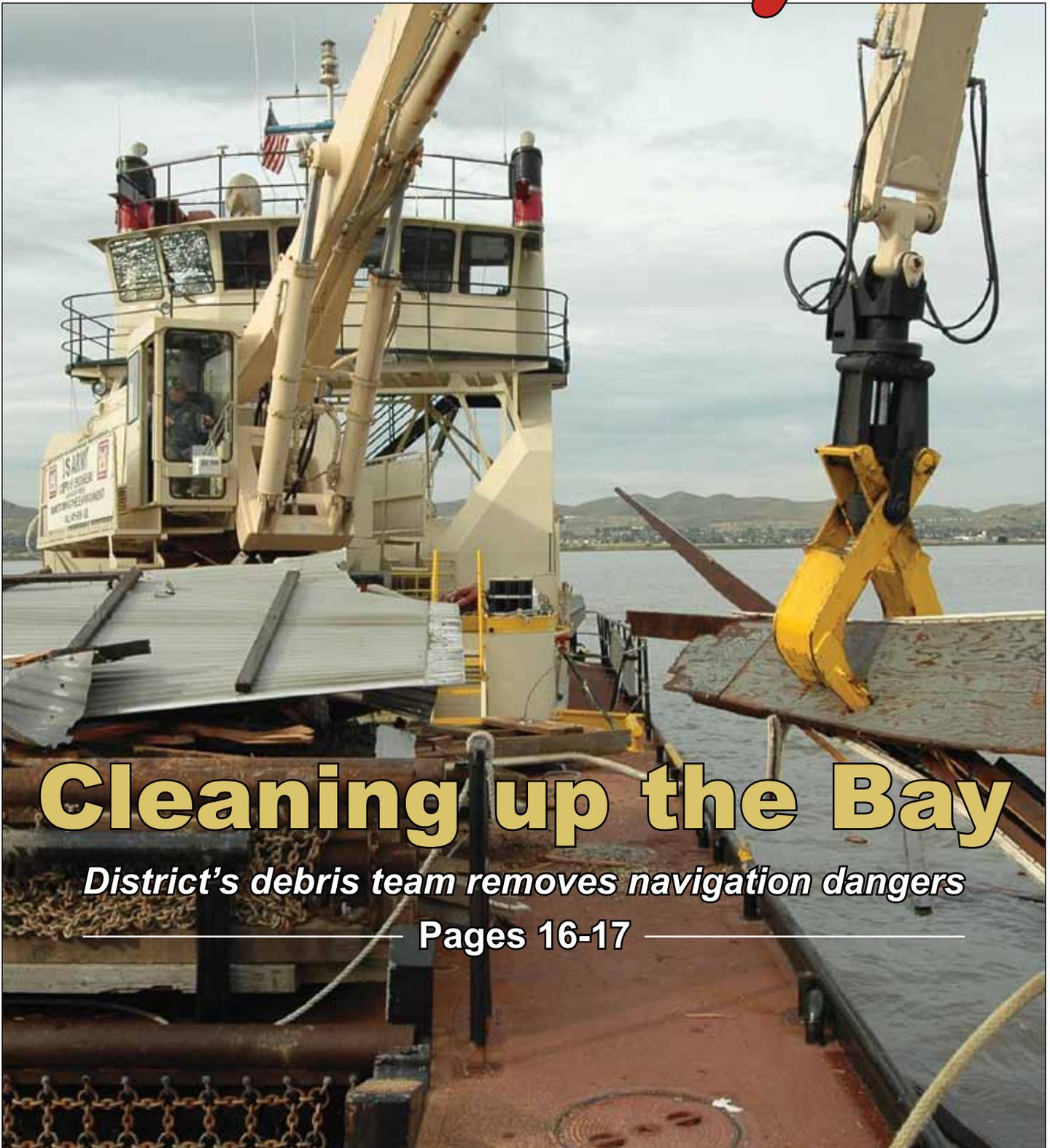




US Army Corps  
of Engineers®  
San Francisco District

SPN

# Surveyor



## Cleaning up the Bay

*District's debris team removes navigation dangers*

Pages 16-17

# COMMANDER'S CORNER

## Summer recreation plans start with safety

By Lt. Col. Laurence M. Farrell  
San Francisco District Commander

Summertime means vacation time as families across the district gear up for a season of fun in the sun. More than any other time of the year, summertime means family time as parents target outdoor recreation destinations with friends and family.

Speaking of recreation destinations, we are fortunate in that we do not have to go outside of our district to visit some of the most popular recreational destinations in California. Lake Sonoma and Lake Mendocino receive more than 1.5 million visitors annually. Both lakes offer your family great outdoor fun. Whether you are a fitness fanatic or just like to take leisurely strolls, our lakes are a great place to go running, hiking, biking, swimming, camping, boating, fishing, water skiing, barbecuing, picnicking and more.

And our lakes are going to become an even better place to visit as \$23 million in America Recovery and Revitalization Act stimulus funds are being invested in the lakes' infrastructure, which will create jobs, boost our local economies and build better quality of life for future vacations.

If you are looking for a one-day getaway, the Bay Model Visitor Center is a great place to take your family to learn about the wondrous San Francisco Bay. You will learn how 93 Liberty ships and T-2 tankers were built to support the World War II effort, and all about the Bay's surrounding habitat that we call home. Afterwards, take a stroll into the town of Sausalito.



I know vacations feel like a reward, but they are well-earned. I applaud all of you who work so hard to make our District a success. Without you, we would not be able to improve the quality of lives for millions of our neighbors. Together, we are keeping navigation shipping channels open for commerce, helping improve the infrastructure at the San Francisco Veterans Affairs Medical Center — as they provide care for our returning wounded warriors — and helping to maintain balance among wetlands, vernal pools and aquatic habitat with economic development. These are just a few of the myriad projects and programs you bring to fruition.

You have worked hard, now take some time and play hard. Spend some quality

time reconnecting with your family by running along the beaches, walking along the bay's miles and miles of shoreline, swimming in our lakes or bicycling around the countryside and enjoying all of the other outdoor activities you like to share; but, remember to "Think Safety."

Here are a few simple, practical and valuable safety tips.

- **Alcohol and water activity do not mix** – Alcohol use is involved in more than half of the deaths reported in water recreation sports such as swimming, diving, boating and skiing.

- **Don't swim alone** – Drowning is the second-leading cause of accidental deaths for people 15 to 44 years of age. Most drowning victims drown within 10 to 30 feet of safety.

- **Hike with another person** – If you go off the beaten path, always carry a cell phone. A man who died at Lake Sonoma was only 250 feet away from help. He became lost and disoriented. If he had a cell phone, maybe he'd be alive today.

- **Check your boat for required safety equipment** – Don't overload your boat with passengers or equipment. For power boats, check your electrical system, and check your fuel system for gas fumes. Know the weather forecast. Let a family member or friend who will not be aboard know your destination plans and time of return.

Thank you for all that you do. I am proud of your performance and hope you enjoy your well-earned vacation with your friends and family. Remember to keep physical fitness in your daily routine, be safe and return healthy.

### District Commander

Lt. Col. Laurence M. Farrell

### Chief, Public Affairs

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## SPN Surveyor

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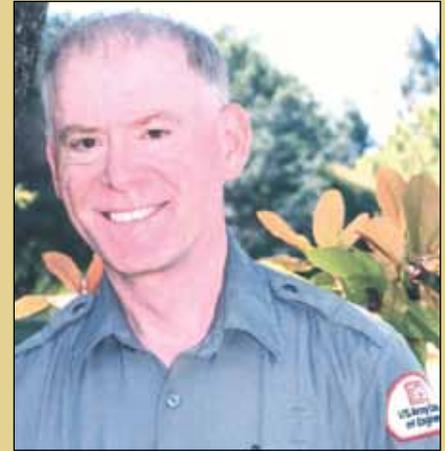
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## District loses teammate



**Fredy Buckholz**  
*Park Ranger, Lake Mendocino*

**By J.D. Hardesty**  
*Chief, Public Affairs Office*

A San Francisco District park ranger working at Lake Mendocino died recently in a single-vehicle accident on California Highway 20.

The cause of death is still being investigated.

Fredy Buckholz, 59, is survived by three daughters, Jessica Hnatysko of Chicago, Rebecca Carpenter of Toledo, Ohio, and Jillian Buckholz who resides in Albany, N.Y.

"All of us in the District are deeply saddened by this tragic loss," said District Commander Lt. Col. Laurence M. Farrell. "We extend our heartfelt sympathy to his family."

Buckholz, a Vietnam War veteran, served in the U.S. Army from 1967-70.

Working as a park ranger was a second career for Buckholz. He was retired from AT&T and had served as a seasonal park ranger at Monocacy National Battlefield with the National Park Service last year. He had volunteered for the Peace Corps, serving in Bulgaria from 2005-2007.

"He was really intelligent, had a good sense of humor and brought a fresh set of eyes to the park," said fellow Park Ranger Laura Smith. "We will truly miss him."

## On the cover

*A crane operator from the U.S. Army Corps of Engineers — San Francisco District debris crew lifts out pieces of a 300-foot long 40-foot wide marina that broke off when gusty winds flipped it over forcing its owner to cut it off from his boat. The owner was towing it up the San Pablo Bay when the accident occurred last month. Members of the Raccoon, part of the district's fleet of debris removal vessels, spent several days removing the wreckage. (Photo by Brandon Beach)*

July/Aug 2009

# Army Reserve Center at Moffett

## Last beam marks early milestone in \$80 million Corps' project

Story & photos by **Brandon Beach**  
*District Public Affairs Office*

Four weeks ago, construction at the Armed Forces Reserve Center at Moffett Field stood no higher than ground level. Today, a steel skeleton stands two stories tall.

Steel work began April 11 and finished June 5, as construction workers held a last beam ceremony to mark the end of one phase and the start of another.

"We are right on schedule," said Lt. Col. Donald Davis, project engineer for the U.S. Army Corps of Engineers — San Francisco District, which is overseeing the \$80 million project. "Getting that steel up means suddenly things start to fall in place. It's going to be a busy site from here on out."

What once was a construction area with 60 workers will more than double in size to 150, as crews begin to fine tune the building with such details as exterior walls, radon piping, roof drains and stairwells.

But despite the last beam hoorah, steel work isn't quite over yet, reminded Lt. Col. Davis. The design calls for two more buildings. In addition to the 103,500-square-foot Armed Forces Reserve Center, which will be home to the 63rd Regional Support Command and 16 Army Reserve and California National Guard units, the site will include a motor pool maintenance shop, with up to 100 vehicles under its 25,000-square-foot roof, and an adjacent storage facility.

It will be the headquarters building for the 63rd RSC though that will be the site's most active pulse. When it officially opens on Oct. 2010, the center will house 378 weekday office personnel, with a maximum capacity of 522 in the facility's auditorium, should the unit conduct a weekend drill formation.

Alongside the auditorium, the center will have a fitness center, dining hall, numerous offices and an Engagement Skills Trainer 2000 range for indoor simulated weapons training, which, as Lt. Col. Davis said, "eliminates any noise to the community." Which is an important concern given that less than a quarter mile away are a civilian housing tract, military housing areas, a day-care facility with an outdoor playground and several of NASA's facilities, including a wind tunnel.

Another state-of-the-art feature will be the inclusion of an access floor, camped directly underneath the center's open office



*[Above] Thomas Hanby, a San Francisco District construction representative, signs the last beam at Moffett Field June 5.*



*[Right] Workers piece together the outer shell of the 103,500-square-foot Armed Forces Reserve Center.*

area. With electrical and telecommunication lines below, the floor allows personnel to easily disconnect, move and reconnect desks within the area. This floor, said Kent DeRusha, project manager for Walbridge/Overaa, the construction firm that was awarded the design-build contract from the Corps' last year, gives the military the flexibility to adjust the workspace environment should military units rotate in and out.

"It's an open office concept," said DeRusha, "so you have large spaces with movable partitions. We want it to be as versatile as possible."

This month also marked a milestone for DeRusha and his team as they completed final design documents for the site, which were forwarded to the Corps's San Francisco District for review. DeRusha understands that this schedule might appear odd at first, but one of the benefits of a design-build process, he said, is the speed of construction.

"We fast track the foundation and steel, and the details of the building follow," he said. "That way, we parallel design and construction together."

Even the steel beams, which fit together like a sort of Tinkertoy set, were chosen not only for their seismic strength, important in the earthquake-prone Bay Area, but for their quick installation.

"They are designed specifically to connect faster because they have interlocking connections. You just interlock, put on the bolts and tighten," said Val Gutierrez, the district's South Bay resident engineer. "There is very little field welding to be done."

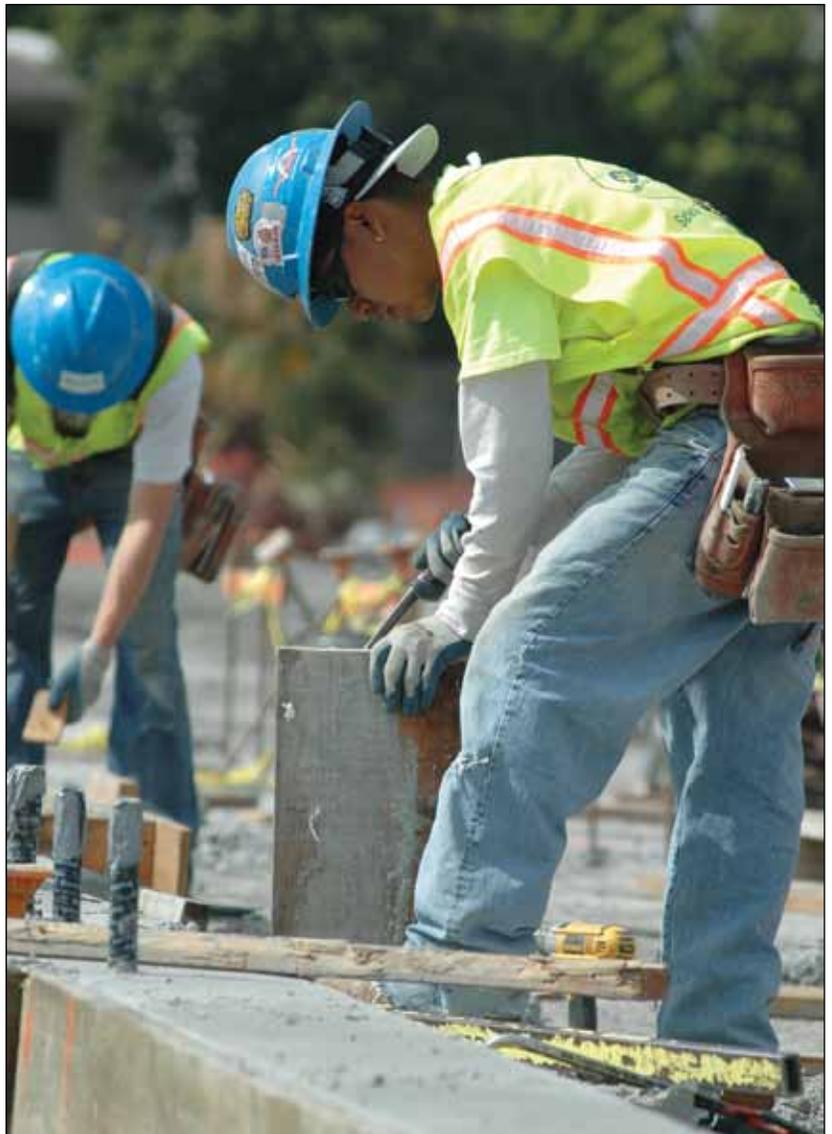
Next up in the coming months will be steel work on the maintenance shop. As of the first of June, foundation work on the 51,000-square-foot storage facility, the third building on site, was 80 percent done, according to Gutierrez, with steel work slated to begin in mid August.



*[Above] With steelwork on the Armed Forces Reserve Center complete, workers will begin work on the details of the building such as exterior walls, radon piping, roof drains and stairwells. The construction area will also see an increase in activity as the workforce on site more than doubles from 60 to 150 workers.*

*[Right] Foundation work on the 51,000-square-foot storage facility nears completion.*

*[Below] A tractor digs a trench near the motor pool maintenance shop, the third building on site.*



# San Ramon Valley Recycled Water Project

By J.D. Hardesty  
Chief, Public Affairs Office

With \$3.48 million in American Recovery and Revitalization Act funds stimulating the local economy, San Ramon Valley Recycled Water Program, East Bay Municipal Utility District and the U.S. Army Corps of Engineers-San Francisco District recently started collaborating on developing plans and specifications for the remaining phases of the multi-phase recycled water, pipeline project.

"We are currently expanding the plans and specifications for a total of 11 miles of additional distribution pipeline while an increase in pipeline alignment surveys are being added to those already in progress," said Clare Polansky, the Corps of Engineers project manager. "Currently, Phase 1 construction of the pump station and main pipeline on Bollinger Canyon Road are nearing completion.

"When completed, the total project will include eight pump stations, additional storage reservoirs and 135 miles of pipeline," she said. "The Corps is currently providing assistance with Phase 1 through 4, which includes the construction of one pump station and 6,500 feet of 16-inch diameter purple main pipeline and assisting with the development and future construction of 11 miles of Phase 2, 3 and 4 distribution pipelines."

The recycled water project partnership between Dublin San Ramon Services District and the East Bay Municipal Utility District helps to conserve potable (drinkable) water by using recycled water to irrigate parks, schools, golf courses, roadway medians and office parks in areas of Dublin, San Ramon, Blackhawk and Danville.

The project has two filtration systems. Secondary effluent wastewater that already meets water quality requirements to be discharged into the Bay is treated with disinfectant chemicals, then passes through a sand filtration treatment to further remove particulate matter. The microfiltration process, used as a backup filtration system, uses a microporous membrane filtration process to remove particulates and contaminants down to 0.1 micrometers (about one tenth of the width of a human hair) and can remove pathogens from the water.

When completed, each of the underground pumps at the pump station are designed to carry a flow capacity of about 2,500 gallons per minute, the equivalent of filling an Olympic-size pool in about four hours.

"Recycled water projects like those being constructed by the San Ramon Valley Recycled Water Project and the East Bay Municipal Utility District strengthen the Bay Area's water resources," Polansky said. Recycled water may be used to create or enhance wetlands and riparian (stream) habitats which directly benefits wildlife, improves watery quality and helps fisheries that have been impaired or dried from water diversion."

She added, "Recycled water reduces operating costs for agricultural irrigation and industries with large consumptions dropping on the average of between 20 to 65 percent and up to 90 percent for agricultural use being reported."

In 2007, the San Ramon Valley Recycled Water Program delivered 738 million gallons of recycled water to customers, reducing the demand on drought-stricken natural resources, while still meeting the irrigation needs of the communities.

California has been using recycled water since the late 1800s, when it was first used for agricultural irrigation. Municipal recycled water use in the state started in Pomona in 1929.

Locally, Golden Gate Park in San Francisco began using recycled water for irrigation in 1932. There are currently more than 5,000 sites in California that use recycled water, including the San Francisco 49ers' practice field in Santa Clara; Pebble Beach, Spyglass Hill and San Ramon Golf Club golf courses; and hundreds of vineyard acres.

Water recycling in the San Francisco Bay Area could get a big boost under a new bill introduced in Congress in May by nine area lawmakers to help stimulate the economy, while reducing the demand for limited fresh water supplies.

The Bay Area Regional Water Recycling Program Expansion Act of 2009 was introduced by Reps George Miller (D-Martinez), Pete Stark (D-Fremont), Ellen Tauscher (D-Concord), Anna Eshoo (D-Palo Alto), Mike Honda (D-San Jose), Lynn Woolsey (D-Petaluma), Jerry McNerney (D-Pleasanton), Zoe Lofgren (D-San Jose) and Jackie Speier (D-San Mateo).

The lawmakers released the following statement after introducing the bill:

"As people all over the country are impacted by declining water supplies, there is no better time to invest in new water technologies like water recycling. Recycling our wastewater is a smart and efficient way to conserve water supplies, lessen our impact on our natural resource and creates jobs and support local businesses."

The Bay Area Regional Water Recycling Program Expansion Authorization Act, signed into law in 2008, added eight water recycling projects to the federal authorization list.





Photos by Ricardo Galdamez

*Construction continues on the new San Ramon Valley Recycled Water Project. Recently, the district started collaborating on the development of plans and specifications for the remaining phases of the multi-phase recycled water pipeline project.*



*San Francisco District Program Manager Clare Polansky discusses the project with construction officials on site. The project is a partnership between Dublin San Ramon Services District and East Bay Municipal Utility District.*

**July/Aug 2009**

# EMPLOYEE NEWS

## Many new faces join district in spring '09



**Mary Cheng**  
Civil Engineer  
Engineering Branch



**Yosef Ahmadi**  
Civil Engineer  
Engineering Branch



**Iris Chavez**  
Student Trainee  
Engineering Branch



**Mark Gibson**  
Survey Technician  
Construction Branch



**Sarah Mello**  
Automation Assistant  
Engineering Branch



**Kimberly Smith**  
Paralegal Specialist  
Office of Counsel



**Rachel Coyner**  
Student Trainee  
Construction Branch



**Ali Hagali**  
Civil Engineer Trainee  
Construction Branch



**Eileen Moritz**  
Project Manager  
Programs & Project Management



**Marisela Rocha**  
Student Trainee  
Engineering Branch



**Michael Stevens**  
Civil Engineer  
Geosciences Branch

## Army training center teams forces to mentor leadership

Story & photo by J.D. Hardesty  
Chief, Public Affairs Office

U.S. Army Corps of Engineers — San Francisco District Commander Lt. Col. Laurence M. Farrell teamed forces with Lt. Col. Randy A. Kilmartin, a lead instructor with 11th Bn., 1st Bde., 104th Div., at the 84th Army Reserve Readiness Training Center to mentor direct and organizational leadership skill sets to captains and majors attending the Intermediate Level Education — Common Course (formerly known as the Command and General Staff College).

LIE-CC is a professional development course.

“The overall take away from teaming guest lecturers like Lt. Col. Farrell together with this class is it helps provide the foundation for these Army officers to serve in joint operations or duty assignments, to prepare them for staff duty assignments at the brigade, division or higher headquarters and, ultimately, to become battalion or brigade commanders,” Kilmartin said.



San Francisco District Commander Lt. Col. Laurence M. Farrell speaks to 10 Army Reserve officers May 10, who are completing the third phase of the Intermediate Level Education — Common Course (formerly known as the Command and General Staff College) at the 351st Civil Affairs Command Headquarters.

# Irene Lee

## A tale of three 'Corps' for district project manager

By Joe Barison

District Public Affairs Office

Charles Dickens' *A Tale of Two Cities* has got nothing on Irene Lee's tale of her three-corps career. In San Francisco District project manager Lee's professional travels, from college to today, each of her employing organizations has had "corps" in its name.

Lee, who was born in Kowloon, Hong Kong, spoke Swatow as her first Chinese dialect. The Lee family came to the United States, sponsored by a church in Pontiac, Mich., for opportunities beyond those then offered in Hong Kong. Irene was 12.

Lee recalls her first attempts to speak English in Michigan. "All I knew is what the other kids taught me. I thought I was saying nice things, but I was speaking only curse words. The kids all thought it was funny. It took me awhile to catch on. The teacher kept telling me to go stand in the corner," she said.

Proving to be an excellent student, Lee went on to graduate from the University of Michigan with a biology degree and a special interest in botany.

Upon graduation, she joined the Peace Corps, serving for two years in the Fiji Islands. Lee's Peace Corps work included elementary-school science teacher, volunteer assistant to nurses on weekend visits to patients, and assisted in the design-built of creek bridges.

"The Peace Corps was one of my best experiences...in a totally different environment from the U.S.," said Lee. "It helps you broaden your perspective on other people's way of life, other than being materialistic."

The Peace Corps experience only whetted Lee's appetite to meet diverse people and explore their cultures. Immediately following her service, she took off for nine months of nonstop backpacking through a virtual United Nations: New



courtesy

Irene Lee poses for a photo at Mori Point, near Pacifica, Calif., during a trail improvement project with the Golden Gate National Parks Conservancy last year.

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We have a lot of really good team members. All of them have put their heart and soul into this project.

**Irene Lee**  
**On Hamilton Project**

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Zealand, Australia, Singapore, Thailand, Philippines, Malaysia, Japan, India, Great Britain, France, Sweden, Germany and Greece — plus her native Hong Kong. "The best part was sam-

pling all the different cultures' foods, meeting all the people, seeing different ways of life... different architecture," she said.

After almost nonstop travel through more than a dozen countries, Lee returned to her family in Michigan and the start of her career. But she saw no jobs for biologists. However, the automotive industry was hiring, so she went to Oakland University at Rochester, Michigan to start studying for a mechanical-engineering degree. While studying engineering, she worked as a U.S. Army Corps of Engineers Detroit District summer hire.

Upon receiving her engineering degree, Lee moved with her husband to Texas, where she worked for the USACE Fort Worth District. Two years later, Lee accepted an engineering position with the Corps' Sacramento District,

where she worked for six years.

However, Lee still desired to explore and to experience the world's cultures. In 2001, she accepted a U.S. Marine Corps offer to work in Okinawa, Japan as a master planner, project engineer and project manager in military construction. "I was looking for something different...The work was...good experience for me and my family, interacting with the culture."

After four years in Okinawa, Lee returned to the Army Corps of Engineers Sacramento District. In 2007, she joined our San Francisco District as project manager for the Hamilton Field wetland restoration. "Having to deal with dredged sediment is new and exciting," Lee said. "It's exciting to see it transform in front of our eyes."

Asked what she finds most challenging about the project, Lee said, "Trying to juggle the various interests, to mesh everything to make it seamless. We have a lot of really good team members — all have put their heart and soul into this project."

Whether at the Corps or at home, Lee's heart is never far from nature, and she enjoys her hobbies of tropical botany and sustainable food sources. In Okinawa, she compiled a list of tropical and sub-tropical edible plants, along with a list of poisonous plants, which she presented to the Marine Corps. She's a member of California Rare Fruit Growers.

Nowadays, Lee spends nearly every Saturday doing volunteer plant restoration for the U.S. Park Service and participating in the Pacifica Beach Coalition Clean-Up. Her personal goal is "to convert my yard space to an edible oasis."

Irene Lee has indeed demonstrated her personal, core commitments — to people, plants and culture — as well as her professional "corps" commitments — to the Peace Corps, the U.S. Marine Corps and the U.S. Army Corps of Engineers.



## Postcards from Iraq

**USACE Iraq Duty —  
making a difference**

**By Israel Rivers, Facilities Services Assistant  
Gulf Region South District  
U.S. Army Corps of Engineers, Tallil Iraq**

For more than a year, I've had the privilege of being part of a truly noble mission in Iraq.

It's been an eye opening experience – humbling at times. An important and significant part of our team here are Iraqis. They come to work every day happy to help rebuild their country. Iraqis have the same dreams and hopes we all do. They want better schools, accessible medical care, cleaner water, more job opportunities and a brighter future for their children and grandchildren. And as part of the USACE team, we're helping to make those hopes a reality.

The Iraqis on our staff are an uplifting group. They want to be able to provide the basic necessities without having to fear for their lives. I pick them up first thing every morning at the front gate. I am proud of the remarkable opportunity to get to know them and work alongside them. They are an inspiration to everyone here. You can see the progress being made and there's a growing optimism among the Iraqi people about where their country is headed. We're working hard to get this job done.

I want to recognize my coworkers and friends at the USACE San Francisco District for their encouragement as I was considering whether to volunteer for this opportunity. I want to thank my lovely wife Christine and our family for their continued support. Although I am missing my loved ones, I know I made the right decision. I am with a truly remarkable team of Military, Civilians and Iraqis. I'm proud to say I was part of this important moment in Iraq's history.



*Israel Rivera says hello to a few of the Iraqis on the staff at Gulf Region South District, Tallil Air Base. Rivera deployed in March 2008 and provides facilities support working for GRS Logistics Office.*



## SF District employee recounts time in Iraq

**By Henry H. Arnold IV  
Gulf Region North District**

Just a short note to inform all that I'm safe and sorry that I didn't send everyone pictures of my time in Iraq. ...

The first week of my arrival didn't go so well since they (Air Force) lost my duffle bag, but I did have my personnel clothing, so I had something to wear. Once I got settled and into a routine life was okay until our first real sandstorm hit, and I lost my way.

Don't worry it's not always that bad. We do have nice weather sometimes or should I say most of the time.

We also get together and play a little volleyball.



*(Clockwise from above)*

*A sand storm towers over the Gulf Region North District Base.*

*Members of the U.S. Army Corps of Engineers — Gulf Region North District enjoy a game of volleyball.*

*A day comes to a close in Iraq.*



# Lake Sonoma park manager retires

By J.D. Hardesty  
Chief, Public Affairs Office

When Lake Sonoma Park Manager Perry Crowley graduated from Humboldt State in 1977, the “Ecology Movement” was still in full social swing, President Jimmy Carter had just cut back on federal hiring and permanent positions at the U.S. National Forest Service and the National Park Service were drying up.

For a recent college graduate aiming for a park ranger career, his career path became apparent.

“I decided to take the first permanent offer to come my way,” said Crowley, who worked in the state of Washington and then in Miami, Fla., for the first year after taking his learned skills out into the workforce.

Two jobs finally came his way: One, a General Schedule (GS) 05 in Georgia; the other, a GS-04 park technician position at Pine Flat Lake outside of Fresno, Calif., located along the Kings River. Both of the positions were with the U.S. Army Corps of Engineers.

“They were part of the establishment back then,” he said. “The Corps was kind of a dirty word back then because they weren’t known to be environmentally friendly.”

The “dirty word” turned into a life-



Photos by J.D. Hardesty



**Perry Crowley**  
*Retired Park Manager*  
**Lake Sonoma**

long career for the park ranger who became the first and only Boating Patrol Ranger when he arrived here in 1984, while shortly after the Warm Springs Dam was completed.

While he has worked in several parts over his Corps tenure, he said, “I felt more at home here than any other park.”

Feeling at “home” was easy he said, “when you’re surrounded by peaks and valleys, huge redwoods, bald eagles and over 8,000 acres of wildlife with 40 miles of trails to walk.”

One of the most difficult parts of his job was getting to learn the different personalities and different needs of people.

“The more I learned to listen to people, the more I learned about them,” he said. “Sometimes the best thing a person can do is to shut-up and listen.”

Looking retrospectively at all of the supervisors and mentors that helped mold his career, he offered this advice: “Don’t prejudge and don’t take for granted. Know everyone has different reasons and different motives for being here. Most strive to do their best because they like working for the Corps of Engineers.”

He explained working for the Corps provided better upward mobility than other “park service agencies because the Corps has so many parks nationwide.”

Crowley cited several reasons for retiring:

- ☐ Retiring will give him time to help work on the five acres on which his 86-year-old mother lives;
- ☐ Spend more time with his family;
- ☐ Retire while on top and still be effective before the passion wains.

“Retirement means I reached old age,” he said. “Now I will have to adapt. I don’t have any plans. I know God has a plan for me.”

If he could write his own legacy, he said, “I hope people would say ‘Perry may not have all the answers, but he cared about his staff and worked hard to get the answers.’”



Photo Courtesy of Nicole Davidson

*Hundreds turned out for Lake Sonoma Park Manager Perry Crowley’s retirement celebration. Perry and his wife, Caroline (left of Perry in blue), an office manager for the Bureau of Land Management, have three children. He said, “I want people to say, ‘Perry may not have all of the answers, but he cared about his staff and worked hard to get the answers.’”*

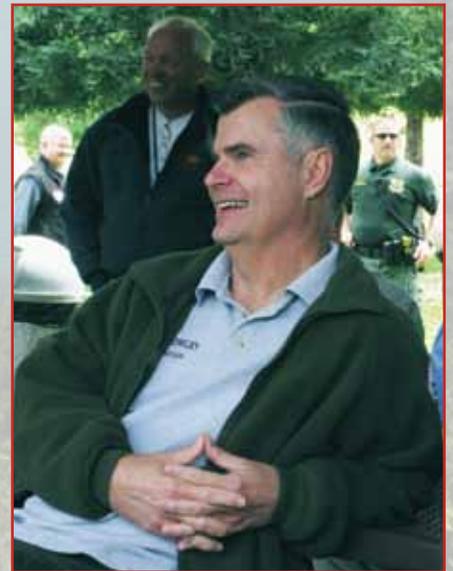


Photo Courtesy of Keley Stock

*Perry Crowley enjoys a few laughs with friends and colleagues at a barbecue held in his honor April 30 at Lake Sonoma Headquarters.*

# Protecting our Resources

## *District's Regulatory Division weighs environmental impacts*

*A cross section of bay mud found at the Santa Clara Valley Water District's tidal wetland mitigation site on Island Pond #19, formerly an industrial salt production pond. Members of the U.S. Army Corps of Engineers — San Francisco District's Regulatory Division annually visits the site for compliance inspections.*

**Story & photos by Paula Gill**  
*District Regulatory Division*

The mission of the Regulatory Division is to protect the Nation's aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions.

An example of an existing permit that facilitates effective management of both inter-agency coordination and protection of aquatic resources is the Santa Clara Valley Water District's (SCVWD) Stream Maintenance Program.

This 10-year permit, issued in 2001, was designed to provide long-term guidance to the District to implement routine stream and canal maintenance projects in order to meet the District's flood protection and water supply mandates in a feasible, cost-effective, and environmentally sensitive manner.

The stream maintenance program area consists of 191 streams for approximately 828 miles and 10 canals for 41 miles.

An inter-agency team including the Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Regional Water Quality Control Board

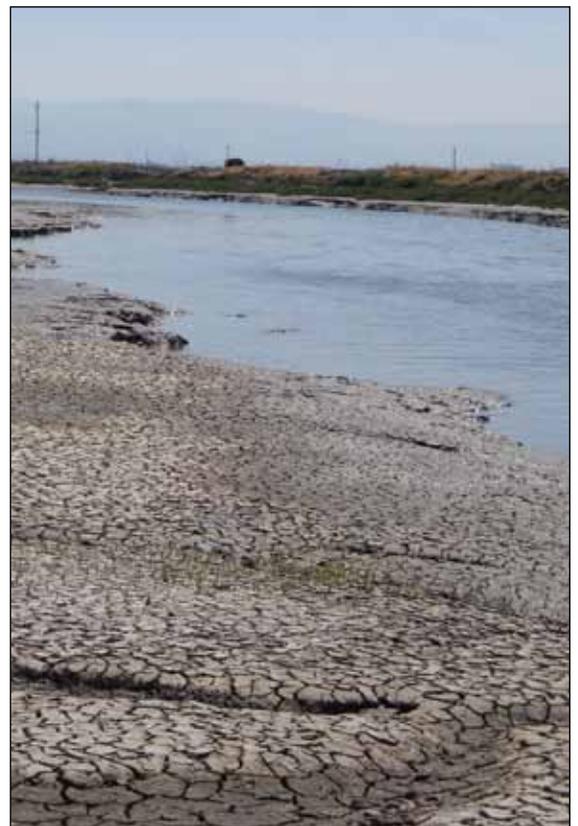
and the California Department of Fish and Game review annual submittals of proposed work, coordinate responses to proposals and attend annual field tours to ensure that the program remains in compliance with the authorized permit.

The SCVWD and the inter-agency team have created a program that to the extent practical, avoids and minimizes adverse environmental effects and encourages preservation and restoration of the aquatic resource.

Guiding principles include: mitigation that matches impacts by basin; larger, sustainable sites over smaller, fragmented sites; creation of freshwater and tidal wetlands; and other mitigation techniques such as invasive species control and land preservation.

The successful implementation of the SCVWD SMP has served as a model for other water districts (e.g. the Sonoma County Water Agency) in consideration of their future maintenance needs.

*Gill is the San Francisco District regulatory project manager for the Santa Clara Valley Water District's Stream Maintenance Program.*



*In 2006, the Santa Clara Valley Water District breached levees at this site to allow tidal waters to flow into the pond to begin the process of tidal wetland restoration.*



*[Left] Corps leadership visited the McDaniel Slough Marsh Restoration Project to see the improved wetlands functions and improved wildlife habitat. The District's Regulatory Division issued a permit to the City of Arcata to restore wetlands in a former cow pasture.*

*[Below] Members of the U.S. Army Corps of Engineers — San Francisco District and CalTrans look over the Mad River Bridge project north of Eureka on U.S. Highway 101. The District's Regulatory Branch issued a permit for the bridge replacement. The permit also covered installing the new piers to protect the bank.*

*[Bottom] A piledriver blasts during the construction to drive a pier deeper into the embankment.*

*Photos by J.D. Hardesty*



# Regulatory Permits Progress

## Regulatory Division permit helps Humboldt County stop erosion threatening houses

*The District's Regulatory Division issued a permit to Humboldt County so construction could help prevent future erosion. Kelley Reid from the District's Eureka Field Office performed a compliance inspection of the authorized boulder and willows construction used to shore-up the bluff near the mouth of the river.*



Photos by J.D. Hardesty

## Mitigation banking seeks 'common ground'

Story & photo by Brandon Beach  
District Public Affairs Office

Call it an ecological trade-off. That's how Phillip Shannin of the San Francisco District's Regulatory Branch would describe the Corps of Engineers' policy on mitigation banking.

It's a relatively new approach for the Corps regarding mitigation. It began back in April of last year when the Corps and the U.S. Environmental Protection Agency wrote a new rule on how to mitigate for impacts to the nation's wetlands and streams.

"For years, the preference was on 'on site' and 'in kind,'" said Shannin, a senior regulatory project manager. "The new rule is having applicants buy credit under approved mitigation banks."

Under the old rule, if a property owner undertook a project that affected an aquatic resource, that owner would be required to restore the same kind of resource somewhere within the boundary of the project.

"If you had a housing development project, for example, the concept was you cut off a chunk of that development to create your wetland," said Shannin.

No net loss has always been the goal. If a developer damages a wetland in one

area, he must restore it in another. While that restoration happened on site in the past, now, since the new rule came into effect, a developer may buy a credit at a wetland bank, thus replacing the loss.

Currently, the San Francisco District has more than 10 certified banks scattered about Marin, San Benito, Solano and Sonoma counties under its program.

Banks are funded by sponsors, created by environmental consultants and sold to developers who need credit to undertake projects that will impact a federal aquatic resource, like a wetland. That's the short version of the model.

The rule changed, explained Shannin, for several reasons. The Corps and the EPA concluded that "on site" mitigation had too many drawbacks. For one thing, there were just too many of them. Every project site in effect had its own mitigation area.

"Monitoring became a big problem," said Shannin. "They were easy access to



Larry Stromberg, Ph.D., right, an environmental consultant, discusses the creation of vernal pools at the Carrinalli-Todd Bank.

cats and dogs. They'd get trash in them."

Mitigation banks solve, for the most part, the monitoring issue. To build a bank, a sponsor (the financier) hires an environmental consultant with the scientific know-how to create and manage it. The profit comes from the sale of credit to developers.

For the Corps, the profit comes from the no net loss, the guiding principle behind its regulatory mission. With so much emphasis on our nation's aquatic resources, mitigation banking ensures their survival.



*[Above] Ken Thompson, right, a San Francisco District civil engineer, instructs Peter Krembs, left, and Peter Ho on using the Corps' Levee Inspection System.*

*[Below] San Francisco District Civil Engineer Rhonda Needham takes photos of the Coyote Creek Levee using a GPS camera.*

# Down in the Muck

**Story & photos by Brandon Beach**  
*District Public Affairs*

**M**ore than a dozen members of the U.S. Army Corps of Engineers — San Francisco District traveled to Fremont, Calif., to learn how to inspect levees.

The April 14 training was held at Coyote Creek Lagoon in the Don Edwards National

Wildlife Refuge. It coincided with Congress's push to establish a comprehensive inventory of the nation's 14,000-mile long system of levees.

During the site visit, team members learned how to fill out reports, what to look for during an inspection and how to use various types of field equipment for analysis.

Since the training nearly two months ago, the team has completed inspections on most of the levees in Alameda County. This data has been forwarded to the National Committee on Levee Safety for inclusion in its database.

Up next are site visits to floodplain projects in Soledad City and in the Santa Clara Valley Water District.



# FLOATING

## Debris team hauls out busted marina from San Pablo Bay

Story & photos by **Brandon Beach**  
*District Public Affairs*

**S**an Francisco District debris crews responded to a call last month reporting that a marina was found floating in the waters near Concord, Calif.

The collapsed wooden-covered pier was estimated at close to 300 feet long and 40 feet wide.

“It was being towed by a person looking to start a marina,” said Joe McCormick, captain of the *Raccoon*, part of the district’s fleet of debris removal vessels. “The wind kicked up, and it unfortunately got away from him.”

Crews from both the *Raccoon* and the *Grizzly*, a small craft debris removal vessel, were dispatched to the scene early on the morning of May 7.

Over the course of two days, crew members from the *Raccoon* alone hauled out more than 20 tons of debris.

“When you collect something like that, it gives you a good feeling,” said Rick Curry, a debris collection worker. “You’re really doing something.”

Though the marina was initially discovered outside of Federal waters, by midweek, the large floating wreckage had entered the north part of San Pablo Bay, falling under the Corps’ jurisdiction for removal.

*[Top] Ken Danielson, chief engineer onboard, tries to hook a piece of wreckage from the bow of the Raccoon May 7, while Jimmy Britton, a drift collection worker, looks on.*

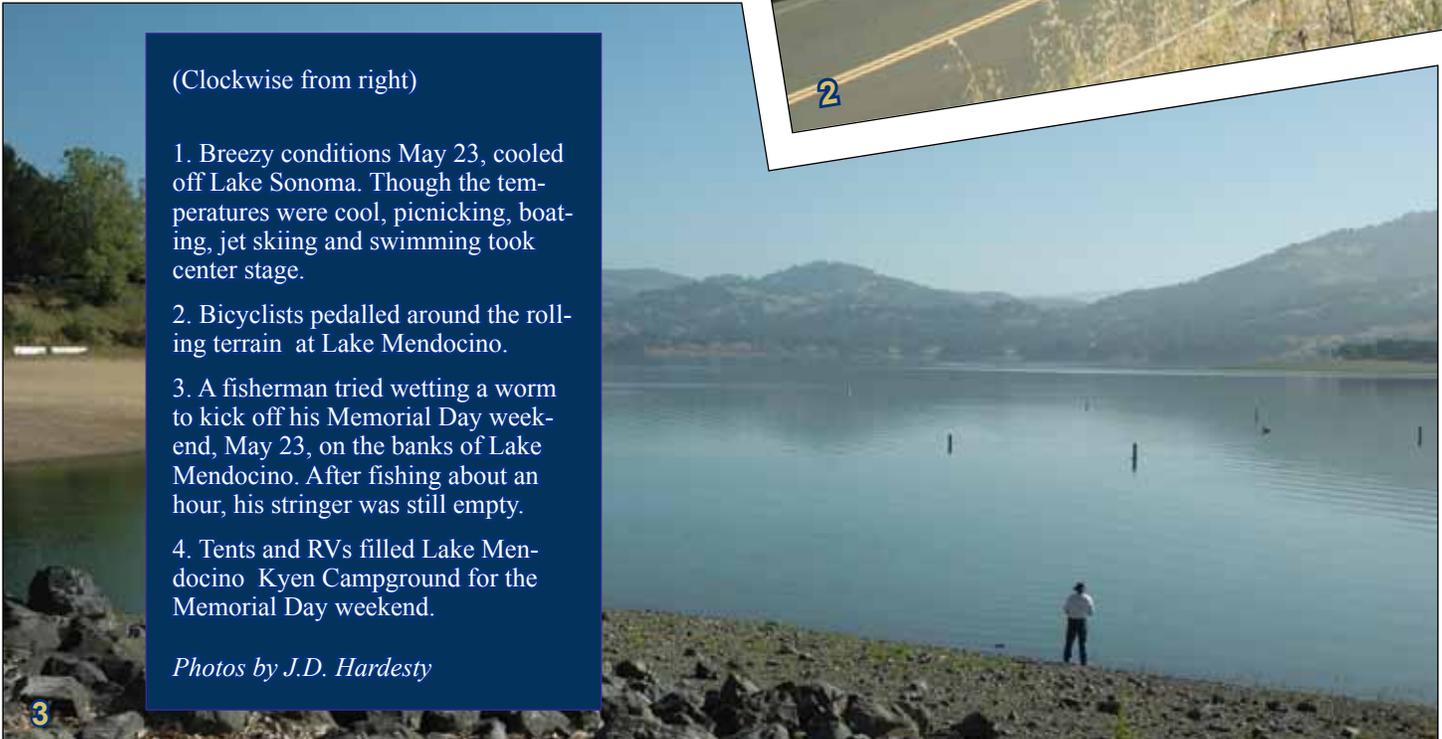
*[Middle] Rick Curry, a drift collection worker, signals to the crane operator.*

*[Bottom] Joe McCormick, left, captain of the Raccoon, surveys the ongoing debris mission, while Hank Macner, chief of navigation, operates the crane.*

# WRECKAGE



# Corps lakes provide fun on Memorial Day weekend



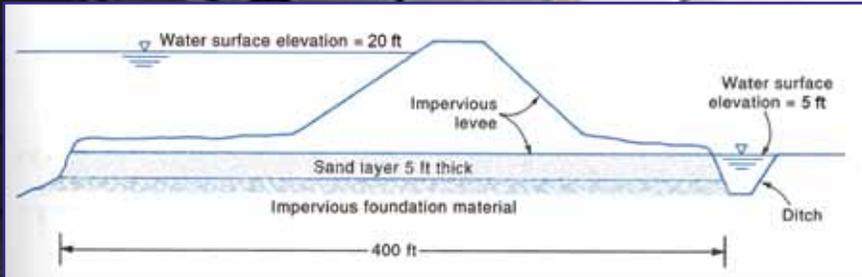
(Clockwise from right)

1. Breezy conditions May 23, cooled off Lake Sonoma. Though the temperatures were cool, picnicking, boating, jet skiing and swimming took center stage.
2. Bicyclists pedalled around the rolling terrain at Lake Mendocino.
3. A fisherman tried wetting a worm to kick off his Memorial Day weekend, May 23, on the banks of Lake Mendocino. After fishing about an hour, his stringer was still empty.
4. Tents and RVs filled Lake Mendocino Kyen Campground for the Memorial Day weekend.

*Photos by J.D. Hardesty*

# ENGINEERING CHALLENGE

It's time to show off your engineering skills. Take on the engineering challenge in this month's SPN Surveyor. The first to solve this mathematical puzzler will receive a commander's coin, with the results being published in the July/August issue. So go ahead, calculate away!



## The Problem

The figure shows a levee at the Hamilton Wetlands Restoration Project. A sand layer of the cross-sectional area shown has been determined to exist for a 2000-foot length of the levee. The coefficient of permeability of the sand layer is 10 ft/day. Determine the quantity of water, in gal/min, which flows into the ditch.

Submit your answers via e-mail to Jake Jacobson at [John.H.Jacobson@usace.army.mil](mailto:John.H.Jacobson@usace.army.mil).

Note: This month's Engineering Problem was submitted by John Cheng.

## Congratulations to last issue's winner!



Brandon Beach

U.S. Army Corps of Engineers — San Francisco District Commander Lt. Col. Laurence M. Farrell, left, presents a commander's coin to Riccardo Galdamez, a civil engineer and winner of the Surveyor's May/June Engineering Challenge.

## The Answer

In the last issue of the SPN Surveyor, readers were asked to design a trapezoidal ditch to carry water away from a work site. Here's how Riccardo solved the problem.

**Manning's Equation**  
For a trapezoidal channel, Manning's equation can be expressed as the following:

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2} \Rightarrow \frac{1.49}{n} (b + Zy_n) Y_n^3 \left[ \frac{(b + Zy_n) Y_n}{b + 2Y_n \sqrt{1 + Z^2}} \right]^{2/3} S^{1/2}$$

FROM CHOW, PAGE 112  $n = .0025$   
 $Q = 400$  cfs  
 $B = 20$  ft  
 $Z = 2$   
 FROM CALCULATOR:  $Y_n = 3.36$  FT.

DETERMINE  $Y_c$ ,  $Fr$  AND FLOW REGIME:  
 CRITICAL DEPTH EQUATION =

For the channel, the Critical Depth Equation can be expressed as the following:

$$\frac{Q^2}{g} = \frac{A^3}{T_c} \Rightarrow \frac{Q^2}{g} = \frac{[(b + Zy_c) Y_c]^3}{b + 2ZY_c}$$

From Calculator  $\Rightarrow Y_c = 2.15'$

B)  $Y_n > Y_c$  THEREFOR SUBCRITICAL

C) DETERMINE  $Fr$ .

$$Fr = \frac{V}{\sqrt{gD}}$$

$$V = \frac{Q}{A} = \frac{400}{(20 + 2(3.36))3.36}$$

$$= 4.46 \text{ FPS}$$

$$D = \frac{A}{T} = \frac{(b + Zy_n) Y_n}{b + 2ZY_n} = 2.68'$$

$$Fr = \frac{4.46}{\sqrt{32.2(2.68)}}$$

$$= Fr = .48$$

$Fr < 1 \therefore$  SUBCRITICAL

OR

$$Y_n > Y_c$$

# ASIAN PACIFIC AMERICAN HERITAGE MONTH

## San Francisco District 4 supervisor keynotes Asian-Pacific Heritage celebration



Photo by Joe Barison

*San Francisco Supervisor Carmen Chu addresses the U.S. Army Corps of Engineers San Francisco District at its Asian-Pacific Heritage Month Celebration May 18. Seated, left to right: District Commander Lt. Col. Laurence M. Farrell, District Asian-Pacific Program Manager Steve Yip, Legislative Aide Cammy Blackstone and District EEO Manager Malcolm Seisay.*

## Proclamation addresses 'achievements amidst struggles'

By Barack Obama  
U.S. President

The vast diversity of languages, religions and cultural traditions of Asian Americans and Pacific Islanders continues to strengthen the fabric of American society. From the arrival of the first Asian American and Pacific Islander immigrants 150 years ago to those who arrive today, as well

*This year's theme ...*

### Lighting the past, present and future

as those native to the Hawaiian Islands and to our Pacific Island territories, all possess the common purpose of fulfilling the American dream and leading a life bound by the American ideals of life, liberty and the pursuit of happiness.

During Asian American and Pacific Islander Heritage Month, we remember the challenges and celebrate the achievements that define our history.

Asian Americans and Pacific Islanders have endured and overcome hardship and heartache. In the earliest years, tens of thousands of Gold Rush pioneers, coal miners, transcontinental railroad builders, as well as farm and orchard laborers, were subject to unjust working conditions, prejudice, and discrimination — yet they excelled. Even in the darkness of the Exclusion Act and Japanese internment, Asian Americans and Pacific Islanders have persevered, providing for their families and creating opportunities for their children.

Amidst these struggles, Asian Americans and Pacific Islanders have contributed in great and significant ways to all aspects of society. They have created works of literature and art, thrived as American athletes and prospered in the world of academia. Asian Americans and Pacific Islanders have played a vital role in our Nation's economic and technological growth by establishing successful enterprises and pushing the limits of science. They are serving in positions of leadership within the government more now than ever before. And along with all of our great service men and women, they have defended the United States from threats at home and abroad, serving our Nation with valor.

From the beaches of the Pacific islands and the California coast, the grasslands of Central Asia and the bluegrass of Kentucky, and from the summits of the Himalayas and the Rocky Mountains, the Asian American and Pacific Islander community hails from near and far. This is the story of our more perfect union: that it is diversity itself that enriches and is fundamental to the American story.

Now, therefore, I, Barack Obama, President of the United States of America, by virtue of the authority vested in me by the Constitution and the laws of the United States, do hereby proclaim May 2009, as Asian American and Pacific Islander Heritage Month. I call upon the people of the United States to learn more about the history of Asian Americans and Pacific Islanders and to observe this month with appropriate programs and activities.

In witness whereof, I have hereunto set my hand this first day of May, in the year of our Lord two thousand nine, and of the Independence of the United States of America the two hundred and thirty-third.

*This and other presidential proclamations may be found online at [www.whitehouse.gov](http://www.whitehouse.gov).*