



L MED  
COUNTY  
FLOOD  
CONTROL &  
W TER  
CONSERV TION  
DISTRICT

FISC L YE R 2005

"To Serve and  
Preserve"  
Our Community



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Donald J. LaBelle, Director

## Message from the Director

With this annual report, the Alameda County Flood Control and Water Conservation District (District) continues its tradition of providing information about our work to the community. The District is pleased to provide a summary of our fiscal year 2005 efforts as well as a look ahead to future flood protection work.

### THE REALITY OF FLOOD DAMAGE

Californians watched with concern as hurricanes and floodwaters ravaged Louisiana and Mississippi as a result of Hurricanes Katrina and Rita in 2005. You may wonder, "Could that kind of flooding happen here?" Or, you may ask, "What purpose does the District serve when our weather, in comparison to other parts of the country, seems so calm?"

The reality is that in past decades, water routinely flooded parts of Alameda County. Thanks to our extensive flood control infrastructure, however, we have greatly reduced local flooding. Today, the District continually repairs and maintains this valuable flood



The District's Zone 2 is home to the Castro Valley hills.

control infrastructure to protect residents and property. District engineers also design system upgrades to increase system flow capacity when needed.

### FLOOD PROTECTION: BEFORE AND AFTER

This year's report includes some dramatic photographs. We have presented "before" pictures of projects scheduled to receive our attention in fiscal year 2006. These photos give an idea of the types of repairs and upgrades to flow capacity we must make year after year.

The “after” photos in next year’s report will reflect the District’s care in restoring channels and creeks in the most natural, environment-friendly way possible. The completed projects will each play an essential role in providing adequate flood protection to county neighborhoods.

## MAINTAINING PROTECTION

With all of the District’s ongoing work, steady and reliable funding is vital. The District’s main source of funding is a small portion of property tax revenues and, in some areas, a special benefit assessment. Revenues collected in each geographic flood control zone can only be used for work within that zone.

Yet, about 40 percent of the funds collected and earmarked for flood control are required, through Assembly Bill 1661, to be turned over to the state’s Educational Revenue Augmentation Fund (ERAF). This reallocation directly and dramatically impacts the District’s ability to provide much needed flood control and environmental services.

Infrastructure has a life cycle, and much of our flood control system was built in the mid-20th century. Now is the time to act to preserve this crucial system for the next generation. We may be asking for your support in the near future to address this critical funding issue.

## SAFE AND SOUND

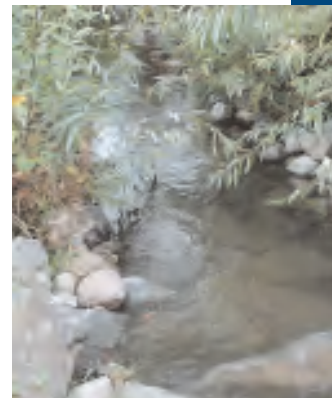
In the meantime, rest assured that we will not stop our work to maintain, upgrade, and restore flood control facilities. We will also continue to advance projects that minimize residents’ need to purchase expensive flood insurance. The District will continue to live up to its motto: “To Serve and Preserve Our Community.”

If you have any input on this issue or questions about the District, its projects, or its finances, please call us. Please check out our new Website for more information on historic projects, rain data, flooding FAQs, and other information.

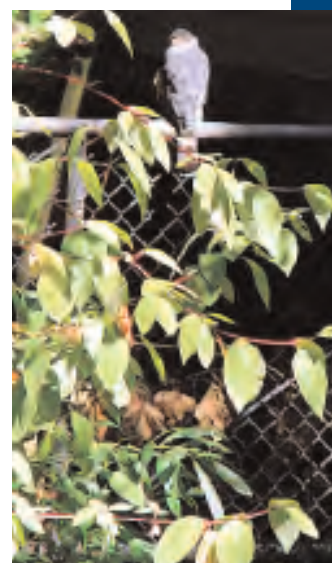
## TRANSITIONS

This is my final message to you as Alameda County Public Works Director as I will be retiring. Assistant Public Works Director, Daniel Wollesenbet, will take on the Director’s role temporarily during a nationwide search for the best candidate for Alameda County.

It has been an honor to serve you, to be a part of your community, and to interact on flood control issues with the neighboring cities and counties of the Bay Area.



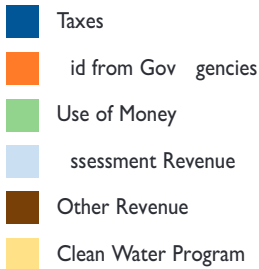
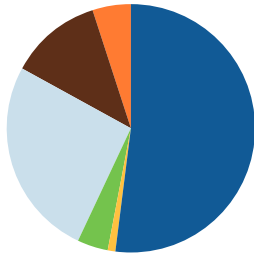
*Glen Echo Creek in Oakland meanders through the District’s Zone 12.*



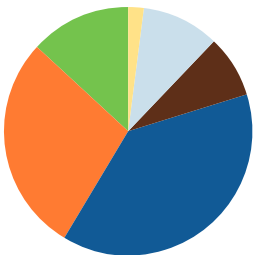
*Wildlife and birds, such as this hawk at Glen Echo Creek, are seen throughout the District.*

## District Responsibilities and Financial Overview

Revenue FY 2004 - 05  
\$34,924,075



Expenditures FY 2004 - 05  
\$ 36,583,370



This report presents an overview of the Alameda County Flood Control and Water Conservation District's activities and finances during fiscal year 2005 (July 1, 2004 through June 30, 2005). We hope that in reading about the District's work, you come to understand that the District takes many steps to reduce the potential for flooding, maintain its investment in the flood control system, preserve the environment, and prepare for the future.

The District works cooperatively with the community and in an environmentally sound way to build new flood control structures, maintain and repair existing facilities, and minimize the adverse impacts of construction and new development. A variety of skills are required, and three departments—Engineering and Construction, Maintenance and Operations, and Development Services—take on this challenging work. For more information about each of these departments, including the Clean Water Program Division, visit [www.acgov.org/pwa](http://www.acgov.org/pwa) and click on "Flood Control District."

### What is the Source of the District's Revenue?

The District receives revenue from a number of sources. It is important to note that tax and benefit assessment monies received from properties within each flood control zone can only be spent on projects or maintenance within that zone.

### Benefit Assessment

**Revenue:** Assessments are based on predictions of the quantity of stormwater and runoff from each parcel of property, given its use and the zone in which it is located. Land use categories are (A) commercial and industrial, (B) institutions and apartments, (C) single family and small multiple residential, (D) vacant land used for farming, parks, etc., and (E) vacant land that is undisturbed or used for grazing. Assessments have not increased since the early 1990s.



*Channels running throughout residential areas of Alameda County help protect homeowners from flooding during rainstorms.*



**Taxes:** The District receives a very small portion of the one-percent countywide property tax. As a result of Assembly Bill 1661, a large portion of the District's property tax allocation is reallocated to the state's Educational Revenue Augmentation Fund (ERAF) to be used by public schools. Of course, future state budget decisions can further impact the amount of tax funding that reaches the District.



**Aid from Governmental Agencies:**

Most of this money is comprised of federal and state grants and funds returned to the District to overpayment of ERAF or redevelopment agencies.

*Each year, the District upgrades selected portions of its flood control infrastructure. Here, workers maximize the channel's capacity and stabilize its banks from erosion.*

**Use of Money and Property:** Interest on cash reserve balances; rental revenue collected for District-owned property; interest on monies encumbered, but not yet spent, for construction and other contracts; and prudent reserves used for emergencies such as major storm damage repairs are included in this category.

**Redevelopment Agency Funding:** This state funding source, which infuses capital to rehabilitate blighted areas, varies by zone.

**Levies:** Special taxes, imposed for a specific purpose, are included in this category.

**Other Revenue:** This includes plan review and permit fees paid by developers and builders.



*This repaired flood control channel will blend, over time, with the surrounding environment as plantings become established.*

## OUR ZONES

For purposes of flood control and protection, Alameda County is divided into zones that roughly correspond to major watershed boundaries. A detailed map indicating each zone is on the District's Website. (Visit [www.acgov.org/pwa](http://www.acgov.org/pwa) and click on "Alameda County Flood Control District" under "Departments" to see the map on the District's home page.)

Activities and proposed improvements for Zones 2, 2 , 3 , 4, 5, 6, 9, 12, and 13 are included in this report. Zone 7, comprising Livermore, Pleasanton, Dublin and adjacent unincorporated areas of eastern Alameda County, is served by a separate Zone 7 staff.

So where are Zones 1, 3, 8, 10 and 11? Zone 1 represented the entire county before the District divided flood control programs into more manageable zones based on drainage basins. Zone 3 was modified to become today's Zone 3 . Projects defined for Zone 8 fell through after preliminary studies.

And Zones 10 and 11 were proposed for Alameda, Piedmont, and Albany, but these cities chose to remain outside the District.

## Where do the Funds Go?

The District's expenditures fall into several categories. As noted earlier, monies received from properties in a particular zone can only be spent on projects or maintenance within that zone.

**Maintenance and Operations:** A significant portion of the District's revenues are spent on maintaining its vast inventory of flood control infrastructure such as flood control channels, pipes, and pump stations to ensure they provide the greatest level of flood protection possible.

**Project Construction:** Although the District is protected by a strong network of existing flood control infrastructure, new developments and a growing population require the design and construction of new structures or upgrades to existing facilities.

**Administration:** A small portion of revenues are used for District-wide administration of the flood control programs as well as information systems, human resources, accounting, and other office services.

**Equipment:** Equipment purchases comprise a small part of the District's annual expenditures.

**Remaining Funds are Set Aside in Cash Reserves.** These funds are used to manage significant flooding from heavy storms, such as those experienced in an El Niño year. Cash reserves are also used for future project development and replacement of major equipment.

## DID YOU KNOW ...

About 40 percent of property taxes collected specifically for the county's flood control is reallocated to the state's Educational Revenue Augmentation Fund (ERAF)? Funding the District's important flood protection and environmental work with this annual drain on District revenue can be a challenge!

**Z**one 2 covers over 40,000 acres and includes several cities and communities: portions of San Leandro and Hayward, Castro Valley, San Lorenzo, Cherryland, and Ashland.

The zone is home to more than 80 miles of natural creek, the most of any zone in western Alameda County. Cull, Crow, Bolinas, Norris, Eden, Hollis, and Palomares Creeks flow from the hills above Castro Valley and Hayward into the communities below. From there, water is conveyed in storm drains, channels, and pipelines to San Lorenzo Creek, where it eventually flows into San Francisco Bay. Other watersheds in the zone include Sulphur Creek and the Estudillo and Bockman Canals, which also flow to San Francisco Bay.

With so many waterways, District Maintenance and Operations crews work hard—with limited revenue—to keep channels clear for stormwater flow. Maintenance activities include fence repair, facility repair, and debris and vegetation removal.



*The District hopes to restore wetlands and enhance flood control at this portion of San Lorenzo Creek.*

A great deal of eroded silt flows through these natural creeks into the Zone 2 flood control channels. Silt must be removed to maintain adequate capacity for stormwater flow. In fiscal year 2005, the District removed nearly 1,200 cubic yards of silt and mud from a basin in Line B, San Lorenzo Creek. Staff conducting quarterly inspections observed an immediate need to clear the silt before the wet weather season began. Otherwise, significant rainfall

could have led to localized flooding. To meet the tight schedule, the District hired a contractor to complete this \$119,700 project.

Zone 2 is also home to the Palomares Watershed Festival. Over 1,700 residents attended the April 30, 2005 event and enjoyed presentations on watersheds, habitats, wildlife, conservation, and pollution prevention provided by the District's Clean Water Division.

## Reservoirs Under Review

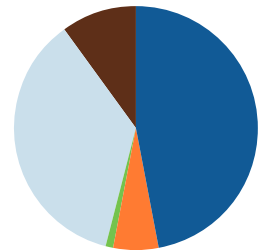
California's Division of Safety of Dams (DSOD), part of the state's Department of Water Resources, is conducting a seismic safety study along the Hayward Fault. As part of its study, the DSOD requested that the District evaluate the seismic stability of its dams at both Cull Canyon and Don Castro Reservoirs.

In fiscal year 2005, the District kicked off the study by obtaining soil samples. The District has teamed with a consultant specializing in seismic evaluations and will share its findings with the DSOD in fiscal year 2006.

Capacity is another consideration at Cull Canyon and Don Castro Reservoirs. Silt flowing into the reservoirs has accumulated and reduced the reservoirs' capacity to detain stormwater flows. In fiscal year 2006, the District will study means of removing excess silt in the most environmentally and economically appropriate means possible.

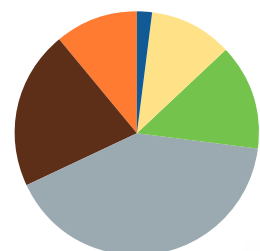


**Revenue FY 2004 - 05**  
**\$ 4,487,967**



- Taxes
- id from Gov agencies
- Use of Money
- ssessment Revenue
- Other Revenue
- Clean Water Program

**Expenditures FY 2004 - 05**  
**\$ 4,227,476**



- Info-Tech Improvements
- Administration
- Development Services
- E&C
- M&O
- Clean Water Program



## Estudillo Canal Project

The Federal Emergency Management Agency (FEMA) encourages property owners in a Special Flood Hazard Area (SFHA) to purchase flood insurance to protect their property investment. In addition, flood insurance is required by law for properties within an SFHA that are financed with a federally insured loan. FEMA periodically reviews regional flooding potential to create Flood Insurance Rate Maps for property owners.

In one of its surveys, FEMA concluded that the flood threat from channel limitations in Estudillo Canal was greater than previously thought. This finding led to a change in FEMA maps that placed approximately 1,800 Zone 2 properties in an SFHA. In other words, nearly 2,000 property owners were faced with purchasing costly flood insurance.

The District's goal is to reduce the number of properties in the SFHA, or eliminate the SFHA completely. To achieve this goal, the District has been working with the U. S. Army Corps of Engineers (USACE) since 2003 to evaluate possible federal interest in funding facility upgrades to lower flood potential.

In fiscal year 2005, the USACE recommended undertaking a feasibility study. The \$3.54 million study will determine more fully the possibility of federal funding for zone upgrades. The USACE and the District will split the costs for the study 50-50. At this time, the USACE is awaiting notice that federal funding is available for its share of the study. Once USACE receives the go-ahead, the study, anticipated to take nearly four years, can begin.



*Earthen channels such as this one must be cleared regularly of debris and excess vegetation for maximum flood protection.*

## San Lorenzo Creek Wetlands

The District's Clean Water Program Division is drawing on a Coastal Impact Assessment Program (CIAP) grant to develop a plan to restore wetlands at the mouth of San Lorenzo Creek. District staff hope to both improve the existing habitat for native flora and fauna as well as maintain or enhance the creek's flood control capability.

Initial work will include detailed surveys of the site's plants and animals, existing wetland features, and unique water flow characteristics. Using the results of these surveys, staff will develop possible wetland enhancement alternatives. A final conceptual design will be completed by December 2006.

## Habitat Improvement

In July 2003, the District began to address a creek and trail restoration and outfall repair project along Line B, San Lorenzo Creek, from Hazel Avenue to 2nd Street. The District held community workshops and coordinated efforts with the City of Hayward, the Hayward Area Recreation and Park District, and representatives from the Friends of San Lorenzo Creek, the East Bay Bicycle Coalition, and other public and regulatory agencies.

Design of the restoration and repair project began in 2004. Work includes repair of the deteriorating Sulfur Creek outfall structure below the 2nd Street Bridge, creek bank stabilization, restoration of the native riparian habitat, erosion control measures, and improved public access. Construction began in the summer of 2005 and is expected to be completed in fiscal year 2006. A grant from the Riparian and Riverine Habitat Grant Program, promoting awareness and community stewardship of local watersheds, will fund a portion of this \$350,000 project.

## SAVING FOR A RAINY DAY

The Flood Control District operates as an asset management organization versus a pay-as-you-go organization.

What does that mean?

Simply that the District sets aside significant reserve funds to help pay for repairs and upgrades to aging infrastructure.

All funds remaining in excess of revenue collected are placed in the cash reserves, which are also used to manage major flooding from heavy storms, such as those seen in an El Niño year.

Zone 2A, in southeastern San Leandro, was established in 1965 to address occasional local flooding caused by overflows from the surrounding region. At 329 acres, it is the smallest zone in the District. There are no natural creeks in this zone. Instead, stormwater is collected in underground pipelines in Zone 2A and delivered, via stormwater pipelines, to Zone 2. From there, flows are conveyed through the Estudillo Canal to the San Francisco Bay.

Maintenance is the most important task in this zone. In the rainy season, District crews clear debris from stormwater drains and drop inlets so the structures operate efficiently during each storm.

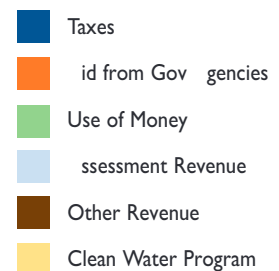
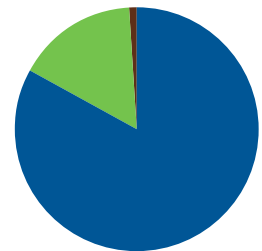


*Trash dumped into storm drains not only pollutes our natural waterways, it can clog underground pipelines that drain the rain from streets. When stormwater backs up, communities can experience localized flooding.*

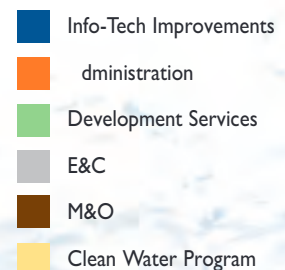
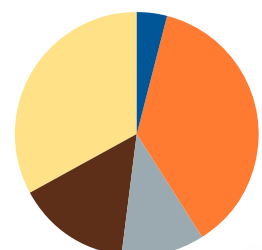
## ZONE



**Revenue FY 2004 - 05**  
\$ 165,066



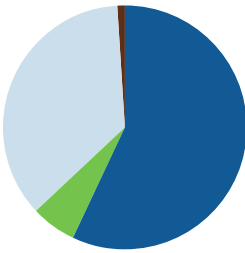
**Expenditures FY 2004 - 05**  
\$ 12,381



## ZONE

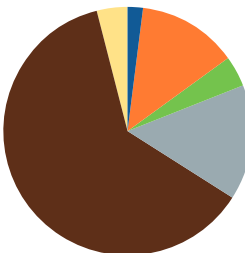


**Revenue FY 2004 - 05**  
**\$ 4,001,771**



- Taxes
- Aid from Gov agencies
- Use of Money
- Assessment Revenue
- Other Revenue
- Clean Water Program

**Expenditures FY 2004 - 05**  
**\$ 3,517,400**



- Info-Tech Improvements
- Administration
- Development Services
- E&C
- M&O
- Clean Water Program

Zone 3A includes Union City, portions of Hayward, Hillview, Fairview, Valle Vista, Tennyson, Mt. Eden, Highland, Alvarado, and Baumberg. In the 19,700-acre Zone 3A watershed, Ward and Zeile Creeks flow from the hills east of California State University, East Bay into the City of Hayward. The stormwater then flows in underground stormwater drains and manmade open channels into Mt. Eden Creek and Old Alameda Creek en route to San Francisco Bay.

Tidal action in this coastal watershed causes rapid silt build-up in the zone's main outlet channel, Old Alameda Creek. This silt can obstruct the free flow of stormwater in the flood control channels.

District maintenance crews remove the silt, along with debris and vegetation, from waterways to keep them free-flowing. Other work to keep waterways clear includes fence repair, channel erosion repair, tidegate maintenance, and tree trimming near channels. In addition, crews continually inspect and maintain Ward Creek Dam located in eastern Hayward.

Levees along channels in this zone also require significant upkeep. In fact, a major project scheduled for fiscal year 2006 is the \$930,000 improvement of the Line A levee from Hesperian Boulevard to I-880.

*A fiscal year 2006 project will raise the elevation of levees on both sides of Line A to increase the channel's flood control capacity.*





## Prime Pumps

There are nine pump stations in Zone 3A: Eden Landing, Ruus Road, Besco, Westview, Alvarado, Industrial, Ameron, Stratford, and Eden Shores. In some low-lying areas, stormwater is collected in storm drains and pumped into flood control channels where the water then flows into the Bay. That makes the pump stations a critical part of the District's system to reduce flood hazards in Zone 3A.

Work conducted over several years to phase in Supervisory Control and Data Acquisition (SCADA) monitoring technology throughout the District's pump stations is now complete (see Sidebar, "SCADA Facts.") Final installations were completed in fiscal year 2005 so SCADA would be available at all Zone 3A pump stations during the 2005/2006 winter rainy season. In addition to improved incident response, staff look forward to reviewing a full year of pump station operating data, provided by SCADA, so that they can maximize the performance of each pump station.

## SCADA FACTS

SCADA, which stands for Supervisory Control and Data Acquisition, is a system that allows District crews to monitor pump station operations remotely. The technology saves time and money by spotting system problems before they escalate and by reducing overtime charges spent on non-critical alarm response and repairs. When problems do occur, SCADA pinpoints malfunctioning equipment for faster repairs that ultimately may reduce the risk of localized flooding.

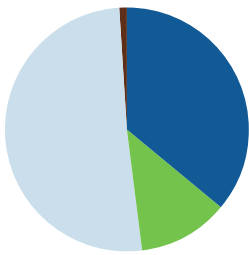
How does SCADA work? In the case of an equipment malfunction, for example, operators can quickly locate and, in most cases, correct the specific problem remotely from a laptop computer or the District's Turner Court monitoring facility. As a result, the station can continue operating until maintenance staff reach the site. SCADA also provides details about the malfunction so staff have the right repair equipment on hand when they arrive. In the case of a minor problem, repairs can be deferred to regular office hours, saving time and money.

For regular checks of each pump station, District staff can use SCADA to call up a graphic display of any station from a laptop computer or the monitoring facility. The display indicates which pumps are running, how much water has been pumped over a period of time, and other operating data.

SCADA also tracks data trends over time. Staff can review long-term equipment use and efficiency data to improve overall station performance. Trend data can be used for better engineering when replacing or rehabilitating District pump stations.

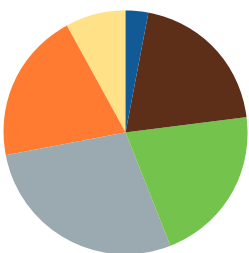


Revenue FY 2004 - 05  
\$ 398,980



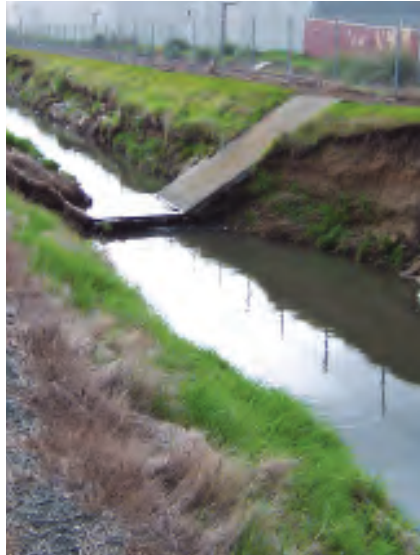
- Taxes
- Aid from Gov agencies
- Use of Money
- Assessment Revenue
- Other Revenue
- Clean Water Program

Expenditures FY 2004 - 05  
\$ 306,898



- Info-Tech Improvements
- Administration
- Development Services
- E&C
- M&O
- Clean Water Program

Zone 4, on the shoreline of San Francisco Bay, is at the western edge of a large alluvial fan created over time by streams draining via East Bay hills. The alluvial fan, or plain, is made up of sand, silt, and mud deposited by water flowing to the Bay. Portions of Hayward and the communities of Mohrland and Russell City are in



*Over the next few years, this eroded portion of Line A will be stabilized and upgraded to improve flood control capacity.*

Zone 4. The master plan looks at the entire zone and complete flood control systems rather than individual sections.

Using the latest engineering software and GIS (Geographical Information Systems) capabilities, engineers evaluated the zone's existing flood control facilities. Their study yielded a list of additional needs for long-term flood control improvement in the zone. Long-term funding requirements have been reviewed as well. The highly detailed Zone 4 Master Plan project, completed entirely in-house, will serve as a model for future master plan updates the District conducts for other zones.

In response to the master plan, design began on a channel embankment repair and capacity improvement for a stretch of Line A. Construction on this \$1 million project is expected to begin in the summer of 2006. The project will use natural materials to create the most environmentally sensitive result possible. Over the next few years, additional projects will be constructed based on expected flood control impacts to the zone and available budget.

Zone 4.

Only 2,960 acres in size, Zone 4 is one of the District's smallest zones. In spite of its size, the zone has a relatively large amount of manmade earthen channel. For this reason, and because of the Bay's constant tidal action, flood channels in Zone 4 require frequent erosion repair.

Other maintenance work in the zone includes desilting, fence repair, and vegetation management, all key tasks in keeping flood control channels clear for stormwater flows.

### Zone-Wide Planning

In fiscal year 2005, District engineers began updating the flood control master plan for Zone

Zone 5, covering 45,440 acres, is one of the District's largest zones. Its watersheds stretch from the Fremont and Hayward hills to the shoreline of San Francisco Bay and include Newark and the Decoto and Centerville portions of Fremont. Over 36 miles of natural waterways are found in this zone including Crandall, Dry, and Plummer Creeks, and Newark and Mowry Sloughs. In the rainy season, stormwater travels through the creeks as well as through almost 50 miles of closed conduit and over 6 miles of concrete channel.

The Alameda Creek Federal Project—almost 10 miles of manmade flood control channel—is found in Zone 5. This project, completed in 1975, eliminated flooding near Alameda Creek and allowed homes to be built on what is now prime real estate. Nearly all of Alameda Creek's 695-square-mile watershed lies outside the zone, to the east.

### Maintaining Flow

Regular repairs and upgrades to the zone's three pump stations—J2, J3, and Quail Run—contribute to the smooth flow of stormwater from area flood control channels to the Bay.

Other major maintenance activities in this zone include erosion repair to Alameda Creek's earthen channels, fence repair, and removal of debris, vegetation, and dead and dying trees. Each of these tasks helps reduce flow obstructions in flood control channels.

Silt flowing from natural waterways and into Zone 5 flood control channels must be cleared to maintain adequate capacity for stormwater flows. A desilting project for Line K, Crandall Creek, is underway to restore the channel's original shape and capacity. District crews completed part one of the project in fiscal year 2005, and will finish Part two in fiscal year 2006.

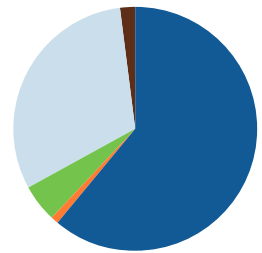


*Silt must be cleared from channels so they can handle stormwater flows. In Fremont's Coyote Hills Regional Park, a device called an Aquamog floated in the waterway, clearing debris and vegetation with little impact to the natural setting.*

Cattails and silt had reduced the capacity of Line P, a channel flowing through the Coyote Hills Regional Park in Fremont. In fiscal year 2005, a \$100,000 project cleared the channel to alleviate this problem. The contractor used special equipment called an "Aquamog" for minimal environmental impact to the waterway. The Aquamog is easily brought on site, then floats in the channel to break up vegetation and collect debris and silt.

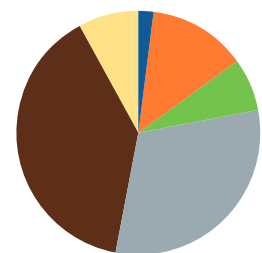


**Revenue FY 2004 - 05**  
**\$ 6,484,586**



- Taxes
- Aid from Gov agencies
- Use of Money
- Assessment Revenue
- Other Revenue
- Clean Water Program

**Expenditures FY 2004 - 05**  
**\$ 5,221,076**



- Info-Tech Improvements
- Administration
- Development Services
- E&C
- M&O
- Clean Water Program





*A tule house, similar to those once found in Ohlone Indian villages, was built from tules harvested on site and completed in August 2005.*

## Wetlands Education

In the late 1990s, the District's Tule Pond Project converted a 14-acre District-owned parcel in a busy residential neighborhood into scenic wetlands and ponds. The area provides flood protection and pollution control for stormwater flowing to the Bay. As an added bonus, the ponds serve as a migratory bird habitat and an area for wildlife and wetland study.

Students of all ages enjoy educational opportunities offered by the Tule Ponds. Elementary school classes learn about wetland habitat on field trips. College students engage in biology, geology, and hydrology studies of the ponds. Teachers can learn how to incorporate the Tule Ponds into their own science classes through workshops offered by the Math/Science Nucleus (a non-profit organization).

Most weekends, high school community service groups, Eagle Scouts, and other volunteers undertake public service projects through habitat creation and improvement, trail upgrades, species monitoring, and native plant maintenance. While community service work helps maintain the Tule Ponds, District maintenance crews regularly assist by removing excess vegetation, keeping the area clean, and bringing in wood chips for weed control.

An annual "Open House" event is held at the Tule Ponds, located at 1999 Walnut Avenue in Fremont. At that time, the public may tour the grounds to learn about the ponds' pollution and flood control properties and view natural settings for native plants and wetland creatures.

For information on teacher workshops, a schedule of drop-in dates for public service projects, or the date of the annual open house, visit <http://msnucleus.org/classes/tule.htm>.

## Continuing Line B Upgrades

Work continues on projects to expand the amount of stormwater conveyed through Line B, which discharges to Mowry Slough in Newark. Improvements to Line B will increase flood protection and, in turn, allow District engineers to propose modifications to Federal Emergency Management Agency (FEMA) flood plain boundaries. As mentioned earlier, in the Zone 2 discussion, maps and boundaries periodically reviewed by FEMA have a direct impact on homeowners' requirements to purchase flood insurance. The District's goal is to minimize areas identified by FEMA as representing a flood hazard so that as few citizens as possible need to obtain flood insurance.

A watershed study for Line B completed in fiscal year 2003 yielded a list of projects to be implemented in coming fiscal years. Design and construction has begun on several of these projects. The \$814,000 capacity improvement of the Mowry Avenue crossing and the \$914,000 restoration of the eroded channel banks from Mowry Avenue to the Union Pacific Railroad (UPRR) each began construction in fiscal year 2004. Both projects will be completed in fiscal year 2006.

Next up for completion is the Cherry Street crossing improvement, valued at \$415,000. The project was briefly delayed when existing utilities had to be relocated to allow construction of the proposed improvement. The project is now on schedule for completion by late fiscal year 2006 or early fiscal year 2007.

Future projects include crossing improvements at Farwell Drive, and Glenview Drive. District engineers are investigating an upstream floodwall for flood control, a relatively low-priced solution, at an I-880 crossing, as well.

*Work to stabilize and improve the capacity of Line B in several locations is planned for fiscal year 2006. The photos below indicate flood control channel conditions in 2005. From left to right, a channel near Farwell Drive, near Glenview Drive, Cherry Street, and Interstate 800 at Farwell Drive.*



*In fiscal year 2005, the District continued to upgrade portions of Line B which was selected for improvement in a 2003 study. Pictured here is work to improve stormwater capacity and restore eroded channel banks of Line B from Mowry Avenue to the Union Pacific Railroad. Work will be completed in 2006.*

## Coming Soon—More Fish

Since 1999, the District has led the efforts of the Alameda Creek Fisheries Restoration Workgroup, a consortium of public agencies and other organizations, to restore steelhead trout to Alameda Creek. Initial studies supporting this effort indicated that a suitable habitat for steelhead can exist if manmade barriers were addressed. These barriers impede upstream migration of adult fish seeking suitable spawning areas and downstream migration of juvenile fish.

The consortium workgroup identified several essential actions to remove the barriers' impacts. Projects include the construction of fish ladders, or fish ways, over several barriers in the flood control channel; screening several diversion structures; removing two dams in Niles Canyon; and modification of a gas pipeline crossing. The workgroup has also started an evaluation of necessary water flow levels for fish passage and is developing a master plan for restoring a steelhead fishery in the Alameda Creek Watershed.

In fiscal year 2005, the group determined that construction of the fish ladders and screening projects would cost approximately \$11 million. The District and consortium partner Alameda County Water District (ACWD) applied for an \$11 million Proposition 50 grant to fund these fish passage projects. If awarded the grant, work will begin in fiscal year 2006 to remove at least one significant barrier and screen the largest diversion pipe. Another workgroup partner, the San Francisco Public Utilities Commission, has obtained funds to remove the two Niles Canyon dams. Construction of this project will begin in the summer of 2006.

With implementation of these and other barrier removal projects, the District and its partners hope that a sustainable steelhead run will be re-established in Alameda Creek, and that the fish will flourish in the watershed within the next decade.

## A Look at Dredging

In fiscal year 2004, the District hired a consultant to study two dredging methods used from 1998 to 2001 in Alameda Creek and determine which method resulted in the least impact to wildlife and plant communities. The consultant was also charged with determining how much time is needed for the channel to recover from dredging impacts. This two-year study will be completed in fiscal year 2006.

Study findings will help pinpoint mitigations that best address the temporary loss of habitat resulting from maintenance dredging programs. The study's conclusions will also help District staff to modify timing and scope of dredging activities to minimize environmental impacts.

## Salt Ponds into Wetlands

With the acquisition of over 15,000 acres of South Bay salt ponds by the federal and state governments, the opportunity to conduct a large-scale wetlands restoration project arose. This project would restore and enhance wetlands for migratory birds and threatened and endangered native species and provide public access for wildlife viewing and recreation. Completing this project will achieve many of the goals and objectives established by the San Francisco Bay Area Wetlands Ecosystem Goals Project.

Another important element in this long-term restoration planning project is flood management. For this reason, both the District and the Santa Clara Valley Water District (representing, respectively, the East Bay and South Bay flood control interests adjacent to the

salt ponds) were asked by the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and the State Coastal Conservancy to participate in the project. The District officially kicked off its efforts in fiscal year 2005. The planning process for salt pond restoration is expected to take five years.

In a related project, the District is preparing to participate in the Alameda County portion of a United States Army Corps of Engineers study to review the San Francisco Bay Shoreline Study prepared in 1992. The USACE study will highlight flood damage reduction and environmental restoration and protection along the shoreline in San Mateo, Santa Clara, and Alameda Counties. The Alameda County study, expected to begin in 2007, will focus on ecosystem restoration and associated flood protection of the Eden Landing salt ponds, as well as associated flood protection for Alameda Creek. District participation in this study is essential in developing a successful, complementary restoration plan for the South Bay salt ponds.

*The District will participate in an ecosystem restoration and flood protection study of the Eden Landing salt ponds, pictured here after a breach as a pond levee is breached to allow tidal flow into the pond.*



Photo: RobHolt.



## ZONE



Zone 6, covering 27,400 acres in southern Alameda County, includes the Irvington, Mission San Jose, and Warm Springs regions of Fremont. Zone 6 is home to a number of natural creeks including Laguna, Mission, Canada Del Aliso, Agua Caliente, Agua Fria, Toroges, and Scott Creeks. These waterways flow from the foothills of Mission Peak, Mt. Alison, and Monument Peak above Fremont and down toward the city. Within the City of Fremont, stormwater reaches San Francisco Bay by flowing through a series of pipelines and earthen and concrete channels to either Mowry Slough or Coyote Creek, which forms the border between Alameda and Santa Clara Counties.

The flatter portion of Zone 6 is an alluvial plain made up of sediment deposited by water flowing to the Bay. Silt can clog flood control channels and restrict stormwater flow, so District Maintenance and Operations crews remove a great deal of silt from this zone's waterways. In fiscal year 2005, crews removed silt along 1,000 feet of Lines A and B following storm events to restore the shape and capacity of the channels.

Other maintenance activities, such as debris and vegetation management and weed control, also help remove obstructions to stormwater flow in the District's channels. In addition, District maintenance staff repair minor levee damage from sources such as stormy weather and even squirrels.

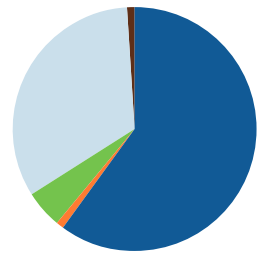
### Fremont Flood Protection

The District has been working with the USACE in a capacity study of Line E, Laguna Creek, to evaluate means of reducing flood potential in adjacent areas. Following a USACE Reconnaissance Study approved by the USACE Headquarters in October 2004. In fiscal year 2005, the District and USACE began negotiating a Project Management Plan in fiscal year 2006.

The District is working to obtain USACE approval of a more detailed Feasibility Study as soon as possible, pending available federal funding. The Feasibility Study, for which the District and USACE would share the cost, will analyze various project alternatives and costs. If an alternative presents a good cost/benefit ratio and if federal funds are allocated, the USACE may proceed to design and construct the improvement project.

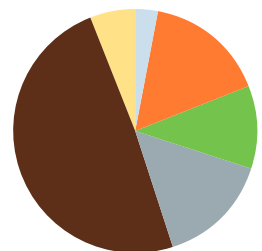
In another project, construction of a levee and floodwall for Line I had been designed by District engineers and advertised for bid in fiscal year 2004. However, construction bids exceeded the District's budget due to worldwide increases in steel and concrete prices. The District has postponed this project until fiscal year 2006 while

**Revenue FY 2004 - 05**  
**\$ 4,751,151**



- Taxes
- Aid from Gov agencies
- Use of Money
- Assessment Revenue
- Other Revenue
- Clean Water Program

**Expenditures FY 2004 - 05**  
**\$ 3,530,594**

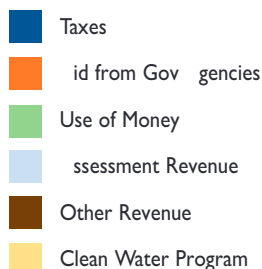
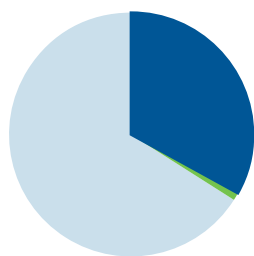


- Info-Tech Improvements
- Administration
- Development Services
- E&C
- M&O
- Clean Water Program

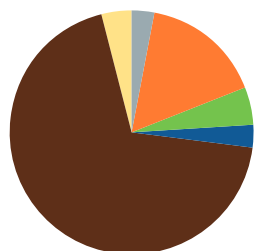
## ZONE



Revenue FY 2004 - 05  
\$ 367,435



Expenditures FY 2004 - 05  
\$ 405,591



Zone 9 in San Leandro, adjacent to and west of Zone 2A, is a different type of creek and less than a mile of earthen channel. Concrete-lined channels and underground pipes move almost all the zone's stormwater to San Francisco Bay.

District crews keep waterways clear and maintained by removing excess vegetation and debris and maintaining fences around flood control structures. These activities allow stormwater to flow freely into channels and pipelines to minimize flood potential for city streets, businesses, and residences.

### Perfecting Pumps

After stormwater is collected in the zone, four pump stations—D-I, H, F, and Belvedere—pump the stormwater into the Bay. Maintenance and Operations personnel keep the pump stations running smoothly through regular preventive maintenance and repairs. One project, replacement of a back-up diesel engine at Pump Station D-I, started in fiscal year 2004, was completed in fiscal year 2005. In two other projects, District forces replaced variable frequency electric motor drives at Pump Stations F and D-I.

As mentioned previously in the Zone 3A discussion, throughout the District, work is now complete to phase in Supervisory Control and Data Acquisition (SCADA) pump station monitoring technology. (See Sidebar, "SCADA Facts on page 13.) The District made completion of its SCADA installation a top priority in fiscal year 2005. The technology was online in every Zone 9 pump station in time for the 2005/2006 winter rain season. In addition to improved incident response, staff look forward to reviewing a full year of pump station operating data, provided by SCADA, in fiscal year 2006.

t 51,200 acres, Zone 12 is the largest zone in western Alameda County. The zone includes the cities of Oakland and Emeryville. Picturesque creeks such as the Temescal, Glen Echo, Pleasant Valley, Trestle Glen, Sausal, Peralta, Courtland, Lion, Arroyo Viejo, Elmhurst, Stonehurst, and the San Leandro meander through this urban zone.

In addition to the natural waterways, almost 50 miles of closed conduit and just over 10 miles of earthen and concrete channel direct stormwater toward San Francisco Bay. Maintenance and Operations crews repair fences, trim trees, and remove debris and excess vegetation around the zone's stormwater channels. This work keeps waterways clear for maximum flood protection.

Four pump stations in this zone—Ettie, McKillop, Lake Merritt, and Temescal—lift stormwater flows for discharge into the Bay. Pump Number 4 at the Ettie Street Pump Station went through a complete overhaul in fiscal year 2005. Because the pump was in generally good condition, the District elected to repair the pump for \$75,000 rather than replace it for more than twice the cost. The work was completed on time and \$20,000 below initial estimates.

The Clean Water Division staff work with the City of Oakland local government to promote stewardship of local creeks and watershed management in Zone 12 as well as encourage pollution prevention practices.

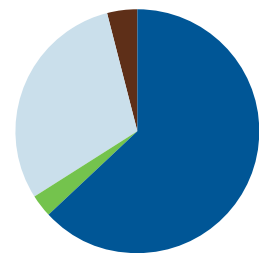
*During the rainy season, District staff monitor Lake Merritt water levels and pump water from the lake as needed to prevent flooding. We also pump water into the lake to raise the water level during the summer to enhance recreational uses.*



Photo: Barry Muniz, Courtesy of Oakland Convention & Visitors Bureau

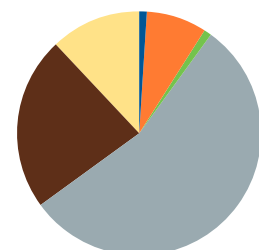


**Revenue FY 2004 - 05**  
**\$ 6,868,350**



- Taxes
- Aid from Gov agencies
- Use of Money
- Assessment Revenue
- Other Revenue
- Clean Water Program

**Expenditures FY 2004 - 05**  
**\$ 11,433,289**



- Info-Tech Improvements
- Administration
- Development Services
- E&C
- M&O
- Clean Water Program





*Residents in Oakland's Trestle Glen and businesses along Lakeshore Avenue will see greater flood protection now that work is complete to expand stormwater collection capabilities in the area.*



## Urban Flood Control

In fiscal year 2004, construction started on a nearly \$7.8 million project to increase the capacity of storm drain Lines D (Trestle Glen Creek) and D-I. Construction was completed in fiscal year 2005. Work included the addition of a concrete box culvert along Lakeshore Avenue from Lake Merritt to Trestle Glen Road. At Trestle Glen Road, additional underground concrete box culverts were installed to replace existing, smaller culverts. Along Lakeshore Avenue, from Mandana Boulevard to Prince Street, an existing storm drain box culvert was replaced with a larger, 60-inch, reinforced concrete pipe.

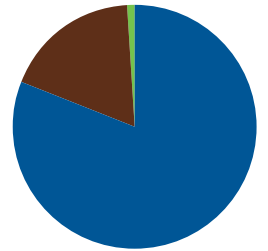
District staff will be coordinating conceptual designs for the Line F, Peralta Creek, channel restoration project with the City of Oakland and members of the neighboring community. The restoration project is tentatively scheduled for completion in fiscal year 2007.



*The District will coordinate designs to restore this damaged stretch of Peralta Creek with the City of Oakland and the neighboring community.*

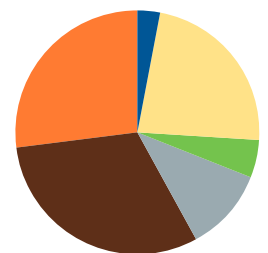


**Revenue FY 2004 - 05**  
\$ 615,628



- Taxes
- aid from Gov agencies
- Use of Money
- Assessment Revenue
- Other Revenue
- Clean Water Program

**Expenditures FY 2004 - 05**  
\$ 148,225



- Info-Tech Improvements
- Administration
- Development Services
- E&C
- M&O
- Clean Water Program

**Z**one 13 was established to take in 3,200 acres of San Leandro that had not been included in Zones 2, 2A, or 9.

The primary District maintenance and operations activities for this zone are vegetation and debris management. Keeping the natural creek and other waterways in the zone clear helps prevent flooding during rainy weather.



*This spot alongside San Leandro Creek will be excavated to create an amphitheater with views of the restored creek stretch. The building shown will be renovated into an education center for visitors.*

## Creek Restoration

The District has offered to participate in a San Leandro Creek bank restoration project in conjunction with an environmental education center planned by the non-profit group Friends of San Leandro Creek. The Friends of San Leandro Creek are further developing the education center plans. In the meantime, during fiscal year 2005, District staff coordinated meetings on the associated creek bank restoration and stabilization project, and District surveyors developed a topographic survey to support the group's efforts.



*Trees and failed, privately owned retaining walls obstruct this stretch of San Leandro Creek. Future restoration plans include construction to make creek banks less steep, which will minimize future erosion, and replacing invasive vegetation and vines with native plants.*

## Well, Well, Well

**“Call before you dig” is wise advice. No one wants to risk hitting underground water, power, gas, cable, or sewer lines while at work on a construction project.**

**The same advice follows for anyone digging groundwater wells or exploratory holes.**

**California law requires a permit for all work on wells or exploratory holes at any depth. The Alameda County Public Works Agency oversees compliance and issues drilling permits for projects in Alameda, Albany, Castro Valley, Emeryville, Hayward, Oakland, Piedmont, San Leandro, and San Lorenzo.**

**Residents of these cities and communities can apply online for well drilling permits and track the status of their application.**

**Visit [www.acgov.org](http://www.acgov.org), and click on “Wells Drilling Permit” under “Online Services” for this convenient service.**

**For more information, call 510-670-5480 or e-mail [wells@acpwa.org](mailto:wells@acpwa.org).**

## One-Year Look Ahead

The District has many ongoing projects under various stages of planning, design, and construction, each with the goal of improving the District's flood control infrastructure. Following is a list of projects planned for implementation in fiscal year 2006.

### Zone 3A

Line Hesperian to I-880 access road restoration: \$930,000

### Zone 4

Line Confluence at Line E to Union Pacific Railroad (UPRR) channel embankment repair and capacity improvement: \$1,000,000

### Zone 5

Line B Cherry Street crossing improvement: \$415,000

Line B Farwell Drive crossing improvement: \$100,000

### Zone 6

Line I From Line E to Southern Pacific Railroad (SPRR) capacity improvement: \$1,200,000

### Zone 12

Ettie Street Pump Station, Pump No. 3 rehabilitation: \$98,000

Line J Lion Creek Restoration Project, demolition phase: \$250,000

Line J Reconstruct In-line Flap Gate Structure: \$185,000

Lake Merritt Pump Station interior rehab: \$225,000

### Zone 13

San Leandro Creek Restoration at Ivarado Street: \$300,000

*Looking to the future, the removal of this manmade barrier is expected to benefit vital fish migration patterns and ultimately reestablish a sustainable steelhead run in Alameda Creek.*







## A NATURAL CHOICE

**H**. . . “Spike” Flertzheim, Jr. was a natural choice for Alameda County’s Director of Public Works, a position he held from 1977 to 1989.

As commanding officer of the San Francisco District of the Army Corps of Engineers, Spike had overseen watersheds flowing to the Pacific Ocean in Northern California and portions of Oregon. His key responsibilities had been flood control and

wetland preservation along with operating dams and reservoirs, building roads, and other projects. He had even worked on cleanup from major Northern California floods in the 1950s.

“I’d seen firsthand the problems of not having adequate flood control in Alameda County,” said Spike.

His greatest challenge as Public Works Director came in 1978 with the passage of California’s Proposition 13. He knew the measure would cut Flood Control District revenues significantly. So, he pulled together a task force that created the Benefit Assessment Program to provide steady flood control funding. The program reached the ballot in 1980 and passed by the two-thirds majority required. In fact, the program enjoyed an average 74 percent voter approval in each zone.

“The people really understood the need for flood control and were willing to pay for it,” said Spike. “The Benefit Assessment Program was my biggest achievement. It saved flood control.”

The Public Works Director was also pleased to see a nationwide acceptance of the environmentally-sensitive outlook on new construction and development, a practice he implemented at the County.

“The Bay Area is a leader in the environmental movement. I’ve always believed you could do what was needed in an environmentally-sensitive way. It was rewarding to see people wake up to that,” he said.

## Read All About It

To learn more about the Flood Control District’s fascinating past, visit the Flood Control District’s Website. Go to [www.acgov.org/pwa](http://www.acgov.org/pwa) and follow the link to the Alameda County Flood Control District. The site features a section describing the history of the Flood Control District and a Hall of Fame saluting some of our outstanding employees.

While at the Website, you’ll be able to read past annual reports and see the progress the District has made. An interactive map allows you to pinpoint your flood control zone and learn more about the work we do there. Finally, our Flood FAQs section provides answers to common questions about flood control.

The Website is updated regularly, so check in often!

## Contact Information

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<b>Scott Haggerty</b> , District 1	(510) 272-6691
<b>Gail Steele</b> , District 2	(510) 272-6692
<b>Alice Lai-Bitker</b> , District 3	(510) 272-6693
<b>Nate Miley</b> , District 4	(510) 272-6694
<b>Keith Carson</b> , District 5	(510) 272-6695

<b>HOT LINE ...</b>	(510) 670-5518
for questions relating to the assessment process (Special Districts Administration)	

### COUNTY OF ALAMEDA PUBLIC WORKS AGENCY AGENCIA DE TRABAJOS PUBLICOS DEL CONDADO DE ALAMEDA

399 Elmhurst Street	PHONE: (510) 670-5480
Hayward, CA 94544	FAX: (510) 670-5541

### FLOOD CONTROL & WATER CONSERVATION DISTRICT DISTRITO DEL CONTROL DE INUNDACION Y CONSERVACION DE AGUA

<b>Donald J. LaBelle</b> , Director	
Office of the Director	(510) 670-5455
Oficina del Director	(510) 670-5455

<b>IN CASE OF EMERGENCY</b>	DIAL 9-1-1
<b>EN CASO DE EMERGENCIA</b>	MARKQUE 9-1-1

<b>TO REPORT FLOODING ...</b>	(510) 670-5500
of major creeks in Alameda County	

<b>PARA REPORTAR DESBORDAMIENTO ...</b>	(510) 670-5500
of inundacion de arroyos en el Condado de Alameda	

<b>TO REPORT ILLEGAL DUMPING OF TRASH ...</b>	(510) 670-5500
in all creeks	

<b>PARA REPORTAR ARROYO ILEGAL DE BASURA ...</b>	(510) 670-5500
en los arroyos	

<b>FOR SANDBAGS IN HAYWARD</b>	(510) 670-5500
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<b>FOR SANDBAGS IN DUBLIN</b>	(925) 803-7007
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<b>PARA BOLSAS DE ARENA</b> en Hayward	(510) 670-5500
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<b>PARA BOLSAS DE ARENA</b> en Dublin	(925) 803-7007
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<b>ADOPT-A-CREEK</b>	(510) 670-5501
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<b>ADOPT-A-SPOT PROGRAM</b>	
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<b>PARA TOMAR UN PROGRAMA SOBRE ARROYOS</b>	(510) 670-5501
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<b>MAINTENANCE &amp; OPERATIONS</b>	(510) 670-5500
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<b>MANTENIMIENTO Y OPERACIONES</b>	(510) 670-5500
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<b>LAND DEVELOPMENT &amp; PERMITS</b>	(510) 670-6601
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<b>DESARROLLO DE TIERRA Y PERMISOS</b>	(510) 670-6601
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<b>ENGINEERING &amp; CONSTRUCTION</b>	(510) 670-5480
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<b>INGENIERIA Y CONSTRUCCION Y PERMISOS</b>	(510) 670-5480
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<b>CLEAN WATER DIVISION</b>	(510) 670-5543
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<b>PROGRAMA SOBRE AGUA LIMPIA</b>	(510) 670-5543
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### FOR GENERAL INFORMATION:

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Or visit us at [www.acgov.org/pwa](http://www.acgov.org/pwa)

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Escribanos a la direccion de correo electronica:

[info@acpwa.mail.co.alameda.ca.us](mailto:info@acpwa.mail.co.alameda.ca.us)

Or visitenos al: [www.acgov.org/pwa](http://www.acgov.org/pwa)

### PARA ASISTENCIA EN ESPANOL:

Por favor llame a **Maria Contreras** (510) 670-5543

O **Lupe Serrano** (510) 670-5993

### FOR ASSISTANCE IN CHINESE:

Please call **Judy Jung** (510) 670-5716



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Public Works Agency  
339 Elmhurst Street  
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