## 3.2 ALAMEDA WATERSHED MANAGEMENT AREA

### *Overview*

Bordering the east bay shoreline of San Francisco Bay, Alameda County encompasses 738 square miles of land and has a total population of approximately 1.5 million. Highly urbanized in the western portion, eastern Alameda County still has considerable agricultural and open space lands (although substantial land development is predicted during the next 10 years). The County has 500,000 acres of rangeland and woodlands. Elevations range from sea level along the 36 miles of bay shoreline to 3,817 feet in the Diablo Mountain Range south of Livermore. The County is approximately 32 miles long in a north-south direction and 45 miles wide (Figure 3-1).

The county is a diverse combination of land types and forms. The western portion contains an urban corridor running from Albany and Berkeley in the north through Oakland, San Leandro, Hayward and Fremont in the south, with a narrow fringe of marshlands along the Bay and large tracts of parklands, grazing lands, and open space in the East Bay Hills. The eastern portion of the county varies from gently rolling terraces and alluvial plains to the steep V-shaped upland areas. The population is concentrated in the highly urbanized Bay Plain along the Bay and in the suburban towns of Dublin, Pleasanton, and Livermore to the east of the East Bay Hills.

Northern Alameda County imports its drinking water from Sierra Nevada sources serviced by the East Bay Municipal Utility District. There are five major reservoirs in the County, three of which are located in the Alameda Creek watershed. Southern and eastern Alameda County also relies on groundwater basins to augment surface water supplies.

### *Watershed Descriptions*

The Alameda Creek watershed is the largest drainage in the southern San Francisco Bay region, encompassing almost 700 square miles and covering sections of Alameda, Contra Costa and Santa Clara Counties, draining roughly the southern two-thirds of the East Bay. To the west, its tributaries drain from the Coast Range, to the east from the foothills of Mt. Hamilton. The southern portion of the watershed includes remote wildlands along upper Alameda Creek within Sunol and Ohlone Regional Wilderness Preserves and SFPUC watershed lands. The northern portion of the watershed includes the rapidly urbanizing towns of Livermore, Pleasanton, Dublin, and San Ramon in the Livermore Valley along the Arroyo Mocho and Arroyo de la Laguna tributaries. The middle of the watershed is in the hamlet of Sunol and includes the Sinbad and Stonybrook Creek tributaries in Niles Canyon. The lower portion of the watershed includes the urbanized Tri-City area of Fremont, Union City, and Newark on the San Francisco Bay Plain. . \Flows in the upper reaches of the Alameda Creek watershed are controlled by water releases from the Calaveras Reservoir, which is managed by the City and County of San Francisco. The Calaveras Reservoir captures natural runoff and stores imported water from the Hetch Hetchy reservoir. The intermediate area of the watershed is controlled by

the Zone 7 Water district, which harvests the local runoff. Supplies for public and wildlife use come from the State Water Project. The Alameda County Water District manages the lower reaches of the watershed. Water from Alameda Creek is used for groundwater recharge in the Niles Cone groundwater basin before it discharges into San Francisco Bay.

***Significant Watershed Issues***

New development is a major watershed issue in Alameda County. Both new and existing development are primarily concentrated in valley floors and coastal plains, but development pressure means that hillside properties are being increasingly developed. Environmental problems may be aggravated if growth is not managed carefully, particularly in hillside areas where land clearing exacerbates erosion and impacts stream corridors. There is increased pressure on creeks and wetlands, and the challenge is to preserve creek functions and meet no net loss of wetlands criteria.

A large focus of Water Board staff effort is in working closely with the Alameda Clean Water Program to implement their stormwater permit and working with agencies and private parties on water quality certifications. Major issues include stream and wetland impacts from proposed new development and existing development; water quality impairment from pesticides, fertilizers, animal waste, automobiles, and other typical urban runoff pollutants; changes to the hydrograph of watersheds due to development and increase of impervious surfaces; and water quality impacts from industrial and commercial site development.

Alameda Creek is one of the most significant watersheds in the region, due to the great diversity of species found there, and because it harbors one of the few remaining remnant steelhead populations in the East Bay. Adult steelhead thought to be native to Alameda Creek have been documented in the flood control channel attempting to migrate upstream during winter spawning runs from 1997 through 2006. Migration barriers, from the BART weirs to inflatable dams for groundwater recharge, have kept them from reaching the relatively unspoiled upper reaches of the watershed. Despite extensive urbanization, flood control projects, and major dams, Alameda Creek still supports one of the best assemblages of native stream fishes in the San Francisco Bay region. At least a dozen native fish species have been documented in recent years, including rainbow trout, Pacific lamprey, California roach, threespine stickleback, prickly sculpin, and tule perch.

Concerns about aquatic habitat in this watershed include fragmentation caused by urbanization, herbicide and pesticide use, stream habitat degradation caused by excessive cattle grazing and associated soil erosion, direct livestock impacts to stream corridors through bank scarring and collapse from animal passage, similar impacts from wild pigs, and stream obstructions. A stakeholder group of livestock and rangeland managers has formed to begin to address these issues in the entire Alameda Creek watershed.

In the upper watersheds of Alameda County, water quality issues soil erosion, pathogens and nutrients from cattle grazing. In several watersheds such as San Lorenzo and San

Leandro Creeks, there are nonpoint source pollution from the many equestrian facilities that are located near creeks, increasing vineyard development, and threats to groundwater recharge areas from upstream activities.

Water recycling and reclamation are important issues discussed in the Alameda Creek Watershed Management Initiative. The local grape growers, agriculture, and new development are examining the use of recycled water for irrigation. In addition, wastewater dischargers promote water recycling. Local water purveyors have been discussing groundwater injection of highly treated (reverse osmosis) recycled water for drinking. Wastewater discharges include two deep-water outfalls into Central San Francisco Bay (East Bay Municipal Utilities District, East Bay Dischargers Authority and Livermore Amador Valley Water Management Agency). A portion of the Union Sanitary District discharge is reclaimed into the Hayward Marsh.

Several creeks in Alameda County are considered impaired as a result of the potential for diazinon discharges to adversely affect aquatic life. Diazinon is a broad-spectrum organophosphate pesticide used for agricultural pest control, structural pest control, landscape maintenance, and other home and garden applications. Runoff from urban areas contains diazinon at levels potentially harmful to some aquatic organisms. Alameda Creek, Arroyo de la Laguna, Arroyo del Valle, Arroyo Hondo, San Leandro Creek, and San Lorenzo Creek have been named specifically because substantial parts of their watersheds include developed urban areas and because they support beneficial uses related to freshwater aquatic habitat. Diazinon may also be of concern in other Alameda County creeks, particularly if they pass through urban areas and support aquatic life. The Regional Board has developed an urban pesticides Total Maximum Daily Load (TMDL) that will address pesticide toxicity in Bay Area urban creeks. Through this process, it will investigate the extent of the problem, identify diazinon sources, allocate diazinon loads among the sources, and implement control measures.

Lake Merritt is considered impaired as a result of floating material and organic enrichment (low dissolved oxygen). In addition, Alameda County storm water and wastewater contribute to impairment of San Francisco Bay, and the Regional Board is developing TMDLs to address water quality problems in the Bay, such as mercury, copper, and polychlorinated biphenyls (PCBs).

Other issues include impacts to creeks from discharges of turbid and high pH waters from quarries and mines in Livermore Valley, degradation of groundwater quality in Livermore Valley from salt loading, and water quality impacts associated with Dublin/Livermore reclaimed water projects.

***Watershed Groups and Watershed Management Efforts***

The Alameda Countywide Stormwater Program began in 1987 and is an effort of the fourteen cities in Alameda County, and the County working together under a Municipal NPDES Stormwater Permit. This program, working with Alameda County Public Works Agency staff and Board staff, has taken an innovative, leadership approach to solving

many difficult problems. County Public Works staff are responsible for the County Clean Water Program, which includes monitoring and watershed assessment, creek restoration, illicit discharge and connection inspection, and promoting best management practices in both local agencies and in the wider community. County activities include working to re-establish fish runs in the San Lorenzo Creek and Alameda Creek Watersheds and working with the community to support watershed awareness and stewardship.

The City of Oakland has been a leader in creek programs through its Watershed Improvement Program. The City and the Alameda County Flood Control and Water Conservation District (ACFCWCD) have partnered to create the Collaborative Creek Improvement Program (CCIP) to restore, preserve, and improve Oakland's creeks. The CCIP includes implementation and training for alternative flood control, soil bioengineering training, riparian restoration, illegal dumping mitigation, water quality improvement, and community outreach and involvement. This program has been able to fund restoration projects on Peralta Creek, Arroyo Viejo, and Sausal Creeks. Oakland also partners with the ACFCWCD to implement Watershed Awareness Programs, whose goal is to establish long term community stewardship and leadership in specific watersheds. Current Watershed Awareness Programs include the Friends of Sausal Creek; a program for Arroyo Viejo Creek is under development. More information about these programs is available at www.oaklandpw.com.

A number of efforts are underway in the Alameda Creek watershed to remove barriers to steelhead migration. Migratory fish are currently blocked by impassable barriers in the creek, and the restoration of this fishery has galvanized both citizen activists and local agencies in the past several years. The Alameda Creek Alliance was formed by citizens mobilized to save the steelhead run. In 1999 the Alameda Creek Fisheries Restoration Workgroup was formed to address fisheries restoration issues. This group includes 15 public agencies as well as the Alameda Creek Alliance and other environmental representatives.

The Alameda County Public Works Agency received funding from U.S. Army Corps of Engineers to construct a fish ladder past the primary barrier to anadromous fish migration on Alameda Creek. This fish ladder will consist of a large concrete railway bridge support structure in Fremont. The Alameda Creek Alliance, a local citizens' group, actively supports this proposal. Some progress is occurring on lands controlled by the East Bay Park District and the City and County of San Francisco.

In summer 2005 a group of interested parties including Water Board staff, Friends of the San Francisco Estuary, East Bay Watershed Center, The Watershed Project and others initiated an Alameda County Watershed Forum to provide opportunities for the creek and watershed community of Alameda County to work together collaboratively on creek protection and education and outreach. At the first meeting in September 2005, about 30 people representing friends of creek groups, watershed councils, educational groups, federal, state and local government agencies came together in Fremont to develop a list of interests and priorities. Some of the highest priorities identified for an Alameda County Watershed Forum were to promote actions to protect creeks and watersheds, provide a

clearinghouse and forum for information sharing on funding and other topics, promote involvement by permanent staff at city and county levels, and promote collaboration and trust-building among creek and agency groups. Some of the high priority needs for creeks and watersheds were identified as development of long-term funding strategies (including watershed coordinators and technical help), formation of a regional coalition, technical training for restoration and monitoring, and educational opportunities. The forum has been meeting regularly since that time, supported primarily by staff from the Water Board and Alameda County Clean Water Program, as well as the Watershed Project, San Francisco Bay Joint Venture and several interested citizens. In 2010, the County was able to hire a part-time coordinator to coordinate events, maintain a website, and do outreach. The Forum will continue under the auspices of the County and the Alameda County RCD, with an emphasis on web-based watershed mapping and helping coordinate efforts with other watershed groups in the County.

In 2008, the Alameda County RC D spearheaded the organization of the Alameda Creek Watershed Council, and the Water Board signed on to the Letter of Understanding as a watershed partner. The Watershed Council's mission is to protect and enhance water related beneficial uses and resources in the Alameda Creek Watershed in order to create a healthy and sustainable watershed for the community. The Council promotes collaboration and the sharing of information among all stakeholders. The Council meets monthly and holds an annual symposium as well as supporting projects in the watershed.

There are also many active citizen-based watershed groups in the County, some supported by agency funds and grants, others entirely volunteer based. These include Friends of Sausal Creek, Friends of San Leandro Creek, Friends of Five Creeks, and the Codornices Creek Watershed Council, among others. Water Board staff have been involved in these activities at various times.

***Proposed Workplan for FY 2010-11/2011-12***

- Take action on 401/404 water quality certifications
- Reissue NPDES and Waste Discharge Permits
- Complete pretreatment compliance inspections
- Conduct annual compliance inspections
- Provide guidance on permanent new development stormwater treatment measures,
- Take enforcement actions as needed

***High Priority Unfunded Activities***

- Develop BMP's for grazing for water district and park watersheds, and general rangeland
- Work with Natural Resource Conservation Service and Alameda County Resource Conservation District on grazing issues
- Oversee reclamation process in Livermore Valley
- Participate in salt management activities in Livermore Valley
- Participate in Alameda Creek Watershed Management Initiative
- Complete CEQA reviews for general plans and development projects

- Assist in removing barriers to anadromous fish migration on Alameda Creek

***High Priority Projects for Grant Funding***

- Riparian habitat and stream restoration projects
- Tidal wetland restoration in former salt ponds to provide habitat for native species, enhance estuarine and tidal marsh habitat, and increase primary carbon productivity
- Re-establishing the delta at the mouth of Alameda Creek by integrating tidal wetland restoration in former salt ponds with planned flood control projects.
- Fish passage barrier removal in Alameda Creek watershed

## Figure 3-1. Alameda County Watersheds