



December storms bring heavy rainfall, flood control & urban drainage systems perform well



Stormwater held behind Big Dry Creek Dam; 8,437 acre-feet of water from Dec./Jan. storms.

The storms that moved through Fresno and Clovis in late December and extending into the first two days of January were historical in many ways. According to the National Oceanic and Atmospheric Administration (NOAA), a total of 7.43” of rain fell on Fresno and Clovis in a 33-day period, from December 1, 2010 to January 2, 2011. The 5.92” of rainfall in December was the second highest rainfall amount ever

recorded in Fresno and Clovis in the month of December, and the seventh highest ever recorded for any month. December also saw three separate record-setting days for high rainfall totals. Average annual rainfall for this area is 11.23 inches, so receiving 66% of the year’s rainfall in 33 days was remarkable.

Storm operations around the clock

District staff managed 137 urban stormwater basins and nine rural flood control facilities. These sites were monitored and valves and pumps operated to maximize flood protection while not exceeding capacity of channels and by adjusting water levels to maintain capacity to accommodate incoming stormwater. Staff worked 24 hours a day in three shifts for 10 days, including Christmas and New Year’s. Water was

‘Storms’ continued on page 3

Flood insurance costs reduced for 650 parcels

The improvement of Fancher Creek Detention Basin at McKinley and McCall has permitted a request for changes to the Department of Homeland Security-Federal Emergency Management Agency’s (DHS-FEMA) flood map in the area downstream from the basin. The changes are expected to be approved by DHS-FEMA later this Spring. The basin is large, at 270 acres with an ultimate storage capacity of just under 1,900 acre-feet. As a point of reference, the average urban stormwater detention basin ranges from about eight to 25 acres.

Caltrans extracted fill material for freeway construction and greater capacity means better protection for downstream

parcels, and also a reduction in the flood insurance requirements lenders impose on property with federally insured mortgage loans. The insurance requirements are based on DHS-FEMA flood maps and the identified level of flood risk to particular parcels. According to DHS-FEMA, the average annual flood insurance premium is \$628*, and the owners of 650 parcels downstream from Fancher Creek Detention Basin may no longer be obligated to buy flood coverage, or may continue coverage at lower premiums. The District

*Figure from 2007, based on replacement cost coverage of \$231,000.

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Message from the General Manager



Bob Van Wyk

As we reflect on our accomplishments of 2010 and the challenges and objectives of 2011 we are reminded the District has provided services to our community for fifty-five years. The community had been in existence for over one hundred years prior to creation of the Flood Control District. Needless to say, there was a lot of work to be done just to catch up and provide services to a rapidly growing community.

The Flood Control District has always relied on input from the citizens of our community. The program was authorized on June 5, 1956 by voters with a five to one majority. Since then citizens themselves have taken an active role in solving drainage problems through participation on the appointed Board of Directors. As of today, eighty-one citizens have served on the Board. Each Board has followed the same objectives – the realization of an effective, efficient and economical storm drainage and flood protection program.

Since 1956, the Board has developed and implemented a master drainage plan, authorized construction of more than 600 miles of pipeline, and the purchase and construction of 154 urban drainage basins. Secondary uses of urban stormwater management basins for groundwater recharge and recreation has also been a consistent priority.

The Way We Were

1969 - Shields and Lorna, 2 blocks west of Hughes, looking southwest



Frank J. Sanders car dealership on Tulare, west of First St., 1969



Hammond Ave., east of Dry Creek canal, March 23, 1958



Major Projects Completed in 2010

Fifteen capital projects funded in large part by the American Recovery and Reinvestment Act (ARRA) were completed in 2010. ARRA funds totaled \$3.89 million, and the District's contribution was \$760,000 in addition to administrative and engineering staff time.

A recurring flooding condition at McKinley and Academy was resolved by replacing an undersized culvert and doubling the flow capacity under the road to alleviate out of channel flooding during large storms. The \$448,000 project was funded jointly with the County of Fresno, and improved traffic safety. Property owners worked cooperatively with the District to provide right-of-way to improve Fancher Creek, too.

Among the larger projects completed in 2010 were Contract HH-25, a \$980,000 project which provided permanent drainage service to a large industrial area near Maple and Jensen, and Contract UU3-27, an \$850,000 project that provided permanent service to both industrial and residential areas along with eliminating the historical flooding of Belmont Avenue just west of Highway 99.

Projects On Deck for 2011

The Board wisely chose to emphasize the funding of pumping systems in the urban area over the last several years. That emphasis paid off in the very wet December and early January, as the community experienced very little flooding and inconvenience from almost seven inches of rain in 17 days through the holidays. This was an extraordinary amount of rainfall for the Fresno/Clovis area.

Several pumping facilities will be constructed in 2011. Among these are pumping stations at Basin "3A", northeast of Shaw and Willow, Basin "5B/5C" south of Sierra and east of Villa, and Basin "W" at Minnewawa south of Freeway 180. Importantly, facilities will be constructed to divert Pup Creek to Basin "3A" as needed to reduce the flood risk in Clovis, and a gravity relief line from Basin "3G" at Locan and Barstow to better control water in a partially excavated basin. Work continues on the improvement of drainage in a triangular area the between Freeway 41, Highway 99 and Ventura Avenue as part of the effort to complete drainage work in an older area of Fresno. The District is also working with the Fresno Unified School District to relocate a portion of a basin to accommodate the school district's plan for an expanded footprint for the Southwest Middle School. The Board is approaching the planning and allocation period for additional projects to be funded in the 2011/2012 fiscal year.

Storms

Continued from cover

moved between basins, and sometimes out to Fresno Irrigation District canals and the San Joaquin River to preserve basin capacity and prevent flooding. Fifty-five electric pumps and 18 portable pumps were used to move water from basins, and telemetry allowed remote monitoring and adjustment of water levels in 67 sites. Eight of the approximately 137 basins exceeded their capacity and stormwater flowed into the streets. Traffic was impacted for a short time in these areas, but no property damage resulted.

The District's two largest reservoirs, Fancher Creek Reservoir, a 1,524-acre site east of Academy at Bullard, and Big Dry Creek Reservoir (cover), a 3,790-acre site northeast of Clovis, controlled approximately 10,500 acre-feet of stormwater. Operational information gathered by staff during these rain events will be used to prioritize future storm drainage construction projects.

Storms cause damage around the state

Seven California counties declared states of emergency as a result of this series of storms. Roads washed out, one section of freeway was impassable due to flood water, and houses, business and schools were flooded. Our community's lack of flooding damage showed the importance of the investment in storm drainage and flood control infrastructure made by Clovis, Fresno and the County. The system performed well

Flood insurance

Continued from cover

recommends that property owners continue to carry flood insurance at the reduced rate. While this flood control facility has reduced flood risks, no flood control facility completely eliminates flood risks.



Looking east - channel branches off into Fancher Creek (l) and Mill Ditch (r) at the new head works.

In December the District notified owners of the 650 affected parcels of the request for map revisions. Once the revisions are approved property owners will be notified. The facility provides increased flood protection to a large downstream area, and at times allows downstream channel

and apart from small, temporary areas of localized street flooding, the metro area was relatively free of flooding. As some readers will remember, our community has historically been prone to flooding during severe storm seasons. Since construction of the Master Plan storm drainage system began in the mid-1960's, an ever-increasing inventory of pipelines, basins, dams and reservoirs has provided an ever-increasing level of flood protection to homes, businesses and property.

Thanks to our municipal & agency partners

As described in the Winter 2010 issue of *Flood Line*, teamwork among FMFCD, other agencies, and municipalities is critical during storms. During the December and January rainfall, FMFCD coordinated storm event operations with the Cities of Clovis and Fresno, the County of Fresno, and the Fresno Irrigation District. The U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation coordinated flows on larger rivers and prevented impacts to downstream communities.

Keeping streets clean and storm drain inlets clear and providing canal conveyance of stormwater, in concert with the District's advance planning, and the capture, movement and storage of stormwater kept Fresno and Clovis safe. Without this interagency coordination, and without the extensive inventory of flood control structures and facilities, there would be post-storm flood clean up and damage repair to homes and businesses throughout the community.

capacity to be available to urban drainage systems.

The 270-acre site is divided by Fancher Creek, now a lined channel operated by FID.



Trucks and excavators move dirt from Fancher Creek Detention Basin at McKinley and McCall for use in the Caltrans 180 East expansion project.

The project combined, rerouted and improved 1.6 miles of Fancher Creek and releases into Fancher Creek, Mill Ditch, or both. Releases are controlled by a new head works on the westerly end of the site. Excavation of 2.2 million cubic yards of dirt created the flood water storage capacity, with another 800,000 cubic yards of material yet to go. Excavation reached this state of completion in large part through a partnership with Caltrans, which needed the fill material to build its Highway 180 East expansion project.

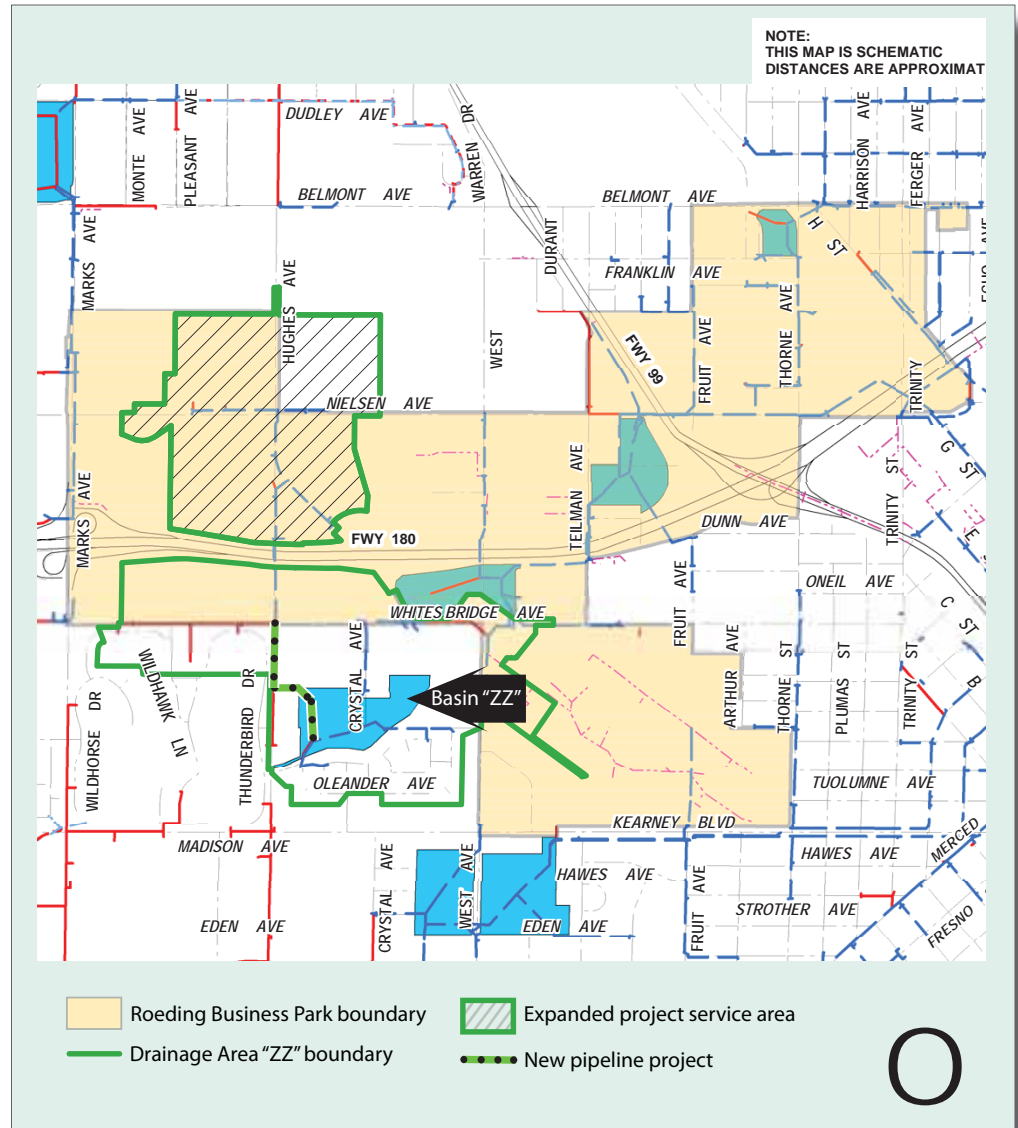
Major Trunk line to Serve Roeding Business Park Area

A major storm drainage pipeline project will be constructed to serve the businesses and homes in the area northwest of Chandler Airport in southwest Fresno. Nineteen-hundred linear feet of pipe, mostly 54" and 60" in diameter, will be constructed in Hughes Avenue south of Whites Bridge to the 24-acre stormwater basin about a quarter mile from the intersection. The basin, located south of Whites Bridge between Hughes and West Avenues, is designed to capture and store urban storm water runoff from a 413-acre area with a mix of commercial, industrial, agricultural, and residential uses. Construction is expected to start this summer, and should be completed within 60 days.

When completed the trunk line will provide permanent storm drainage service to about 167 acres of land north and 246 acres south of Freeway 180, near Highway 99. This area currently has temporary ponds to handle storm drainage. When Freeway 180 was extended west of Highway 99, Caltrans built the storm drain in Hughes, across the freeway. This project will connect it to provide permanent drainage service. The new area of service represents roughly 40% of the overall acreage of Drainage Area "ZZ", so this is a significant piece of the system. Following this project roughly 80% of the drainage area will have permanent drainage service.

Project Aligns with Redevelopment Goals

The Fresno Redevelopment Agency (RDA) has committed \$250,000 to the roughly \$450,000 project cost, with the condition that the work be awarded in fiscal year 2010/2011. The RDA is interested in the project because it will provide permanent storm drainage to the Roeding Business Park, a 954-acre area shown on the map above



The storm drainage trunk line project planned for Hughes Avenue, south of Whites Bridge, will nearly complete storm drainage service to the 413-acre drainage area and allow improved movement of stormwater off of streets and into 24-acre Basin "ZZ".

in tan. Roeding Business Park is zoned for general heavy commercial, light industrial and heavy industrial uses. It is located within a federally designated Empowerment Zone and State designated Enterprise Zone, which can offer significant tax savings to qualifying businesses.

The trunk line project was anticipated to be built with the Running Horse development, but the financial failure of the mixed use housing/retail development and golf course project delayed the completion of the storm drainage system.

GPS Survey Equipment Saves Time, Money

The District is using a new suitcase-sized GPS survey unit in its engineering and operations tasks. Purchased in November, the unit is being test-driven by District staff and is expected to save both time and money. Some survey work that used to be done either by local consulting firms or by two-person teams of District staff can now be done by one person. A second money-saving development is the decision not to build a GPS signal broadcast station to support the new equipment. Research into the District's options for sending and receiving information from the GPS unit led to an arrangement with Caltrans for use of their base station network (from Bakersfield to Chowchilla), at no cost. Caltrans offers the same use to the City of Fresno and the County of Fresno. This alone saved the District nearly \$23,000 on station equipment costs.

"The primary use of the equipment will be in managing the District's excavation permit program, providing greater speed and accuracy in verifying basin grades. The District

permits dirt to be removed from basin sites that need excavation to companies that need fill material for their construction projects. Basin grades can be recorded before and after excavation to determine how much material was excavated. The equipment will also allow staff to perform certain limited survey functions without the need and expense of consultant surveyors, as well as data collection for the District's GIS system," explains Dan Gilbert, Senior Engineering Tech in the District's Rural Streams section. Dan further explained, "The new unit will be particularly useful for surveying performed in remote areas where traditional survey reference points are less available. Satellite network signal access allows the surveyor to use the equipment at a site without the need to start the survey at a known point which might be a distance away. Data collected can also be integrated into the District's GIS system for refinements and updates."

On the News

During December and January the District was well represented by its staff on a variety of local news broadcasts. Topics included the District's major areas of responsibility. General Manager Bob Van Wyk talked with news reporters from KFSN 30, KGPE 47, KMPH 26, KSEE 24, and the Fresno Bee newspaper about storm operations and how the urban drainage and flood control systems work together to keep Fresno and Clovis safe and dry. Engineer Sarai De La Garza shared storm and operations information with KFTV 21. Assistant District Engineer/Design Engineer Alan Hofmann talked with KGPE 47 about the recent completion of a major rural flood control project, Fancher Creek Detention Basin (see cover), and the anticipated flood insurance savings to downstream property owners. Environmental Resources Tech Patrick Bryan did interviews for several English and Spanish T.V. and radio stations, as well as KBIF 900 AM for



Hmong translation. His message focused on informing the public about the importance of their pollution-preventing practices at home and the connection between the urban storm drain system and water quality.



Environmental Resources Tech Patrick Bryan on KSEE's Central Valley Today with Alex Delgado

The District is grateful for the opportunity to inform the public of its work to provide flood and storm protection to the Fresno/Clovis area and for help in its effort to reduce stormwater pollution through public education and outreach. Local print, television and radio media outlets have been effective partners in keeping the public apprised of what their tax dollars make possible through the work of the Fresno Metropolitan Flood Control District.



Keys to San Joaquin River Parkway's Success



Guest writer:
Melinda Marks
**Executive Officer,
San Joaquin River
Conservancy**

The San Joaquin River Conservancy is a regionally governed state agency formed to implement and manage the San Joaquin River Parkway. The Parkway is a planned 22-mile regional natural and recreation area in the river-bottom extending from Friant Dam to Highway 99. The Conservancy's mission includes acquiring approximately 5,900 acres from willing sellers, operating and managing those lands for public enjoyment, and protecting, enhancing and restoring riparian and floodplain habitat. This mission is accomplished, in part, through local partnerships.

The Fresno Metropolitan Flood Control District has been a long-term, key partner in establishing the Conservancy, creating a vision for the Parkway, facilitating daily operations, and planning and developing Parkway projects. The Conservancy is governed by a board representing twelve state and local agencies to coordinate and mediate diverse public interests. The District, represented by Doug Harrison, was a founding member of the Board. Mr. Harrison was directly involved in the advisory team that guided the San Joaquin River Parkway Master Plan adopted by the Conservancy in 1997. More recently, District Director Kendall Groom has served as a Conservancy Board member.

As reported in the Fall 2008 issue of *Flood Line*, District stormwater quality management infrastructure has been adapted to create new wetlands at the Conservancy's Jensen River Ranch. Stormwater runoff from the surrounding



Storm drainage channel serving a neighborhood just south of the river delivers water to the created wetland along the MacMichael Trail, near the Jensen River Ranch.



drainage area is directed to created wetland ponds, full of willows, cottonwoods, and wildlife. The new habitat is thriving and bird life can be observed

from the Tom MacMichael Sr. Trail (above) at Jensen River Ranch. The trail is a 1.5-mile loop that winds through open fields along the river. Thousands of native trees and shrubs have been planted, including bush lupine, blue elderberries, California poppy, Valley oaks and sycamores.

Other District stormwater quality facilities are located along the river in the Parkway planning area. One day these detention ponds may also provide runoff water for new wetland swales and wildlife habitat in the Parkway. People can see close up the stormwater quality outfalls (below, far left) at Jensen River Ranch and at the Parkway's Riverside Trail.

The trail crosses the outfall behind the 10th hole at Riverside Golf Course. The District's Basin "EK" is adjacent to a future Parkway park, named for plan-



View east from the future Riverbottom Park.

ning purposes "Riverbottom Park." It will offer a nature area and hand-carried boat launch. Construction plans are ready for this park, which can be funded as soon as proper park management resources are secured.

The Flood Control District rents office space to the Conservancy at cost. This efficient use of resources saves the public money and provides the Conservancy with excellent mapping, information tech support, engineering guidance, and administrative support. This close working relationship, one of many Conservancy collaborations, is critical to conserving the natural and cultural resources of the river, and providing public access to nature and recreation on publicly owned Parkway lands.

- Melinda Marks

New Residential Award Program for Central Valley Friendly Landscapes



A new award program has been launched to recognize Fresno/Clovis metropolitan area gardens that provide living examples of how landscaping at our homes can be beautiful, natural and healthful. Residential landscapes that follow the program's seven guiding principles and strive to protect and conserve water and

other natural resources can receive the designation 'Central Valley Friendly'. Central Valley Friendly gardeners provide neighborhood models of what a Central Valley Friendly garden can offer – from an edible kitchen garden to native wildlife habitat to a Mediterranean retreat, and they can inspire others to use environmentally-friendly practices.

What makes a landscape Central Valley Friendly? Seven guiding principles:

1. Conserve water and ensure water quality,
2. Conserve energy and protect air quality,
3. Nurture the soil,

4. Reduce garden waste or send less to the landfill,
5. Practice Integrated Pest Management,
6. Select appropriate plants, and
7. Create habitat and protect wildlife.

Applications are now available. The deadline to apply is June 1, 2011, and notification of winners will be made by September 1, 2011. Visit ucanr.org/cvfriendlylandscaping to download the CV Friendly checklist and application to assess your current practices. You could be on your way to creating an award-winning garden!

This new award program was developed by City of Clovis Public Utilities, Clovis Botanical Garden, City of Fresno Water Conservation Division, UC Master Gardeners of Fresno County, and the Fresno Metropolitan Flood Control District. The District supports this award program because of its alignment with our messages to discourage over watering of landscapes to prevent the transport of yard chemicals, and to promote the use of less toxic garden products as part of a community-wide effort to reduce stormwater pollution. The award program is modeled after successful public education programs in California's Bay Area and Florida.

May is Water Awareness & Water Safety Month

We all need water to live, and it's up to us to keep ourselves and our kids safe around water. Were you aware of that? Of course you were! Then you are ready for Water Awareness and Water Safety Month in May. Each year both the Central Valley Water Awareness Committee (CVWAC) and the Water Safety Council of Fresno County approach the City Councils of Clovis and Fresno and the County of Fresno Board of Supervisors and ask that May be proclaimed Water Awareness Month and Water Safety Month. These proclamations draw public attention to the importance of each citizen's choices and behaviors in:

- Understanding that preserving and protecting our water supply is critical, and that it is up to all of us to conserve water and keep it pollution-free.
- Keeping our children and ourselves safe around all bodies of water through learning to swim, never swimming alone, and providing constant supervision to kids in and around ALL water.

To learn more about water quality and supply, visit [www](http://www.centralvalleywater.org).

centralvalleywater.org, and to learn more about water safety, visit www.watersafe.org. Mark your calendar for the annual Water-Wise Plant Exchange on Saturday, May 7 at the CSUF Horticulture Greenhouses. This event is sponsored in part by CVWAC. You are also invited by the Water Safety Council to sponsor swimming lessons for kids who may otherwise not be able to afford them. Fifteen dollars from you can teach a child how to swim, through a partnership with City of Fresno Parks, After school, and Community Services' Aquatics Division. To sponsor, call Brandy Swisher at 456-3292 or e-mail brandys@fresnofloodcontrol.org.

The District has been a proud and active member of both the Central Valley Water Awareness Committee, since 1989, and the Water Safety Council of Fresno County, since 1982.





Fresno Metropolitan Flood Control District

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Need a speaker?

If your agency, organization or community group is in the Fresno/Clovis area and you'd like a presentation on the flood control and urban storm drain system, water resource management or pollution prevention - contact Brandy Swisher at brandys@fresnofloodcontrol.org or (559) 456-3292.

Close Up: Norma Lopez

Norma Lopez came to work at the District in April, 2005 and works as an Office Assistant III, providing support and organization for the District's Environmental Resources, Accounting, and Information Technology departments. Norma is a native Fresnan, who graduated from Central High School, and from Fresno City College with an Associates in Business Administration. She will soon complete her Bachelor of Business Management program at Fresno Pacific University.

Prior to the District, Norma's previous employer for five years was California Manufacturing Technology Center, a private non-profit that provides consulting services to California's small and medium-size manufacturers to increase their competitive advantage through improved methods of management and manufacturing.

Norma has three daughters, Amber, 19; Mary Ann, 15; and Cheyenne, 8 years old. And of course, there's Weezy, the family's 5 year-old Chihuahua mix, who doesn't realize he's a dog. Because of Norma's full-time work and school schedules, free time is at a premium and her preferred way to spend it is with her girls. She and her daughters enjoy spending time together outdoors and love summer time at the beach. Norma does squeeze in a little time for friends, but her focus is always her girls, and her goal is to finish her bachelor's program in a few months.

A family priority, in addition to education, is service to others in the form of volunteering, particularly helping people less fortunate than themselves. Norma works to instill in her daughters a natural sense of giving back to the community in a variety of ways, participating in activities through People's Church and on their own at school.

One of the things Norma enjoys about working at Flood Control is that everyone is so willing to help one another. She finds that it makes everyone's job easier. She also appreciates that staff feedback is solicited and encouraged by management.

As expressed by Frances Lopez, Office Manager and Norma's supervisor, "Norma became part of the Office Assistant Team nearly six years ago. She brings to the District a positive attitude and a strong work ethic. Supporting various departments at times can be challenging, but not for Norma. She has the skills to complete the job, and is always willing to take on more challenges. I truly admire her taking the initiative in completing her Bachelor's Degree and her dedication to her three daughters."



Norma Lopez and her daughters (l-r) Mary Ann, Amber and Cheyenne, and Weezy the tiny family dog.

