Riverside County Flood Control and Water Conservation District

ANNUAL REPORT

FY 2015/2016

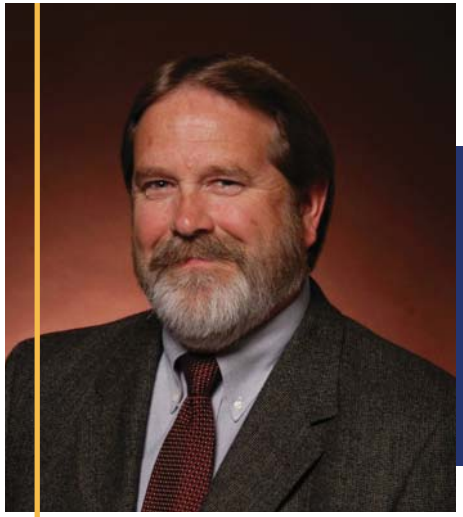
2016

RESOURCEFUL RESPONSIBLE RESPECTFUL

MISSION

To protect people,
property and watersheds
from damage or destruction from flood
and storm waters and to
conserve, reclaim and save
such waters for beneficial use.

CONTENTS



HONORING
A NATIONAL LEADER IN FLOOD CONTROL MANAGEMENT

Warren "Dusty" Williams
General Manager-Chief Engineer (retired)

General Manager-Chief Engineer Warren "Dusty" Williams retired from the Riverside County Flood Control and Water Conservation District after 39 years of outstanding service.

Dusty will be long remembered for his unwavering loyalty to the District, his devotion to protecting public health and safety from unconfined flooding, and his commitment to using stormwater runoff capture and recharge to offset the need to import water.

As a local, state, and national leader in flood control management and environmental/regulatory issues, Dusty's service included work with the National Association of Flood and Stormwater Management Agencies, County Engineer's Association of California, National Committee on Levee Safety, and Governor's Alluvial Fan Task Force.

Dusty was committed to helping train the next generation of flood safety professionals, serving as a part-time professor of Civil Engineering at the University of California, Riverside from 1991 through 2001, and a part-time professor of Civil Engineering at California State Polytechnic University from 2005 through 2008.

Dusty's legacy and leadership will be honored and remembered long after his retirement.

MESSAGE
FROM THE GENERAL MANAGER-CHIEF ENGINEER

Jason E. Uhley
General Manager-Chief Engineer

The 2015-16 Fiscal Year has been a watershed year for the District (pun intended). Just a few of the significant events and accomplishments include:

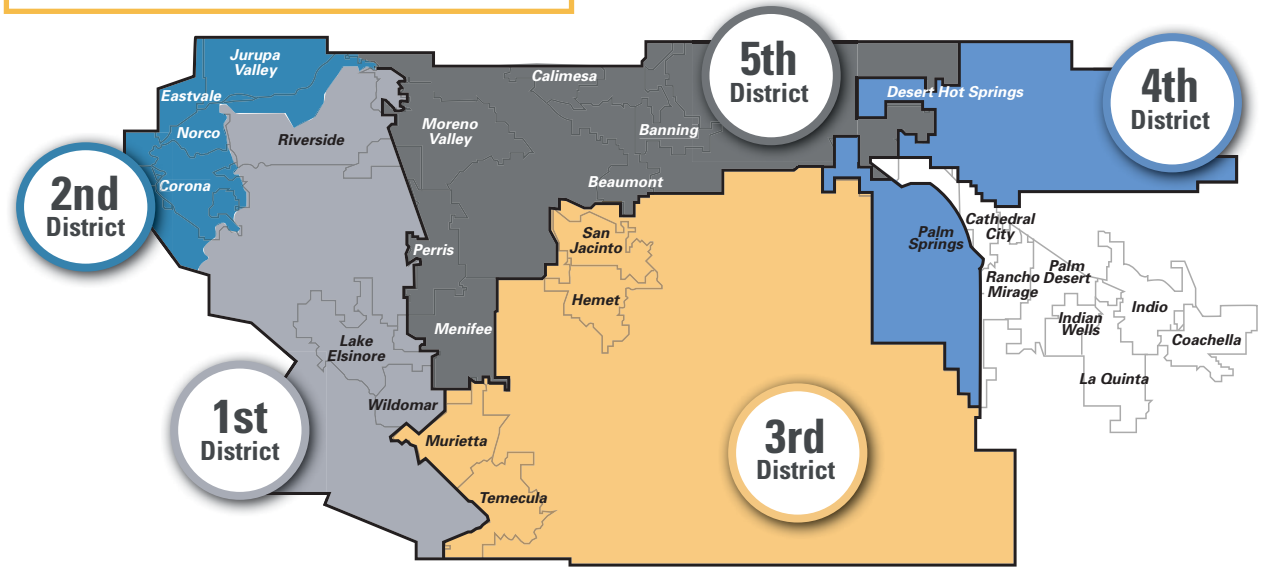
- The District celebrated its 70th Anniversary on July 7, 2015.
- Eagle Canyon Dam, the first major dam to be completed in the County in over 20 years, was recognized as the Project of the Year by the Inland Empire Section of the American Society of Civil Engineers. Helio Takano, the District's Resident Engineer, was also named Engineer of the Year by the Inland Empire Section for his work on the project.
- Our capital improvement program is churning out projects at over twice the rate of our historic average, including the $26 million Romoland Line A project – the single largest capital improvement project administered by the District to date.
- The District, in partnership with the County, saved residents in flood prone areas of the unincorporated County a cumulative $320,000 in flood insurance premiums – a 10% decrease.
- Over $5 million in grants were awarded to the District by the Department of Water Resources for stormwater capture, flood control, and water quality improvement projects.

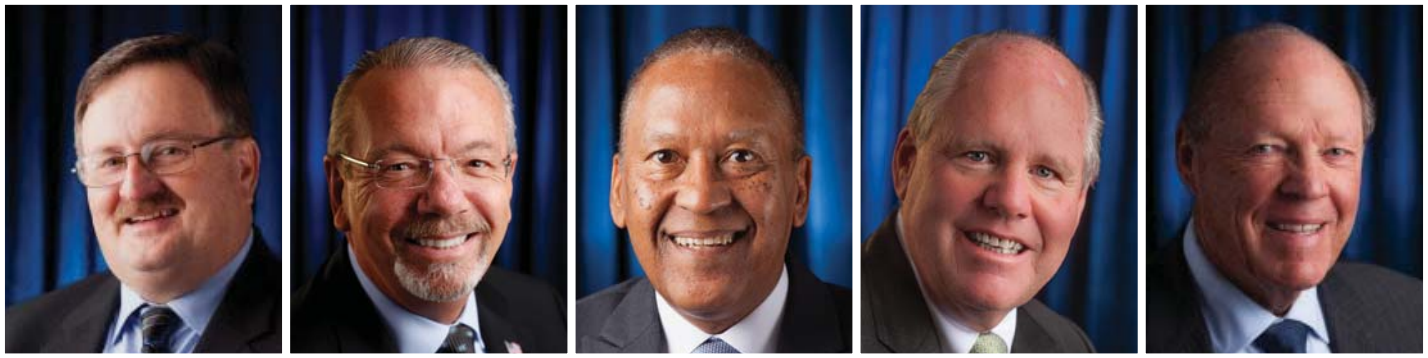
You might think that the hard work was behind us. The reality is that changes in technology, climate, economy, and demographics present evolving and new challenges for the District including:

- A public with very high expectations for the use and deployment of new technology and open data to facilitate efficiencies and transparency in public services.
- District dams and levees approaching 70 years old that will likely require increasing resource allocations for maintenance and rehabilitation work.
- A lack of affordable housing that accentuates the need to accelerate critical regional flood control infrastructure.
- An ongoing drought that challenges existing local and imported water supply sources.
- Increasing interest in multi-agency projects that can enhance the resilience of local groundwater basins.
- Evolving regulations and policies targeted at protecting the health and water quality of local lakes, rivers, and streams from the impact of increasing urbanization and urban stormwater runoff.
- Increasing interest by local, state, and federal agencies to develop both public and private partnerships that can deliver multi-purpose, multi-benefit projects that can accelerate the delivery of critical infrastructure and services to the public while also reducing total costs.

To remain on top, the District must continue to adapt to the evolving world around us. That is why my appointment as the new General Manager-Chief Engineer for the Riverside County Flood Control and Water Conservation District was not only an honor, but also a call for leadership to continue to adapt the District to face evolving 21st Century challenges. To that end, I am engaging staff, the Board, and our partners in a strategic planning process to assess how best to address these evolving challenges. It is an exciting time for the District team and I know from experience that we are up to the challenge.

BOARD OF SUPERVISORS





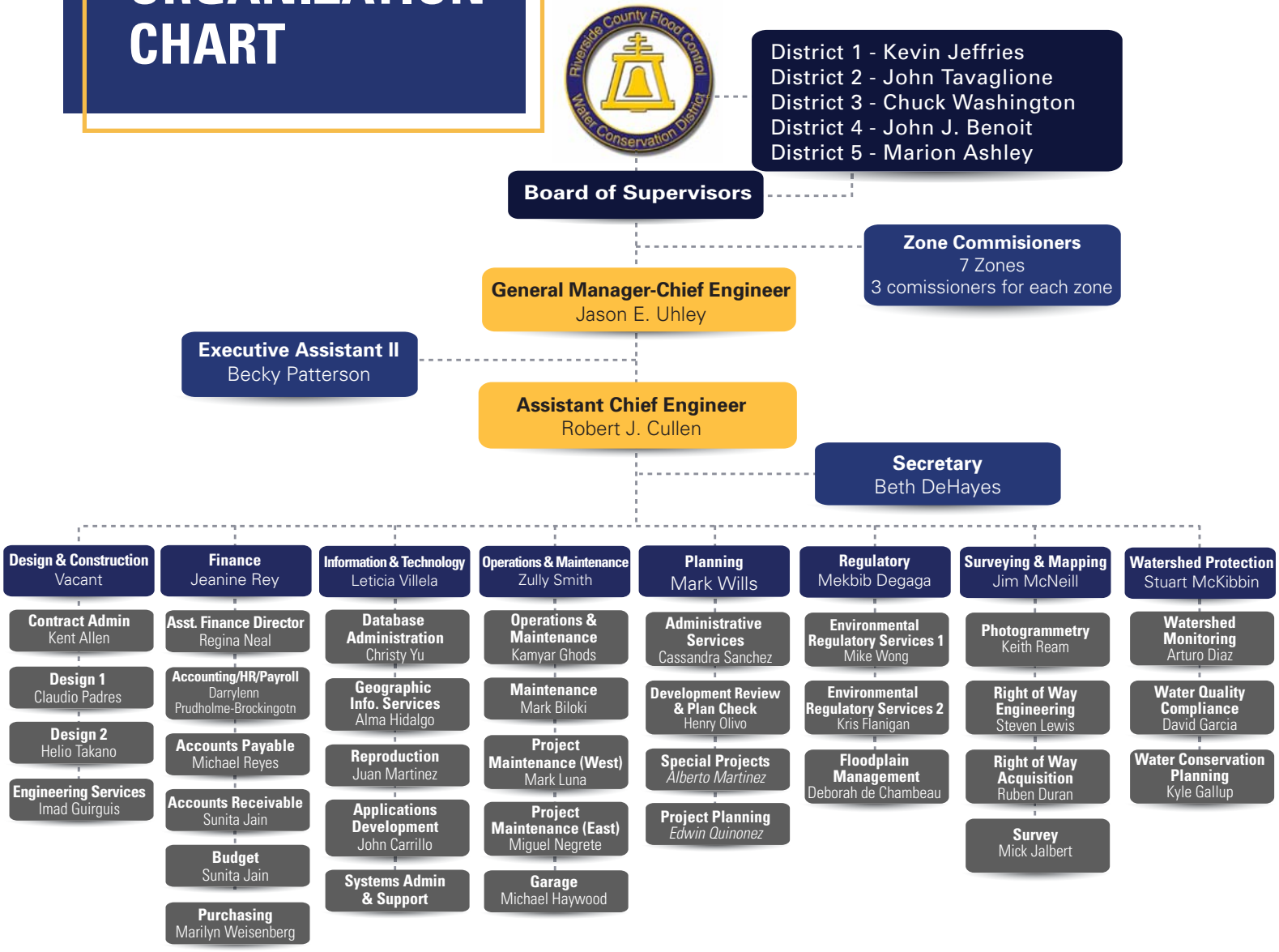
First District	Second District	Third District	Fourth District	Fifth District
Kevin Jeffries	John F. Tavaglione	Chuck Washington	John J. Benoit	Marion Ashley

MANAGEMENT TEAM

FRONT ROW (from left to right)
Jeanine Rey *(Chief of Finance)*
Becky Patterson *(Executive Assistant)*
Zully Smith *(Chief of Operations and Maintenance)*
Leticia Villela *(Chief of Information Technology)*

BACK ROW (from left to right)
Mekbib Degaga *(Chief of Regulatory)*
Mark Wills *(Chief of Planning)*
Jason Uhley *(General Manager-Chief Engineer)*
Bob Cullen *(Assistant Chief Engineer)*
Stuart McKibbin *(Chief of Watershed Protection)*
Jim McNeill *(Chief of Surveying and Mapping)*

ORGANIZATION CHART



LEADERSHIP
COMMITMENT TO COMMUNITY

NATIONAL ASSOCIATION OF FLOOD AND STORMWATER MANAGEMENT AGENCIES (NAFSMA)
Jason Uhley: *Board of Directors*

ESRI-IEGIS (INLAND EMPIRE GIS USER GROUP)
Alma Hidalgo: *Coordinator, Adjunct Geography/GIS Faculty at San Bernardino Valley College*

ASSOCIATION OF ENVIRONMENTAL PROFESSIONALS
Kevin Cunningham: *Inland Empire Chapter – President (Jan 2015 – Present)*

CAL POLY POMONA DEPARTMENT OF URBAN AND REGIONAL PLANNING Alumni Association
Kevin Cunningham: *Vice President*

AMERICAN SOCIETY OF CIVIL ENGINEERS INLAND EMPIRE
Juliana Gonzalez, P.E.: *Treasurer*
Arlene Chun: *Stormwater Committee*
Edwin Quinonez: *ASCE Los Angles Section Treasurer, ASCE Inland Empire Report Card Co-Chair*

AMERICAN SOCIETY OF CIVIL ENGINEERS YOUNGER MEMBER FORUM (ASCE/YMF)
David Cortese. P.E.: *Vice-President*
Ryan Johnson, EIT: *Community Service Coordinator*
Andrea Gonzalez, EIT: *Practitioner Advisor I, Cal Poly Pomona*

ALERT USERS GROUP
Robert Laag: *Treasurer*

CALIFORNIA STORMWATER QUALITY ASSOCIATION
Darcy Kuenzi: *Legislative Chair*

COMMUNITY CONTRIBUTION & INVOLVEMENT

Santa Ana River Clean-up Event
October 2015

Participating Agencies: Riverside County Flood Control and Water Conservation District, Riverside Chamber of Commerce-Keep Riverside Clean & Beautiful, City of Jurupa Valley, City of Riverside, Riverside County Sheriff's Department, Riverside County Department of Waste Resources, City of Riverside Police, Inland Empire Water Keepers, UCR, La Sierra University and Arlington High School

Hosted by District: Darcy Kuenzi
435 Community Volunteers
13.45 Tons of trash removed

Youth in Government
Andrea Gonzalez

VOLUNTEER CHARITABLE EVENT COORDINATORS

Fill-a-Backpack
Mental Health Snowflake Drive
Danielle Pierce

4 LifeStream Blood Drives – 143 units collected
Beth DeHayes | Michele Martin

American Heart Walk
Charlene Warren | Cassie Sanchez
Summer Henderson | Sunita Jain

Mental Health Thanksgiving Food Drive
Becky Patterson

Employee Campaign
Julianna Gonzalez
Cassie Sanchez

Culture of Health Ambassador
Kevin Cunningham

DISTRICT ZONES

The District is divided into seven geographically defined funding zones. The District collects tax revenues within both the unincorporated and incorporated portions of each zone. The revenue generated in each zone must be spent on projects that benefit the zone.

The Board appoints three Zone Commissioners to serve each zone and assist the District with setting budget priorities.

ZONE 1
Don Harriger, 1st District
Charles Krieger, 1st District
Scott H. Krentel, 1st District

ZONE 2
Serena Burnett, 1st District
Richard MacGregor, 2nd District
Baxter Miller, 2nd District

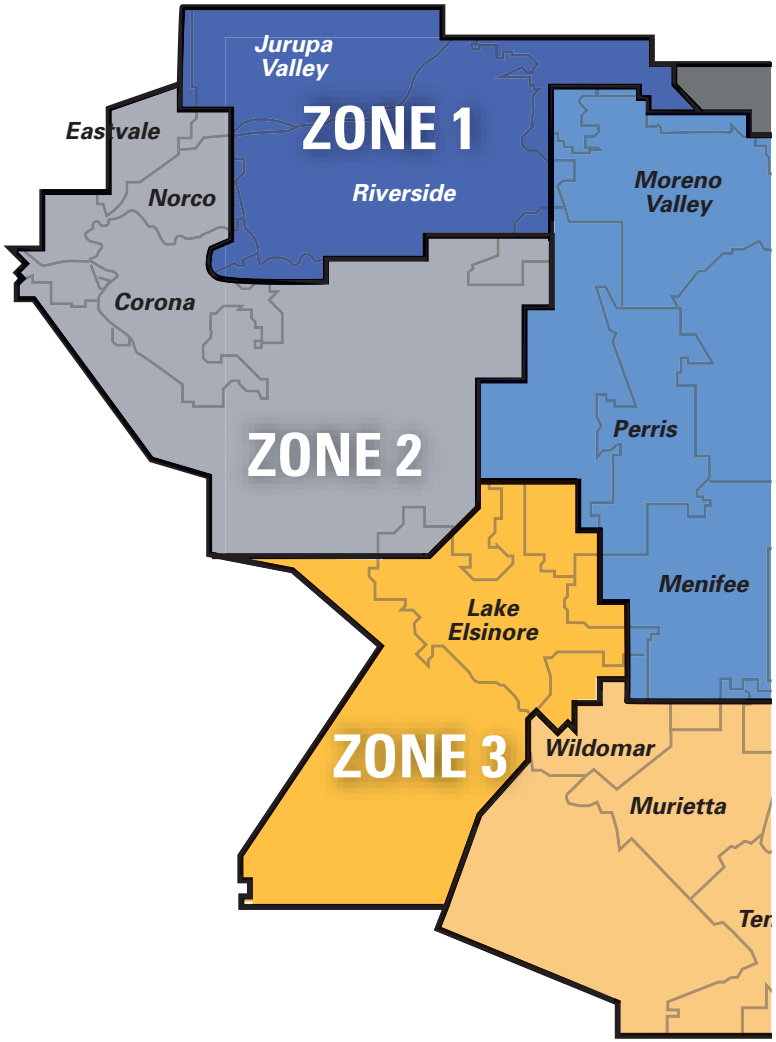
ZONE 3
Richard Heil, 1st District
Chris Hyland, 1st District
Vacant, 1st District

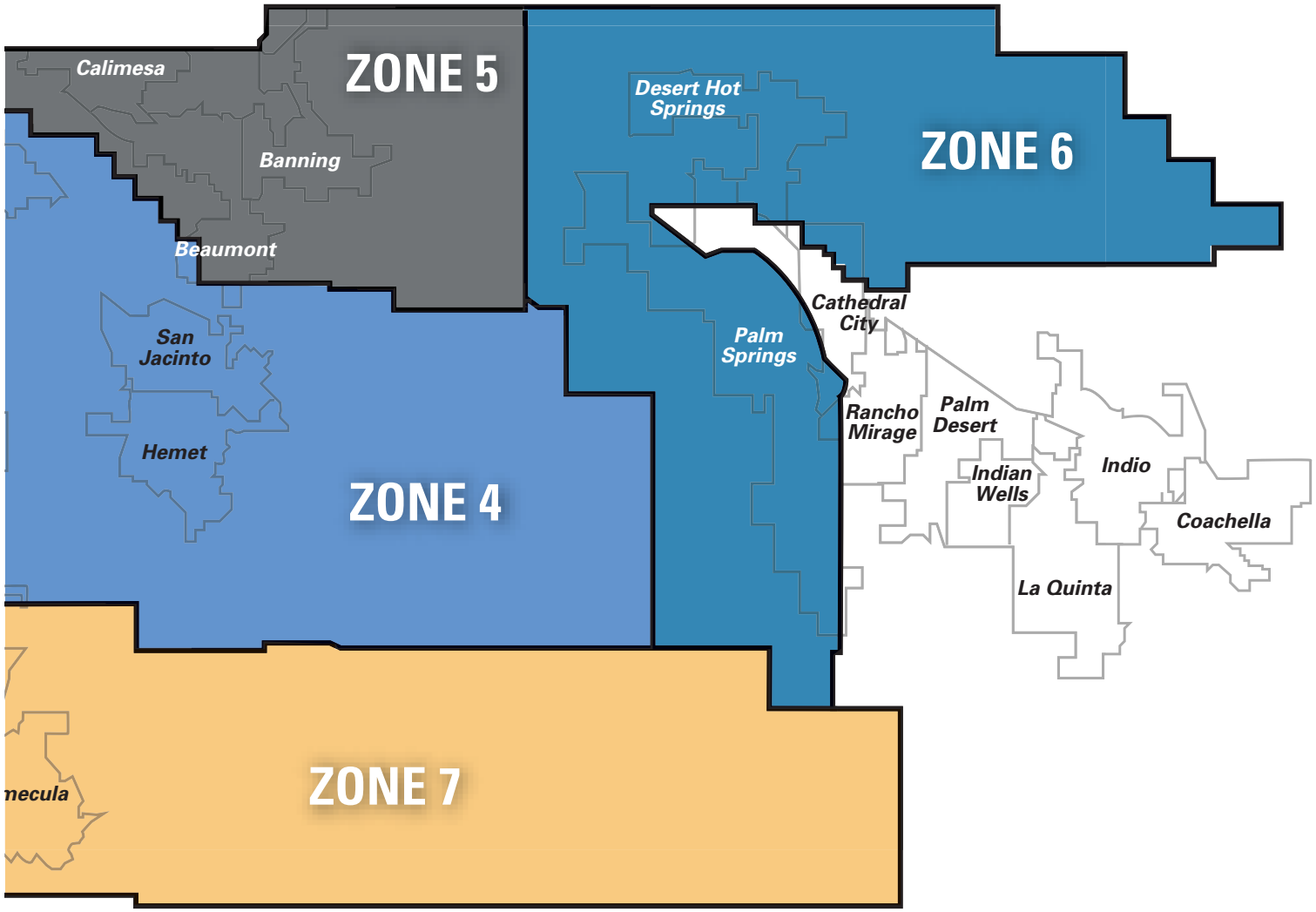
ZONE 4
Roy Bleckert, 5th District
Brad Scott, 5th District
Bobby Hicks, 3rd District

ZONE 5
James Siva, 5th District
Paul St. Martin, 5th District
Vacant, 5th District

ZONE 6
John Furbee, 4th District
Ivan Sewell, 4th District
Steven Stewart, 4th District

ZONE 7
Steven Beswick, 3rd District
Vincent Scarpino, 1st District
Vacant, 3rd District




ZONE 5
ZONE 6
ZONE 4
ZONE 7
Calimesa
Banning
Beaumont
Desert Hot Springs
Cathedral City
Palm Springs
San Jacinto
Hemet
Rancho Mirage
Palm Desert
Indian Wells
Indio
Coachella
La Quinta
necula

2015-2016 DASHBOARD

$66 MILLION
in Capital Improvement Expenditures

134 *Structures Removed from Floodplain*

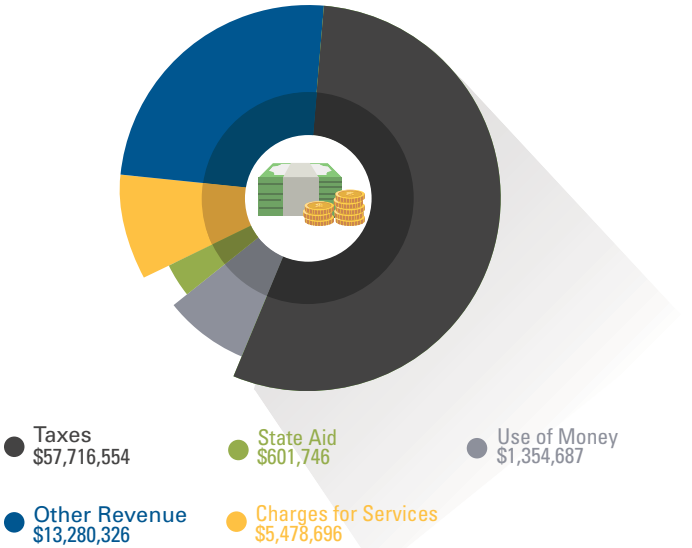
20 Acres of Harmful Floodplain Removed

9.95 **Acres of Natural Floodplain Preserved**

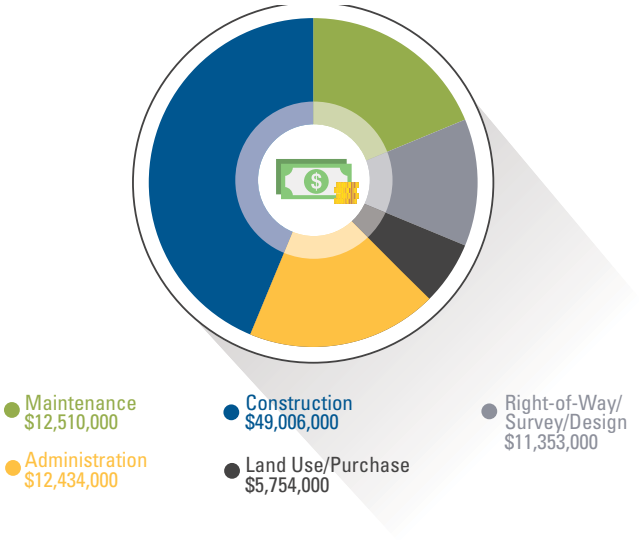
Customer Feedback Results – 100%

25,000 Acre-Feet
in New Local Water Supply Proposed

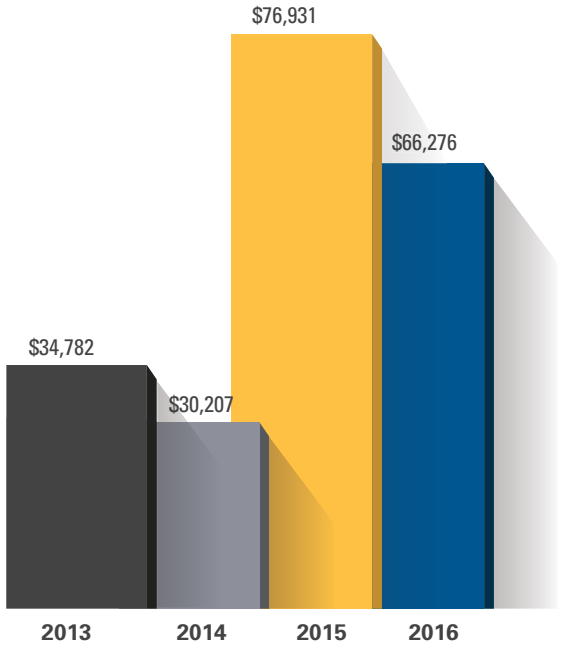
REVENUE



EXPENSES



CAPITAL PROJECT EXPENDITURES (1,000s)



The District's ad valorem property tax revenues are proportional to property values in Riverside County. Increased property values, and therefore revenues, allowed the District to expand the capacity of the District's Capital Improvement Plan (CIP) to the benefit of the residents of the District in recent years. The CIP facilitates the long-range planning of District facilities based on expected revenues and expenditures.

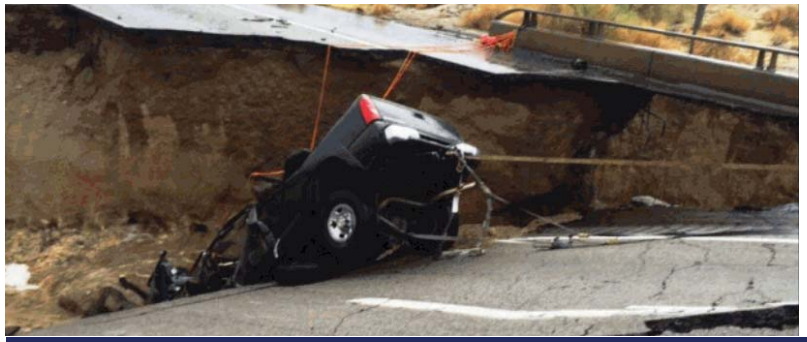
To facilitate the CIP, the District has improved its capacity to deliver projects through a combination of increased staffing, consultant support, and partnerships with local agencies. This three-fold approach to building project delivery capacity is designed to ensure the maximum return of investment on taxpayer dollars and also ensure that District staffing remains at sustainable levels should the economy slow down.

RAINFALL AND RUNOFF

'GODZILLA' EL NIÑO IS A NO SHOW IN SO-CAL

Developing from a small patch of warm water in the Pacific Ocean, this El Niño grew to among the largest ever recorded from an ocean temperature perspective and shaped weather around the world. It delivered much-needed rain and snow to parched Central and Northern California, but failed to end the state's historic drought. The jet stream and associated rainfall shifted to the north, sending what would have been local storms into Northern California. As a result, cumulative precipitation totals were lower than expected across much of the southwest.

On June 9, 2016, the National Weather Service declared that El Niño had dissipated. ENSO-neutral conditions are present with a 75% chance of La Niña development during the upcoming fall and winter. La Niña conditions typically result in drier than normal winters, implying that the Southern California drought may be far from over.

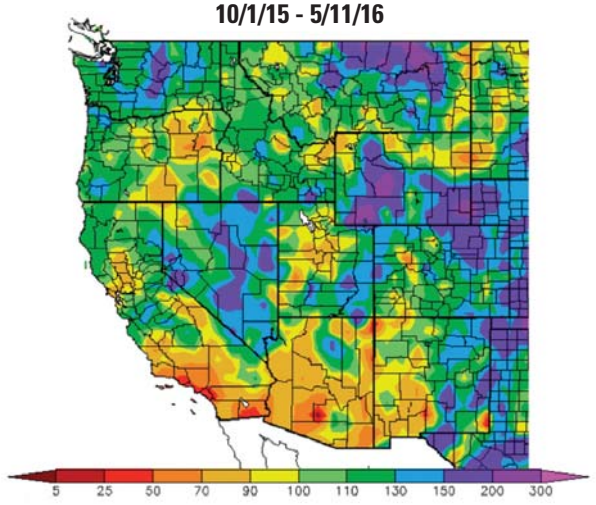


THE DROUGHT IS NOT OVER

Statewide precipitation from October through April was 110% of average, however, local rainfall ranged from 120% of normal in the north to 55% of normal in the south. Many water supply reservoirs in Northern California were replenished. However, the drought has not ended. California is a big state, and an average winter in Northern California does not compensate for four prior years of statewide drought. Local lakes, including Lake Elsinore, are still approaching historic lows. Threats from the drought still remain.

- Although storage has recovered in most of the large Sacramento Valley reservoirs, this is not the case in the San Joaquin Valley.
- Roughly one-third of Southern California's urban water supply is delivered from northern rivers through the Sacramento-San Joaquin Delta. The key reservoir that holds water conveyed from the Delta is less than half full.
- Southern California precipitation remains well below average.

PERCENT OF AVERAGE PRECIPITATION (%)
10/1/15 - 5/11/16



Generated 5/1/16 at WRCC using provisional data. NOAA Regional Climate Centers

PRECIPITATION

Riverside County has been experiencing prolonged drought. Nine of the eleven years since 2005 have been dry. California and Riverside County also experienced record warmth during this time. Last year and 2014 were, respectively, the warmest and second-warmest years in 121 years of statewide average temperature records. Riverside hit a record high 90 degrees Wednesday, February 10, 2016 breaking the old mark of 89 that was set in 1907.

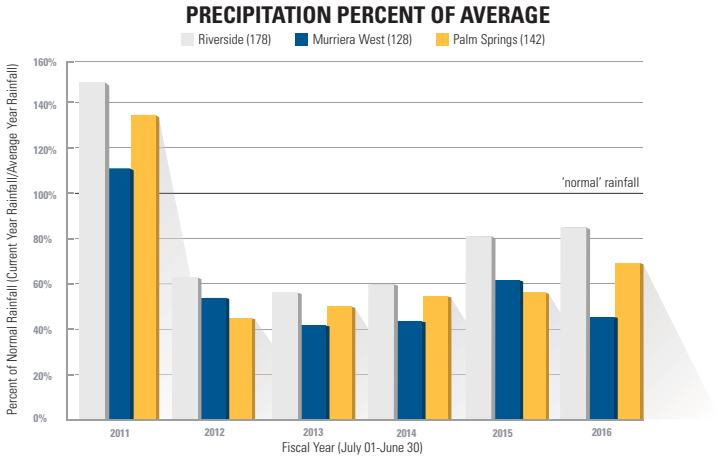
February represents the wettest month of the season for most locations of southwestern California. The odds of a wet February increase for strong El Niño events. The exact opposite occurred in February 2016 when the downtown Riverside gauge recorded just 0.50 inch of precipitation - which was 2.11 inches below normal for the month.

The figure below summarizes actual rainfall as a percent of annual precipitation for seven representative areas throughout Riverside County despite the El Niño. Countywide precipitation is 71% of average.

Percentage (%) of Normal + Current Year/Average Year							
YEAR	**RIVERSIDE**	**HEMET**	**BANNING**	**PALM SPRINGS**	**MURRIETA**	**MEAN**	**RESULTS**
1999	57%	54%	83%	18%	40%	50%	Dry
2000	69%	67%	107%	59%	66%	74%	Dry
2001	102%	75%	90%	88%	81%	87%	Normal
2002	32%	30%	38%	12%	26%	28%	Very dry
2003	143%	109%	79%	70%	125%	105%	Normal
2004	65%	61%	54%	71%	63%	63%	Dry
2005	216%	192%	146%	206%	240%	200%	Very wet
2006	71%	86%	74%	61%	49%	68%	Dry
2007	25%	27%	18%	2%	18%	18%	Very dry
2008	73%	91%	86%	89%	79%	84%	Dry
2009	68%	70%	50%	117%	63%	74%	Dry
2010	111%	92%	92%	133%	99%	105%	Normal
2011	149%	136%	113%	134%	111%	129%	Wet
2012	63%	68%	66%	45%	54%	59%	Dry
2013	56%	51%	42%	50%	42%	48%	Very dry
2014	60%	51%	48%	55%	43%	51%	Dry
2015	81%	70%	70%	57%	62%	68%	Dry
2016	85%	69%	84%	69%	46%	71%	Dry

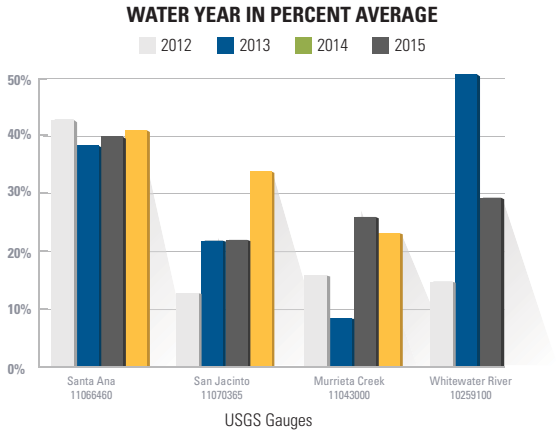
PRECIPITATION (CONT)

Total annual precipitation for the Santa Ana River, Santa Margarita River, and Whitewater River regions was about 85%, 46%, and 69% of average, respectively. The figure to the right shows annual precipitation for three gauges as a percent of average going back to 2011.



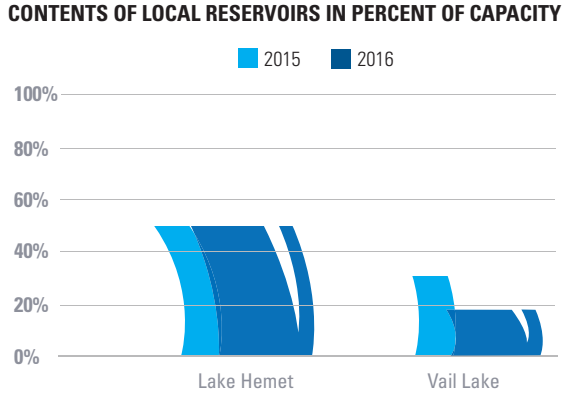
RUNOFF

Statewide runoff so far this water year has been about 110% of average compared to 55% last year. However, in Riverside County, runnoff remained much below average, hovering at 20-40% of normal. The figure below shows runoff as a percent of the historical average for the last four water years at four USGS gauge stations: Santa Ana River at the MWD crossing, San Jacinto River near Sun City, Murrieta Creek near Highway 79, and Whitewater at Rancho Mirage.



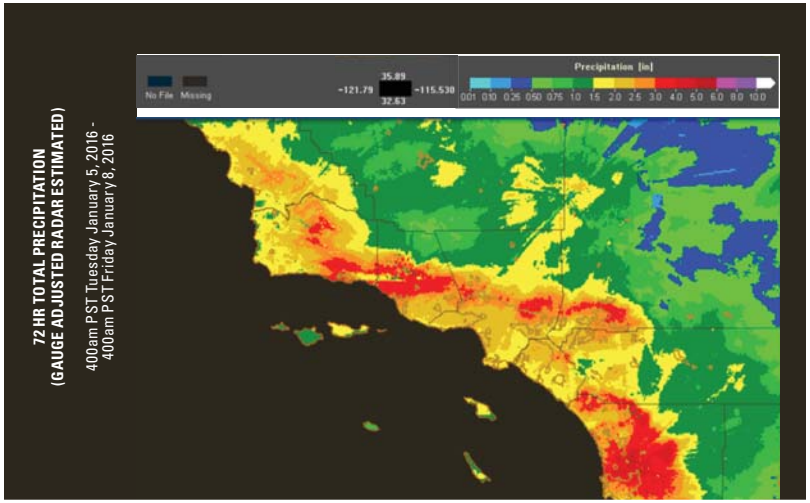
RESERVOIR STORAGE

Statewide reservoir storage is about 90% of average overall, and much improved from 65% one year ago. There are only two managed reservoirs in Riverside County that are fed strictly by stormwater runoff: Lake Hemet and Vail Lake. The figure below shows storage levels at Lake Hemet and Vail Lake as of June 30, 2016 in percent of available capacity.



STORM EVENTS

Following are snap shots of some of the most notable storm events that occurred in FY 15/16. The image on the right shows the cumulative rainfall from the most significant storm of the season - the January 5-7 storm.



January 5-7, 2016

El Niño made a brief but considerable appearance in early January which yielded nearly 2.5" of rain in 2 days causing flooding as seen on Jefferson Avenue in the city of Temecula.

Photo by Alex Groves/The Press-Enterprise

September 8, 2015

Hurricane Linda remnants yielded nearly 0.65" of rain in about an hour causing flooding as seen here along Menifee Road in the city of Menifee. Linda's effect could be felt throughout the county over several days.

Photo by Frank Bellino/The Press-Enterprise

July 19, 2015

Hurricane Dolores remnants yielded 1.15″ to 2″ of rain over a two-day period in the Corona area causing flooding and the need to dispatch emergency personnel for a possible swift water rescue.

Photo by Riverside Police Department Air Support/Twitter

July 19, 2015

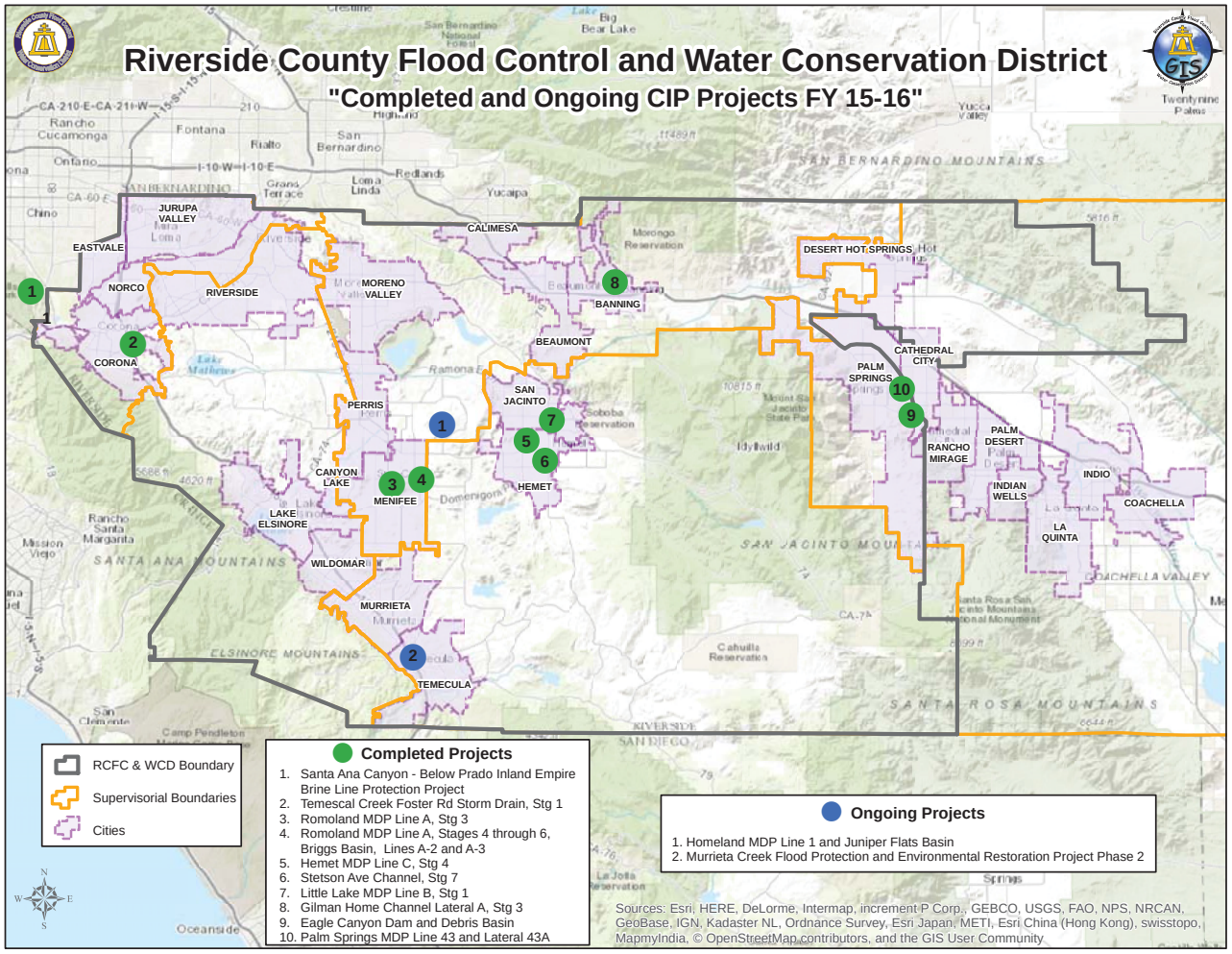
Hurricane Dolores remnants yielded heavy precipitation from localized cells. This cell was estimated by radar to have approximate rainfall rates of 5″ per hour causing the wash-out of an Interstate 10 Bridge near Desert Center.

July 19, 2015

Hurricane Dolores remnants yielded nearly 1.5″ of rain in about 30 minutes causing flooding as seen here in the Canyon Springs and Sunnymead Ranch neighborhoods in the city of Moreno Valley.

Photo by Joe Bender/The Press-Enterprise

CAPITAL PROJECT HIGHLIGHTS



COMPLETED PROJECTS

1 SANTA ANA CANYON - BELOW PRADO INLAND EMPIRE BRINE LINE PROTECTION PROJECT

The $6.3 million Inland Empire Brine Line Protection Project consists of the installation of approximately ***2,500 lineal feet of sheet pile, with a maximum toe depth of 55 feet,*** secured by tiebacks spaced approximately every 10 feet. The proposed project will protect the Inland Empire Brine Line from being exposed due to possible erosion caused by the Santa Ana River and Aliso Creek.

2 TEMESCAL CREEK FOSTER ROAD STORM DRAIN, STAGE 1

The District constructed this $1.7 million underground storm drain in Foster Road from I-15 to Temescal Creek to address historic flooding issues. The project also includes environmental enhancement adjacent to Temescal Creek.

3 ROMOLAND MDP LINE A, STAGE 3

This $6 million segment of the Line A project ***is constructed of two miles of earthen interim channel from the San Jacinto River near Goetz Road*** to just upstream of Interstate 215. The project provides an outlet for the remaining portion of Romoland MDP Line A and Homeland Line 1 described below.

4 ROMOLAND MDP LINE A, STAGES 4 THROUGH 6, BRIGGS BASIN, LINES A-2 AND A-3

3 MAJOR FACILITIES

This $27 million project includes three major facilities: Romoland MDP Lines A, A-2, and Briggs Road Basin along with a small portion of a fourth line (Line A-3). This is the longest single project undertaken by the District. The project extends the improvements completed as part of the Romoland MDP Line A, Stage 3 project.

5 HEMET MDP LINE C, STAGE 4

This $4.8 million project ***constructed a 6,600-foot storm drain in the city of Hemet.*** The project reduces recurring flooding along Whittier Avenue from the existing storm drain just east of Palm Avenue to San Jacinto Street.

6 STETSON AVE CHANNEL, STAGE 7

The final stage of Hemet MDP Line D (aka Stetson Avenue Channel) is an approximate ***1,300-foot long underground storm drain*** that collects flows at Hemet Street and connects to the upstream terminus of the existing Line D storm system at the intersection of Stetson Avenue and Meridian Street.

This project completes the Hemet MDP Line D mainline (a more than five-mile long project).

Hemet Pipeline

Eagle Canyon Dam

7 LITTLE LAKE MDP LINE B, STAGE 1

This $6.4 million underground storm drain project extends from the downstream terminus of the existing Meridian Street Channel located south of South Hampton Court. It continues southerly along Meridian Street and Park Avenue to just upstream (south) of Florida Avenue.

The project addresses local flooding at the highway and sets the stage for a future extension that will provide significant flood protection to the local communities.

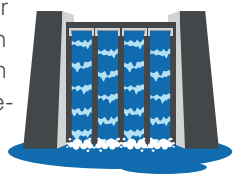
8 GILMAN HOME CHANNEL LATERAL A, STAGE 3

This $4.1 million project consists of two parts. The first part upgraded the existing undersized storm drain in 4th Street from Williams Street to Nicolet Street, and the second part consisted of extending the existing Gilman Home Channel Lateral A, Stage 2 west in Cottonwood Road, north in 10th Street, west again in George Street then northwest along the East Gilman Home Wash (Channel). The project crosses 12th Street and ends south of Wilson Street, joining with the existing East Gilman Home Wash.

This project will allow the abandonment of an existing undersized man-made channel that bisects private property.

9 EAGLE CANYON DAM AND DEBRIS BASIN

This critical, award-winning $11 million dollar project located in Cathedral City puts an end to historic flash flood damage within the Eagle Canyon floodplain and also re-purposes a long blighted parcel.



10 PALM SPRINGS MDP LINE 43 AND LATERAL 43A

This $5 million project primarily serves as the outlet for Eagle Canyon Dam. It includes approximately 2,400 linear feet of pre-cast reinforced concrete box and 1,800 linear feet of reinforced concrete pipe. This project will work in concert with Eagle Canyon Dam to provide flood protection to property along Highway 111 from Golf Club Drive to Auto Park Road.

ONGOING PROJECTS

1 HOMELAND MDP LINE 1 & JUNIPER FLATS BASIN

This $14.3 million project is over two miles long (along Briggs Road and Watson Road) and extends from the Briggs Road Detention Basin to Juniper Flats Basin. The project will complete the backbone flood protection that was initiated with Romoland Line A projects.

2 MURRIETA CREEK FLOOD CONTROL ENVIRONMENTAL RESTORATION AND RECREATION PROJECT PHASE II

The United States Army Corps of Engineers, in partnership with the District and Cities of Murrieta and Temecula, awarded the $16 million construction contract for Phase II of this critical flood protection project during the summer of 2015. The project extends the Phase I improvements ending just downstream of First Street to just downstream of Rancho California Road. This second phase will substantially improve flood protection for Old Town Temecula. Full protection will not be provided until later phases are completed.

DISTRICT HIGHLIGHTS

CAPITAL IMPROVEMENT PROJECTS

This year the District continued a high level of productivity in delivering critical flood protection projects for residents and businesses. **The District expended over $66 million** to bring **11 separate capital projects to completion**, including the Eagle Canyon Dam and Debris Basin project which was awarded the Overall Civil Engineering Project of the Year from the San Bernardino/ Riverside Chapter of the ASCE.

AWARD WINNING STAFF

Helio Takano (center right) was named Civil Engineer of the Year – Public Sector, by the Inland Empire Chapter of the American Society of Civil Engineers.

WET SEASON PREPARATION AND ASSISTANCE

The District Maintenance teams accelerated maintenance and safety operations in preparation of the expected El Niño winter. Advanced preparation included meetings, training, and procedural reviews with local partner agencies to ensure effective emergency response. Emergency environmental permits were pursued to facilitate critical maintenance activities where necessary. The District conducted over 30 community and professional presentations in partnership with TLMA and EMD to help prepare local residents.

CITY PARTNERSHIPS

The District partnered with several cities to co-fund an additional $11 million in city-led flood control projects to accelerate the completion of critical flood control infrastructure within our communities.

Partner projects include:

- Monroe MDP Line E, City of Riverside, ($300K)
- Corona MDP Line 52, City of Corona, ($4M)
- San Jacinto River, Stage 4, City of San Jacinto, ($600K)
- Heacock Channel Sunnymead MDP Line B, ($150K) and
- Moreno MDP Line K-1, City of Moreno Valley, ($160K)
- Calimesa Channel, City of Calimesa, ($2M)
- Desert Hot Springs Line E-5, City of Desert Hot Springs, ($2M)
- Wildomar MDP Lateral C-1, City of Wildomar, ($1.9M)

SURVEYING AND MAPPING

Completed 44 land acquisitions projects, including 29 easements and 15 fee acquisitions, totaling 43.79 acres. Properties and rights were acquired for the construction, operation, and maintenance of District facilities.

The District introduced a Robotic Total Station into the field to enable a two-person crew to accelerate survey work. The new

Trimble S7 Total Station combines scanning, imaging, and surveying into one powerful solution reducing the equipment needed to perform data capture, create 3D models, produce highly accurate visual site documentation, and develop point clouds.

DEPLOYING TECHNOLOGY TO SERVE THE PUBLIC

The District implemented Bluebeam PDF software to digitize and streamline the planned development review process. Since the changeover, in-house work has also been digitized to further facilitate a paperless office and improve efficiency. A partnership with the County Assessor and Surveyor to improve the accuracy of the County's Parcel Lay Database continues to improve the digital accuracy of the parcel GIS layer. **Over 131,000 parcels have been corrected to date.**

The District partnered with County departments to acquire updated aerial imagery of Riverside County to improve the accuracy of the County's District and Geographical Information Systems.

MAINTENANCE

Removed enough graffitti to cover a 6' block wall almost 10 miles long!

Repaired fencing at **800 locations**

Installed 2,000 feet of new fencing

Graded **320 miles** of access roads

50,600 cubic yards of sediment and debris removed from channels & dams

Mowed 1,800 acres of vegetation

Facilitated humane relocation & clean-up of ***35 homeless encampments***

2,150 tons of debris and trash removed

MASTER DRAINAGE PLANS, AREA DRAINAGE PLANS AND OTHER STUDIES

The Board of Supervisor's adopted the San Jacinto Valley MDP in October 2015. The San Jacinto Valley MDP identifies a network of drainage facilities that will alleviate both known and anticipated drainage problems within the San Jacinto Valley area. The project consisted of the consolidation and update of the 1980s Northwest Hemet MDP and San Jacinto Area MDP and the addition of new areas in the northern and western portions of the city of San Jacinto.

Area Drainage Plan (ADP) updates establishing new developer fees to fund flood management infrastructure are in the process for:

- **Moreno ADP** – Will include new drainage facilities proposed in the revised Moreno MDP adopted in April 2015 and recommend a revised drainage fee based on up-to-date construction and right of way cost estimates.
- **Little Lake ADP Update** – Update drainage fee to reflect the latest construction cost and right of way estimates for the proposed facilities.

FINANCE

The District received its 24th consecutive Certificate of Achievement for Excellence in Financial Reporting for its Comprehensive Annual Financial Report (CAFR) Implemented IBM COGNOS reporting tool to simplify and streamline fiscal tracking and reporting for consultant contracts.

The District partnered with the County of Riverside Transportation Department to develop an integrated project cost accounting system to further improve county-wide project cost accounting capabilities.

WATER QUALITY

Impressive improvements to the clarity and quality of **Canyon Lake** waters continue to result from the multiagency partnership funding the **application of alum treatments** to neutralize excessive nutrient levels in the lake and, therefore, reduce the significance and extent of algal blooms on the lake

To better understand nutrient loading to Canyon Lake and Lake Elsinore, the District ***partnered with Western Riverside County Agricultural Coalition*** to update the land use maps that are used to determine potential sources of nutrients to the lakes.

The San Diego Regional Water Quality Control Board enrolled the District, County, and the Cities of Wildomar, Murrieta, and Temecula into the San Diego Regional Municipal Stormwater permit in November 2015. The Permit requires development of a Water Quality Improvement Plan for the watershed. The District Watershed Protection staff, as well as City staff, County staff, and other regional stakeholders are **laying the groundwork for the development of the Water Quality Improvement Plan**, which must be submitted in January 2018.

The District's collaboration with Beaumont-Cherry Valley Water District is picking up as the two Districts embark on the joint effort to construct Beaumont MDP Line 16. Line 16 would recharge approximately 500 acre-feet of stormwater annually into the groundwater aquifer and reduce flooding in the Cherry Valley community.

2016 Employee Campaign Chair Mark Wills and Co-Chair Julianna Gonzalez receive two awards from the Board of Supervisors for District employees' contributions to the campaign

Eagle Canyon Dam Ribbon Cutting

The Distrtict hosts one of the quarterly 2016 County Engineering Association of Southern California Regional Meetings

IN MEMORIAM

KENNETH L. EDWARDS
(1930 – 2016)
General Manager-Chief Engineer

Kenneth L. Edwards served as General Manager-Chief Engineer from 1978 to 1995. Ken was born in Valparaiso, Indiana, and graduated from Valparaiso University in 1952 with a B.S. in Civil Engineering. He received his Masters in Civil Engineering from USC in 1965 and a Masters in Public Administration from USC in 1976.

Ken was employed at the District for nearly 34 years. During this period, Riverside County experienced tremendous growth and the attendant need for drainage infrastructure. Under Ken's direction, the District constructed several hundred miles of open channels and underground storm drains as well as numerous levees, dams, and detention basins at a cost of over $220,000,000.

As Chief Engineer, he assembled a highly professional staff and carefully guided them in accomplishing the District's mission of relieving the people of Riverside County from the devastating effects of uncontrolled flooding. In recognition of his contribution to the District and its citizens, the Board of Supervisors named the District Headquarters in Ken's honor in 1996 as the Kenneth L. Edwards Flood Control Center.

WILLIAM 'BILL' BYRNE, JR.
(1927 – 2015)
Zone Commissioner 2002 - 2015

William "Bill" Byrne, Jr. served as a Zone 6 Commissioner for the Riverside County Flood Control and Water Conservation District from 2002 to his passing on August 2, 2015 at age 87. He was a founding member of the Palm Springs Air Museum, a longtime volunteer with Catholic Charities, and served as Zone 6 Commissioner from 2002-2015.

Bill was a Renaissance man, an accomplished welder, sculptor, designer and builder of race cars, an engineering consultant who played a role in the Saturn Rocket that would take Apollo 11 to the moon and early on in life was a child actor, working with the likes of Shirley Temple. His infectious spirit, dedication, and wonderful stories will be missed by the County.

CELEBRATING SERVICE

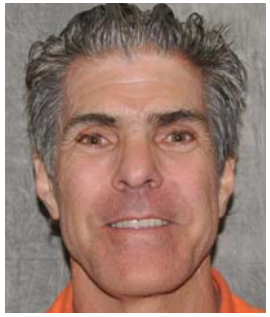
ANTHONY KORHELY
Supervising Land Surveyor
36 years of service

ERIC RUSSELL
Associate Civil Engineer
36 years of service

GREGORY WALKER
Senior Real Property Agent
14 years of service

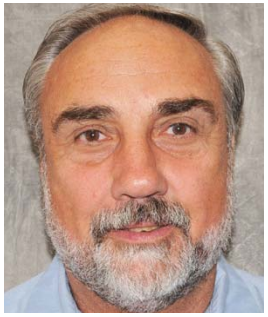
GREGG GRIM
Buyer II
25 years of service

JOHN TAYLOR
Equipment Operator I
12 years of service



MICHAEL SLAICK
Senior Equipment Operator
30 years of service

MICHAEL FISCHER
Principal Engineering Technician
24 years of service



RICHARD SEAGER
Equipment Service Supervisor
15 years of service

THOMAS RHEINER
Associate Engineer-Air/ Water Quality Control-RE
15 years of service

WARREN WILLIAMS
General Manager-Chief Flood Control Engineer
39 years of service

Riverside County Flood Control
and Water Conservation District
951.955.1200
rcflood.org