

Maintaining septic system in an appropriate manner can minimize potential effects on drinking water sources. Design standards for septic systems are codified and regulated by county ordinances in both Alameda and Santa Clara counties. The Alameda

County Onsite Wastewater Treatment Systems Regulations describe septic system requirements, including site and soil conditions required for a standard system, septic tank sizing and leachfield location requirements.

For More Information

More detailed guidance and technical recommendations on all of these conservation practices can be found within Chapter 5 of the SBA Watershed Protection Program Plan. This chapter includes a comprehensive list of publications and technical resources to help you implement these activities on your private lands.

The SBA Watershed Protection Program Plan is available from the Alameda County Water District. Please visit http://www.acwd.org/wq_sba.php5 or call (510) 668-6516 to obtain a copy.



South Bay Aqueduct Watershed Protection Program

c/o Alameda County Water District
Attn: Operations Department
PO Box 5110
Fremont, CA 94537

There is a connection between your land and the drinking water quality of thousands of Californians.



Alameda County Water District, Santa Clara Valley Water District and Zone 7 Water Agency – collectively known as the SBA Contractors – serve portions of Alameda and Santa Clara Counties with drinking water for over two million people. The SBA contractors are committed to delivering high-quality drinking water to their customers.

In this brochure you will find ideas and information about land management practices that will protect drinking water and other resources for generations to come. For more in-depth information, please refer to the SBA Watershed Protection Program Plan, located at: http://www.acwd.org/wq_sba.php5 Look inside for further resources and contacts.

Land Management and Water Quality in the South Bay Aqueduct Watershed

The South Bay Aqueduct (SBA) Watershed encompasses the lands that drain to Lake Del Valle and Bethany Reservoir, including the San Antonio and Upper San Antonio valleys, Arroyo del Valle, and its tributary streams and canyons. These watershed lands contribute to the municipal water supply for over 2 million residents and businesses in Alameda and Santa Clara counties. Those who own and manage land and who live in the SBA Watershed can protect the water supply through:

- the continuation of existing practices that have protected water quality in the watershed; and
- the adoption of voluntary conservation practices designed to improve land management and reduce the risk of introducing pollutants to the reservoirs and their tributary streams.



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A watershed is the land over which water flows into a common water body. The watersheds surrounding Bethany Reservoir and Lake Del Valle consist of the hills, canyons, fields, and developed areas over which water flows before entering the lakes. As water flows through these watersheds, it can pick up contaminants which then accumulate in the lakes and pollute the water supply. You can help protect critical drinking water sources and at the same time increase the health, productivity, and beauty of your land by improving your land management practices.

How can rangeland management and structural range improvements help protect water quality?

Rangeland management is the predominant land use in the SBA Watershed. Carefully managed livestock operations provide significant conservation benefits to the land and water, including protecting water quality, encouraging biodiversity, and reducing fire risk.

Here are some techniques that can help protect water quality:

Residual Dry Matter (RDM) Management

Residual dry matter is the old plant material left standing or on the ground at the beginning of a new growing season. It indicates the combined effects of the previous season's forage production and its consumption by grazing animals of all types. Properly managed RDM can provide a high degree of protection from soil erosion, nutrient losses, and fire hazard. Individual land managers should establish their own RDM target levels, based on their management objectives and the characteristics of their land.

Rotations

Rotating animals between different pastures can help maintain RDM and prevent erosion.

Riparian Zone Management

One of the most effective means for protecting water quality in rangeland is to control access of cattle to creeks. Limiting their contact with the riparian zone, either by herding them, developing alternative water sources to "lure" them away, or even excluding them from such areas can significantly reduce the likelihood that sediment or pathogens will contaminate source water, particularly during winter. Excluding calves from riparian zones is particularly effective in reducing risk of contamination from *Giardia* and *Cryptosporidium* protozoa, since calves are more likely to be infected with these organisms, which can cause illness to humans if ingested.

Supplemental Water, Salt, and Feeder Infrastructure

Providing supplemental water, salt, feed and shaded areas away from riparian zones can be effective ways to manage livestock distribution to achieve target RDM levels throughout a grazing unit and reduce the likelihood of contaminants entering sources of human drinking water.

Additional techniques for water quality protection include **dry season calving and herd health programs**.

In-depth materials and technical assistance on all of these rangeland and livestock management measures are available through your local RCD/NRCS office and UCCE.

The SBA Watershed Protection Program Plan

The mission of the SBA Watershed Protection Program Plan is to protect and enhance the quality of water from the SBA watershed, including Lake Del Valle and Bethany Reservoir, as an important source for drinking water, while recognizing and respecting the agricultural, recreational, environmental, and other uses of these resources.

Agricultural and Open Space Lands Benefit Water Quality

The low density and low intensity of land uses in the Lake Del Valle and Bethany Reservoir watersheds is important to the protection of water quality produced by these watersheds. Increases in density or intensity of land use, for example through residential or recreational subdivision and development of rangelands, or through construction of new roads and railroads, could pose major risks to the water supply. There are many land conservation tools available to landowners to help preserve and maintain existing rural land uses.

One is the **California Land Conservation (Williamson) Act**, which provides the opportunity for landowners to enter into contracts with their county for the purpose of maintaining specific parcels of land in agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal. For more information on the Williamson Act Program: www.conservation.ca.gov/dlrp/lca

Conservation easements are another important land protection tool. A conservation easement is a voluntary, legally recorded deed restriction placed on a piece of property to protect its associated resources in perpetuity. The goal of a conservation easement is to protect land for future generations while allowing owners to retain most private property rights and to live on and use their land. Landowners can either sell or voluntarily donate a conservation easement to local government or to a land trust which is then responsible for ensuring that the terms of the easement are upheld. For more information on conservation easements, you can visit:

CA Farmland Conservancy Program

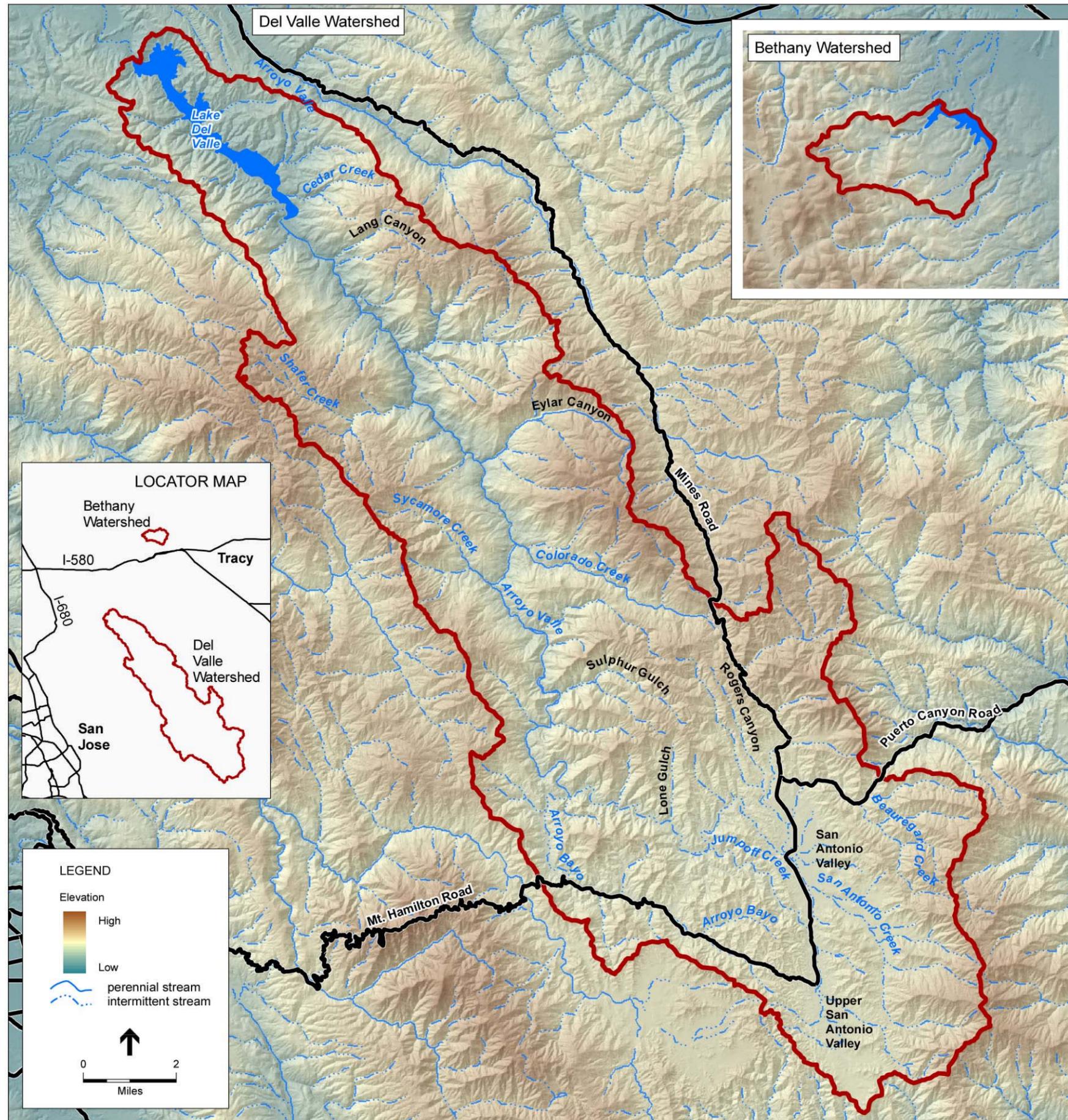
www.consrv.ca.gov/DLRP/cfcp/FAQ/aboutACE.htm

Tri-Valley Conservancy

www.trivalleyconservancy.org

Grade Stabilization/Erosion Management

Maintaining an appropriate RDM level and achieving favorable distribution of cattle on grazing lands will reduce the likelihood of grade destabilization and erosion. Where grade destabilization is evident, structures such as retaining walls, rock barriers, filter strips, and sediment basins can be constructed to direct and manage runoff and to minimize the likelihood of introducing contaminants to drinking water sources.



Contact your local Resource Conservation District (RCD)

Alameda County RCD (925) 371-0154
www.acrcd.org
Guadalupe-Coyote RCD (408) 288-5888
www.carcd.org/wisp/guadalupe/

UC Cooperative Extension (UCCE)

(408) 282-3106 Sheila Barry,
Livestock and Natural Resources
Advisor for Alameda and Santa Clara
Counties
<http://cealameda.ucdavis.edu/> or
<http://cesantaclara.ucdavis.edu/>

UCCE, local RCDs, and the USDA Natural Resources Conservation Service have abundant information, technical assistance, and in some instances, funding for improvement of rangeland management.

Household Hazardous Waste Information

Alameda County (800) 606-6606
www.stopwaste.org/home
Santa Clara County (408) 299-7300
www.sccgov.org/portal/site/deh

Free Drop Site for Used Oil

Paul Oil Co, Inc., (209) 892-8902

Santa Clara County Firesafe Council – Fire Prevention

(408) 779-2121
www.sccfiresafe.org

Santa Clara Valley Non-point Source Pollution Control Program

(800) 794-2482

To Report Illegal Dumping

Alameda County (510) 670-5500
Santa Clara County (408) 299-3233

The Nature Conservancy: Conservation Easements

www.nature.org/aboutus/howwework/conservationmethods/privatelands/conservationeasements/

Alameda County Environmental Health (Septic Wastewater Systems)

<http://www.acgov.org/aceh/septic/ordinance.htm>

SBA Contractors Alameda County Water District

www.acwd.org
Zone 7 Water Agency

www.zone7water.com

Santa Clara Valley Water District
www.valleywater.org