

Fiscal Year 2001

Alameda County Flood Control  
and Water Conservation District

# Report to the Community





Donald J. LaBelle

# A message from the Director



## Which Flood Zone do you live in?

	Zone	Page #
Alvarado	3A	12
Baumberg	3A	12
Castro Valley	2	10
Centerville	5	18
Cherryland	2	10
Decoto	5	18
Emeryville	12	22
Fairview	2	10
Fremont (north)	5	18
Fremont (south)	6	20
Hayward (central)	4	16
Hayward (north)	2	10
Hayward (south)	3A	12
Highland	3A	12
Hillview	3A	12
Irvington	6	20
Mission San Jose	6	20
Mohrland	4	16
Mt. Eden	3A	12
Newark	5	18
Oakland	12	22
Russell City	4	16
San Leandro (central)	2	10
San Leandro (east)	2A	24
San Leandro (north)	13	26
San Leandro (south)	9	25
San Lorenzo	2	10
Union City	3A	12
Valle Vista	3A	12
Warm Springs	6	20

Public safety—protecting Alameda County from the devastating property damage and loss of life caused by major floods—is our number one concern. But over the past five or ten years, our focus has broadened in response to changing public priorities and new environmental requirements. So, while maintenance and operations, and engineering and construction still form our core services, we are now offering more to the communities we serve.

One important way that the Alameda County Flood Control and Water Conservation District accomplishes our vision is to maintain an open and productive dialogue with the people we serve.

This Annual Report is a natural outgrowth of our desire to inform our constituents about the work the Flood Control District performs. We've included descriptions of specific projects and accomplishments in each flood control zone and a summary of the District's finances, including our sources of revenue and our expenditures.

## New Priorities. New Partnerships

Our country is much more environmentally conscientious than it was in decades past, and creek habitats are increasingly important to today's communities. The Flood Control District places a very high value on water quality. In partnership with the East Bay Regional Park District and the Alameda Creek Alliance, the Flood Control District removed a nine-foot-high dam on Alameda Creek, opening the waterway for spawning salmon.

In the coming years, we will continue to forge partnerships with community and environmental groups, businesses, municipalities, and regulatory organizations to develop and implement projects that are beneficial to Alameda County's quality of life.

Over the past two years, the Flood Control District worked with the Federal Emergency Management Agency (FEMA) to perform detailed assessment and mapping of Alameda County flood hazard zones. The District is in the process of garnering federal, state, and local funding to make improvements to our infrastructure to prevent flooding and to remove areas from FEMA flood hazard status, if possible.

We will continue to work closely with our Friends-of-the-Creeks groups to evaluate ways that we can provide better access to our natural creeks—potentially one of Alameda County's greatest natural assets—while respecting the safety concerns raised by creek neighbors.

**Dedicated,  
Quality Service  
to the Public**



# To Serve and preserve Our Community



And we will continue to build new avenues of communication with the public we serve, including a major upgrade to the Alameda County Public Works Agency website. The new website will include additional information about the Flood Control District and links to other organizations involved in our creeks and watersheds.

## Safety First

We have worked diligently since the Flood Control District was formed in 1949 to protect Alameda County against natural flooding and disasters. However, as we all learned on September 11, 2001, a new kind of danger to our well-being has emerged. The Flood Control District remains committed to the security and safety of our infrastructure, our staff, and the people we serve.

Although it is not financially possible to counter every possible threat to our flood control facilities, the Flood Control District has upgraded its security systems to provide the most viable protection against unforeseen events.



The Flood Control District believes that it is in the public's best interest to build cost-effective capital improvement projects. Although most of our basic flood protection infrastructure is in place, there are many additional needed improvements that will benefit Alameda County.

We, like most governmental agencies in California, are restricted in the ways we can generate the revenue needed to implement these improvements. We hope that the information presented in this Annual Report will form the basis of new discussions of our communities' expectations compared to the Flood Control District's available resources. Together, we can formulate creative strategies to bridge the gaps.

Donald J. LaBelle, Director

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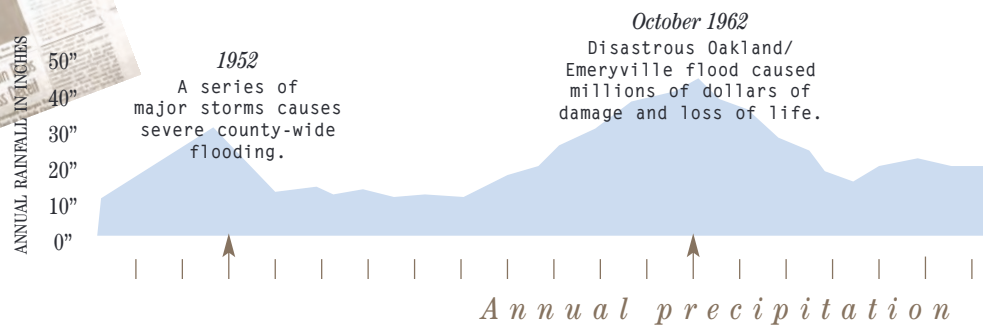
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# History of the



Many people don't realize that much of Alameda County is in a flood plain. Until the 1950s and '60s, many parts of the county were subjected to repeated flooding that closed businesses and schools, interrupted transportation and utility services, destroyed homes, and took lives.



## Early Foothold Against Flooding

At the request of Alameda County residents, the State Legislature created the Alameda County Flood Control and Water Conservation District in 1949. Throughout the 1950s and '60s, cities and unincorporated areas joined the Flood Control District to receive protection from devastating floods.

The cities and unincorporated areas were grouped into "zones" generally corresponding to an area's watershed, or drainage basin, boundaries. There are now ten individual flood control zones (see map, pages 14-15). Since 1949, the Flood Control District has steadily constructed strategic flood control improvements.

## Valuable Infrastructure Now In-Place

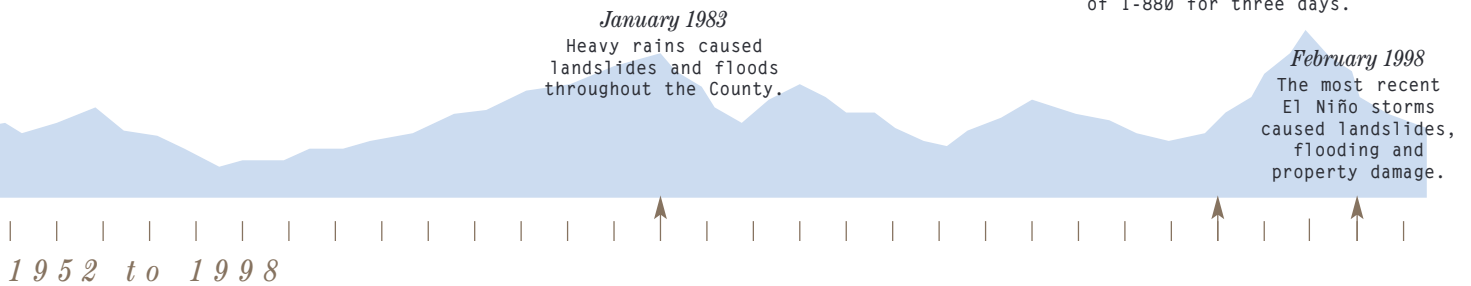
Even though few in the 1950s could have imagined the magnitude of development that has occurred in Alameda County, the flood control system was constructed assuming full build-out of the land. The system includes stations that pump storm water for discharge to the Bay, erosion control structures, and hundreds of miles of pipeline and channels — from concrete-lined waterways to natural creeks.

Recent estimates placed the value of the flood control infrastructure at over \$825 million. System components have been paid for with a combination of property taxes, benefit assessments, special federal and state project funding, and developer fees.





# District



The Alameda County Flood Control District responded quickly in the 1980s to a nationwide imperative to clean up surface water bodies. The Clean Water Program, administered by the Flood Control District, leads seventeen city and regional agencies in improving the quality of storm water discharge.

## Much More to be Done

The work of the Alameda County Flood Control District is far from complete. Aging equipment must be replaced and facilities upgraded. The efforts to keep flood control channels clear of silt and debris never cease. Planners and engineers evaluate the impacts of new developments on the county-wide system.

The memory of San Lorenzo Creek overflowing its banks is as faded as an old photograph. Because the Flood Control District has built, operates, and maintains a flood control system that protects Alameda County property and residents from damaging floods, former flood plains are today's prime real estate for housing and profitable Bay Area businesses.



## Views of Progress

*Dick Karn loves to fly into Oakland International Airport. The high vantage point reveals 50 years*



*of county-wide economic development made possible by the Flood Control District.*

*Hired in 1950, Karn was Employee #4 of the newly formed*

*Alameda County Flood Control and Water Conservation District. He was excited to work on projects that curbed once-regular flooding in Alameda County.*

*In the mid-1950s, Karn was assigned to Zone 7 in the Livermore-Amador Valley where a reliable drinking water conveyance system, in addition to flood control, was needed. Karn successfully negotiated with the state for construction of the South Bay Aqueduct. In 1962, he became the Flood Control District's Engineer-Manager.*

*Karn left to form the consulting firm Bissell & Karn, Inc. in 1966. The firm's work at Alameda Creek and on highways and new developments in the County complemented District efforts. Karn retired in 1995.*

*Karn believes that the District's success started with good standards. That success continues, he says, because the District does every project the right way.*

# General Responsibilities of the District

## Glossary

### Alluvial

*pertaining to a deposit of sand, silt, or mud formed by flowing water*

### Assessment

*the amount a property owner pays to support the flood control programs*

### Culvert

*a drain or pipeline under a road or sidewalk*

### Design Flow

*volume of water over a period of time, such as cubic feet per second, that can be handled by a pipe, channel, or other flood control structure allowing for a sufficient margin of safety to prevent flooding*

### Desilting

*removing deposits of sand and silt from a creek, flood channel, or reservoir*

### FEMA

*Federal Emergency Management Agency*

### Fiscal Year (FY) 2001

*the period of time between July 1, 2000 and June 30, 2001*

### Flood Hazard Area

*area of land that would be inundated by a 100-year flood*

### Flood Plain

*a nearly flat area next to a creek that is naturally subject to flooding*

### 100-Year Flood

*a significant flood that has a 1-in-100 chance of occurring in any given year*

### Habitat

*the natural environment where an organism lives or grows*

Today's Alameda County Flood Control and Water Conservation District keeps the flood control system in reliable working order. New projects improve capacity and flow. Equipment and channels are regularly maintained and upgraded. Impacts on existing flood control system components are carefully considered in the early planning stages of new developments. The District also plays a key environmental role helping to preserve and enhance the quality of water in our local creeks and the San Francisco Bay through the efforts of the Clean Water Division.

## Engineering and Construction

Planning, design, and inspection of new flood control projects is the responsibility of the District's Engineering and Construction Division. The group takes on projects as diverse as silt removal in Cull Canyon Reservoir to construction of Fremont's Tule Ponds, a combination storm water treatment facility and wildlife habitat.

Engineers design projects in accordance to District guidelines, building codes, and environmental requirements. Staff inspectors make sure that facilities are constructed in accordance with engineered plans.

The Engineering and Construction Division also assists the Federal Emergency Management Agency (FEMA) with the development of accurate maps of potential flood zones. District input on these maps has saved thousands of property owners from having to pay for unnecessary flood insurance.

The public also benefits from the Division's Adopt-a-Spot/Adopt-a-Creek Program, which helps volunteers with projects to beautify the County's natural areas.

## Maintenance and Operations

The Flood Control District's Maintenance and Operations Division keeps storm water channels clear and pump stations operational so that rain water moves quickly from city streets to San Francisco Bay. The staff maintains over 500 miles of pipelines, channels, and natural creeks as well as 22 pump stations and over 4 million linear feet of fencing.

Key tasks include debris and weed removal, fence and gate repair, tree trimming, facility inspections, and cleaning pump stations' silt basins and trash racks before and during rain storms.

Maintenance and Operations staff perform preventive maintenance work to preserve equipment. They also provide technical knowledge to other District groups on future projects like pump station upgrades or silt removal.





## Land Development

Developers of new housing subdivisions and business parks continue to be drawn to prime locations in Alameda County. The Land Development Division's top goal is to maintain the integrity of the existing flood control system in the face of new developments. The group is a resource for developers, residents, cities, and unincorporated areas involved in development or grading projects.

Land Development takes responsibility for confirming that all private and public developments in unincorporated areas comply with accepted hydraulic standards and environmental requirements. City engineers turn to Land Development staff for flood control expertise when new developments are proposed within city boundaries.

Land Development staff will discuss designs and provide comments at the outset of a project. As the project moves forward, the developer pays for review costs and obtains a permit. The developer and staff engineers together help find solutions to storm water mitigation requirements.

## Clean Water Division

The Clean Water Division's aim is to work with the community to preserve and enhance watersheds in Alameda County in order to protect the quality of water in our local creeks and the San Francisco Bay.

The Clean Water Division's major responsibilities are to implement the Alameda County Unincorporated Area Clean Water Program, as well as various clean water activities undertaken within each of the zones, and to administer the Alameda Countywide Clean Water Program for its 17 member agencies. These programs were established in 1991 with the goal of reducing stormwater pollution in compliance with local, state, and federal regulations.

## Safety and Emergency Response Programs

Public safety takes a high priority at the Flood Control District. District staff meet the specific needs of County citizens and property owners during times of crisis by providing hazardous spill response, inspection of damaged trees, sand bag supply, and fire hazard reduction. The District also serves as an Emergency Response Unit during disasters like earthquakes and localized flooding.

## **Glossary, continued**

### **Hydrology**

*the science dealing with the effects of water on the earth's surface, both above and below ground*

### **Infrastructure**

*system of built structures and facilities that serve a purpose, such as flood control*

### **Levee**

*an embankment designed to prevent flooding of a river or creek*

### **Mitigation**

*a special project designed to make the adverse impacts of a construction or maintenance project less severe*

### **Pump Station**

*a facility that lifts collected storm water to an elevation high enough to allow the storm water to flow by gravity into San Francisco Bay. Storm water reaches pump stations by way of creeks, pipes, and channels*

### **SCADA**

*Supervisory Control and Data Acquisition*

### **Storm Patrol Cleanup**

*inspection and debris removal after a storm*

### **Watershed**

*the region or area drained by a creek or river*

### **Wetland**

*land characterized by particular soils and vegetation that is often or always under water and may serve as a natural habitat*

### **Zone**

*administrative area designated by the Alameda County Flood Control District*



Moneys received from properties in each individual zone can only be spent on projects or maintenance  
For example, fees collected from Zone 2 can only be spent on Zone 2 projects

## How Your Assessment is Determined

Until 1979, the Flood Control District based flood control fees on property value. The passage of Proposition 13 changed the way special assessments could be calculated. Assessments are now based on the stormwater runoff from each parcel of property.

Larger parcels generate greater runoff. The rate per acre depends on the zone in which the property is located.

More highly developed parcels, those with pavement or buildings that don't readily absorb rainwater, also generate greater runoff. There are five categories of land use:

**Group A** – Commercial and Industrial

**Group B** – Institutions and Apartments

**Group C** – Single Family and Small Multiple Residential

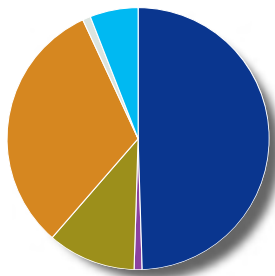
**Group D** – Vacant Land used for farming, parks, etc.

**Group E** – Vacant Land that is undisturbed or used for grazing

The assessment is calculated by multiplying the established rate (based on zone and land use group) by the property acreage, with a flat-rate minimum for properties less than a quarter-acre.

Assessments have not been increased since the 1992-1993 Fiscal Year, except in Zone 6. Zone 6 assessments were increased in Fiscal Year 1993-1994, and have been held at the same rate since then.

# Overview of District Finances



## Sources of Revenue

● Taxes	50%	\$14,027,046
● Aid from Governmental Agencies	1%	\$278,582
● Use of Money	11%	\$3,067,564
● Assessment Revenue	32%	\$8,997,027
● Other Revenue	1%	\$139,393
● Clean Water Program	6%	\$1,634,028
<b>Total FY2001 Revenue</b>		<b>\$28,143,640</b>

## Sources of Revenue

The Flood Control District receives revenue from two main sources (taxes and assessments) and receives supplemental revenue from four additional sources.

**Taxes:** The District receives a very small portion of the one percent Countywide property tax. As a result of AB 1661, 39 percent of the District's property tax allocation for Fiscal Year 2001 (FY2001), or \$10,578,271, was then reallocated to the Educational Revenue Augmentation Fund (ERAF) for use by the schools. Of the tax revenue received, \$1,379,015 was applied as an offset to District-wide expenses. In Zones 2A and 13, property tax allocation is the only source of revenue.

**Aid from Governmental Agencies:** Most (88%) of the Aid from Governmental Agencies was money returned to the District by the State for overpayment of ERAF.

**Use of Money or Property:** Because the Flood Control District maintains cash reserve balances for emergencies like those during the El Niño years, the funds are held in interest-bearing accounts to generate additional revenue and help keep assessments down. The District also collects rental revenue for use of certain property it owns.

**Assessment Revenue:** Nearly a third of the District's revenue comes from assessments on property. See "How Your Assessment is Determined," this page.

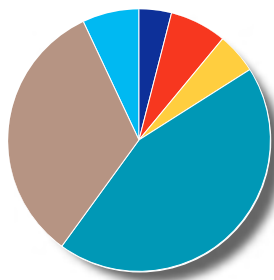
**Other Revenue:** This category includes a variety of minor sources of revenue, including plan review and permit fees that builders and developers pay when they obtain encroachment permits or receive engineering reviews.

**Clean Water Program:** The Clean Water Program is funded by contributions from each of the cities in the County, a clean water assessment on each parcel in the unincorporated area, and grants. For FY2001, the Clean Water Program received \$1.3 million in contributions from the cities, \$329,000 in unincorporated area assessment fees, and \$18,000 in grant funding.

In recent years, this program has not been self-supporting. The deficit has been made up through contributions from the zones. An increase in assessment fees in the unincorporated area is being investigated as a means of overcoming this deficit.



within that zone.  
and not on work in any other zone.



### Expenditures

Information Technology Improvements	4%	\$1,152,414
Administration	7%	\$2,052,170
Development Services	5%	\$1,372,433
Engineering and Construction	45%	\$13,371,304
Maintenance and Operations	33%	\$9,613,753
Clean Water Program	7%	\$1,939,577
<b>Total FY2001 Expenditures</b>		<b>\$29,501,651</b>

## Expenditures

Moneys received from properties in each individual zone can only be spent on projects or maintenance within that zone. For example, fees collected from Zone 2 can only be spent on Zone 2 projects and not on work in any other zone.

**Information Technology Improvements:** Approximately 4% of the District's expenditures went toward upgrading and supporting the Agency's computer hardware and software systems, including major technology expenditures to develop an automated, remote permitting system. The Agency also began the process of converting existing historical data to digital form for archiving and ease of retrieval.

**Administration:** Approximately 7% of the District's expenditures represent District-wide administration of the flood control programs, including human resources, accounting, and administrative services.

**Development Services:** A portion of Development Services' expenditures is covered by permit fees (see "Other Revenue," page 8) and the remainder primarily by taxes and assessments.

**Engineering and Construction:** With new developments and increasing population, it becomes imperative to keep the flood control infrastructure updated and adaptive to changes. Nearly half (45%) of the District's expenditures went toward engineering and capital improvements.

**Maintenance and Operations:** Most of the major flood control infrastructure in Alameda County has already been built, and roughly a third (33%) of the FY2001 expenditures were used to maintain and operate the flood control facilities and pump stations.

**Clean Water Division:** In FY2001, 7% of the total District expenditures went toward implementing the Alameda County Unincorporated Area Clean Water Program, as well as various clean water activities undertaken in each zone, and to administer the Alameda Countywide Clean Water Program for its 17 member agencies. Projects performed included a fisheries assessment of the San Lorenzo Creek Watershed; negotiation of new NPDES permits; and implementing the monitoring, inspection, outreach, and evaluation of program components.

## Saving for a Rainy Day

Every year, the Flood Control District looks ahead at major projects that need to be accomplished to keep the flood control system operating at peak performance. Subsequent sections of this report present the capital improvement projects that the District hopes to accomplish by FY2006. District reserves are sufficient to cover flood emergencies, but fall short of that needed to replace the District's aging infrastructure or to construct needed improvements. (see "Bridging the Gap," this page).

## Bridging the Gap

Historically, the Flood Control District has operated as a "pay-as-you-go" organization, wherein we identify projects and build them when reserve funds are available. A financial audit of the Flood Control District conducted in 1998 recommended that we become an "asset management" organization, wherein we keep enough money in reserve to replace aging infrastructure. A shift from "pay-as-you-go" to "asset management" requires a significant increase in our reserve funds. Complying with environmental regulations, and shifting our priorities toward more environmentally friendly projects, also requires additional funding. There are many new demands on the Flood Control District to deliver expanded services.

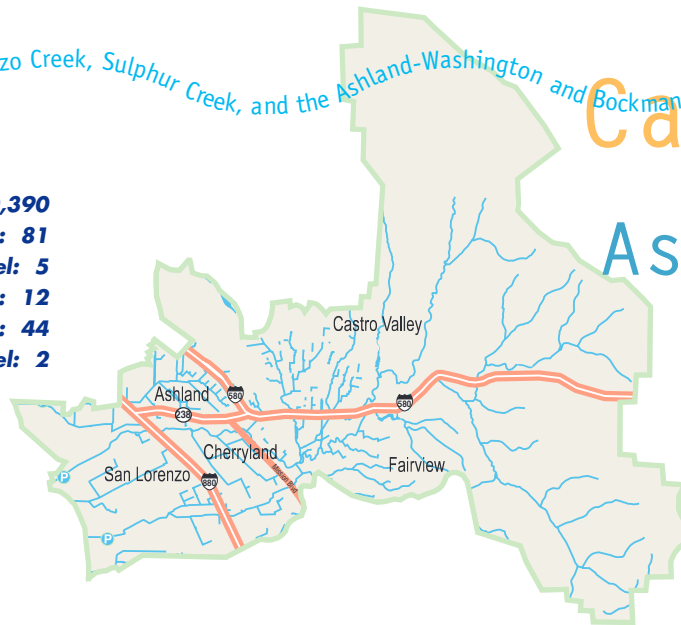
We have made many improvements in our work processes to help do more with less. However, we will need our community's continued input and support to meet the challenges in years to come.

# Zone 2

## AT-A-GLANCE

**Area in acres: 40,390**  
**Total miles of natural creek: 81**  
**Total miles of earth channel: 5**  
**Total miles of concrete channel: 12**  
**Total miles of underground pipe: 44**  
**Total miles of improved channel: 2**

San Lorenzo Creek, Sulphur Creek, and the Ashland-Washington and Bockman Drainage Canals



Castro  
San  
Ashland  
San  
Cherryland

Zone 2 enjoys the most natural creeks of any zone in the Flood Control District. Maintenance and Operations crews work to keep flood control channels clear for rain water flow (see “Only Rain in the Drain,” page 17). Activities like fence repair and debris and vegetation removal help the District meet this goal.

Zone 2	7-Year Capital Improvement Plan
Cull and Don Castro Reservoir desilting	\$1,500,000
Line A (Estudillo Canal) floodwall construction and crossing enlargement from Bay to I-880	\$20,000,000
Line B (San Lorenzo Creek) bank stabilization from Foothill Blvd. to Grove Way	\$1,000,000
Line B-7 bypass installation via Valley Ave., San Lorenzo Creek to D St.	\$1,800,000
Line B-23 (Crow Creek) bank stabilization	\$210,000
Line G (Chabot Creek) bank stabilization upstream of Tanglewood Dr.	\$150,000
Line I (Castro Valley Creek), Redwood Rd. to I-580 capacity improvement	\$600,000
Line I (Castro Valley Creek) bypass or diversion to San Lorenzo Creek, Redwood Rd. to Line B	\$1,350,000
Line K (Sulphur Creek) culvert enlargement at 5th and 7th Streets	\$500,000
Line K (Sulphur Creek) reinforced concrete pipe installation at Hayward Airport	\$1,700,000
Line K (Sulphur Creek) culvert modifications at Hesperian Blvd.	\$300,000
Line K (Sulphur Creek) bypass pipeline installation at Mission Blvd. to 2nd St.	\$600,000

The Flood Control District operates and maintains two pump stations in Zone 2—Sulphur Creek and Roberts Landing—that pump rain water into the San Francisco Bay at high tide (see “Turning the Tides,” page 17).



## Clearing Local Reservoirs

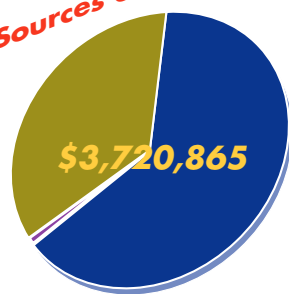
Zone 2 is home to the Cull Canyon and Don Castro recreational reservoirs. These reservoirs are maintained by the District, and are operated by the East Bay Regional Park District for recreational purposes (see “From Flood to Fun,” page 11).

From 1988 to 1994, the banks of streams feeding into Cull Reservoir were stabilized. That project helped reduce the amount of silt reaching the waterways. However, despite these efforts, over 350,000 cubic yards of silt have accumulated in Cull Reservoir. Water quality and recreation are impeded by the built-up silt (See “The Siltation Situation,” page 12).



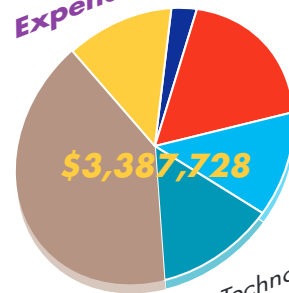
# Valley Lorenzo portions of Hayward Leandro and

Sources of Revenue



- Taxes
- Aid from Governmental Agencies
- Use of Money
- Assessment Revenue
- Other Revenue

Expenditures



- Information Technology Improvements
- Administration
- Development Services
- Engineering and Construction
- Maintenance and Operations
- Clean Water Program

A \$1.15 million pilot project to partially desilt Zone 2 reservoirs was completed in FY2001. Over 11,000 cubic yards of silt were removed from Cull Canyon Reservoir and almost 16,000 cubic yards of silt were taken out of Don Castro Reservoir. Limited disposal areas near the reservoirs and high transportation costs to the final disposal site presented challenges that District engineers will consider in future desilting projects. An updated study on desilting the Zone 2 reservoirs is anticipated to be completed early in FY2003.

## Crow Creek Repairs

An investigation of Crow Creek, known as Line B-23 to District Engineers, revealed significant damage at one creek bend. Erosion, possibly due to high storm water discharge from a nearby drainage pipe, had caused a high embankment to slip. Engineers completed designs to realign the creek and restore its natural, meandering path. The high embankment was stabilized by reducing its steep slope. Construction began on this \$280,000 project in FY2001. Final touches will include revegetation with native plant species and the use of biodegradable erosion control materials on the slope.

## Celebrating Palomares Creek

Through a partnership with the US Department of Agriculture Natural Resources Conservation Service (USDA NRCS), the Alameda County Resource Conservation District (ACRCD), the Castro Valley Unified School District, and a \$350,000 grant from the State Water Resources Control Board, the Alameda County Unincorporated Area Clean Water Division in collaboration with the Engineering and Construction Division began the Palomares Creek Restoration Project. The project includes restoring approximately 800 feet of Palomares Creek, developing watershed-based curriculum for grades K-5, and supporting the annual Palomares Watershed Festival. At the festival, guests were taken on creek tours. Over a dozen exhibitors including Lindsay Wildlife Museum, California Department of Fish and Game, and the California Native Plant Society educated the public about watershed issues and local wildlife.

## From Flood to Fun

Preventing floods is serious business. Yet fun and relaxation are the unexpected benefits of several County flood control projects. Some reservoirs and creek enhancements also act as recreational areas managed by the East Bay Regional Park District or city governments.

The 360-acre park at Castro Valley's Cull Canyon Reservoir includes picnic areas and a swimming lagoon west of the reservoir. Anglers try for bass, catfish, and sunfish in the reservoir.

Don Castro Reservoir in Hayward also offers a swimming lagoon every summer. Anglers can hook trout, bass, catfish, or bluegill. A shore trail offers views of turtles, frogs, ducks, and deer.

Hikers, bicyclists, and equestrians are welcome on the Alameda Creek Trail in Fremont's Coyote Hills Regional Park. The twelve-mile trail links San Francisco Bay with Niles Canyon. It was developed in conjunction with the Alameda Creek Federal Project, which dramatically reduced flooding in the surrounding area.

# zone 3A

## AT-A-GLANCE

**Area in acres: 19,700**  
**For Zones 3A and 4 combined:**  
**Total miles of natural creek: 21**  
**Total miles of earth channel: 20**  
**Total miles of concrete channel: 5**  
**Total miles of underground pipe: 43**



Ward Creek, Zeile Creek, Mt. Eden Creek, and old Alameda Creek

Fairview  
Union  
Hillview  
Valle  
Hayward  
Mt.  
Alvarado

## The Siltation Situation

The Flood Control District's battle to keep silt from clogging flood control channels and reservoirs never ends since silt is an ongoing by-product of nature. During heavy storms, eroded soil washes into fast-moving creeks and is carried downstream. When it reaches a reservoir or the flatland, where the water flow is slower, the silt settles out.

In waterways near San Francisco Bay, silt is carried into the creeks or channels at high tide. When Bay salt water mixes with fresh water, the silt settles out.

Silt must be removed so that water may flow unimpeded. Desilting projects, however, are often slowed by a number of regulatory requirements. Before work begins, the District must obtain a Waste Discharge Requirement permit from the Regional Water Quality Control Board.

If the project is near the shoreline, an additional permit from the Bay Conservation and Development Commission is required.

(continued, next page)

Tidal action in the Zone 3A coastal watershed causes rapid silt buildup in the zone's main outlet channel, Old Alameda Creek. As water from the San Francisco Bay mixes with fresh water from the watershed, silt falls out and obstructs the free flow of storm water in flood control channels.

Maintenance work in Zone 3A includes fence repair, tree trimming, upkeep and repair of channel access roads, and removal of debris, vegetation, and silt. Each task helps keep storm water channels clear for maximum flood protection (see "Only Rain in the Drain," page 17). Additionally, District Maintenance and Operations crews regularly inspect and maintain Ward Creek Dam.

The District maintains and operates nine pump stations in Zone 3A—Eden Landing, Ruus Road, Besco, Westview, Alvarado, Industrial, Ameron, Stratford, and A2.

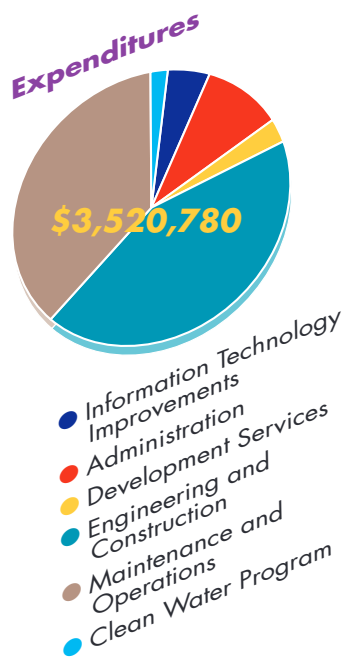
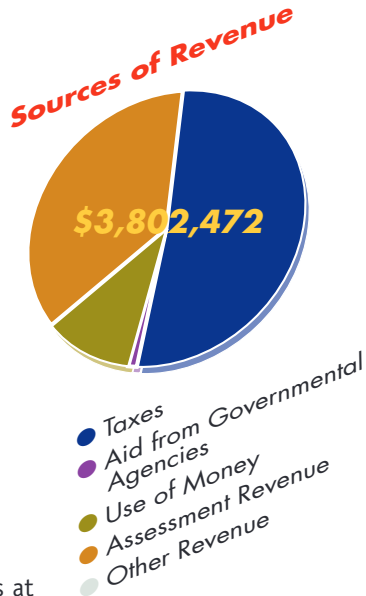
## Fewer Floods

A \$620,000 project to greatly eliminate chances of flooding at Spanish Ranch Mobile Home Park was completed in FY2001. A floodwall ranging from four to seven feet in height now protects residents from overflows of Line B, Ward Creek. An existing maintenance roadway was also raised along the mobile home park's eastern border.

Zone 3A	7-Year Capital Improvement Plan
Line A (Alameda Creek) levee repair from railroad bridge (downstream of Union City Blvd.) to I-880 (Ward Creek)	\$600,000
Line A (Alameda Creek) replace railroad bridge downstream of Union City Blvd.	\$1,000,000
Line A (Alameda Creek) levee repair Cargill to 20-tidegates	\$400,000
Line A-5 bypass installation, Industrial Blvd. to Catalpa Way	\$600,000
Line B (Ward Creek) floodwall construction from Line H to Line F-1	\$620,500
Line C (Zeile Creek) silt basin construction upstream of Holy Sepulchre Cemetery	\$300,000
Line D (adjacent to Industrial Pkwy.) increase capacity with possible floodwall construction, 600 feet upstream of Line A to 300 feet upstream of Huntwood	\$1,200,000
Line E (Ward Creek) box culvert reroute and enlargement as part of Harder Rd. undercrossing by City of Hayward (District's share)	\$142,000
Line F levee repair (in conjunction with Line B project)	\$100,000



# City Vista Tennyson Eden Highland Baumberg



District engineers examined impacts of improvements at Spanish Ranch on nearby areas. They designed a project to raise existing levees along Line F, thus greatly reducing the chance of flooding in the immediate neighborhood. Construction on this \$150,000 project began in FY2001.

## The Latest Development

Upon completion, the 500-acre Mount Eden Project on the Oliver Trust property will be a major development with a commercial area, recreation fields, and 750 new homes. The District, the City of Hayward, the Hayward Area Shoreline Planning Agency, and the project developer have worked together throughout the planning and design process. These cooperative efforts yielded a project design sensitive to a nearby wetland and endangered species such as the salt marsh harvest mouse.

Construction of the new Mount Eden Pump Station begins in FY2002. The station will replace existing District Pump Station A-2, which is in need of extensive repair. This developer-funded project, with an estimated \$4.5 million construction cost, will save the District \$750,000 in upgrade costs and yield a state-of-the-art facility. The pump station will incorporate SCADA technology (see “Turning the Tides,” page 17), which allows District staff to monitor station operations from remote locations. Improvements to maintenance roadways along Lines A and A-2, flood control channels near the Mount Eden development, will be incorporated into the pump station project.

### The Siltation Situation, ...continued from page 12

Coordination with the California Department of Fish and Game is required for all work in and near waterways.

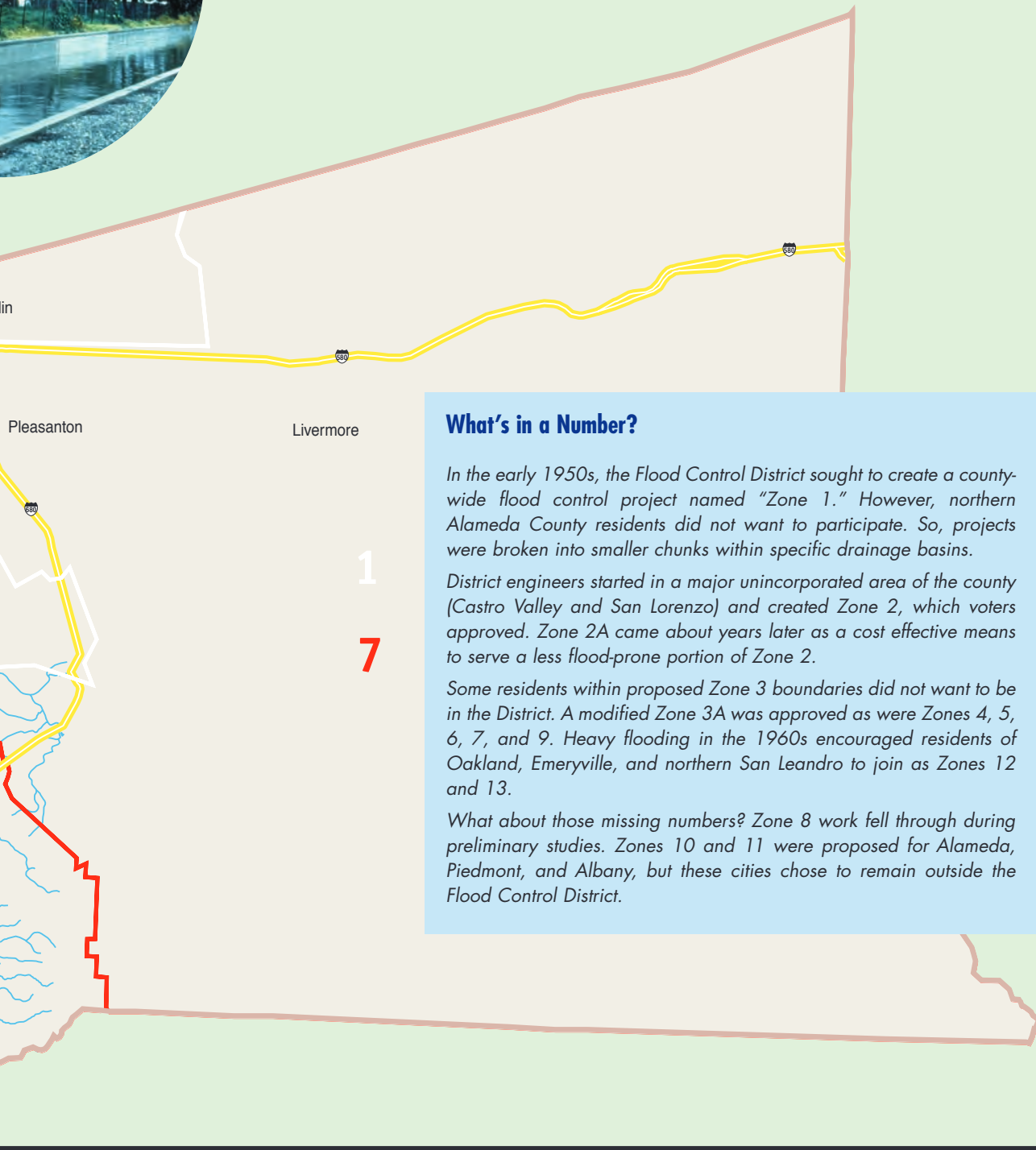
In recent years, the Flood Control District has been finding ways to minimize the amount of silt that reaches the waterways. When these approaches work to reduce silt accumulation, the need for costly and time consuming desilting projects is reduced. And the environmental community is happy that fewer disruptive activities are conducted in creeks.

As an example, upstream of Cull Canyon Reservoir, creek banks were eroding and depositing silt into the reservoir. Post-and-wire revetments, much like wire fences, were installed at the toe of the creek bank at eroding spots. This enhancement helps prevent the collapse of creek banks. Tree limbs and debris collect behind the revetments and vegetation is established, protecting the slopes from erosion.





# Alameda County Flood Control and Water Conservation District



## What's in a Number?

In the early 1950s, the Flood Control District sought to create a county-wide flood control project named "Zone 1." However, northern Alameda County residents did not want to participate. So, projects were broken into smaller chunks within specific drainage basins.

District engineers started in a major unincorporated area of the county (Castro Valley and San Lorenzo) and created Zone 2, which voters approved. Zone 2A came about years later as a cost effective means to serve a less flood-prone portion of Zone 2.

Some residents within proposed Zone 3 boundaries did not want to be in the District. A modified Zone 3A was approved as were Zones 4, 5, 6, 7, and 9. Heavy flooding in the 1960s encouraged residents of Oakland, Emeryville, and northern San Leandro to join as Zones 12 and 13.

What about those missing numbers? Zone 8 work fell through during preliminary studies. Zones 10 and 11 were proposed for Alameda, Piedmont, and Albany, but these cities chose to remain outside the Flood Control District.



# zone 4

## AT-A-GLANCE

**Area in acres: 2,960**  
**For Zones 3A and 4 combined:**  
**Total miles of natural creek: 21**  
**Total miles of earth channel: 20**  
**Total miles of concrete channel: 5**  
**Total miles of underground pipe: 43**



## Mohrland Russell City portions of Hayward



Zone 4 was established in 1952, in the early days of the Flood Control District. At just 2,960 acres in size, Zone 4 is one of the smallest zones in the District. Its watershed is an alluvial plain adjacent to San Francisco Bay.

This zone has a relatively large amount of earth channel for its small size. For this reason, and because of the Bay's constant tidal action, Zone 4 flood channels require regular erosion repair.

Other maintenance work in the zone includes fence repair and vegetation removal, key tasks in keeping flood control channels clear for design storm water flows (see "Only Rain in the Drain," page 17).

District engineers are working to increase the

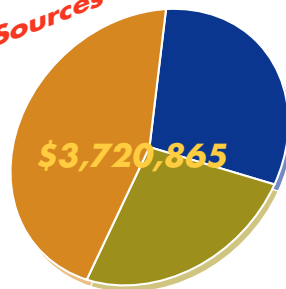
storm water flow capacity of Line A at Winton Avenue while returning portions of the channel to a more natural appearance. Engineers are currently reviewing the design and environmental impacts of this project. Construction of this \$300,000 project is set to begin in 2003.

### Zone 4

### 7-Year Capital Improvement Plan

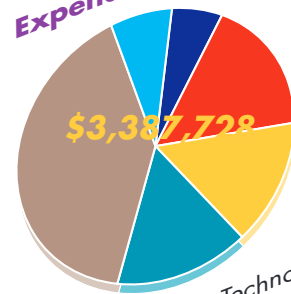
Line A crossing improvement at Winton Ave.	\$300,000
Line A capacity enhancement, SPRR to Clawiter Rd.	\$1,000,000
Line A capacity enhancement at Cabot Blvd.	\$200,000

### Sources of Revenue



- Taxes
- Aid from Governmental Agencies
- Use of Money
- Assessment Revenue
- Other Revenue

### Expenditures



- Information Technology Improvements
- Administration
- Development Services
- Engineering and Construction
- Maintenance and Operations
- Clean Water Program

# Only Rain in the Drain



Maintenance and Operations field crews regularly inspect the over 330 miles of creeks within the Flood Control District. First, areas where water flow may be blocked by silt, trash, or vegetation are identified. Then, obstructions are removed with careful attention paid to maintaining the appearance of natural areas and complying with environmental regulations.

Crews remove over 1,000 shopping carts a year from the county's waterways, along with nearly 4,000 cubic yards-worth of couches, rugs, mattresses, pollutants, and other illegal debris and garbage. This debris is detrimental to the creeks and costly to remove. That's why one of the District's primary messages to the public is "Only Rain in the Drain."



The District's integrated vegetation management program controls plants that pose a fire danger, obstruct storm water flow, or interfere with maintenance activities. Weeds are either removed by hand, by natural biological means, or by herbicides that are applied to curb their growth. Only state certified personnel apply the herbicides, which are registered for use by the State and Federal Environmental Protection Agency.

When trees impede water flow in creeks and channels, Maintenance and Operations crews remove branches and limbs as needed to clear the waterway. Only dead, dying, or split trees are completely removed. Flood Control District personnel always work in a way that stirs up the least amount of silt and minimizes overall disruption to the channel.

The public can help keep waterways clear by placing trash and green waste in proper disposal containers. The Flood Control District asks that citizens notify the District's Maintenance and Operations Division at (510) 670-5500 when significant amounts of debris are found near creeks and channels.

## Turning the Tides

Rain water flows by gravity from high ground through creeks, channels, and conduit and ultimately to San Francisco Bay. Flood Control District pump stations, generally located in low-lying shoreline and residential areas like San Leandro, Hayward, and Fremont, help the rainwater complete its journey.

Tides cause water levels in the Bay to fluctuate up to eight feet over the course of a day. At high tide, when the Bay water level is higher than that in the creeks, pumps in District-operated stations must physically lift the collected storm water so it can flow into the Bay.



Most of the District's 22 pump stations were originally built by individual cities and then turned over to the Flood Control District for operation. Each station varies in size and design. District stationary engineers and plant mechanics, each with expertise in many trades, keep the stations in good working order.

Preventive maintenance takes on a different sense of scale from everyday projects. An oil change for one engine can require 130 gallons of oil and 21 new filters!

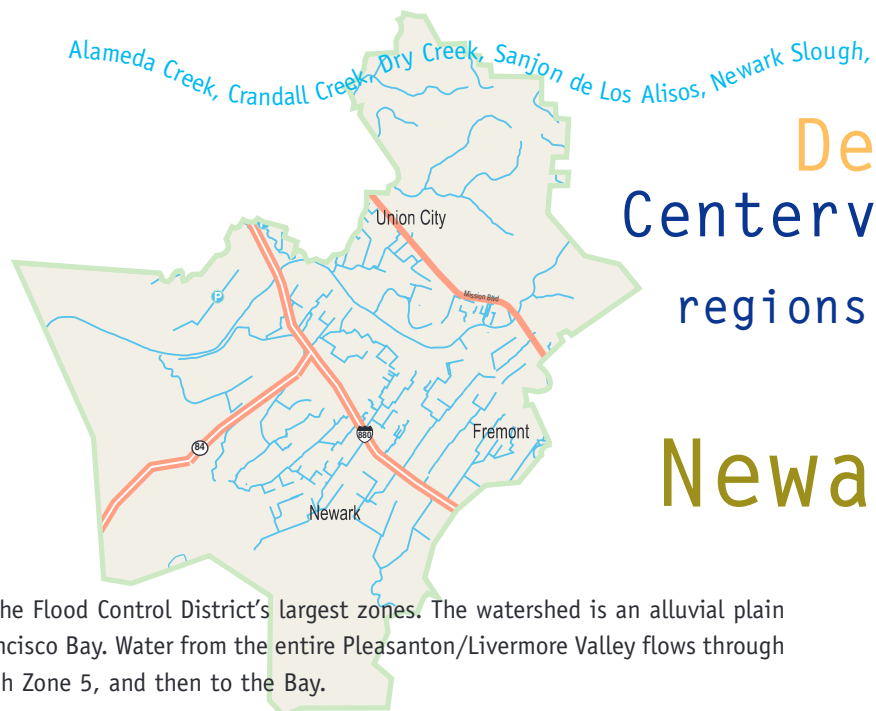
Design and implementation has started on a SCADA system for the District's pump stations. SCADA, which stands for Supervisory Control and Data Acquisition, is a technology that will monitor station operations and interface with Flood Control District computers.

SCADA will allow for more prompt response to operational problems occurring outside regular business hours. When a potential problem is detected at a station, the system will automatically notify an on-call employee. The employee can then refer to a laptop computer and either change operating parameters via computer or determine if a site visit is needed. The SCADA system will save District dollars by minimizing equipment damage and cutting down on overtime to correct simple operating functions.

# zone 5

## AT-A-GLANCE

**Area in acres: 45,440**  
**Total miles of natural creek: 37**  
**Total miles of earth channel: 35**  
**Total miles of concrete channel: 7**  
**Total miles of underground pipe: 49**  
**Total miles of improved channel: 9**



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Zone 5 is one of the Flood Control District's largest zones. The watershed is an alluvial plain adjacent to San Francisco Bay. Water from the entire Pleasanton/Livermore Valley flows through Niles Canyon, through Zone 5, and then to the Bay.

In addition to the zone's extensive system of natural creeks, Zone 5 contains more earth channel—almost 35 miles—than any other zone. Thanks to the Alameda Creek Federal Project, which has greatly reduced the potential for flooding, many homes are built on what was once a large flood plain but is now prime real estate.

A significant amount of silt—over 1200 cubic yards—was removed from Zone 5 channels in FY2001. Just one cubic yard of silt would fill over six 32-gallon trash cans. Other maintenance

activities in this zone include erosion repair to earth channels, fence repair, and removal of debris, vegetation, and dead and dying trees. Each of these tasks helps reduce obstructions to flow in flood control channels (see "Only Rain in the Drain," page 17).

Repairs and upgrades to the zone's three pump stations—J2, J3, and Quail Run—contribute to the smooth flow of storm water from area waterways and ultimately into San Francisco Bay (see "Turning the Tides," page 17).



### Zone 5 7-Year Capital Improvement Plan

<b>Line A (Coyote Hills Slough) desilt downstream of Union City Blvd.</b>	<b>\$1,500,000</b>
<b>Line B Tule Pond classroom/observation area</b>	<b>\$225,000</b>
<b>Line B floodwall and possible culvert modification I-880 to Farwell Dr.</b>	<b>\$300,000</b>
<b>Line B capacity enhancement upstream of Cherry St.</b>	<b>\$300,000</b>
<b>Line F-1 capacity enhancement upstream of Cedar St.</b>	<b>\$700,000</b>
<b>Line H capacity enhancement upstream of Union Pacific RR</b>	<b>\$400,000</b>
<b>Line J-2 floodwall between Regents Dr. and Jean Dr.</b>	<b>\$700,000</b>
<b>Line M capacity enhancement between line M-4 and Mission Blvd.</b>	<b>\$400,000</b>
<b>Line M-3 capacity enhancement between line M and Mission Blvd.</b>	<b>\$400,000</b>
<b>Line M-3 and M-4 sediment and peak flow reduction upstream of Mission Blvd.</b>	<b>\$700,000</b>

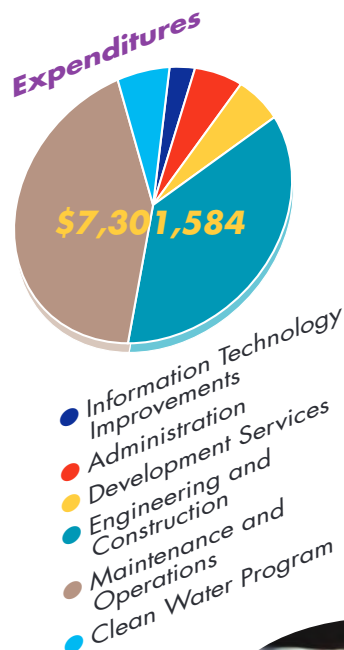
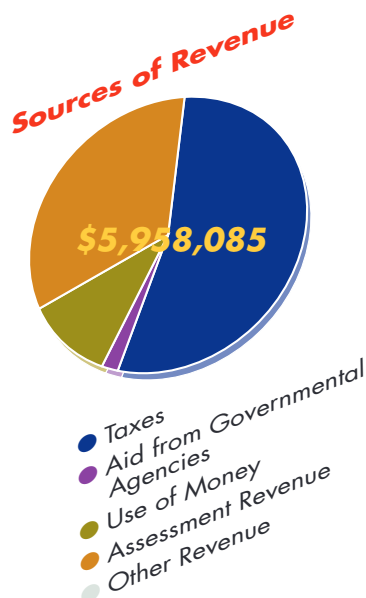
### A Better Line B

Engineers hope to increase the capacity of Line B between I-880 and Farwell Drive. Flood control improvements proposed for this area include additional box culverts and flood walls.



Plummer Creek, and Mowry Slough

# coto ille of Fremont rk



## Caring for Alameda Creek

A project to remove built up silt from Alameda Creek between Decoto Road and Ardenwood Blvd. has been completed. Environmental impacts from the desilting project, such as the potential temporary loss of wetland habitat due to the dredging activities and disturbance to the creek, were mitigated by creating a wetland on District property and purchasing "shares" in a nearby mitigation bank. A study to evaluate sediment removal from Alameda Creek from Ardenwood Blvd. to the Bay has been initiated. The State Water Resources Control Board has awarded a \$115,800 grant to the District to study the feasibility of not removing sediment along this reach of Alameda Creek by reconfiguring the levees along the channel, thus allowing extreme storm water flows to flood into the adjacent soon-to-be-abandoned salt ponds.

The District has formed a task force interested in restoring steelhead trout to Alameda Creek. The task force is comprised of government and regulatory agencies, private businesses, and citizens. Barriers within flood control channels can inhibit steelhead, listed as a threatened species, from reaching spawning habitats in the watershed then returning to San Francisco Bay.

## Environmental Education

The District's Tule Pond Project in Fremont converted a polluted natural depression located in a busy residential area into scenic ponds and wetlands. As storm water flows through the series of ponds, pollutants are removed by natural wetland processes.



The Tule Pond Project also provides the area with a new habitat for migratory birds like Canada geese and snowy egrets. The District designed and built this successful project in collaboration with the City of Fremont, the District's own Countywide Clean Water Program, and the Natural Resources Conservation Service (NRCS). The NRCS is a federal organization committed to project partnerships that conserve and sustain the nation's natural resources.

In FY2001, design work continued on an outdoor classroom and education center where children could learn about wetlands and storm water treatment. District engineers carefully considered the classroom design to reduce unnecessary construction costs. Construction is expected to begin in FY2002.



## **Preserving Habitat**

The main role of the Alameda County Flood Control and Water Conservation District is to protect County residents and property from devastating floods. Since 1991, the focus of the District has been expanded to include working with communities to protect and restore creeks and to reduce pollution entering local creeks and San Francisco Bay.

Today the District is working to protect native fisheries and associated aquatic habitats while ensuring flood protection. Examples of these efforts include the District's active role in restoring the once abundant steelhead trout populations to the Alameda Creek Watershed, enhancement of fish habitats and aesthetics of Sausal Creek in Dimond Park, and improving habitat and public access throughout the San Lorenzo Creek Watershed. The District embraces its role in providing flood protection while enhancing wildlife habitat for today's and future generations' benefit.

# Zone 6

Morrison Creek, Mission Creek, Arroyo de la Laguna, Arroyo Agua Caliente, Arroyo Agua Fria, Torogues Cress,

Irvi  
Mission  
Warm  
regions of

## AT-A-GLANCE

**Area in acres: 27,400**  
**Total miles of natural creek: 43**  
**Total miles of earth channel: 20**  
**Total miles of concrete channel: 6**  
**Total miles of underground pipe: 14**



Zone 6 is an alluvial plain on the San Francisco Bay shoreline. This zone falls just behind Zone 5 in terms of amount of silt removed. Silt can clog flood control channels and restrict rain water flow. District Maintenance and Operations crews removed over 1100 cubic yards of silt from Zone 6 in FY2001.

Other maintenance activities in this zone, like debris and vegetation removal and weed control, also help remove obstructions to storm water flow in the District's channels (see "Only Rain in the Drain," page 17). A FY2001 project to improve a culvert inlet structure and trash rack on Line D-1 at Yucatan Street helped further alleviate local flooding.

## Lake Elizabeth

Lake Elizabeth, located in central Fremont, is a popular spot for boating and fishing. The lake is located on District property, and the City of Fremont maintains the facility.

Visitors may not realize that Lake Elizabeth aids in flood control by retaining rain water that flows into the pond from the hills above Fremont, then releasing the water into downstream channels at controlled rates. For the lake to carry out this role, silt must be removed regularly. Desilting also improves the lake's water quality and aquatic habitat.

A project to dredge Lake Elizabeth and remove 75,000 cubic yards of sediment is in the design phase. Work on this \$1 million project is expected to commence in FY2002 and be complete in time for summer 2002 recreation.

## Zone 6 7-Year Capital Improvement Plan

<b>Lake Elizabeth desilting</b>	<b>\$1,300,000</b>
<b>Line B floodwall 1000 feet upstream of Ursa Dr.</b>	<b>\$100,000</b>
<b>Line D (Agua Fria Creek) channel and bank repair and erosion protection, I-680 to Rancho Higuera St.</b>	<b>\$1,200,000</b>
<b>Line D-1 inlet structure modifications at I-680 and Yucatan Dr.</b>	<b>\$150,000</b>
<b>Line E (Laguna Creek) reduction or elimination of FEMA "Zone A" designation, Line F to Lake Elizabeth</b>	<b>\$16,000,000</b>
<b>Line G repairs and protection to top of bank, Automall to Valpey Park Dr.</b>	<b>\$600,000</b>
<b>Line K capacity enhancement at Osgood Rd.</b>	<b>\$300,000</b>
<b>Line L (Mission Creek) channel and bank repair and erosion protection, Driscoll Rd. to Palm Ave.</b>	<b>\$1,000,000</b>
<b>Line L (Mission Creek) channel and bank repair &amp; erosion protection, upstream of Mission Blvd.</b>	<b>\$1,500,000</b>
<b>Line L (Mission Creek) capacity enhancement at Union Pacific Railroad</b>	<b>\$400,000</b>
<b>Line M channel and bank repair and erosion protection, Canyon Heights to Vargus Rd.</b>	<b>\$2,000,000</b>
<b>Line M capacity enhancement, Stevenson Blvd. to Canyon Heights</b>	<b>\$1,100,000</b>

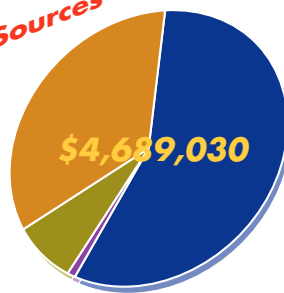
## Reducing Erosion

Severe erosion problems have been observed at a portion of Line L, Mission Creek. The creek bed has been undercut from high storm water flow conditions in the channel. District engineers are studying plans to create a wider, meandering streambed for a more natural appearance and

# ngton San Jose Springs Fremont

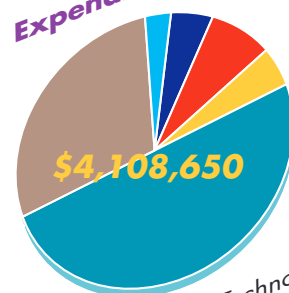
and Scott Creek

Sources of Revenue



- Taxes
- Aid from Governmental Agencies
- Use of Money
- Assessment Revenue
- Other Revenue

Expenditures



- Information Technology Improvements
- Administration
- Development Services
- Engineering and Construction
- Maintenance and Operations
- Clean Water Program

to prevent bank erosion. The District is coordinating its efforts with the City of Fremont, the Fremont Unified School District that owns the property, and the Math Science Nucleus, a non-profit organization dedicated to studying the creek and its importance to the environment.

In FY2001, District engineers completed the design for erosion repairs and environmental enhancements to a 3/4-mile portion of the Laguna Creek bypass flood control channel, Line G. This manmade, earth-lined, trapezoidal channel constructed in 1960 was experiencing top-of-bank erosion and in-channel silt deposition. District engineers wish to reconfigure the channel's cross-section to reduce future erosion potential, improve sediment transport, and enhance the riparian and aquatic habitat while still maintaining flood flow capacity. Construction on a \$685,000, five-month project to upgrade Line G from Miramar Park Drive to Valpey Park Avenue is set to begin in early FY2002.

## What is a flood plain?

## Flood Plain Facts

A flood plain is a natural geological feature linked to a river or creek. As development increases in a flood plain, and opportunities for natural rain water dissipation decrease, flooding events can become more frequent. A 100-year flood plain is that area adjacent to a creek or channel for which there is a one-percent chance of flooding any given year.

## What does FEMA have to do with flood plains?

FEMA, the Federal Emergency Management Agency, is commonly known for implementing emergency management programs that help communities nationwide to prepare for disasters and deal with their aftermath.

In the 1980s, FEMA produced a Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs). Flood risk was determined by considering factors like topography, historical and current rainfall data, in-place flood control measures, and existing and planned development in the flood plain.

All 100-year flood plains are shown as Special Flood Hazard Areas (SFHAs) on FIRMs. While the odds of a home being completely flooded in a 100-year storm seem slim, the chance for flood damage increases over the life of a 30-year mortgage. For this reason, lenders require flood insurance on homes located in an SFHA.

## What is the National Flood Insurance Program (NFIP)?

The NFIP, administered by FEMA, provides federal flood insurance when a local government, like the Alameda County Flood Control and Water Conservation District, takes steps to reduce flood risks within a 100-year flood plain. Until recently, private insurance companies did not offer this type of insurance coverage. In the event of flooding within the District, the NFIP provides federal disaster assistance.

Information adapted from the Contra Costa County Flood Plain Management Program Guide, May 2001.

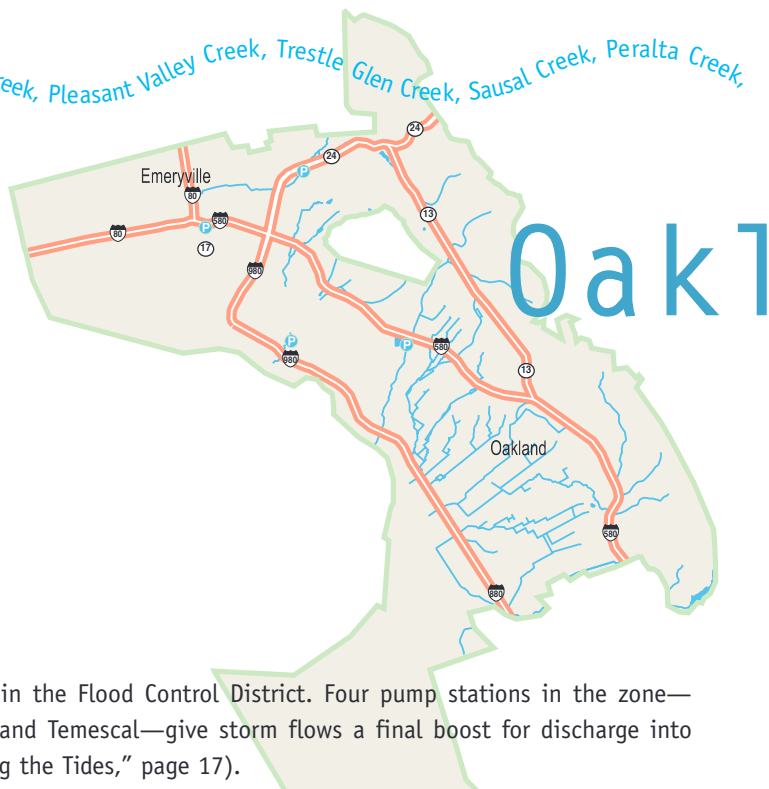


# Zone 12

## AT-A-GLANCE

**Area in acres: 51,200**  
**Total miles of natural creek: 17**  
**Total miles of earth channel: 4**  
**Total miles of concrete channel: 7**  
**Total miles of underground pipe: 49**  
**Total miles of improved channel: 1**

Temescal Creek, Glen Echo Creek, Pleasant Valley Creek, Trestle Glen Creek, Sausal Creek, Peralta Creek,



Zone 12 is the largest zone in the Flood Control District. Four pump stations in the zone—Ettie, McKillop, Lake Merritt, and Temescal—give storm flows a final boost for discharge into San Francisco Bay (see “Turning the Tides,” page 17).

### Zone 12 7-Year Capital Improvement Plan

<b>Line B (Glen Echo Creek) capacity enhancement, 27th St. to 29th St.</b>	<b>\$2,550,000</b>
<b>Line B-1 (Glen Echo Creek) detention basin capacity enhancement upstream of Pleasant Valley Ave.</b>	<b>\$25,000</b>
<b>Line B (Glen Echo Creek) capacity enhancement, Richmond Blvd.</b>	<b>\$1,000,000</b>
<b>Line B (Glen Echo Creek) erosion repair, Montell Wilda St. to Monte Vista Ave.</b>	<b>\$250,000</b>
<b>Line C capacity enhancement along Grand Ave.</b>	<b>\$2,700,000</b>
<b>Line D/D-1 (Trestle Glen Creek) capacity enhancement, Lakeshore Ave.</b>	<b>\$6,400,000</b>
<b>Line E (Sausal Creek) creek restoration, El Centro Ave. to Leimert Blvd.</b>	<b>\$320,000</b>
<b>Line F (Peralta Creek) structural wingwall at Bridge Ave.</b>	<b>\$25,000</b>
<b>Line F (Peralta Creek) capacity enhancement, Florida St. to Wisconsin St.</b>	<b>\$1,000,000</b>
<b>Line I (Seminary Creek) capacity enhancement, E. 14th St.</b>	<b>\$300,000</b>
<b>Line J-1 (Chimes Creek) erosion repair, Nairobi Pl. to Delmont Ave.</b>	<b>\$250,000</b>
<b>Line J (Lions Creek) culvert bypass, Brann St. to Seminary Ave.</b>	<b>\$3,900,000</b>
<b>Line K (Arroyo Viejo Creek) restoration</b>	<b>\$500,000</b>
<b>Line R (Lake Merritt) pump station trash rack modifications</b>	<b>\$1,000,000</b>



In FY2001, construction began on the \$1 million Lake Merritt Pump Station trash rack modification project. The new design increases the outfall channel flow rate and improves accessibility for cleaning and maintenance.

District Maintenance and Operations staff continuously monitor Lake Merritt water levels and prevent winter flooding by pumping water from the lake before and during storm events. In summer months, gravity flow gates are kept open to flush the lake with tidal currents. District crews, in conjunction with the City of Oakland, also maintain creeks flowing through nine city parks.

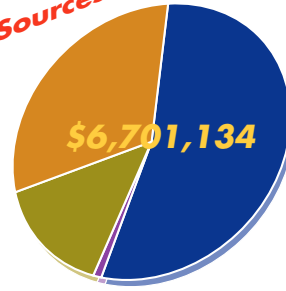
Maintenance work in this zone includes debris and vegetation removal, fence repair, and tree trimming—work that helps keep storm water

channels clear for maximum flood control (see “Only Rain in the Drain,” page 17). In FY2001, District crews removed a total of 1351 cubic yards of debris from this zone. Storm flow capacity along Line B-1 was improved thanks to a project to increase the capacity of a detention basin near Pleasant Valley Avenue by modifying the outfall structure.

and

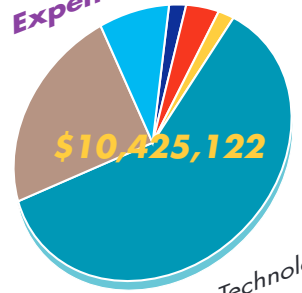
# Emeryville

Sources of Revenue



- Taxes
- Aid from Governmental Agencies
- Use of Money
- Assessment Revenue
- Other Revenue

Expenditures



- Information Technology Improvements
- Administration
- Development Services
- Engineering and Construction
- Maintenance and Operations
- Clean Water Program

## Updates at Glen Echo Creek

In FY2001, construction began on improvements to Line B, Glen Echo Creek, from 28th to 29th Streets. The \$3.3 million project rehabilitated a large culvert and replaced old piping that had been a bottleneck in the creek's drainage system. System back-ups had caused periodic flooding at 30th Street and Richmond Boulevard during winter storms.

Further improvements from 29th Avenue to Frisbie Street are planned for FY2003. A \$1 million project will improve flood control by adding a flood wall and lowering the elevation of some open channel areas. Replacement of a pedestrian and vehicle bridge at 30th Street and Richmond Boulevard is also proposed.

Erosion repair of Glen Echo Creek at Monte Vista Avenue is in the works. District engineers held public meetings and coordinated with the Piedmont Area Neighborhood Improvement League (PANIL) to review design options for the steeply sloped channel. The next step is obtaining environmental permits for construction work that is planned for FY2003.

## Sausal and Arroyo Viejo Creeks Naturalized

The Sausal Creek Restoration Project at Dimond Park realigned portions of the creek, removed concrete structures from the channel, and incorporated native plants for revegetation. A pedestrian path was rebuilt as well. Modifications not only enhanced the creek's appearance, but improved creek water quality, flood control capacity, and natural rainbow trout habitat. Funding for the \$320,000 project, a collaboration between the City of Oakland and the District, came from the California Coastal Conservancy and the District. Friends of Sausal Creek contributed hundreds of labor hours to help make the project a success.

A \$73,000 project to protect Peralta Creek from collapsing retaining walls on both banks was completed in FY2001. Construction also began on a creek restoration project along Zone 12, Line K, Arroyo Viejo Creek. District staff oversaw this \$796,000 creek restoration project, which removed concrete flood walls, a concrete amphitheater, and non-native vegetation and trees. Public access and recreational opportunities along the creek were improved by creating new walkways, and installing a new foot bridge, amphitheater, and picnic tables. A new irrigation system and newly planted native trees provide a more natural creek setting for the community and wildlife to enjoy.

## **Collaborative Effort**

*The Sausal Creek Restoration Project represents a successful collaboration between the Flood Control District and the City of Oakland, and was funded by the California Coastal Conservancy and the Alameda County Flood Control and Water Conservation District. The Friends of Sausal Creek, a community watershed awareness group, contributed hundreds of hours of labor in re-establishing native vegetation along Sausal Creek.*



*This project proves that a community can work together with governmental agencies to make a difference!*

# zone 2A

AT-A-GLANCE

Area in acres: 329

For Zones 2A, 9, and 13 combined --

Total miles of natural creek: 3

Total miles of earth channel: less than 1

Total miles of concrete channel: 3

Total miles of underground pipe: 33



## eastern portion of San Leandro

### A Zone All Its Own

The Flood Control District's **Zone 7**, comprised of Livermore, Pleasanton, Dublin and adjacent unincorporated areas of eastern Alameda County, was formed in 1957. Residents of the Livermore-Amador Valley voted to create Zone 7 when issues like poor drainage, flood hazards, and uncertainties about future water supplies came to a head.

The first order of business was to procure a reliable drinking water supply. In 1960, construction began on facilities to treat water from the State Water Project's South Bay Aqueduct plus pipelines, wells, and pumping plants to deliver treated drinking water. Drainage and flood control facilities were also constructed.

Flood Control District staff served Zone 7 until 1978 when a separate Zone 7 staff, now based in Pleasanton, was created to carry out programs initiated by the zone's Board of Directors.

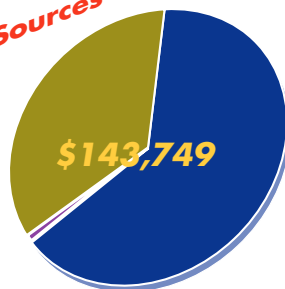
The seven-member board, made up of local residents, governs the zone and advises the Alameda County Board of Supervisors, which presides over the Flood Control District. Because the District is ultimately responsible for Zone 7 flood control, non-routine actions approved by the Board of Directors must also be approved by the Board of Supervisors.

Zone 2A, in a southeastern portion of San Leandro, is the smallest zone in the Alameda County Flood Control District. Zone 2A was established in 1965 to address occasional local flooding caused by overflows in surrounding regions. There are no natural creeks in this zone; rather, water flows in a series of pipelines into the Zone 2 system.

Key services provided by District Maintenance and Operations crews in Zone 2A, such as debris removal, help minimize flooding in the area by keeping waterways clear for storm water flows (see "Only Rain in the Drain," page 17).

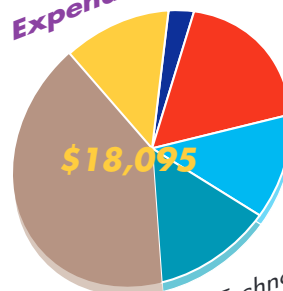


### Sources of Revenue



- Taxes
- Aid from Governmental Agencies
- Use of Money
- Assessment Revenue
- Other Revenue

### Expenditures



- Information Technology Improvements
- Administration
- Development Services
- Engineering and Construction
- Maintenance and Operations
- Clean Water Program



# southern portion of San Leandro



# zone 9

## AT-A-GLANCE

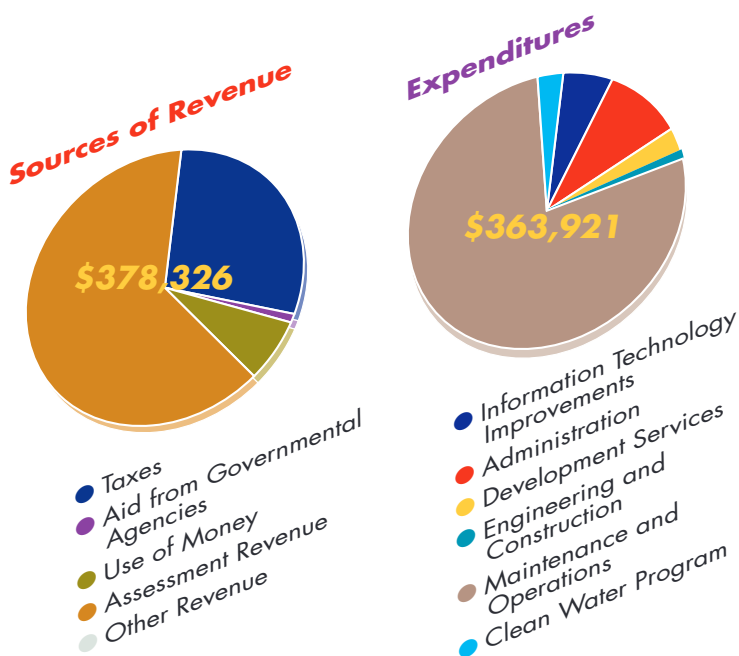
**Area in acres: 2,482**  
**For Zones 2A, 9, and 13 combined --**  
**Total miles of natural creek: 3**  
**Total miles of earth channel: less than 1**  
**Total miles of concrete channel: 3**  
**Total miles of underground pipe: 33**

Zone 9 is located in San Leandro adjacent to Zone 2A. No natural creeks or channels are found in this watershed. Concrete lined channels and underground pipes move rain water from the streets for discharge to San Francisco Bay.

The Flood Control District works to keep Zone 9 flood control channels clear and well-maintained so that rain water can be transported away from city streets, businesses, and residences and into the flood control system.

District Maintenance and Operations personnel make sure that the four pump stations in the zone— F, H, D1, and Belvedere—are in top working order (see “Turning the Tides,” page 17). Preventive maintenance and repairs keep the Zone 9 pump stations operating smoothly. But aging equipment will soon need to be replaced.

Other maintenance activities in Zone 9 include fence repair and vegetation removal to minimize flooding by keeping waterways clear (see “Only Rain in the Drain,” page 17).



# Zone 13

## AT-A-GLANCE

**Area in acres: 3,200**  
**For Zones 2A, 9, and 13 combined —**  
**Total miles of natural creek: 3**  
**Total miles of earth channel: less than 1**  
**Total miles of concrete channel: 3**  
**Total miles of underground pipe: 33**



## northern portion of San Leandro

Zone 13 of the Alameda County Flood Control District was established in 1963 to take in portions of San Leandro that had not been included in Zones 2, 2A, and 9. Zone 13 is the watershed for San Leandro Creek.

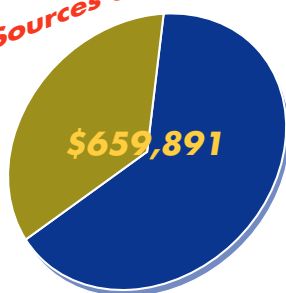
The primary District maintenance activities for this zone are vegetation and debris removal. Keeping the natural creek and other waterways clear helps prevent flooding during rainy weather (see "Only Rain in the Drain," page 17).

### Watershed Management

The District is coordinating a Watershed Management Plan with the City of San Leandro and the public. District staff have developed working relationships within the community through public meetings and outreach activities.

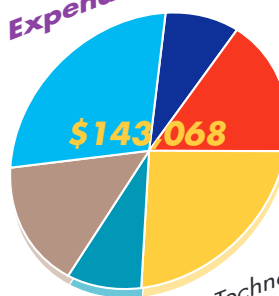
The purpose of the Watershed Management Plan is to develop ways to manage San Leandro Creek. Issues of public access and channel maintenance are addressed along with means of handling creekbank slides and erosion.

### Sources of Revenue



- Taxes
- Aid from Governmental Agencies
- Use of Money
- Assessment Revenue
- Other Revenue

### Expenditures



- Information Technology Improvements
- Administration
- Development Services
- Engineering and Construction
- Maintenance and Operations
- Clean Water Program

# Volunteers

## Preserve Scenic Creeks



*You can adopt a portion of a local waterway through the Flood Control District's **"Adopt-a-Spot"** and **"Adopt-a-Creek"** programs. Individuals or groups can take responsibility for removing trash and other debris, removing weeds, planting native trees, shrubs, and wildflowers, and caring for plants and the wildlife habitat in a specific location.*

*Participating in Adopt-a-Spot/Adopt-a-Creek is easy. First, select and map the portion of waterway that you want to care for and contact the Flood Control District at (510) 670-5501. An Adopt-a-Spot coordinator will review your selection. If the location is not already taken, and if the area is deemed safe for volunteer workers, the spot can be adopted. Applications and permits are renewed annually. Volunteers must apply for the free permit, then review and follow District safety and notification requirements.*

*The District provides free trash bags and trash disposal, gloves, and orange safety vests, and rewards volunteer efforts with recognition signs near the selected site.*



Alameda County Flood Control and Water Conservation District

**To Serve and Preserve Our Community**  
**Para Servir y Preservar Nuestra Comunidad**

**County of Alameda  
PUBLIC WORKS AGENCY**  
**Agencia de Trabajos  
Publicos del Condado  
de Alameda**  
399 Elmhurst Street  
Hayward, CA 94544  
(510) 670-5480  
(510) 670-5541 fax

**FLOOD CONTROL AND  
WATER CONSERVATION  
DISTRICT**  
**Distrito del Control  
de Inundacion y  
Conservacion de Agua**

**DIRECTOR**  
**Donald J. LaBelle**  
**Office of the Director**  
(510) 670-5455  
**Oficina del Director**  
(510) 670-5455

**In case of emergency,  
dial 9-1-1**  
**En caso de emergencia,  
marque 9-1-1**

**To report flooding  
of major creeks in  
Alameda County,  
call (510) 670-5500**  
**Para reportar  
desbordamiento o  
inundacion de arroyos en  
el Condado de Alameda,  
llamar al (510) 670-5500**

**To report illegal  
dumping or trash  
in creeks, call  
(510) 670-5500**  
**Para reportar arrojo ilegal  
de basura en los arroyos,  
llamar al (510) 670-5500**

**For sandbags, in  
Hayward call (510)  
670-5500 and in Dublin  
call (925) 803-7007.**  
**Para bolsas de arena,  
en Hayward llamar al  
(510) 670-5500; en Dublin  
llamar al (925) 803-7007**

**Adopt-a-Creek,  
Adopt-a-Spot Program**  
(510) 670-5501  
**Para tomar un programa  
sobre arroyos**  
(510) 670-5501

**Clean Water Division**  
(510) 670-5543  
**Programa sobre  
agua limpia**  
(510) 670-5543

**Land Development  
and Permits**  
(510) 670-6601  
**Desarrollo de tierra  
y permisos**  
(510) 670-6601

**Engineering  
and Construction**  
(510) 670-5480  
**Ingenieria y construccion**  
(510) 670-5480

**For general information,  
e-mail us at  
info@acpwa.mail.  
co.alameda.ca.us**  
**Or visit us at www.  
co.alameda.ca.us/pwa**  
**Para informacion general  
escribanos a la direccion  
de correo electronica:  
info@acpwa.mail.  
co.alameda.ca.us**

**O visitenos al:  
www.co.alameda.ca.us/  
pwa**

**Para asistencia en  
espanol, por favor llame  
a Maria Contreras al (510)  
670-5590; Linda Herrera  
al (510) 670-5497**

**BOARD OF SUPERVISORS**

**Scott Haggerty, District 1**  
(510) 272-6691

**Gail Steele, District 2**  
(510) 272-6692

**Alice Lai-Bitker, District 3**  
(510) 272-6693

**Nate Miley, District 4**  
(510) 272-6694

**Keith Carson, District 5**  
(510) 272-6695

**Hot Line for questions  
relating to the assessment  
process: Call the Special  
Districts Administration**  
(510) 670-5518

為不說英語的顧客提供電話服務，請打電話：

**For assistance in Chinese, please contact Judy Jung. (510) 670-5716**



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