



City of Vacaville

**After Action Report:
December 2005 Floods**

*FINAL REPORT
May 17, 2006*

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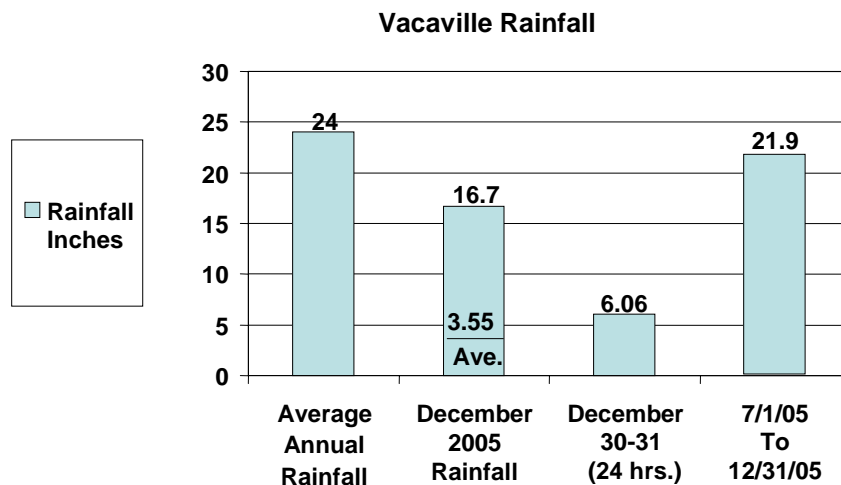
Introduction

- This report summarizes the actions taken by the City of Vacaville before, during, and after the flooding that occurred in late December 2005. These actions are organized into three sections:
 - The **Pre-Impact Phase** section includes actions taken on a regular basis throughout the year to prepare for winter storms and for all types of emergencies. It also outlines the specific actions taken during the period of December 26 – December 30 in anticipation of major storms following a month of heavy rainfall and ground saturation.
 - The **Impact Phase** section focuses on the emergency response period. It includes a chronology of the events of Saturday, December 31, as well as a summary of the calls for service and the staffing levels for that day. An outline of the public information/outreach effort during the emergency is also included.
 - The **Post-Impact Phase** section documents extensive efforts by the city organization to respond to the damage caused by the floods and to facilitate the recovery effort. This includes the response to public property damage (the traditional role of local government), as well as the City's efforts to assist residents in recovering from damage to their homes and possessions.
- Following this summary is an assessment of the way that the City organization prepared for and responded to the situation. Included are conclusions and the steps being taken to improve the way that the City deals with emergencies of this type.
- This report also includes a summary of the most recent (1990) comprehensive study of the Ulatis Creek Watershed. The major creeks in this watershed include Ulatis Creek, Alamo Creek, Horse Creek, Gibson Canyon Creek, Sweeney Creek, and McCune Creek.
 - Actions taken by the City in response to this study are described.
 - The rainfall data and model used in the Watershed Study was updated in the late 1990's. The City requested that the Solano County Water Agency (SCWA) prepare an update to this report, including a review of the proposed mitigation alternatives, based on flooding experienced in 2002 and in December 2005. The SCWA Board retained the firm of West-Yost Associates to conduct the study, which is scheduled to be completed by November/December 2006.

Summary of Event

The Solano County Water Agency (SCWA) commissioned the engineering consulting firm of West Yost Associates to conduct a detailed evaluation of the magnitude of the December 30-31, 2005 storm. The following summary incorporates the consultant's findings. The executive summary of the evaluation was received on April 13, 2006 and is attached to this report as **Exhibit 31**.

- Heavy rains were experienced in Vacaville during the month of December 2005, intensifying during the week of December 26 – 31.
 - December 2005 rainfall totaled more than 16 inches, compared with a December average of 3.55 inches. This represents almost 70% of the average total annual rainfall (24 inches).
 - A major storm resulted in approximately 6 inches of rain during the twelve-hour period between 7:45 p.m. on December 30 and 7:45 a.m. on December 31.



- The December 30 – 31 storm was the most severe that Vacaville has seen in years. By comparison, the December 2002 storms totaled 6.91 inches of rainfall, but over a four day period (December 13 – 16).
- The intense rainfall that occurred between 7:45 p.m. on the 30th and 7:45 a.m. on the 31st was preceded by several days of heavy rain that saturated the ground and contributed to the flooding. Once the ground becomes saturated, most of the rain becomes runoff, thereby increasing the flows in the creek system. This is evident in the fact that the rainfall measured by most of the city's rain gauges indicated no more than a 40-year storm, but the creekflows measured in Alamo Creek and Ulatis Creek

at the eastern edge of the City were at the FEMA 50-year and 100-year flow rates respectively, despite significant overflows that occurred upstream in these two watersheds.

- Ulatis Creek experienced measured creekflows in excess of the FEMA 100-year flow rate at the stream gauging station at Leisure Town Road, even with the significant outbreaks at the Creekside Mobile Home Park on Aegean Way, upstream and downstream of the Nut Tree Road Bridge, and the overtopping at Leisure Town Road. The measured peak flow at this location is estimated at 4,000 cubic feet (or almost 30,000 gallons) per second, the highest peak recorded during the last nine years of stream gauging.
- Alamo Creek at Vanden Road experienced measured creekflows just below the FEMA 50-year flow rate, despite the significant overflows identified upstream of Interstate 80 and the overflows between Peabody Road and the Putah South Canal. The measured peak flow at this location is estimated at over 5,400 cubic feet (or more than 40,000 gallons) per second, which is 54% higher than the recorded flows during the December 16, 2002 storm event, and the highest peak recorded during the last nine years of stream gauging. Due to the volume of storm water in the flooded areas, it is estimated that the frequency of the storm flows for Alamo Creek would be in line with the measured flows of Ulatis Creek (100 year storm flow), even though the measured peak flow is estimated around the FEMA 50 year flow rate.
- Flooding occurred in localized areas of Vacaville between approximately 11 p.m. on the 30th and 9 a.m. on the 31st. Most of the flooding occurred in residential areas. Approximately 3% of households experienced flooding of their homes, garages, and/or cars.
 - Detailed maps of the flooded areas are being developed. Drafts of these maps are provided in **Exhibit 1**.
- There was one storm-related death in Vacaville.
- Total damage in Vacaville exceeded \$25 million. A summary of the initial damage estimates is provided in **Exhibit 2**.
 - Approximately 900 homes experienced flooding. Of these, approximately 500 experienced flooding in the living areas of the home.
 - Approximately 500 vehicles were flooded.
 - Four businesses experienced flooding.
 - Damage to public property (primarily creek bank erosion, bike path damage, slides in public open space, damage to the downtown CreekWalk, and flooding of the City corporation yard and water treatment plant), along with the cost of emergency response, was initially estimated at more than \$2 million.

Pre-Impact Phase: Planning

Dates: *Through 12/30/05*

Annual Storm Drainage and Flood Control Preparedness

- Preparation for winter storms includes an annual storm drainage maintenance and creek clearing program.
 - Clearing of creek flow lines includes the removal of downed trees, large debris (e.g. shopping carts), and arrundo donnex (bamboo). Small trash (e.g. cups, bottles) and types of plant growth that tend to “lay down” in heavy creek flows is not removed as part of the city’s creek clearing program. The City’s creek clearing activities are governed by the regulations of the State Fish & Game Department and are limited by private property ownership and the need to maintain vegetation to control creekbank erosion.
- Most creek clearing is handled by CMF work crews.
 - The CMF crew periodically walks the creek banks looking for downed trees and obstructions. Most notably this year, prior to the December storm, they removed 16 large trees that were down in separate locations in Alamo Creek alone. They also removed many downed trees, tules, bamboo, homeless encampments, shopping carts, bicycles, and miscellaneous debris from all of the creeks including Alamo, Encinosa, Ulati, Gibson Canyon, Pine Tree, and Laguna Creeks.
- The City adopted performance measures for storm drainage in 1999. The annual goals include clearing 40% of major creek channel flows annually.
 - This goal has been exceeded each year from 2000 to 2005 (**Exhibit 3**). In most years, 95% or more of major creek channel flows were cleared.
 - CMF did not provide work crews for the majority of 2004, resulting in major creek clearing activity for that year only slightly above the established goal.
- Vacaville also participates in the annual Solano County Coast & Creek Cleanup Day, which helps to reduce the small trash in creeks. In 2005, 265 Vacaville volunteers cleaned 19.5 miles of creeks, collecting 9,688 pounds of trash and 1,011 pounds of recyclables.
- Storm patrol is provided by Street Maintenance and Field Utilities crews from the Public Works Department. These crews combine to perform routine storm preparedness assignments.
 - The City is broken into twelve areas and one person is assigned to each area. Their job is to inspect drain inlets, creek conditions, and issues related to prior flooding incidents in their assigned areas. While on patrol they clear any inlets that appear to be plugged and correct any problems that can be

done quickly and without assistance. If a problem is identified within one of the areas that is too large or time consuming for the inspector to handle alone, he routes this problem to one of the Supervisors, who in turn dispatches assistance as necessary.

- Additional storm patrol capabilities are provided by one sweeper operator, two 2-person vacuum truck crews, three 2-3 person emergency crews, and the CMF Roving Crew consisting of ten inmates from the California Medical Facility. The Field Utilities Supervisor and the Street Maintenance Supervisor act as coordinators and their work is overseen by the Public Works Maintenance Superintendent.
 - Beginning with the first rains in October 2005, Storm Patrol was performed in Vacaville 16 times prior to the December 30-31 storm.
- Catch basin cleaning is performed regularly. There are several different types of catch basins: those with grate inlets, those with side openings, and those which are a combination of the two. Those with only a grate opening require the most maintenance. Leaves and debris hang up on the grate causing them to plug. With all types of catch basins the subsurface boxes can also collect sediment.
 - Grates are cleaned throughout the year, but most intensely immediately preceding and during a storm because that is when most of the leaves fall. Approximately 200 inlets boxes required sediment removal from the subsurface boxes, and they were cleaned throughout the year.
- A Storm Drainage annual public education campaign focuses on keeping storm drains clear of leaf litter. Details about this campaign are provided in **Exhibit 4**.
 - In addition to public education, during leaf season Vacaville Sanitary Service street sweepers make multiple passes in heavy leaf areas in an effort to keep the streets clear. Contrary to popular perception, however, the sweepers are designed to collect dirt and small debris only. It is difficult to collect large volumes of leaves, and particularly difficult to collect wet leaves. During the season, the sweepers are allowed to deposit their loads at the City Corporation Yard, rather than making the trip to the landfill, so as to remain on the routes longer.
- Sand bags and sand are stocked at the City's Corporation Yard and made available to residents.
 - Public Works Maintenance routinely stocks approximately 20,000 sand bags at the Corporation Yard and approximately 75 cubic yards of sand. Prior to the December storm there were approximately 25,000 sandbags on hand, and as the stock diminished an additional 20,000 were purchased.
- Rainfall and creek level gauges are used to monitor storm activity.
 - The City has four rain gauges, located at the Three Oaks Community Center, the Ulatis Cultural Center, Browns Valley Reservoir, and at Mount Vaca.

Rainfall totals are accessed via the internet, and information from these gauges is posted on the City's website at:
(http://www.cityofvacaville.com/departments/public_works/flood_control.php).

The 15 minute, 30 minute, one hour, and two hour totals are accessed through the phone system by City employees to determine rainfall intensities. During the December 30-31 event, the rain gauge at Mount Vaca was damaged or malfunctioning (i.e. not accurately reporting data).

- The City also has a stream gauge on Alamo Creek at the Marshall Road Bridge posted on the City website. Depending on the intensity of the rainfall, a creek reading of approximately 9 feet at this location may correlate to minor street flooding in the Tulare Drive neighborhood due to the flap gates closing.
- The City also closely monitors Triple Doppler at the TheKCRACHannel.com website, the Weather Channel website, the National Oceanic & Atmospheric Administration (NOAA) website, and broadcasts from the National Weather Service communication on Weather Alert Radio.

Annual Emergency Operations Planning

- Emergency operations planning and training took place throughout 2005.
 - Emergency Operations Center (EOC) training occurs each year. Training activities for calendar year 2005 are summarized in **Exhibit 5**.
 - The Fire Department updated its Standard Operating Guidelines (SOG) for flood emergencies in February 2005 (**Exhibit 6**).
 - The City's new Emergency Operations Center (EOC) opened in the fall of 2005.
 - All City employees were reminded of their responsibilities as Disaster Service Workers in an employee newsletter that was distributed on December 15, 2005 (**Exhibit 7**).

Actions taken during the week of December 26, 2005:

- During the week of December 26, 2005, the City of Vacaville participated in county-wide planning and coordination through the County Office of Emergency Services, as follows:
 - On Tuesday evening December 27, 2005, the following e-mail was received from Emergency Services Manager Bob Powell of Solano County OES.

"Solano County OES has been advised by the National Weather Service and State OES that a series of storms will be impacting Northern Calif. over the next week. The storm coming in Tuesday night could bring in 1-3" in the valley and up to 3-5" in the mountains. These amounts are for the time period of 1800Hrs to 1200Hrs Wednesday. This is a very warm storm and significant runoff may occur. Some of the counties west of us are already reporting minor flooding. Solano OES will be getting updated information tomorrow morning.

Solano OES is asking that all the cities and fire districts call in to a Solano Op Area conference call at 1030 Hrs (707-784-1677) on Wednesday. We will be relaying any relevant information that is received from National Weather and state OES. The call will also allow for all the cities and special districts to be kept up to date with current information that is received."

- On Wednesday December 28 at 10:30 a.m., a conference call was held with Solano County OES and representatives from each city. Managers from the City of Vacaville Public Works, Fire, and Police Departments participated. Topics discussed included the amount of rain expected and preparation measures. A second conference call was arranged with OES for Friday morning, the 30th of December, to be briefed on the upcoming weekend storm.
- On Friday December 30th at 10:30 a.m., a conference call was held with County OES and the cities, with representatives from the City of Vacaville Public Works, Fire, and Police Departments participating. The participants were informed by OES that the storm coming in later that day could bring 1-3" of rainfall in the valley.
- Based on the weather forecast, the Public Works Department made additional preparations in the week leading up to the event:
 - The Storm Patrol was implemented every day starting on the Monday preceding the December 30-31 Storm. Special attention was given to the inspection of historical problem areas and all were found to be clear and/or operational. Additional sand was delivered to the Corporation Yard and over 25,000 sand bags were on hand.
 - The Deputy Director of Public Works met with all Maintenance Division supervisory staff and alerted them to the impending storm on Friday December 30th. Two additional standby employees were assigned to assist the regularly assigned standby employee. All work crews were alerted to be available in case of emergency. A sandbag station was established at the Corporation Yard and Irene Larson Ball fields on Alamo Drive, and crews were assigned to man the locations around the clock.
 - The Deputy Director of Public Works maintained a presence at the City Corp Yard throughout the day on December 30th and through the entire night. Additional crews were called in to work as the storm intensified through the evening of December 30th as the water levels rose. At 3:30 p.m., the Alamo Creek level was at 2.5 feet and ten maintenance employees were on duty, including three that were on standby. As the creek continued to rise to an elevation of 9 feet on Alamo Creek at approximately 11 p.m., additional crews were brought in for a total of 15 shortly after midnight. All instances of flooding were investigated to determine the cause. All inlets that became plugged during the storm were cleared. Streets were closed and signs were posted where flooding could not be prevented due to rising creek levels and overwhelmed storm drain systems.
- Additional preparation was also taken by the Police and Fire Departments in the week leading up to the event:

- A command structure for the incident was established in the Police and Fire Departments, delineating levels of responsibility for key staff. Managers confirmed EOC Protocols with Communications Center and Patrol Sergeants, and began regular updates to Communications Supervisors and Patrol Sergeants, which continued from December 28th to January 1st.
- Vacaville Police Department participates in a multi-agency Mobile Field Force (MFF). The MFF is a 20-officer team that is specially trained and equipped to deal with large scale community problems like disasters, crowd control, or weapons of mass destruction incidents. They have been used in large operations where large numbers of officers are needed to deal with a situation. Because they all carry pagers and are on call they rapidly respond to major events like flooding. An alert was sent to the MFF members of callback potential via telephone pager system on the afternoon of December 28, 2005.
- Preparations were made in anticipation of the establishment of Incident Command.
 - At the conclusion of the conference call with Solano County OES on the morning of Friday December 30th, emergency cell numbers were verified between the Deputy Director of Public Works, the on-call Police Lieutenant, and on-call Fire Division Chief and Battalion Chief. These four staff communicated throughout the evening of December 30th and through the morning hours of December 31st.

Communications and Public Information

- Residents were alerted of potential flood conditions and small creek advisory warnings by announcements to local newspapers, radio and television outlets (in both Sacramento and Bay Area) on December 30 (**Exhibit 8**).
- The City's Communications Center (a.k.a. Dispatch) established a telephone tree for non-emergency calls relating to flooding that directed callers to resources and vital flood information, freeing up police/fire call takers.
 - The City's communication system is designed so that all calls are handled directly by call takers. We do not utilize a telephone system that allows callers to select from a telephone menu for desired services before they actually get to talk to a real person.
 - On the morning of December 30, Communications Center supervisors established a telephone number that they could transfer callers to who had dialed the regular business line for information about the flood. Rather than having a call taker repeat the information about services, for instance where the sandbags were being distributed, to over a thousand callers, such calls were transferred to the pre-recorded telephone line that had sub-lines for critical information.

- The Automated Phone Alert System (a.k.a. “City Watch” or “Reverse 9-1-1”) was implemented on the afternoon of December 30.
 - Using the County OES system, the City of Vacaville sent out a recorded message to potentially affected residents warning of possible flooding, starting at 2:18 p.m.
 - Areas were targeted based on the potential for street flooding. These areas included the areas north and south of Alamo Creek in the Tulare Drive/Beelard Drive areas, the Peabody Road Southwood Condominium area, Brown Street, and Seneca Way.
 - Using City Watch, 1,827 telephone numbers in the designated areas were dialed. CityWatch makes three attempts to connect. Connections were made (meaning the call was picked up by a person or by an answering machine) in 1,339 cases, for a connection rate of 73%.
 - **Exhibit 9** shows the text of the alert sent out to the targeted flooded areas.

Impact Phase: Emergency Response

Date: 12/31/05

Chronology of Events:

- At 4:30 a.m. on December 31, unified command for the flood incident was established by Public Works (Deputy Director Rod Moresco), Fire (Division Chief Joel Brick) and Police (Lieutenant Jan Makowski). Unified Command is a command structure which provides for all agencies or individuals who have jurisdictional responsibilities, either geographical or functional, to jointly manage an incident through a common set of objectives.
- At 5:00 a.m., the City of Vacaville's Emergency Operations Center (EOC) was activated by Fire Chief Brian Preciado. A total of 24 individuals staffed the EOC at various periods throughout the day.
 - The Fire Chief advised dispatch to notify first responders to shelter residents in place, except in cases of medical emergency.
- At approximately 6:00 a.m., the Three Oaks Community Center on Alamo Drive was opened by Unified Command as an emergency evacuation center. The American Red Cross arrived at approximately 9:30 a.m. to assist in operating the shelter. The Public Works Department provided emergency transportation for evacuees using city busses.
- At 6:26 a.m., the Fire Department activated a General Alarm call back of all fire personnel.
- At approximately 7:30 a.m., City Manager David Van Kirk and EOC management declared a "Local State of Emergency".
 - The declaration was relayed to the Solano County Office of Emergency Services, which then declared a county-wide state of emergency to the Governor.
- At approximately 7:30 to 8:00 a.m. on December 31st, Alamo Creek and Ulatis Creek reached their peak levels. Peak level for Alamo Creek (at Marshall Road) was 19.15 feet, which was over 4.5 feet higher than recorded on December 16, 2002.
 - Major flooding peaked at this time. Flooding occurred in streets and on residential, commercial, and industrial properties, including the City Corporation Yard where the Incident Command Post was located.
 - The flooding of the Corporation Yard did not significantly affect the Incident Command Post operations, but caused damage to equipment at the Central Garage, the Fuel Station, the Water Plant and Offices. It also affected the ingress/egress to the Corporation Yard for emergency response vehicles and those picking up sandbags.

- Additional sandbag stations were established at City Hall and the Three Oaks Community Center, and City crews assisted with the delivery of sandbags to some senior residents and residents with disabilities. City crews also placed sandbags along the Ulatis Creek project channel downstream of Nut Tree Road in an effort to protect the adjacent convalescent hospital and assisted the Fire Department with some rescue efforts that required the use of a boat.
- More than a dozen streets were closed by Police staff during the early morning hours of December 31. Road closures included Alamo Drive at Rosewood, Peabody Road in front of the prison to Beelard Drive, Southwood, Tulare, Brown Street, Alamo at Marna, Leisure Town Road from Alamo to I-80, and Beelard Drive.
- Immediately after floodwaters receded, Police and Fire units drove through their respective areas checking on any potential life safety issues. To allow the units to remain in service for incoming emergency calls, observations could only be made from the cab.
- At approximately 10 a.m., clean up operations began.
- At approximately 11:50 a.m., shortly after floodwaters receded, a 63-year-old male resident who was walking in a park near the creek was killed by a very large falling tree from the creek bank. Units from Fire and Police as well as Public Works staff responded to the incident.
- At approximately 1:00 p.m. a debriefing was held at the EOC, and at approximately 2:45 p.m. the EOC was closed.
- At approximately 7:00 p.m., the Three Oaks Shelter was closed by the Red Cross. About 30 people were served during the day. Most of the displaced residents chose to find places to stay with friends or relatives, with the shelter mainly functioning as a place to get dry, get some food, and make contact with friends or family members.

Calls for Service

- Incoming call volumes to the Communications Center on December 31, 2005 (24 hour period) were as follows:

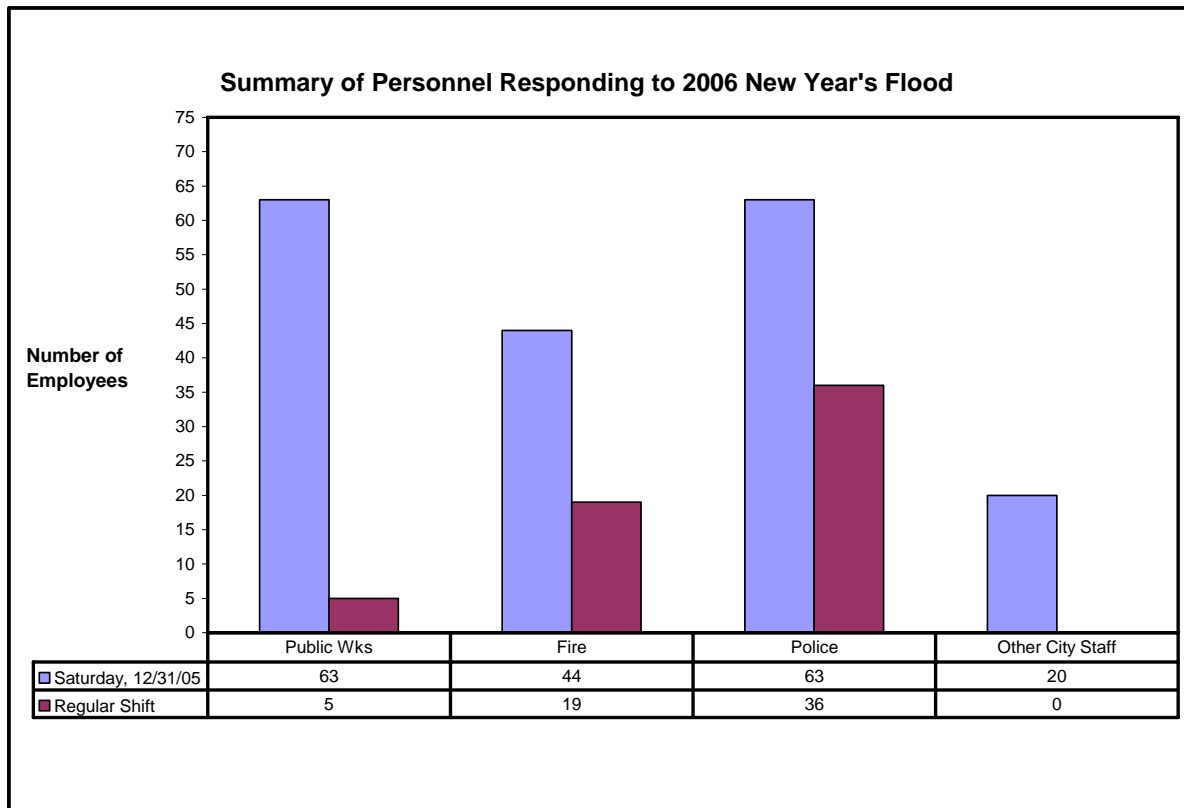
○ Emergency (9-1-1) calls	398
○ Business line calls	<u>2,950</u>
○ Total calls	3,348
- This call volume is approximately 4-5 times the average. The average number of total calls to the Communications Center in a 24 hour period is 700. The average number of 9-1-1 calls is approximately 100.
 - The highest call volume was between 7:00 a.m. and 8:00 a.m.

- Use of the 9-1-1 number was generally appropriate (i.e. mostly used for emergency calls). Calls to the business line typically involved residents notifying the City of flooded areas and asking “what to do” type questions.
- Emergency calls were prioritized based upon life-safety needs first. Major incidents requiring immediate attention included:
 - 34 medical calls including chest pains, shortness of breath, and a woman in labor with contractions one minute apart;
 - 4 traffic collisions with injuries; one multi-vehicle accident on I-80 involving several patients;
 - 21 fire-related calls such as arcing wires, smoke investigations, natural gas leaks, citizen assists, and electrical wires down;
 - Creek wall erosion behind Vacaville Convalescence & Rehabilitation Center, causing the potential need to evacuate approximately 100 ambulatory and non-ambulatory patients;
 - 6 calls from the Yellowstone Drive area in the Leisure Town, which had significant flooding, trapping some residents in their vehicles while trying to evacuate; and
 - Power loss at a senior apartment complex where some residents rely upon oxygen machines.

Staffing Levels

- Staffing levels were significantly increased in the Police, Fire, and Public Works Departments.
- In the Police and Fire Departments, this was achieved through a general alarm callback of all off duty fire personnel, holdover of on-duty fire and police personnel at shift end, and dispatcher staffing call-back.
 - Normal fire staffing per shift is 19 staff at four fire stations. This includes one battalion chief and three engine companies, one engine or ladder truck company, three dedicated ambulances, and one ambulance or engine company.
 - At 6:26 am December 31st, unified command sent out a general alarm for all off-duty fire personnel. This utilizes a paging system that contacts all fire personnel with instructions. Nine off-duty fire personnel responded allowing for the staffing of three additional units.
 - In addition, at 8:00 a.m. the on-duty fire personnel were scheduled to go off duty but remained on-duty, thus adding personnel and the staffing of six units; for a total of 44 emergency first responders.

- Police personnel held over their swing and midnight shifts; at peak conditions, 23 patrol officers were on duty, along with two Community Services Officers. During peak conditions, emergency dispatcher staffing increased from the standard three to a total of eight. Police Department staffing on December 31 totaled 63.
- At the time major flooding occurred (7:30 a.m. – 8:00 a.m.), thirty (30) Public Works Maintenance employees were on duty. When the cleanup operations began late morning at approximately 10:00 am, a maximum of 34 Public Works Maintenance employees were on duty, in addition to contractual labor to assist in the emergency efforts. Additional Public Works staff were on duty at the Water Plant and Wastewater Plant, for a department total of 63.
- A summary of personnel responding to the floods is provided in **Exhibit 10**, and a comparison of staffing on December 31 to normal Saturday staffing levels is provided below.



Public Information on December 31

- Beginning around 7:00 a.m. residents began receiving alerts from radio/television. All reports to County OES from Vacaville emergency operations were distributed to media.

- The local media contact list includes the Reporter, the Fairfield Daily Republic, the Vallejo Times Herald, the Dixon Tribune, the Dixon Independent Voice, and KUIC 95.3 FM.
- Around 9:30 a.m., Vacaville EOC staff began posting information on Channel 26, the local government cable TV channel **(Exhibit 11)**
- When it became apparent that KUIC was not broadcasting emergency operations information, except road conditions, Vacaville EOC staff began trying to make contact with the station. No one at the station responded to telephone calls, so a city representative went to the station offices, but was unable to make contact with staff inside.
- At approximately 3 p.m., an updated news release was distributed to local media by Vacaville and continual updates sent to the county EOC.

Post-Impact Phase: Recovery

Dates: 1/1/06 –5/17/06

(Note: this report covers the recovery efforts to date; however, some of these efforts are ongoing).

Public Services/Public Property

- **Mud in Streets:** Immediately following the storm, City maintenance crews began the clean-up efforts on the north side of town as the flood water was still receding on the south side of town.
 - A total of eight water trucks were used to clean streets. Four contractors were called in to assist City maintenance crews, providing 20 additional crew members, four water trucks and other necessary trucks and equipment. The City crews used their water truck in addition to three rental water trucks for a total of eight.
 - Cleanup efforts were challenging due to the difficulty of picking up heavily saturated mud and the numerous disabled cars that were parked on the streets. Streets had to be cleared in phases, first the traveled ways were cleared, then the majority of the mud was removed, next the sidewalks were cleared, and then the streets were washed down. The final task, cleaning the storm drains, is on-going.
- **Traffic Control:** Police Officers and Community Services Officers continued to block streets until water receded, mud was washed away and barricades were removed.
 - Police Officers provided support to Public Works by directing traffic in and around heavy equipment being used in flooded areas for a week after the flooding.
 - Police Officers and Community Services Officers staffed key intersections in some areas limiting vehicle traffic because of complaints of on-lookers for a week following the flooding.
- **Trees in Creeks:** The heavy runoff and unusually high water in the creeks caused heavy erosion of the channels. In some areas the creek banks were eroded up to 20 feet beyond their original locations. Consequently many trees were uprooted and fell into the creeks.
 - As soon as the storm subsided, work begun on the removal of the trees. This work was accomplished by three tree contractors, the CMF crew, and Parks Maintenance personnel. Due to the size and location of the trees, large excavators were required to assist in their removal in some cases. Since the storm, a total of more than 60 downed trees have been removed from the creeks.

- **Other Repairs:** A 12" ductile iron water main that was suspended under the Depot Street Bridge over Ulatis Creek was broken by the high flows under the bridge. This line was isolated and removed from service during the storm. Plans for the repair are being finalized and the project will go out to bid. Estimated completion is late summer/early fall 2006. There were areas along Dobbins Street where the creek banks eroded and exposed some utilities, which were repaired. There were also numerous instances of landslides on City open space that filled in drainage ditches. These areas have been cleared.
- **Damage to Public Infrastructure:** After the storm event, Public Works Engineering performed a Public Damage Assessment that was submitted through the Solano County OES to the State OES (**Exhibit 12**). As of mid-May, projects totaling more than \$1.3 million have been submitted to FEMA for reimbursement. Projects totaling almost \$300,000 will be submitted by the end of May, and additional projects are expected to be submitted.

Assistance to Residents / Private Property

- The following is a summary of activities sponsored or coordinated by the City of Vacaville to assist residents in recovery from the flood. Not knowing if or when federal assistance would be available to residents, the City stepped outside the normal role of local government and took the lead in initiating recovery efforts for private residents. Most of these activities took place in January and February.
 - A number of organizations and individuals played a key role in providing assistance to residents. To the greatest extent possible, community partners who have assisted the City in these activities have been identified.
- **Temporary Shelter and Basic Needs:** The City of Vacaville, Vacaville Community Welfare Association, Salvation Army, and Red Cross provided temporary shelter to households flooded out of their homes by providing motel vouchers from December 31, 2005 through March 15, 2006.
 - Five local motels were used: Motel 6, Best Western, Extended Stay, Royal Motel, and Super 8. No discounts were given, but rates are considered the lowest available: between \$48-\$85/night (depending on household size, weekend vs. daily rates, etc.).
 - In addition, food, gas, and/or clothing have also been provided by community organizations.

City / Vacaville Community Welfare Association:

	Total # (Unduplicated)	Total \$ Received	Avg. Voucher by Household
<i>Households Assisted -- Motel Vouchers</i>	130	\$38,010	\$292.
<i>Households Assisted – Food</i>	27	\$1,275.00	\$47
<i>Households Assisted – Gas</i>	5	\$ 50.00	\$ 10.00
Total		\$39,335	
Individuals Assisted	353		

- **21** of **130** households also received food and/or gas vouchers.
- Vouchers were funded in part by local donations totaling **\$25,206.** (Stars Recreation and the Downtown Vacaville Business Improvement District sponsored a dinner and dance, raising \$8,500 of this amount).

Salvation Army:

	Total # (Unduplicated)	Total \$ Received	Avg. Voucher by Household
<i>Households Assisted -- Motel Vouchers</i>	53	\$66,546	\$1,255.58
<i>Households Assisted – Clothing</i>	41	\$13,300	\$324.39
<i>Households Assisted – Food Vouchers</i>	21	\$1,500	\$71.39
Total		\$81,346	
Individuals Assisted	329		

Red Cross:

	Total Assisted	Total Dollars
Community Services -- Meals/Snacks	2,000	\$5,000
Cleanup Kits (brooms, mops, shovels, buckets)	280	-
<i>Households Assisted -- Motel Vouchers</i>	15	\$5,500
<i>Households Assisted – Clothing & Food</i>	250	\$78,000
<i>Households Assisted – Bedding</i>	180	\$24,000
Total \$ Spent		\$112,500
Total Number of Cases Opened	250	

- **Clean Up Activities:** Code compliance staff did an assessment on Tuesday, January 3, of the need for neighborhood assistance with clean-up activities. Working with Vacaville Sanitary Services, the City of Vacaville organized and implemented five “Clean Up Days” so residents could dispose of flood damaged items. Clean Up Days were held on Wednesday, January 4; Thursday, January 5; Saturday, January 7; Sunday, January 8; and Saturday, January 14. Appliance pick-up was provided on January 14.

- Beginning January 4th, the City contracted with Vacaville Sanitary Service (VSS) to provide a variety of equipment and loading services to assist with debris removal. Debris boxes (30 to 40 yard) were placed at various locations in the flood areas and emptied and returned throughout the day on the 4th and 5th. Front- and rear-loader refuse trucks were utilized, providing the equivalent capacity of 3-4 debris boxes in one load through compaction. Appliances were collected with flatbed trucks. The vehicles/containers were loaded by VSS staff, including drivers and managers, City staff, residents and volunteers. Public Works staff placed 3 - 20 yd end dump trucks, 3 loaders and a backhoe in service to assist in the clean-up. Members of the City’s Emergency Operations Center Logistics Team were brought in to secure food, supplies, restrooms, etc. for the balance of that event, and the four subsequent clean up events.
- In addition, two VSS street sweepers were diverted from their regular routes for Monday January 16th to operate in the flood areas. The VSS refuse collection route driver in the area continued, through the end of January, to make multiple passes each route day to collect excess materials. Details on VSS services provided can be found in **Exhibit 13**.
- The City arranged for free dump passes to be distributed to households throughout the flood affected areas: (1) on the north side in lieu of extended debris pick up/clean up activities, and (2) on the south side for volunteers who used their own vehicles to take debris out to the dump on behalf of flood victims, as well as residents needing additional assistance. City Code Compliance Staff assessed and inspected four to five times during the first half of January to ensure those who needed free dump passes received them:

459	Free Dump Passes Issued
106	Free Dump Passes Used
59	Tons received from use of free dump passes
593	Tons delivered by Vaca Sanitary & City trucks / end dumpers
652	Total Tons Received at Hay Road Landfill

- Hazardous waste disposal was not allowed in the debris boxes, dump trucks, refuse trucks or through use of dump passes, as it is prohibited by law to dispose of those materials in the landfill. City and VSS staff could not haul hazardous waste as they would be in violation of the regulations requiring haulers to be licensed. The Household Hazardous Waste Collection Facility,

located at the VSS yard on Davis Street, is open every Saturday for the free disposal of batteries, oil, paint and antifreeze, and on the first and third Saturdays of each month for all acceptable hazardous waste. Additional qualified staff was on hand at the Facility on Saturday January 14th and instructed to accept all materials in any quantity.

- Local residents and organizations participated in the five day clean-up efforts organized by the City:

49 Volunteers – Wednesday, 1/4

53 Volunteers – Thursday, 1/5

35 Volunteers – Saturday, 1/7

43 Volunteers – Sunday, 1/8

27 Volunteers – Saturday, 1/14

- In addition to individuals who volunteered, numerous organizations assisted in these efforts (**Exhibit 14**). Fairmont Elementary School was used as the staging area for volunteer sign in, to make assignments, to be transported to assigned locations (via PAL and City Coach vans), residents to sign up for assistance, referral to other services, flyer distribution, food, free dump passes, etc.
- **Outreach Activities:** In order to keep residents informed about flood recovery efforts, the City implemented a variety of public outreach/information activities. These included flyer distribution, a telephone information and referral service, drop-in assistance centers, and a “town hall” meeting.
 - Flyers were distributed by staff and volunteers (Police Department Cadets, Volunteers and Boy Scouts) to notify residents on a door-to-door basis for the week following the flooding. Samples are provided in **Exhibits 15 – 23**.

Date	Activity or Service	# Distributed
1/3/06	Flood Debris Pick Up	600
1/4/06	Flood Debris Pick Up, Cleaning, & Electrical Safety Information	600
1/6/06	Drop-In Assistance Center	1,000
1/7/06	Debris Clean Up & Upcoming Week's Activities	1,000
1/8/06	Town Hall Meeting	1,000
1/11/06	Southwood Debris Pick Up Location	150
2/1-6/06	Flooded Vehicle Disposals	67
2/10/06	FEMA Information	1,450

- Throughout January and February, the City provided a clearinghouse/referral telephone line for flood recovery information and services (449-5660). Up to 4 staff (at any given time) were responsible for registering and/or referring residents to the appropriate service, including: Clean Up Assistance; Clean

Up Assistance for the Disabled; First Month's Rent/Security Deposit Loans; Food, Clothing, Furniture Donations & Requests; Home Repair Loans; Mental Health & Crisis Counseling (referrals to FIRST/FRC); Tenant/Landlord Housing Counseling; Free Dump Passes; Volunteer Registration; Other Referrals & Questions – general FEMA information, questions about Clean Up Days, Town Hall meeting, free building permits, etc.

- A total of 1,605 phone calls were received through 2/28/06. Initially approximately 300 calls per day were received, but call volumes slowed significantly after the first week.
- The City sponsored two Drop-In Assistance Centers (one each on the south and north sides of the city) on January 7, 2006. The centers were located in two churches that donated the space (Shepherd of the Hills and Orchard Baptist). Each three-hour session was designed to provide residents affected by the flood with information and resources. The offerings were the same at both locations, so residents could attend either session. The CityWatch telephone system was used to notify residents. In addition, one-thousand flyers were hand carried to residents on the south and north sides of the City to inform them about the centers (**Exhibit 17**). Representatives and information provided included:

Police Department	Fire Department
Community Development Department: Building Services	Public Works Department – Flood Zone Location Information
Red Cross	Salvation Army
Counseling & Family Services	Tenant Assistance
Temporary Housing Information	Home Repair Information
Federal Emergency Assistance Programs	

- Handouts with frequently asked questions, particularly regarding the FEMA process, were prepared in both English and Spanish (**Exhibit 18**). A large schematic showing the process for obtaining federal disaster assistance was developed and displayed (**Exhibit 24**), to address the high volume of questions regarding FEMA assistance. In addition, an example of the “72-hour emergency preparedness” kit was on display. Approximately 300 residents attended the Drop-In Assistance Centers.
- The City recognized that residents affected by the flood needed an opportunity to have questions about the flood addressed. The City coordinated a Town Hall meeting on the evening on January 9, where information was presented on the following subjects:
 - Type and magnitude of the storm/flood
 - Projects completed to help mitigate flooding
 - Future efforts to mitigate flooding
 - Annual maintenance completed in anticipation of each storm session

- Extra steps taken by Public Works prior to storm hitting
- Automated Phone Alert system
- Incident Command Center set up
- EOC activation
- Declaration of Local Emergency
- Opening of Temporary Shelter
- General Media Alerts
- Flood Emergency Response – rescues, road closures, etc.
- Public street clean up
- Checking of creeks for blockages
- Clean up activities – clean up days, free dump passes, cleaning house
- Damage Assessment

The 4½ hour forum also provided a Question and Answer session where each and every person who attended was provided an opportunity to address the City Council and staff. Approximately 550 people attended this meeting. City staff were also present to provide information about City resources and the 72-hour emergency preparedness kit.

- Outreach through local media was continued for several weeks.
 - KUIC began making announcements Sunday evening. Local newspapers carried information that was provided by the City of Vacaville. Information continued on Channel 26 (for the next three weeks updates were posted).
 - On Tuesday, staff began posting information on resources and donations for flood victims on the city website.
- **One-on-One Assistance** has been provided by the City in several ways.
 - Housing Counseling: One-on-one counseling on state law and available resources was provided to tenants, landlords, and homeowners. This counseling was provided by a US Department of Housing and Urban Development certified Housing Counselor:
 - 64** Tenants counseled
 - 25** Landlord/property owners counseled
 - 42** Homeowners counseled
 - The City's Vacaville Youth In Action (VYIA) Program has provided one-on-one clean up and minor repair assistance to flood-affected residents who have physical limitations. Eligible individuals were identified through the Clearinghouse and Drop-In Assistance Centers. Due to demand for this assistance, clean-up aid continues to be provided:
 - 69** Households served
 - 6.5** Average hours spent on clean up and/or repair activities per household

- Food/Furniture/Clothing: The City's Family Resource Center/FIRST (Family Investigation & Response Team) coordinated efforts to provide families affected by the flood with food, furniture, and/or clothing, via community donations:

45 Households provided food, furniture, and/or clothing

18 Persons who donated food, furniture, and/or clothing

- Mental Health/Crisis Assistance: During the City's Clean Up Days, the Drop-In Assistance Center, and through the Clearinghouse, FRC/FIRST's Family Support Workers met with families to provide mental health and crisis assistance:

118 Households received crisis intervention

- Towing of Flood Damaged Vehicles: City staff placed notices on flood-damaged vehicles, advising their owners of different ways to dispose of their vehicles (including charitable organization donations and free towing services). Staff also permitted extra time for vehicle insurance adjustment inspections, before requiring the vehicle to be removed from the public street.

67 Flood Vehicle Assistance Notifications (on public streets)
Of these, 18 vehicles were towed free of charge

- **Financial Assistance** to flood victims has been provided in several ways.

- Emergency Loan Program: The City developed a new home repair program to address the specific needs of households whose homes were flooded. The program provides for reduced underwriting and credit criteria (versus the City's regular home repair program). Loan payments (including interest) are deferred over the first five years, in order give the homeowner time to recover from other financial concerns related to the flood (see **Exhibit 25**). Note that this program continues to accept applications, so there are actually more applications submitted, approved, pending, under review, etc. As of 5/15/06:

131 Applications taken out

31 Applications submitted

24 Applications approved to date

4 Applications denied

3 Applications cancelled by borrower

- Security Deposit/First Months Rent Program: The City developed a program to provide a security deposit and first month's rent for both apartment dwellers (who wanted to move from a flooded unit) and homeowners (while their home is being repaired). The loan is deferred for 6 months and then paid off at \$100 each month (see **Exhibit 26**). As of 5/15/06:

18 Loan Applications Taken Out

11 Applications Submitted

10 Loans Made

1 Loan Rescinded (applicant not approved for apartment move-in)

- Free Building Permits

132 Total Building Permits Issued at no cost.

- Other services to assist flood victims included extra patrol at night times of areas with abandoned homes due to flooding; removal of creek channel obstructions regardless of ownership or other land rights (in most cases, the City either owns the creek channel or has a drainage easement along the channel); and working with a FEMA volunteer coordinator to identify additional potential sources of nonprofit and volunteer assistance.
- The City also worked to facilitate the disaster declaration process necessary for residents to be eligible for federal assistance. This included damage assessments conducted by City building inspectors and facilitation of inspection tours (including home interiors) by State OES and FEMA inspectors.

Conclusions and Next Steps

- Unified Command structure, involving Police, Fire, and Public Works, provided management of the incident in a coordinated and effective way.
- Activation of the Vacaville Emergency Operations Center supported the incident effectively and efficiently.
- Interagency cooperation worked well. Vacaville's Police and Fire Departments maintain a positive and state-of-the art mutual aid system within the County (and statewide).
 - The Police and Fire Departments have an excellent working relationship with the County Office of Emergency Services (OES). In past years lines of communications have been established readying prompt response in cases of mutual aid, natural disasters and man-made disasters such as terrorist events or civil unrest. Critical Incident Management has been a top priority in the past five years since events like September 11, 2001. Systems and policies are in place to provide support in disasters; these worked well.
- The City's ability to protect life safety in a flooding situation would be enhanced by the purchase of two inflatable rescue boats and swift water rescue equipment, as well as additional training to support the swift water rescue program. As of mid-May, the boats have been purchased and purchase of rescue equipment is in progress.
- Flooding of homes was exacerbated by "looky-loos" and joy-riders driving through flooded streets and displacing water into homes. While this is a difficult problem to prevent, additional public education may help. A greater police presence at the edges of flooded areas may be used when staffing is available.
- Although there were a large number of police and fire staff dedicated to emergency response on December 31, many residents reported being unaware of a public safety presence in their neighborhoods immediately after the floodwaters receded. In future incidents of this type, once the initial post-flood drive-by assessment is made by police and fire units, public safety units will return to patrol the most heavily affected areas.
- While significant efforts were made to alert residents when the potential for severe flooding was imminent, many seemed caught unaware.
 - The "reverse 9-1-1" system proved to be an effective tool. Modifications to the standard message have been made to further increase its effectiveness, including repeating the message to ensure better comprehension. Wording has also been added asking residents to help spread the word to their neighbors to ensure that they are aware of the potential emergency. Revised wording for this type of emergency is shown in **Exhibit 27**.

- The City has evaluated several alternatives and has begun the purchasing process for its own “reverse 9-1-1” system in order to provide state-of-the-art targeted notification for use in emergencies.
- This type of approach, because it allows for targeting of both the message and the recipients, is more effective for localized emergencies such as flooding than a community-wide alarm.
- In some cases, it may also be effective to have patrol cars and/or fire engines drive through neighborhoods when flooding is imminent to warn residents with vehicle PA systems. However, there are potential problems associated with this approach, including the potential for causing panic and/or medical distress in individuals, as well as the potential for “false alarms” (it can be difficult to predict whether flooding will extend to homes or will be limited to streets).
- This type of notification can only be used **prior** to actual flooding, when evacuation is feasible, water will not be displaced into homes, and the risk of disabling emergency vehicles is low. Emergency shelters will need to be opened concurrently with such notification.
- Several steps are being taken to improve public information immediately before, during, and after disasters.
 - Radio is a primary source of public information during disasters. While Vacaville is fortunate to have a local radio station, EOC staff was unable to establish contact with KUIC on December 31 despite established protocols. Since this event, City staff and KUIC have worked together to develop a better emergency alert system to keep local residents well informed. The City now has special contact numbers for KUIC posted in the EOC. In case of emergency, EOC staff can contact KUIC using these numbers and they will broadcast (live) the information and continue special broadcasts on a regular basis. Cell phone numbers for specific KUIC personnel have also been provided for use if there are problems getting through to the station.
 - The local government cable TV channel will be a good communication tool, once the City of Vacaville assumes production responsibilities for the channel later this year from Comcast Cable, making it easier to post information. Upgrades to the broadcast equipment at City Hall are underway and should be completed by the end of July.
 - Use of the city website to communicate with residents, both prior to and immediately following the emergency, has been increased. A disaster preparedness page is now posted on the website (www.cityofvacaville.com), with a link on the homepage under “Frequently Requested.” It includes information checklists as well as what to do in case of various types of emergency. Links to resources including Homeland Security and the Red Cross provide additional information on how to prepare for an emergency. Instructions on posting and updating “News” information on the homepage of

the City's website have been established and distributed to EOC staff with public information responsibilities.

- Additional stream gauges are being installed on Alamo Creek at Tulare Drive and at Peabody Road. The rain gauge and creek level information available on the City's website is being improved, with new graphics to alert website viewers when creeks reach critical levels. These projects are currently in progress.
- Community self-sufficiency is not at the desired level. The City has expanded its efforts to help residents prepare to be self-sufficient for 72 hours following a disaster. The new Vacaville Community Emergency Response Team (VCERT) program, coordinated by the Police and Fire Departments, teaches teams of residents to take life-saving action to help their families, neighbors, businesses and communities get through the first few hours or days when public services are overwhelmed. VCERT recently graduated its first class of 25 citizens, and an additional 32 have registered for future sessions. Information about VCERT is provided in **Exhibit 28** and is available on the City's website. Information on the program is also being distributed city-wide via water bill inserts.
 - Community preparedness is also being increased by expanding seasonal public information campaigns each year for both floods (November) and fire (May).
 - A Seniors Guide to Disaster Preparedness brochure has been developed and is being distributed.
- A voluntary registry has been established to provide special assistance for senior citizens and individuals with disabilities during an emergency.
- In events like this one, once flooding has occurred, it is generally safer for residents to shelter in place until floodwaters recede, unless there is a life-safety emergency. However, perhaps because of Hurricane Katrina, some residents assumed that they should evacuate during the flood, which put them at additional risk. Public education efforts and disaster communications will focus on when and why to shelter in place, and what situations are exceptions.
- Supplies were needed at the emergency shelter immediately upon its opening. In recent months, the City has purchased a basic supply of non-perishable shelter supplies (e.g. blankets, cots) to allow the shelter to better serve users in the early hours of an emergency, prior to the Red Cross arriving.
- Residents had questions regarding federal, state, and local roles related to flood control, flood insurance, and disaster response.
 - Many residents believed that, because their homes were not in a federally designated flood plain, they were not at risk for flooding and/or that flood insurance was unavailable or unnecessary. Many also expected that federal assistance would be available within days, when in fact it took 5 weeks to

receive the federal disaster declaration needed to make residents eligible for FEMA and SBA assistance.

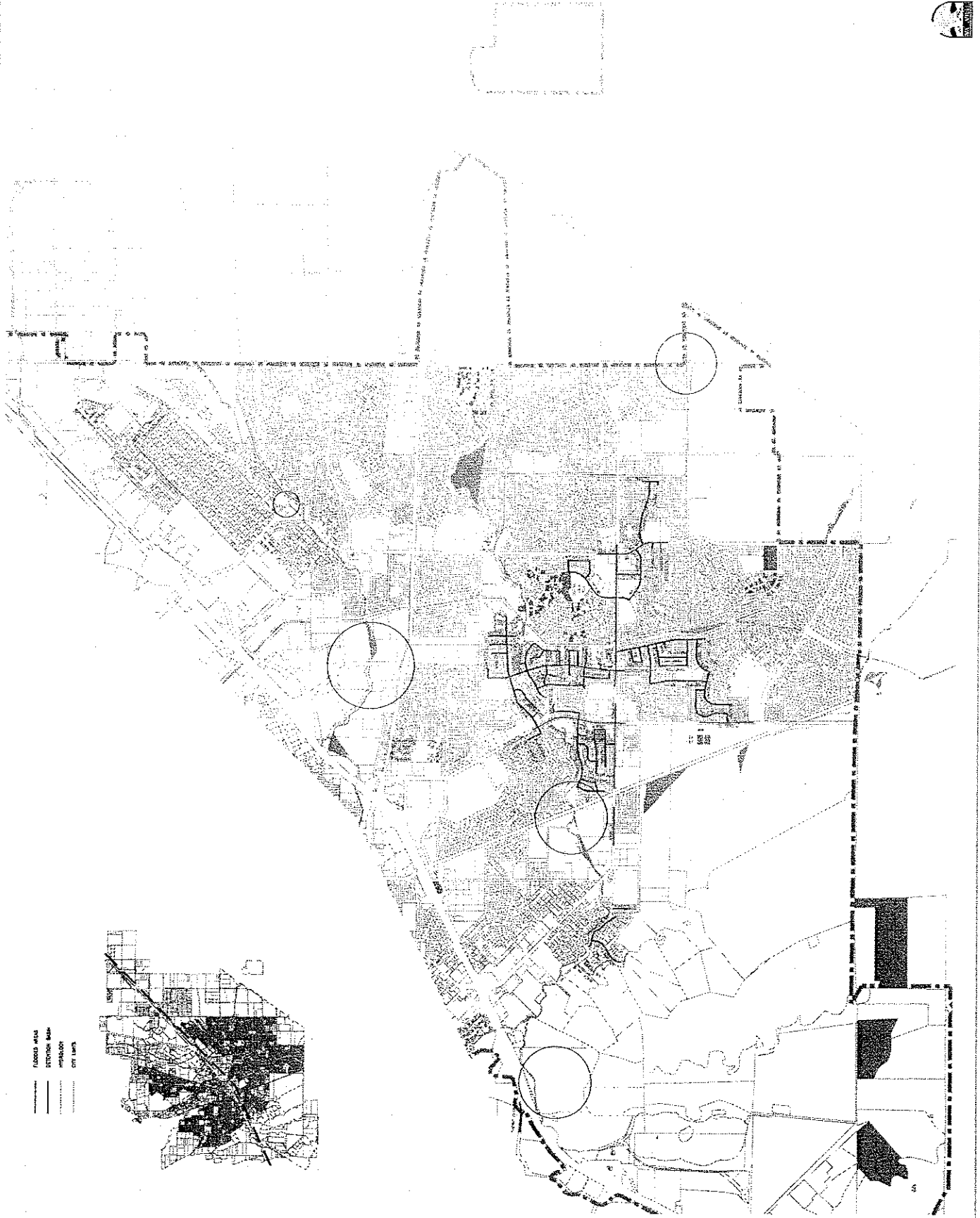
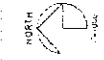
- The City took the initiative in clarifying the process for residents and was proactive in conducting inspections needed to assist in the State OES/FEMA damage assessment process, encouraging residents to document damage, and laying the groundwork for FEMA. Once the disaster declaration was made, the City made space available at the old Police building to locate the FEMA/SBA field office.
- Additional public education efforts will include the benefits of purchasing flood insurance. The City has publicized the information available at www.floodsmart.gov.

Ulatis Creek Watershed Study

- The 1990 Ulatis Creek Watershed Study was conducted for the City of Vacaville and the Solano County Water Agency (SCWA). The purpose of this study was to identify present and future flooding problems and develop alternatives to mitigate these flooding problems. The Executive Summary from this study is provided in **Exhibit 29**.
 - The 1990 study rainfall data and model was updated by the SCWA in the late 1990's after the heavy rains of late 1996 / early 1997.
 - The City requested that SCWA have their consultant perform a full review of the Ulatis Study, including reviewing the mitigation alternatives using the December 2002 and December 2005 rainfall and stream gauge data. SCWA has retained the firm of West-Yost Associates to conduct this study, which is currently underway. It is scheduled to be completed by late fall 2006.
- When the 1990 Ulatis Report was released, one of the recommended mitigation alternatives was on-site detention by new development on a case-by-case basis.
 - In 1992, the City adopted several Drainage Development Impact Fees (DIF) for Drainage Conveyance and Drainage Detention. Also incorporated into the 1990 General Plan was the requirement that all major developments mitigate their increase in runoff between pre- and post development (hard surface vs. bare soil), and for areas upstream of Peabody Road within the Alamo Creek watershed, that an additional 10% be detained. All excess drainage from infill and small developments are mitigated by detention basins constructed by the City, of which several have been built throughout Vacaville. Since 1990, there have been no major development projects constructed in the northwest sector that would substantially contribute to the upstream flows of Alamo Creek.
 - "Alternative 2" from the 1990 study describes four large detention basins to help mitigate the flows that are generated within the Vaca Mountains in the west, flowing easterly into the City. Rainfall in the mountains that flows into Alamo and Ulatis Creeks are almost twice as much as falls within the City. These four detention basins required \$12.5 million (in 1990 dollars) to build, and there was no immediately available funding source.
 - The City Council recently approved an agreement with the property owners for the purchase of one of the four sites. Escrow closed on the Pleasants Valley Detention Basin on May 11, 2006 and design and construction will begin in fiscal year 2006-07. This project will reduce the peak storm water flows in both Encinosa and Alamo Creeks. The City is beginning the process of determining the site for the next detention basin, located north along Alamo Creek.

EXHIBIT 1

CITY OF VACAVILLE

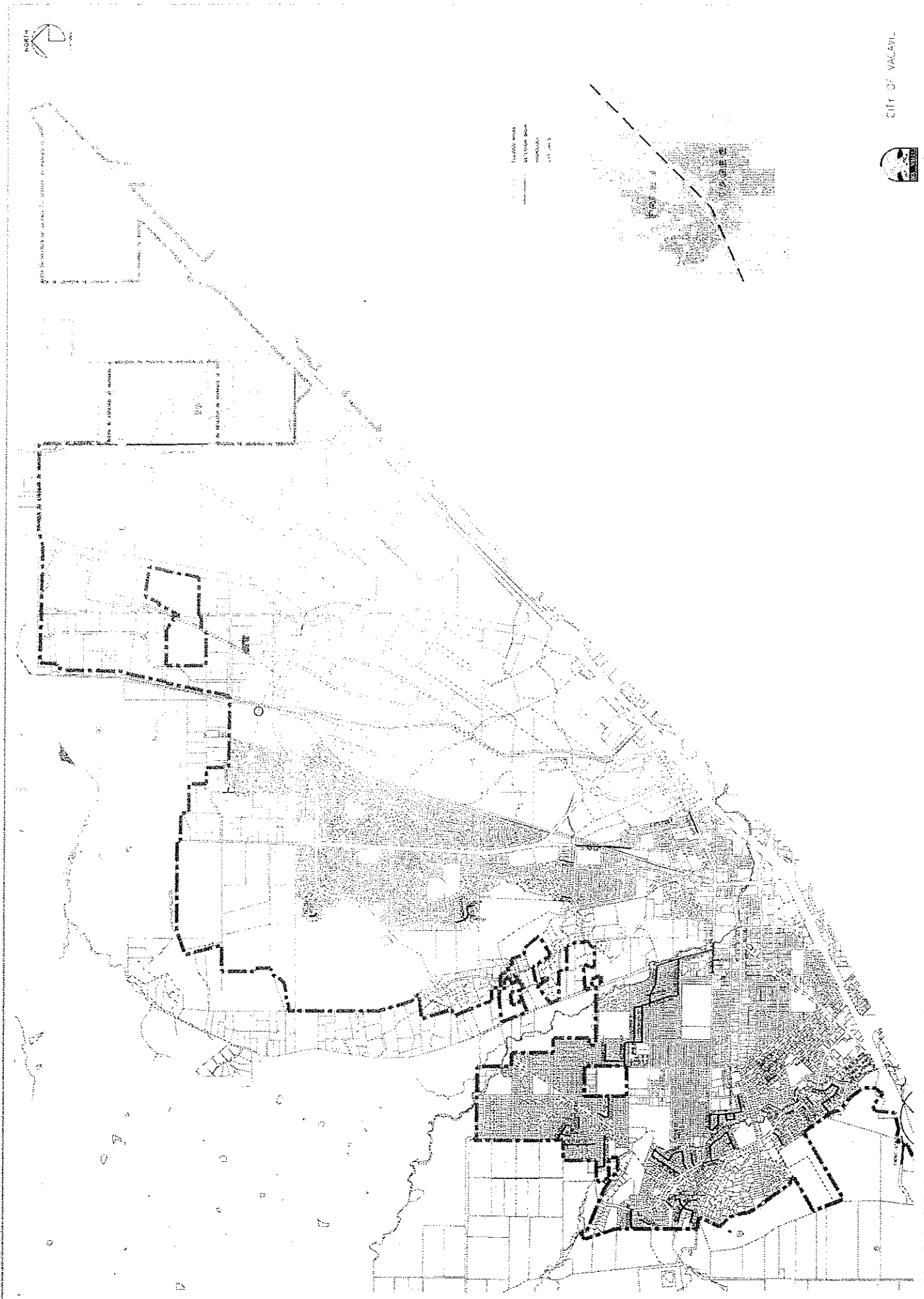




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CITY OF VACAVILLE



City of Vacaville
2006 Storm Damage Estimate
(as of Jan.5, 2006)

Private Property Damage Assessment: (structural only; no personal belongings)

	Number Affected	Est. Cost
Homes w/ damage to living areas	150	\$ 5,961,000
Apartments w/ damage to living areas	340	3,978,100
Homes w/ damage to non-living areas	419	10,056,000
Sub-total Residential Units	909	19,995,100
Damage to Vehicles	500	2,500,000
Damage to Businesses	4	1,280,000
Sub-total Private Property		\$ 23,775,100

**Public Property Damage / Assistance Assessment:
Emergency Related:**

Debris Removal/Disposal		\$ 370,000
Temporary Housing Vouchers		20,000
Emergency Response - Public Works		35,000
Emergency Response - Police & Fire		27,621
		452,621
Permanent Damage Repairs:		
Roads & Bridges (non-federal)	9	\$ 85,000
Water Control Facilities (levees, dams & channels)	15	1,300,000
Public Bldgs. & Equipment	2	125,000
Public Utilities (water, sewer, etc.)		25,000
Parks & Other	15	40,000
		1,575,000

Sub-total Public Property/Assistance

2,027,621

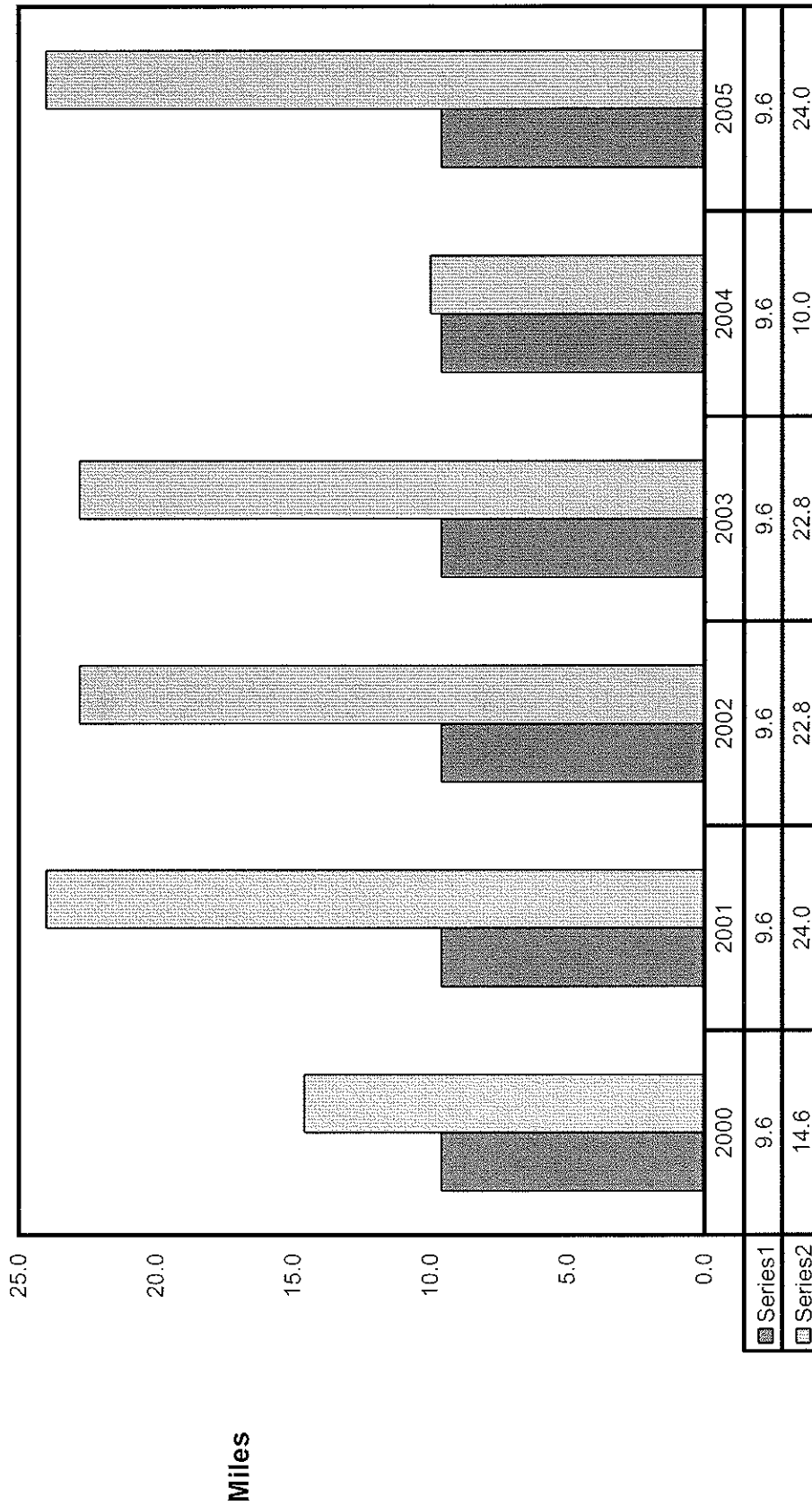
Total Damage/Assistance Estimate

\$ 25,802,721

City of Vacaville

Public Works of Major Creek Channel Flows Cleared (by calendar year)

Annual goal: 9.6 miles (=40% of the 24 miles of major creek channel flow lines)



Series1 Series2

Storm Drainage Annual Public Education Campaign

Each fall, ads are placed in various media to both promote the use of the separate yard waste toter ("Leaf Ad") and to encourage leaf clean-up to keep storm drains clear ("Storm Drain Ad"). The latter includes the message, "Your storm drain is no place for leaves. Collect leaves and put them in your green toter. Keep your streets safe. Prevent flooding." The phone number for Public Works Maintenance is included. These ads are placed in the Reporter and the Grapevine and on signs on the backs of the City Coach buses.

On the vacavillerecycling.com website, the Put Leaves in Their Place and the Storm Drain Awareness articles were previous on the "What's New?" features on the homepage and remain in the articles listed for viewing. These articles include messages to keep leaves out of storm drains to prevent flooding and a reminder that anything that enters the storm drain will empty into creeks and waterways. The Yardwaste Tips page includes the following:

Please do not blow or sweep leaves into the street! Loose leaves in the street can conceal mufflers, hubcaps or other objects, entice children into the street to play, and clog storm drains. They can pose a danger to your family or neighbors and can even cause flooding that could damage your property. Recycling leaves with your yard waste is easy and convenient and makes a safer and tidier community for all of us.

A new storm drain icon was set up on the homepage prior to the end of the year. Web pages are under construction that will detail information regarding pollution and flood prevention.

The following table details the outreach placement in 2005. The Storm Drain ad has been typically placed in the Reporter in both November and December, but was limited to November in 2005 due to budget cuts.

MEDIA	AD	PLACEMENT
The Reporter	Storm Drain Leaf Ad - approx. 9" x 5"	November 2, 4, 6, 8, 13, 17, 20, 24, 27, 29
The Reporter	Leaf Ad	
Web Banner at www.thereporter.com	Storm Drain Leaf Ad	Month of November
The Grapevine	Storm Drain Leaf Ad – ½ page	November & December issues
City Coach Bus Ads	Storm Drain Leaf Ad	November & December
Website Article at www.vacavillerecycling.com	"Put leaves in Their Place"	Continuously run in the "What's New" article archive
Website Article at www.vacavillerecycling.com	"New Storm Drain Awareness Campaign"	Feature "What's New" article run the months of August & September
Website Article at www.vacavillerecycling.com	"Yardwaste Tips"	Continuously run on the website under the Yardwaste section

City of Vacaville 2005 EOC Training Log

- April 21, 2005 at the McBride Center: presented EOC power point training to Community Services staff
- June 15, 2005 at the Easterly Water treatment plant: presented EOC power point training to all Public Works managers
- July 8, 2005 in the City Hall A/B room: presented EOC power point training to IT, HR, and OHR personnel
- July 29, 2005 in the City Hall City Manager's conference room: presented EOC power point training to Fire Admin and Prevention staff
- September 2, 2005: provided EOC training for the logistics section
- September 6, 2005: met with ADA Committee and provided care and shelter training in the event of a disaster
- September 13, 2005: attended the VMA at Valley Church and provided disaster training specific to evacuation and care and shelter issues
- September 21, 2005: provided EOC training for the planning section
- Fire and police staff held a training session on unified command
- October 18, 2005: Chief Preciado, DC Brick, and Staci Kendrick attended RIMS training at the Solano OES EOC
- October 24, 2005: held EOC table top for both EOC teams and had representatives in attendance from the following agencies:
 - American Red Cross
 - North Bay Medical Facility
 - Solano County OES (Kevin Ives)
 - Dixon Fire Dept
 - Suisun City Fire Dept
 - Vallejo Fire Dept
 - Fairfield Fire Dept
- November 8, 2005: held follow up training for Logistics team A & B
- November 10, 2005: held follow up training for Planning team A & B
- November 28, 2005: held table top exercise for both EOC teams.
- December 31, 2005: activated EOC to support flood incident

Vacaville Fire Department Emergency Operations Manual**Chapter: Special Operations**
SOG: Flood Plan**Revision Date: 02/2005**
Page 1 of 2

- I. The purpose of the Vacaville Fire Department Flood plan is to establish a coordinated plan with Public Works and Police to respond to flood related emergencies. The Flood Plan relies on a Unified Command Structure and early notification of all the involved parties. The Fire Department flood plan was developed to allow for a safe and proactive response to flood related emergencies. The plan consists of three major components:
 - A. The first component is the Flood Operations Response Plan. This plan has four major levels of activation. This plan is reliant on the cooperation of both Public Works and the Police Departments to be successful. This is where the overall Command of Flood Emergencies begins. The Flood Ops Center will be located at the Corporation Yard.
 - B. The second component of the plan is the Flood Emergencies Response training element which prepares our personnel to safely respond to Flood Emergencies.
 - C. The third component is Public Education. This part consists of pre-flood information including public service announcements (PSA), a flood flier, and press releases. It also includes flood warnings and updates broadcast by KUIC and the local public channels.
- II. With these three components in place, in the event of flood problems, the Fire Department will be able to respond in a safe, professional, and timely manner to effectively manage flood emergencies. The plan consists of four major levels of activation.
 - A. Level I

Once signs of flooding are noticed by Public Works

Fire and Police are notified
 - B. Level II

Streets are flooding, road closures are needed

 1. Activate Departmental Flood Ops Center, staff with Public Works, Fire and Police personnel
 2. Consider General Alarm to recall Fire personnel
 3. Field reconnaissance by PD and PW of flooding status
 4. Notify media of problems; KUIC and the local public channels
 - C. Level III

Imminent or actual threat to life or property, Fire Department needs to enter the water

 1. Respond one Engine Company and Squad to the incident
 2. Establish Incident Command Post at scene with FD, PW, and PD
 3. Notify Operations Chief

Vacaville Fire Department Emergency Operations Manual

Chapter:

Revision Date:

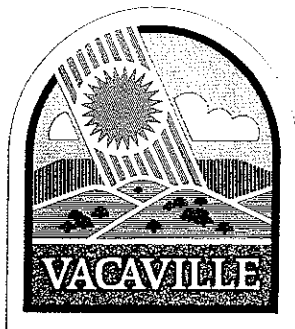
SOG:

Page 2 of 2

D. Level IV

Widespread flooding

1. Notify Fire Chief
2. Notify City EOC Staff
3. Conduct General Alarm recall of personnel and hold crews over as needed; consider Mutual Aid Units.



December 2005/January 2006

Partners

In Vacaville

CITY MANAGER'S UPDATE

By David J. Van Kirk

Our Other Job Title: Disaster Service Worker

When you and I first came to work for the City, we picked up an important additional emergency occupation – that of Disaster Service Worker. The State of California, Government Code Section 3100 states that all public employees (including cities) are declared to be “disaster service workers subject to such disaster service activities as may be assigned them by their superiors or by law.” This means that all City employees would automatically assume Disaster Service Worker status in the event of a declared local, state and/or national emergency.

During a disaster such as a major earthquake, normal emergency services staff in Fire and Police would be overwhelmed. The community will be depending upon us, as Disaster Service Workers, to effectively deal with the emergency situation and help meet their needs.

Because of our role in an emergency, it is important that we plan ahead and prepare our families. A good rule of thumb in emergency preparedness is to prepare for you and your family to be self-sufficient for a minimum of 72 hours following a major emergency situation. This means preparing an adequate supply of food, water, and medical supplies. Information on emergency preparedness is available at www.72hours.org. If you know that your family is prepared, you will be better able to function as a Disaster Service Worker in an emergency.

As a Disaster Service Worker you may be called upon to perform a variety of duties vastly different than your normal duties (you can review possible duties with your supervisor). Additionally, you may be scheduled for extended periods of time (12 hour shifts or longer) depending on the emergency. Again, check with your supervisor for specific department policies and procedures for emergency operations.

If a disaster strikes while you are at work, you should remain at your work site until you receive instructions from your Department Head or supervisor. Time will be needed to allow City staff to determine the extent of damages and plan the City's initial response to the emergency. Be ready to evacuate your facility if necessary. Should a major disaster strike during your non-working hours, first make sure your personal and family needs are met. If your supervisor has given you instructions for disaster situations, please adhere to those guidelines. If not, in a major disaster you have several options. You can check the TV government channel 26 or KUIC 95.3 FM for instructions, or phone the City disaster hotline for instructions (this line is under development, more info coming soon). If you are unable to get information from the above sources, report to the Police Department lobby.

Now is a good time for you to become familiar with our updated Emergency Operations Plan, available on the InfoNet. In recent months, we have conducted several training exercises for City staff who have been designated as emergency management personnel, and equipped our new Emergency Operations Center (EOC) in the Police building. Additional training exercises will be held quarterly throughout 2006.

While we hope that we never have to deal with a major disaster, we need to temper that hope with thoughtful planning and preparation to protect the lives and property entrusted to us.

A Newsletter for City Employees

PRESS RELEASE INFO
(December 30, 2005)

Based on National Weather Service reports the City of Vacaville may experience areas of localized flooding tonight and Saturday morning. Please monitor local weather reports on radio and television and take precautions as necessary to protect your cars and property. Self Help sand bags are available at the Irene Larson ball fields next to Fire Station 74 on Alamo Drive and at the City of Vacaville Corporation Yard, 1001 Allison Drive.

Along with potential flooding the storm may bring high winds that could topple trees leading to downed and or arcing power lines. Treat downed power lines with the utmost respect, do not approach them and notify the Vacaville Police Department immediately by calling 911, or if you are on a cell phone call 449-5200.

For personal safety and as a courtesy to your friends and neighbors, please refrain from driving and walking through flooded streets. Hazards exist below flood waters where unseen currents can dislodge grates and street access covers, which can trap vehicles or people walking through the water. Past experience has shown that damage to homes and personal property is caused by vehicles driving through flooded streets creating a wake that washes into homes. .

In any potential emergency preparation is the key. The City of Vacaville recommends you take steps to prepare for this and any storm by having flashlights and extra batteries on hand as well as basic survival supplies including food, water, and basic first aid supplies. Additionally you can help your community prepare for this storm by clearing any leaves or debris from gutters and storm drains in your neighborhood. If you live in an area that has flooded in the past the City of Vacaville recommends you move your vehicles and other property that could be damaged by flood waters to higher ground.

For further information please call 449-5226 Box #4 or visit these websites on the Internet, www.solanocounty.com/oes, www.weather.gov, or www.stillwaterredcross.org.

CITY WATCH BULLETIN

This is a courtesy notice from the City of Vacaville. Based on National Weather Service reports your area may experience localized flooding tonight and Saturday morning. Please monitor local weather reports on radio and television and take precautions as necessary to protect your cars and property. Self Help sand bags are available at the Irene Larson ball fields next to Fire Station 74 on Alamo Drive and at the City of Vacaville Corporation Yard, 1001 Allison Drive. For further information please call 449-5226 Box # 4

City of Vacaville

Summary of Personnel Responding to 2006 New Year's Flood

	Dept	Emp Count	Total Hours	Estimated Dollar Costs
Saturday				
December 31, 2005				
	Public Works	63	653	\$26,690
	Fire	44	487	\$19,585
	Police	63	492	\$23,876
	All Others	20	124	\$5,400
	Total for 12/31	190	1,756	\$75,551
Sunday				
January 1, 2006				
	Public Works	42	358	\$14,711
	Fire	20	21	\$742
	Police	7	44	\$2,170
	All Others	2	8	\$642
	Total for 1/1	71	431	\$18,265
Monday				
January 2, 2006				
	Public Works	36	276	\$10,578
	Police	1	2	\$177
	All Others	9	39	\$1,104
	Total for 1/2	46	316	\$11,859
	Three-Day Total		2,503	\$105,674

Regular shift personnel:	Public Works	5
	Fire	19
	Police	36

Channel 26 Alerts

ALERT

Vacaville Flood Assistance Alert

FLOOD DEBRIS ASSISTANCE

Call 449-5660

ALERT

Vacaville Flood Assistance Alert

SANDBAGS

Available at the Corporation Yard

7:30 a.m. to 3:30 p.m., Monday – Saturday

1001 Allison Drive

ALERT

Vacaville Flood Assistance Alert

TEMPORARY SHELTER INFORMATION

Call 449-5200

For Shelter Updates

ALERT

Vacaville Flood Assistance Alert

ELECTRICAL SAFETY

**Don't use any appliance that was
or in water.**

**If electrical receptacles were under water
check with a licensed electrician before using.**

Be sure to Contact a licensed electrician

ALERT

Vacaville Flood Assistance Alert

FREE BUILDING REPAIR PERMITS

The City of Vacaville will provide

Repair permits free of charge

For homes affected by flood.

Drywall, electrical repairs, installation needs

will be covered.
Call 449-5154

ALERT
Vacaville Flood Assistance Alert

MINOR CLEANUP HELP

The City of Vacaville may be able to
Assist the physically impaired with
Youth work crews.
Call 449-5660

ALERT
Vacaville Flood Assistance Alert

EMERGENCY REPAIR LOANS
3% Loans for repairs may be available
to those who qualify.

Contact 449-5660 for details

ALERT
Vacaville Flood Assistance Alert

CALL 449-5200
for general information
And referral to appropriate offices.

ALERT
Vacaville Flood Assistance Alert

**Volunteers needed to flood debris
Cleanup.**

Saturday, Jan. 14
9 a.m.
Fairmont Elementary School
1355 Marshall Rd.
Call: 449-5660

ALERT
Vacaville Flood Assistance Alert

**FLOOD RELIEF
FUNDRAISER**

**5 to 8 p.m.
Stars Recreation Center
\$20 donation
Spaghetti Dinner, Music
Makes Checks to Vacaville Community Welfare Association
(Tax Deductible).**

Call 451-2100

**ALERT
Vacaville Flood Assistance Alert**

**Help Your Neighbors
Make a Donation**

**Make Checks Payable to:
Vacaville Community Welfare Assoc.**

**Mail to DVBID
311 Parker St.
Vacaville, CA 95688**

Call 451-2100

SOLANO COUNTY OFFICE OF EMERGENCY SERVICES
PUBLIC/PRIVATE ASSISTANCE DAMAGE ASSESSMENT WORKSHEET

Date: _____

EXHIBIT 12

DAMAGE SITE (Address or Location)	Priv	Pub	CITY OR COUNTY	DAMAGE LEVEL				ESTIMATED \$ TO REPAIR	INSURANCE % or \$	DESCRIPTION OF DAMAGE / NOTES
				D	MJ	MR	AF			
DEBRIS REMOVAL & DISPOSAL		CAT A	CITY OF VACAVILLE					270,000.00	N/A	General Citywide debris clean up. City crews
DEBRIS REMOVAL & DISPOSAL		CAT A	CITY OF VACAVILLE					75,000.00	N/A	General Citywide debris clean up. Vacaville Sanitary Service
EMERGENCY PROTECTIVE MEASURES		CAT B	CITY OF VACAVILLE					35,000.00	N/A	Flood preparation measures.
BRIDGES NORTH OF I-80		CAT C	CITY OF VACAVILLE			x		28,000.00	N/A	Scour damage, shotcrete or rock slope protection damage, undermining of abutment, fence or rail damage
BRIDGES SOUTH OF I-80		CAT C	CITY OF VACAVILLE			x		125,000.00	N/A	Scour damage, shotcrete or rock slope protection damage, undermining of abutment, fence or rail damage
ROADWAY/SIDEWALK REPAIR - ELDRIDGE STREET		CAT C	CITY OF VACAVILLE	x				65,000.00	N/A	Large area of AC pavement, sidewalk, curb, gutter, chain link fencing, destroyed. New roadway section needed.
ALAMO CREEK - MARSHALL RD to PEABODY ROAD		CAT D	CITY OF VACAVILLE		x			230,000.00	N/A	Erosion of creek bank requiring reconstruction and/or RSP, tree and debris removal, damage drainage facilities
ALAMO CREEK - PEABODY RD NUT TREE RD		CAT D	CITY OF VACAVILLE		x			580,000.00	N/A	Erosion of creek bank requiring reconstruction and/or RSP, tree and debris removal, damage drainage facilities
ALAMO CREEK - NUT TREE RD to LEISURE TOWN RD		CAT D	CITY OF VACAVILLE			x		50,000.00	N/A	Erosion of creek bank requiring reconstruction and/or RSP, tree and debris removal, damage drainage facilities
ULATIS CREEK - WEST OF ALLISON DR		CAT D	CITY OF VACAVILLE		x			150,000.00	N/A	Erosion of creek bank requiring reconstruction and/or RSP, tree and debris removal, damage drainage facilities
GIBSON CANYON RD - BANK EROSION (Joint Trench)		CAT D	CITY OF VACAVILLE			x		20,000.00	N/A	Erosion of creek bank against public sidewalk, erosion of utility joint trench, at back of walk.
PUBLIC BLDGS & EQUIPMENT		CAT E	CITY OF VACAVILLE			x		125,000.00	N/A	Flooding at City of Vacaville water treatment plant (\$75,000)
12" DIP WATERLINE (Depot St @ Ulatis Creek)		CAT F	CITY OF VACAVILLE	x				30,000.00	N/A	Flooding at City of Vacaville Corporation Yard (\$50,000)
CREEKWALK - ULATIS CREEK McCLELLAN ST TO E.M.V		CAT G	CITY OF VACAVILLE		x			50,000.00	N/A	12" DIP waterline hung from bottom of Depot St bridge @ Ulatis Cr. Severed. Out of service. Replace ~100 feet.
CREEKWALK - WALKWAY CIDH PILE REPAIR		CAT G	CITY OF VACAVILLE		x			50,000.00	N/A	Erosion of creek bank requiring reconstruction and/or RSP, tree and debris removal, damage drainage facilities
SLIDE AREAS - CALIFORNIA DR AREA		CAT G	CITY OF VACAVILLE			x		150,000.00	N/A	2 CIDH piles supporting a sidewalk facility are undermined to the pile seat.
SLIDE AREA - 667 HILCREST CIR		CAT G	CITY OF VACAVILLE			x		30,000.00	N/A	Multiple slide areas in public open space at the rear of residential units west of California Dr in Hidden Oaks area
										Slide in public open space at rear of 667 Hilcrest, blocking drainage ditch and access road

Assessors' Names and Contact Telephone Numbers:

**Vacaville Sanitary Service
Flood Recovery January 2006**

The following table details the VSS equipment and services provided. The notation of partial days for vehicle use on January 4th resulted from VSS drivers being diverted from the regular routes as soon as possible without disrupting service.

Date	Vehicle/Equip Type	Number	# Drivers/helpers
1/4/06	Front Loader	1 – all day	2
	Front Loader	2 – ½ day	4
	Roll-Off (debris box truck)	2 – all day	2
	Roll-Off	5 – 2-3 hrs	5
	Debris Boxes	9	
1/5/06	Front Loader	1	2
	Rear Loader	1	1
	Roll-Off	2	2
	Debris Boxes	9	
1/6/06	Roll-Off (empty and pull)	2 – 3 hrs	2
1/7/06	Front Loader	1	2
	Flatbed (for appliances)	1	2
	1 box emptied and pulled		
1/14/06	Front Loader	3	6
	Side Loader	1	2
	Rear Loader	1	2
	Flatbed	2	3
1/16/06	Street sweeper	2	2

Total Tonnage Disposed

Service	Tons
Debris Box	224.84
Dump Pass	58.77
City Trucks + Pre-Pass Self Haul	214.05
Other VSS	154.30
TOTAL	651.96

Total Clean-Up Cost

Type	Debris Box	Jan 4	Jan 5	Jan 7	Jan 14	Appliances	Dump Pass	City + Pre-Pass	HHW	TOTAL
Disposal	8262.87	965.42	858.85	345.45	3500.81	4140.28	2159.80	7866.34		\$28,099.82
Labor	18914.81	1463.60	1375.60	1214.80	3805.60	175.60			350.00	\$27,300.01
TOTAL	27177.68	2429.02	2234.45	1560.25	7306.41	4315.88	2159.80	7866.34	350.00	\$55,399.83

2005 Flood Recovery Donors & Volunteers

Thank you letters were mailed to the following people/organizations for their generous support during the flood recovery efforts:

Vacaville Sanitary
Ghilotti Construction
Paul Merrick Construction
Chevron Refinery Employees
City Coach
Fairmont School Maintenance Superintendent
Vaca Valley Vettes (Corvette Club)
DVBID - Fundraiser

American Red Cross
Salvation Army
Vacaville Community Welfare Assn.

Albertson's
Raley's
Nugget
Costco
Sam's Club
Wal-Mart
Home Depot
McDonald's
Perfect Blend Coffee
Starbucks
Marvin Neil – Food Cart
Sacramento Coca-Cola Bottling Co.
Papa John's Pizza
Subway

Vacaville Ministerial Association
Shepherd of the Hills Church
Orchard Avenue Baptist Church
First Baptist Church
Trinity Baptist Church
The Father's House
Living Water Missionary Baptist Church
SOULS Ministries
Crossroads Christian Church
Christian Body Life Fellowship Church
Valley Church
Church of Jesus Christ of Latter-Day Saints

Donations to Vacaville Community Welfare Assn. were acknowledged by VCWA.

FLOOD DEBRIS REMOVAL

EXHIBIT 15

**IN YOUR NEIGHBORHOOD
WEDNESDAY – JANUARY 4th
8:00 a.m.**

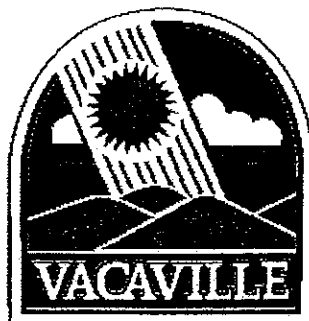
Debris bins will be located at:

**Corner of: Catalpa & Southwood
Corner of: Dogwood & Tulare
Corner of: Persimmon & Tulare
Corner of: Southwood & Tulare
Corner of: Beelard & Tulare
Corner of: Beelard & Mathews
Corner of: Tulare & Kingsland
Corner of: Southwood & Eastwood
Corner of: Brookdale & Tulare
Citrus Avenue between Juniper & Ironwood**

The City of Vacaville & Vacaville Sanitary are providing this emergency service to assist residents to remove items damaged by the flood, such as carpets, furniture, dry wall. No appliances at this time.

Call: 449-5600

For recorded information about this service.



Where To Go For Assistance

SANDBAGS: Sandbags will be available at the Corporation Yard, 7:30 a.m. to 3:30 p.m. Monday through Saturday, 1001 Allison Drive.

SHELTER INFORMATION: Call 449-5200 for temporary shelter information.

FREE REPAIR PERMITS: The City of Vacaville will provide drywall/installation/electrical repair permits free of charge to those whose homes were affected by flood. Contact the City Community Development Department, 449-5154.

ELECTRICAL SAFETY: Do not use any appliance that was standing or in water. Portable GFCI's may be an option for electrical receptacles that were under water. Residents should check with a licensed electrician for more information.

MINOR CLEANUP ASSISTANCE: The City of Vacaville may be able to assist for those physically impaired. Call 449-5660 for information.

REHABILITATION/EMERGENCY REPAIR LOANS: Loans for general building code repairs at a 3% interest rate may be available for those who qualify. Contact 449-5660 for information. ~~Following is general guidelines to qualify:~~

INFORMATION MEETING:

An information meeting for residents affected by the flooding will be held at the Shepard of the Hills Church, 580 Trinity Drive, from 9 a.m. to noon on Saturday, January 7th. City officials will be available to assist residents and answer their questions regarding how to contact regional, state and federal agencies.

Call 449-5200 for general information and referral to appropriate offices.

Flood Recovery Drop-In Assistance Center

Flood recovery assistance centers will be open this Saturday to provide residents affected by recent flooding with information and resources.

Centers will be open on Saturday, January 7, 2006

9:00 a.m. to 12 noon

Location: Shepherd of the Hills Church, 580 Trinity Drive

2:00 pm to 5:00 pm

Location: Orchard Baptist Church, 301 North Orchard

The same information and resources will be available
at each location.

Representatives and information will be available from:

Police & Fire Departments

Building Services-Including permitting and inspections

Public Works – Flood Zone Location Information

Red Cross – Solano County

Salvation Army-Services

Counseling and Family Services

Tenant Assistance & Short Term Housing/Shelter Information

Home Repair Loans/Application Information

Information on Federal Programs (including FEMA)

VACAVILLE FLOOD RECOVERY**DROP-IN ASSISTANCE CENTER****Saturday, January 7, 2006**

9:00 a.m. to noon
2:00 to 5:00 p.m.

Shepherd of the Hills Church, 580 Trinity Drive
North Orchard Baptist Church, 301 North Orchard Drive

Each location will have the following representatives and services available:

Salvation Army: Representatives from the Salvation Army will be available to provide information about their services and what assistance is available to flood victims.

Red Cross: Representatives from the Red Cross will be available to provide information about their services and what assistance is available to flood victims.

Counseling and Resource Information: Counseling staff from the City's family resource center will be on-hand to meet with individuals or families that may need help with coping mechanisms and provide information on available resources.

Tenant Assistance and Short-Term Housing: One-on-one advice for renters about flooding issues, lists of available apartment vacancies and short-term housing vouchers at local motels will be available.

Federal Information: For residents to be eligible for financial assistance from FEMA and other federal agencies, **our county must first be designated as a federal disaster area, and this has not yet occurred** (see reverse side for more info on this process). If Solano County is declared as a federal disaster area, residents will then be able to apply directly to FEMA/SBA for assistance in the form of low-interest loans and, in some cases, grants. Handouts are provided with basic reference information regarding federal programs that may become available, tax deductions for flood losses, and other federal resources.

Home Repair Loans (Neighborhood Conservation Program): Information and applications for the City's low interest (3%) loans for up to \$45,000 for eligible households will be available. Loan funds can be used to repair flood damage such as flooring drywall electrical, etc. Applicants must meet eligibility requirements including income as shown on the reverse side of this page (e.g. not more than \$88,700 for a family of four).

Building Services: The Chief Building Official and Assistant Community Development Director will be available to provide information on building codes. The City will allow property owners to obtain permits at no cost for flood damage repairs.

Fire/Police: The City's Police Chief and Fire Chief will be available to answer questions about disaster preparedness.

Public Works-Flood Zones: The City's Public Works Director and City Engineer will be available to answer questions and provide information on flood zones as designated by FEMA.

(over)

FREQUENTLY ASKED QUESTIONS ~ FAQ'S

Is assistance still available to help clear debris at my home? A volunteer center is in place today, Saturday January 7th, at Fairmont School (1355 Marshall Rd.) from 8:30 a.m. to 4 p.m. to match up local volunteers and available equipment with residents needing assistance on flood clean-up projects. The City has also visited homes in the worst impacts areas on Friday, January 6th to distribute one time vouchers for a free dump load at the B&J Land Fill on Hay Rd. Elderly or disabled persons who need assistance clearing flood debris can call 449-5660 for further assistance.

When will all of the street be cleaned? The City is doing everything they can to clean up the streets as fast as possible. We hope to complete by 1/13/06.

Am I eligible for the City's Home Loan or Tenant Rental Program? There are a variety of standards to be met before determining if a family is eligible for assistance for home loans or rental programs. The first level of eligibility is determined by family income. If your family's income is less than the amounts listed below, based on family size, you may then inquire if you are eligible for the programs at the drop-in center tables today or by calling the Housing and Redevelopment Office at 449-5660.

<u>Family Size</u>	<u>Annual Income Limit</u>	<u>Family Size</u>	<u>Annual Income Limit</u>
1	\$62,100	5	\$95,800
2	\$70,950	6	\$102,900
3	\$79,850	7	\$110,000
4	\$88,700	8	\$117,100

What do I do if I do not have Flood Insurance? First, if your vehicle(s) sustained flood damage, contact your automobile insurance company to determine if you have coverage. For property damage, if you have rental or homeowner's insurance, contact your agent to determine if you have any coverage. Most rental and homeowner insurance policies do not cover flood damage. The other programs offered through the City or FEMA are described further in this handout.

How do I get financial assistance from FEMA? For residents to be eligible for assistance from FEMA or other federal agencies, this county must first be designated as a federal disaster area. This has not yet occurred. If our area is designated as a federal disaster area, residents will then be able to apply for assistance in the form of grants and low-interest loans. To help prepare for this process, it is important that you document any damage or losses that you have had due to the flooding. Keep invoices, cancelled checks, and receipts for repairs and take pictures to illustrate the damage.

So what does it take to get our county designated as a federal disaster area? Solano County was declared a state of emergency by the Governor on January 3, and the State Office of Emergency Services is currently working with state and FEMA inspectors to complete an initial field assessment of the extent of flood damage in all 23 affected counties. Based on the results, the Governor may request a federal disaster declaration, which would be made by the President. A list of current federal disaster declarations can be found at <http://www.fema.gov/news/disasters.fema>

If we do become eligible for federal assistance, what kinds of help will be available? Most disaster assistance from the federal government for homeowners and renters is in the form of low-interest loans from the Small Business Administration (SBA). Through the SBA, homeowners may be eligible to borrow money for disaster-related home repairs, and both homeowners and renters may be able to borrow money to replace disaster-damaged personal property, including vehicles. Some applicants may qualify for FEMA's Assistance for Individuals and Households program, which may include cash grants for housing needs (including temporary housing) and other disaster-related needs. Applicants to FEMA may be required to seek assistance from the SBA first. (Source: www.fema.gov)

RECUPERACION DE LA INUNDACION DE VACAVILLE
CENTRO DE ASISTENCIA

EXHIBIT 19

Sábado, 7 de enero de 2006

9:00 a.m. hasta el mediodía

Shepherd of the Hills Church, 580 Trinity Drive

2:00 p.m. a 5:00 p.m.

North Orchard Baptist Church, 301 North Orchard Avenue

En cada sitio, estarán representantes y los servicios disponibles incluidos abajo:

Salvation Army: Representantes del Salvation Army estarán presentes para proveer información sobre sus servicios y la asistencia que está disponible para las víctimas de la inundación.

Cruz Roja: Representantes de la Cruz Roja estarán presentes para proveer información sobre sus servicios y la asistencia que está disponible para las víctimas de la inundación.

Consejos y Recursos: Consejeros del Centro de Recursos para Familias de la Ciudad de Vacaville estarán presentes para reunirse con individuos o familias quienes necesitan ayuda con enfrentarse con la situación y para proveer información sobre recursos disponibles.

Asistencia para Inquilinos y Vivienda de Plazo Corto: Consejos individuales para inquilinos sobre asuntos de la inundación, listas de apartamentos disponibles y comprobantes para vivienda de plazo corto en hoteles locales estarán disponibles.

Información del Gobierno Federal y Estatal: Para que residentes sean elegibles para asistencia financiera de FEMA y otras agencias federales, **primero nuestro condado tiene que ser designado como una área federal de desastre, y esto aún no ha pasado (vea al otro lado de este boletín para más información sobre este proceso).** Si declaran al condado de Solano como una área federal de desastre, residentes podrán aplicar directamente con FEMA/SBA para asistencia en forma de préstamos de bajo interés y, en algunos casos, becas hacerse disponibles en el futuro, deducciones de impuestos para las pérdidas de la inundación, y otros recursos federales.

Préstamos para Reparaciones de Casa (Programa de Conservación del Vecindario): Estarán disponibles información y solicitudes para el programa de la Ciudad de Vacaville para préstamos de bajo interés (3%). Residentes elegibles pueden pedir prestado hasta \$45,000. Estos fondos se pueden usar para reparar los daños causados por la inundación como pisos, drywall, alambres electricas, etc. Para aplicar, debe satisfacer los requisitos de elegibilidad, incluyendo limites de ingresos (por ejemplo, no puede ganar más de \$88,700 al año para una familia de 4).

Servicios del Departamento de Permisos de Construcción (Building): El oficial principal del Departamento de Permisos de Construcción (Building) y el Director Asistente del Departamento de Desarrollo Comunitario estarán presentes para proveer información sobre los códigos de construcción. La Ciudad de Vacaville permitirá que los dueños de propiedades obtengan permisos gratis para reparaciones de daños causados por la inundación.

Bomberos/Policia: El Jefe de Policia y el Jefe de Bomberos estarán presentes para contestar preguntas.

Departamento de Mantenimiento de Facilidades Públicas – Zonas de Inundación: El Jefe del Departamento de Mantenimiento de Facilidades Públicas y el Ingeniero de la Ciudad estarán presentes para contestar preguntas. El mapa de Precios Federales de Aseguranza estará disponible para que se vean las zonas de inundación.

Preguntas Frecuentes

¿Cómo puedo conseguir asistencia financiera de FEMA?

Para residentes elegibles para asistencia de FEMA u otras agencias federales, primero este condado tiene que ser designado como una área federal de desastre. Esto aún no ha pasado. Si resulta que nuestra área sea designada como una área federal de desastre, residentes podrán aplicar directamente con FEMA/SBA para asistencia en forma de préstamos de bajo interés y, en algunos casos, becas. Para prepararse para este proceso, es importante que mantenga documentos sobre los daños o pérdidas que ha sufrido por la inundación. Guarde sus cuentas, cheques cancelados, y recibos para reparaciones, y tome fotos para documentar los daños.

¿Qué se necesita para que nuestro condado sea designado como una área federal de desastre?

El condado de Solano fue declarado como un estado de emergencia por el Gobernador en el 3 de enero, y la Oficina de Servicios de Emergencias del Estado está trabajando con inspectores del estado y de FEMA para completar una evaluación inicial de la alcance de los daños causados por la inundación en todos de los 23 condados afectados. Según los resultados, el Gobernador puede pedir que el Presidente declare un desastre federal. Una lista de declaraciones de desastres federales presentes se puede encontrar en <http://www.fema.gov/news/disasters.fema> y información presente se mantendrá en el website de la Ciudad de Vacaville en www.cityofvacaville.com.

Si somos elegibles para asistencia federal, ¿qué tipo de ayuda estará disponible?

La principal forma de ayuda federal para recuperación de largo plazo para dueños de casas y inquilinos es de préstamos para desastres de interés bajo por parte de la Administración de Negocios Pequeños de los Estados Unidos (SBA). Los que apliquen a FEMA se les puede requerir que busquen asistencia primero del SBA. Los préstamos por parte del SBA son para cubrir los costos de reparaciones de daños a propiedad privada (la cual puede incluir su casa, propiedad personal, y/o su vehículo) que no son cubiertos por su aseguranza. Si el SBA determina que usted no está capacitado para pagar el préstamo, se le puede referir a otros programas de asistencia. Más información está disponible en el siguiente: <http://www.fema.gov/about/process/> y <http://app1.sba.gov/faqs/faqindex.cfm?areaID=3>.

FLOOD RECOVERY CLEAN-UP

January 8 to 14, 2006

The following services will be available to assist flood victims with debris removal.

Sunday, January 8: Coordinators will be available at Fairmont School (1355 Marshall Road) from 9:00 to 2:00 to assist residents in completing an assessment for volunteer referrals. The City has distributed dump passes for residents to use for flood damage debris disposal at the B&J Landfill on Hay Road.

January 9-13: Residents can contact 449-5660 to complete an assessment for volunteer referrals or request a dump pass. The City has distributed dump passes for residents to use for flood damage debris disposal at the B&J Landfill on Hay Road.

As volunteers become available, they will be referred to residents who have completed an assessment.

Saturday, January 14: Vaca-Sanitary will be called in to provide dump truck service to remove *flood damaged debris only* which has been placed in front yards and driveways.

THERE WILL BE NO FLOOD DEBRIS DUMPSTER OR DUMP TRUCK SERVICE UNTIL SATURDAY, JANUARY 14TH.

Your normal trash removal service will occur during the week. Debris is to remain in front yards and driveways until that time.

Please do not store debris in the street.



CITY OF VACAVILLE TOWN HALL MEETING

**MONDAY, JANUARY 9, 2006
7:00 P.M.**

**Ulati Community Center
1000 Ulati Drive**

- **FLOOD UPDATE**

City Council and staff will receive written and public comments from residents affected by the storm.

Limited shuttle service available beginning at 6:00 p.m.

Albertson's Parking Lot – Alamo/Peabody
Fairmont School Parking Lot – 1355 Marshall Road

FLOOD DEBRIS REMOVAL

Please place the flood debris items such as: carpet, furniture, dry wall, and appliances you collect this week at the following locations on Saturday, January 14 by 8 a.m. for pickup service by Vacaville Sanitary.

(*See map on reverse side showing debris pickup locations in the Southwood/Glenwood Estates):

- **In front of pool house on Eastwood**
- **At the side of 1960 Duxburry (Woodglen)**
- **At the side of 1961 Aletha Lane**

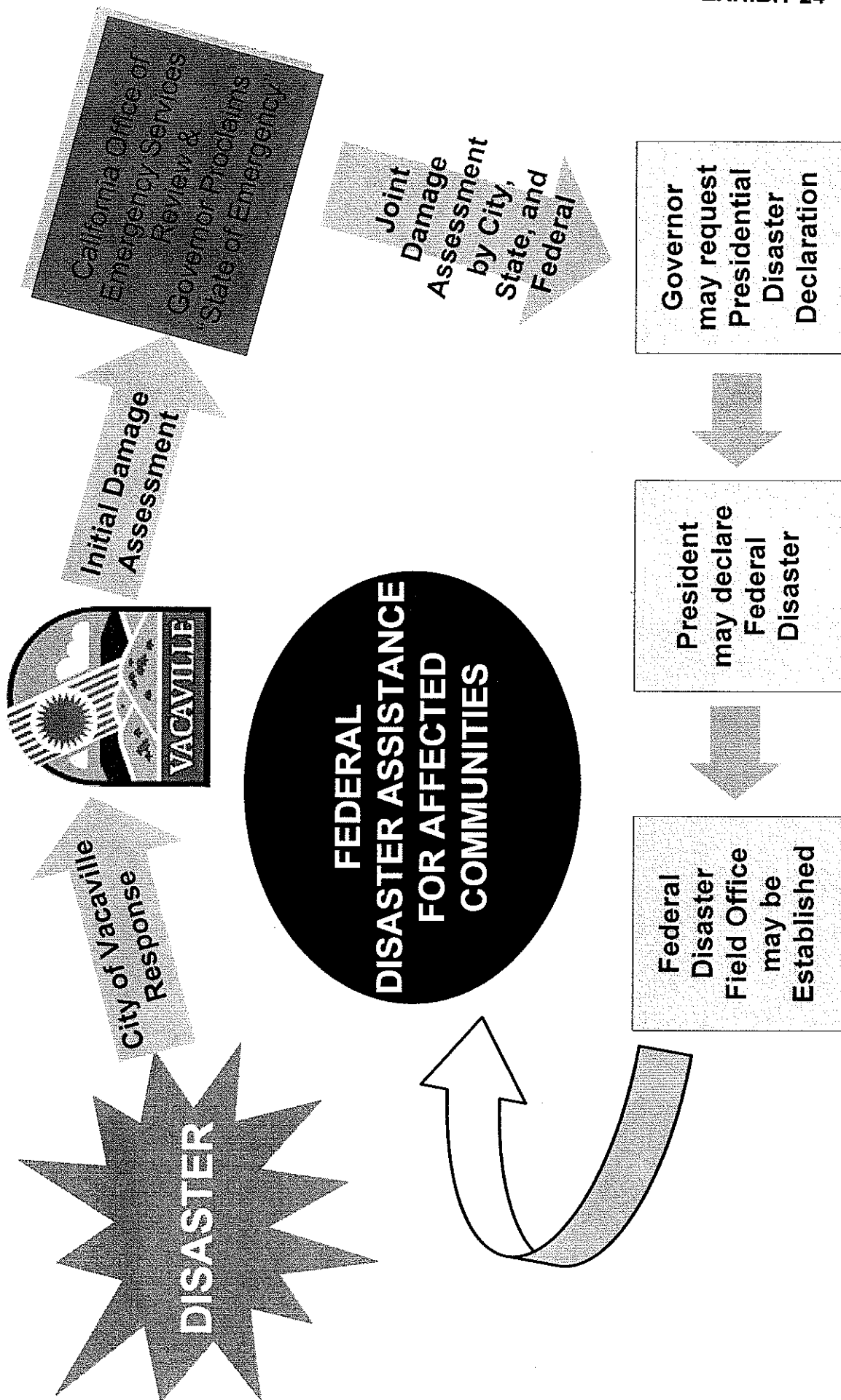
For more information, call 449-5660



Flood Contact Numbers

Building Permits at no cost	449-5154	City of Vacaville - Building Division
Contractor verifications	800-962-1125	Contractor's State License Board www.slb.ca.gov
Damage report - Solano Co.	784-4750	Solano Co. Bldg. Insp. Request Line
Damage report – Fairfield	428-7400	City of Fairfield
Donation <u>or</u> need of household goods/clothing	469-6608	City of Vacaville Police Dept. Family Resource Center (FRC)
Dump Pass <u>List</u> (flood debris removal)	449-5660	City of Vacaville (HRD Admin) (Code Compliance - Lucy x5694)
Emergency Loans (Home Repairs)	449-5660	City of Vacaville (HRD – Kathy x5653)
FEMA	800-621-3362	Applications. www.fema.gov
Housing Counseling Tenant/Landlord Rights	449-5691	City of Vacaville (Housing Services) Kat Lawton, Housing Counselor
IRS	800-829-3676	Tax info regarding losses. www.irs.gov
Lodging/Vouchers	449-5610	City of Vacaville (Housing Services) Interns
Mental Health Counseling	469-6608	City of Vacaville Police Dept. Family Resource Center (FRC)
Mold/health issues	784-6765	Solano County Health Department
Mud removal from streets & creek damage	449-6500	City of Vacaville Public Works Maintenance Division
Prorated property tax break application	784-6200	Solano County www.co.solano.ca.us
Emergency shelter, food, health & mental services	438-7059	Red Cross
Disaster services (e.g. food, clothing, clean-up)	449-8046	Salvation Army
Transportation	449-6000	City Coach

Disaster Assistance Process



**"December 2005 Emergency Flood Program (ELP)"
Guidelines**

Eligibility Criteria:

1. Living quarters (excluding garages or out buildings) must have been damaged by December 2005 flood.
2. Family income must not exceed 120% of local median income adjusted for family size (i.e.: \$88,700 for a family of four).

Loan Size and Terms:

1. The maximum loan amount is \$45,000. The minimum loan amount is \$5,000.
2. The interest rate is 0% and payments are deferred for 5 years. Beginning year 6, the interest rate is 3% and loan payments are made over the next 15 years.
3. Families with incomes below 50% of median will have 0% interest rate and the loan payments are deferred until title transfer.
4. Loans will be secured to the home.

Underwriting Criteria:

1. Pre-ELP mortgage Loan to Value (of the home) cannot exceed 90%.
2. Debt to Income ratio and credit history will be reviewed on a case-by-case basis.

Eligible Uses:

1. Borrower may use loan funds to repair flood damage to the living quarters of the home. (This does not include appliances that could be removed from the home, such as washers, dryers, refrigerators, and microwaves.) If loan funds remain, they may be used to repair garages, shed, fences, and/or landscaping.
2. Work may be performed by licensed contractors or by the Borrower/property owner. If a licensed contractor is not used, the property owner will only be reimbursed for the cost of materials with proof of purchase of the materials.
3. Borrower must submit cost estimates or bids for work to be performed, which will be reviewed for cost reasonableness.
4. Borrower will be solely responsible for quality of work. (City staff will inspect to verify that work was performed but will not inspect for work quality.)
5. Borrower must secure building permits as required. The City will waive building permit fees.
6. Borrower will be reimbursed for materials after submitting receipts and inspection to verify that materials were installed. Requests for funding prior to purchases will be considered on a case-by-case basis.
7. Borrower will not be required to address all code violations with the loan funds, but will be encouraged to apply under the City's Neighborhood Conservation Program at a later date.

At this time, residents affected by the 2005 floods may or may not be determined to be eligible for assistance through the Federal Emergency Management Agency (FEMA) and/or the Small Business Administration (SBA). If it is also not known whether participation in the City's ELP program may make a Borrower ineligible for assistance from other agencies or programs including, but not limited to, FEMA and SBA.

Residents should also check with their bank or financial institution regarding flood programs they might be eligible.

Emergency Loan for First Month's Rent and Security Deposit

The City of Vacaville is offering an emergency loan to families affected by the December 2005 flood who need assistance to pay first month's rent and the security deposit. This may apply to families who are currently renting or homeowners who need temporary housing while their home is being repaired.

- The maximum loan amount will be equal to the first month's rent and security deposit.
- The City of Vacaville will pay the new landlord directly with the loan proceeds.
- The interest rate is 0%.
- Borrowers will sign a promissory note in favor of the City of Vacaville.
- Repayments will be deferred for six months from execution of the promissory note.
- Monthly payments will be \$100 per month until the loan is paid off, and the borrower will be billed by the City.
- No penalty for pre-payment.
- The City of Vacaville will institute collection procedures for violations of the agreement.

The income limits for the program are as follows:

<u>Family Size</u>	<u>Annual Income Limit</u>	<u>Family Size</u>	<u>Annual Income Limit</u>
1	\$40,600	5	\$62,650
2	\$46,400	6	\$67,300
3	\$52,200	7	\$71,900
4	\$58,000	8	\$76,550

** The maximum income limit may be waived on a case by case basis.*

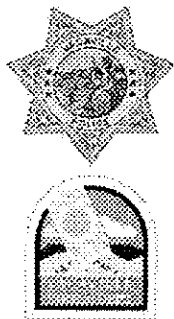
To participate, borrowers must meet with a Department of Housing and Redevelopment staff member to assess their needs and situation (i.e. their tenant obligations under their current lease). Borrowers must fill out an application and provide financial information. The Borrower also must bring in a rental agreement for the new housing unit and an acknowledgement of the program by the new landlord.

Depending on the situation, the borrower may need to provide additional information. This may include a copy of their current lease agreement and a release from the agreement signed by the current landlord.

To participate in this program, please call **449-5660**.

UPDATED CITY WATCH BULLETIN

THIS IS A WEATHER ADVISORY FROM THE CITY OF VACAVILLE PUBLIC SAFETY DEPARTMENTS. BASED UPON THE LATEST NATIONAL WEATHER SERVICE REPORTS, IT IS ANTICIPATED THAT MODERATE TO HEAVY RAINFALL WILL LIKELY OCCUR WHICH COULD LEAD TO FLOODING IN YOUR AREA SUNDAY EVENING INTO MONDAY AND EXTENDING THROUGHOUT THE WEEK. PLEASE MONITOR LOCAL WEATHER REPORTS THROUGH THE LOCAL TELEVISION STATIONS, AND THE LOCAL RADIO STATION KUIC 95.3. WE ADVISE YOU TO TAKE NECESSARY PRECAUTIONS TO PROTECT YOUR VEHICLES AND PROPERTY. PLEASE HELP SPREAD THE WORD TO YOUR NEIGHBORS TO ENSURE THEY ARE AWARE OF THE POTENTIAL OF HEAVY RAINFALL. SAND AND SAND BAGS ARE AVAILABLE FOR YOU TO SELF FILL AT IRENE LARSON PARK, 1850 ALAMO DRIVE BEGINNING SATURDAY AT 8:00 AM. HOME BOUND SENIORS AND THOSE WITH PHYSICAL IMPAIRMENTS WHO MAY NEED ASSISTANCE WITH SAND BAGS MAY CALL 449-5200.



Vacaville Community Emergency Response Teams VCERT

During the first few hours and days after a disaster strikes, emergency services could be overwhelmed, leaving families, neighborhoods and businesses on their own for hours or days. The goal of the **VCERT** program is to provide for community self-sufficiency during the first 72 hours after a disaster.

A new community-based program called **Vacaville Community Emergency Response Teams (VCERT)** is currently being developed and will be instructed jointly by the Police and Fire Departments. Vacaville Fire and Police personnel will train neighborhood **VCERT** teams. The **VCERT** instructors will teach residents to take life-saving action to help their own families, neighbors, businesses and communities get through the first few hours or days when emergency services are overwhelmed.

VCERT teams are trained in safe, basic emergency skills valuable in any major disaster, such as fires, earthquakes, floods, mud slides or terrorism events. The **VCERT** program teaches light search and rescue, basic fire suppression, emergency management and medical triage. The goal is to start evacuations and first aid as quickly as possible and serve in other time-critical emergency functions to help save lives and property.

We anticipate this class will be offered to Vacaville residents in late spring, 2006. Part of the curriculum includes developing emergency preparedness kits, reviewing home safety, and building community-protection strategies.

It is anticipated that members will most likely meet once a week for four weeks; learning essential skills including disaster preparedness, fire suppression, basic medical operations, and search and rescue. There will be two additional Saturday hands-on sessions. Occasional training will also be scheduled to keep skills updated.

Neighborhoods, including Neighborhood Watch groups are being offered this program initially to establish neighborhood teams. Businesses are also encouraged to create a team that can spring into action when the next emergency strikes. If you are interested in forming a **VCERT**, please use the contact information listed below.

**VCERT - TOGETHER WE MAKE THE DIFFERENCE
WE NEED YOU!!!**

Meaghan O'Neill
c/o Vacaville Police Department
660 Merchant Street
Vacaville, CA 95688
707.449-5432
Email: moneill@cityofvacaville.com

February 1990

City of Vacaville, California

ULATIS CREEK WATERSHED STUDY

Prepared by

Camp Dresser & McKee Inc.

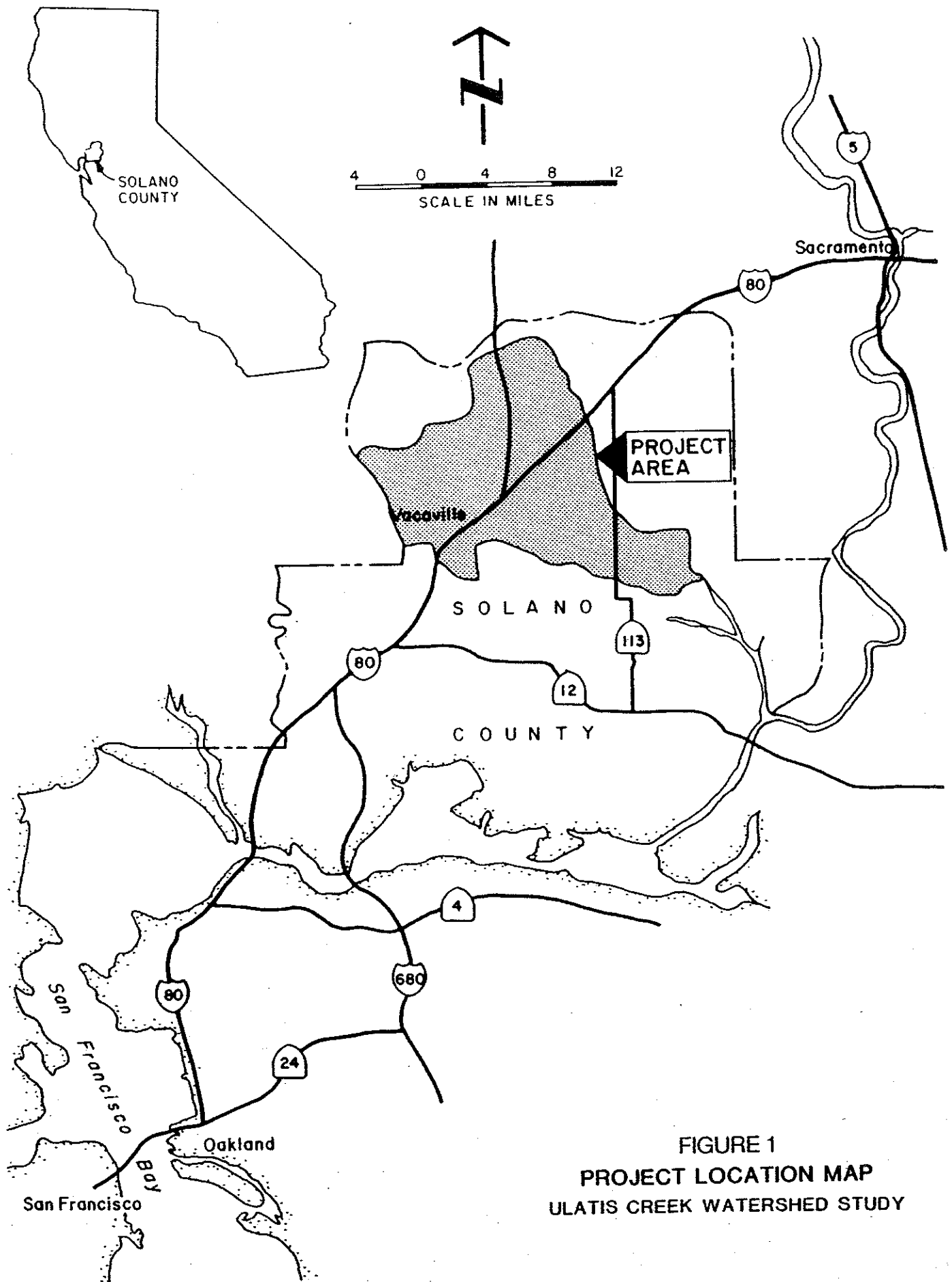
EXECUTIVE SUMMARY

The Ulatis Creek watershed comprises approximately 150 square miles in the northwestern portion of Solano County, California. The major creeks located within the watershed are: Ulatis Creek, Alamo Creek, Horse Creek, Gibson Canyon Creek, Sweeney Creek, and McCune Creek. The creek system drains to Cache slough, which outlets into the Sacramento River. The City of Vacaville is the major urban center within the watershed. Figure 1 shows the location of the study area.

The Ulatis Creek watershed is located in the Sacramento Valley area where the main economic base is agriculture. Flood protection improvements for the agricultural lands downstream of Vacaville were built in the 1960's by the Soil Conservation Service (SCS) under the Public Law 566 project (Project). The improvements consisted of: realigning and widening some existing creek channels; constructing new channels; and building several miles of levees.

Since completion of the Project, growth in the urban center of Vacaville has been more rapid than originally anticipated, and flood problems have intensified. The City of Vacaville, with the participation of the Solano County Water Agency (SCWA), selected Camp Dresser & McKee Inc. (CDM) to perform a study of the Ulatis Creek watershed to determine the effect that the rapid growth of the area had on the Project channels.

The primary goals of the study are: (1) the identification of existing and future flooding problems; and (2) the formulation of alternatives to mitigate these flooding problems. The study must consider the impacts of development both on the improved Project channels downstream of Vacaville and on the unimproved channels through Vacaville upstream of the Project. Since the improved Project channels form the downstream reaches of the creek system, it is essential to compare the existing conditions of those channels with respect to the design criteria used by the SCS. In addition, since Vacaville is located upstream of the improved Project channels, it is essential to define the impact of future development on drainage not only within the City, but also on the downstream improved Project channels.



EXISTING DRAINAGE SYSTEM

Storm runoff and irrigation tailwater are carried in the streams of the Ulati Creek system that flow in a general east-southeasterly direction. The mouth of the watershed is at Cache Slough, which drains to the Sacramento River. The major creeks located within the water area: Ulati Creek, Alamo Creek, Horse Creek, Gibson Canyon Creek, Sweeney Creek, and McCune Creek.

The improved Project channels through the agricultural lands downstream of Vacaville, which were generally designed for a 10-year level of protection, have been functioning with no observed overtopping. However, overflows have occurred within Vacaville upstream of the Project channels. The existing problems are most severe at locations where the channel or structure capacities are restricted by natural or manmade barriers, causing ponding of water.

HYDROLOGIC AND HYDRAULIC ANALYSES

The development of drainage alternatives for the Ulati Creek watershed required the determination of peak flows and runoff hydrographs within the watershed. A computerized runoff simulation model, the Army Corps of Engineers HEC-1 model (Flood Hydrograph Package), was chosen to develop the runoff hydrographs due to its capabilities for simulating runoff and routing upstream hydrographs through large rural and urban areas, and for simulating the effects of reservoir and detention basin storage.

The 1961 SCS design flows for the improved Project channels were derived as a function of drainage area based on correlation with available regional stream discharge data, although no historic streamflow data was available for the Ulati Creek watershed. This method, tended to understate differences between subwatersheds attributable to more detailed variations of rainfall, land uses, and topography. The HEC-1 model results consistently showed higher peak flows from the Alamo and Ulati subwatersheds and lower peak flows from the McCune and Sweeney subwatersheds than the 1961 SCS design flows, due to the use of the much more detailed computerized analysis methods.

Two scenarios were modeled for existing and future land use cases. One scenario assumed that existing overflows and capacity restrictions significantly decrease peak flows in Alamo and Ulati Creek; this scenario would represent existing channel conditions. The second scenario assumed that all runoff could enter the channels and be carried unrestricted to Cache Slough; this scenario would represent future improved channel conditions.

The HEC-2 (Water Surface Profiles) computer model developed by the Corps of Engineers was used for the hydraulic analysis. Hydraulic analyses using the HEC-2 model were made of the improved Project channel reaches of Ulati, Alamo, Sweeney, McCune, Horse and Gibson Canyon Creeks, as well as of the unimproved reaches of Ulati and Alamo Creeks through Vacaville.

In general, the results of the hydraulic analyses indicated no capacity problems on Sweeney, McCune, Horse and Gibson Canyon Creeks since the peak flows calculated for existing and future conditions were lower than those used by SCS in their design. However, although the improved Project channels can carry the SCS design flows, the results indicated problems with freeboard encroachment on the improved Project channels on Alamo and Ulati Creeks for the peak flows calculated by the HEC-1 model which were higher than the SCS design flows. The results of the hydraulic analysis also showed significant overflows on the unimproved channels through Vacaville under future conditions.

ALTERNATIVES DEVELOPMENT

The improved Project channels were to have been designed to convey the 10-year peak flows for future land use conditions with some minimum freeboard. In view of this design objective, the alternatives analysis for existing facilities considered appropriate minimum freeboard criteria and then formulated two alternatives to restore a minimum freeboard level to the improved Project channels downstream of Vacaville. The alternatives that were formulated to restore freeboard were (1) excavation to enlarge the existing channel, and (2) detention basins for Alamo and Ulati Creeks at locations in the vicinity of Leisure Town Road. The alternative

utilizing channel excavation appeared to be the more cost effective and more easily implemented improvement compared to the detention basin alternative.

A number of preliminary stormwater management concepts were considered in the formulation of specific alternatives to mitigate drainage problems for future conditions. Based on the concepts, five alternatives were formulated and analyzed for the 10-year, 10-hour storm runoff under ultimate future conditions. The five alternatives were:

Alternative 1 - Upstream Detention Reservoir (Vaca Mountains)

Alternative 2 - Large Detention Basins Within Vacaville

Alternative 3 - On-Site Detention By New Development

Alternative 4 - Flowage Easements Through Agricultural Areas

Alternative 5 - Two Large Detention Basins in the Upstream Reaches of the SCS Improved Project Channels of Alamo and Ulatis Creeks

Preliminary cost estimates were prepared for Alternatives 1, 2, 4, and 5 to assist in the evaluation. No cost estimate was prepared for Alternative 3 as this alternative was analyzed generally and would be implemented on an individual basis by developers as part of their cost of development. The results of the cost analysis showed that all alternatives were very close in value.

ALTERNATIVES EVALUATION

In order to compare and evaluate the alternative plans for future conditions, an evaluation matrix procedure was used. With this procedure, criteria important to the project were established and were then evaluated to determine an overall rating for each alternative. The evaluation of each criterion, as it applied to the various drainage system configurations, was done on the basis of a positive, negative, or neutral rating.

The evaluation criteria were:

- Capital Cost
- Effectiveness
- Compatibility and Disruption
- Acceptability to the Public
- Environmental Factors
- Potential for Staged Construction

RECOMMENDATIONS

Based on the extensive hydrologic and hydraulic analyses, the cost analysis, and the evaluation matrix procedure, the following recommendations for improvements to existing facilities and alternative plans for future conditions were developed.

Existing Facilities

- . A minimum 1.5 foot freeboard should be restored to the improved Project channels by excavating to enlarge the channel or by building up levee embankment to provide greater flow-carrying capacity. This work would be done by the SCWA maintenance crew as part of their regular channel maintenance program.

Future Conditions

- . Alternative 3 (on-site detention by new development on a case-by-case basis) should be implemented immediately.
- . The Alternative 1 upstream detention reservoirs should be constructed as the most desirable long-term solution, either all at the same time or in a staged implementation. The preliminary approximate locations of the upstream reservoirs are:
 - On Ulatis Creek upstream of Pleasants Valley Road;
 - On Encinosa Creek upstream of Pleasants Valley Road;
 - On Laguna Creek upstream of Cherry Glen Road; and
 - On Alamo Creek at Gates Canyon.

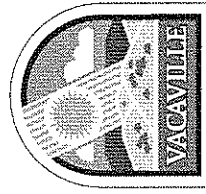
These preliminary locations could be modified as the detention improvements are refined and implemented, as long as the same hydraulic results are achieved to reduce peak flows upstream of Vacaville.

Disaster Supplies Kit (to last up to 72 hours)

Assemble supplies you might need in an evacuation. Store them in an easy-to-carry container, such as a backpack or duffle bag. Basic supplies in your kit should be water, food, first aid supplies, clothing and bedding, tools, emergency supplies and special items.

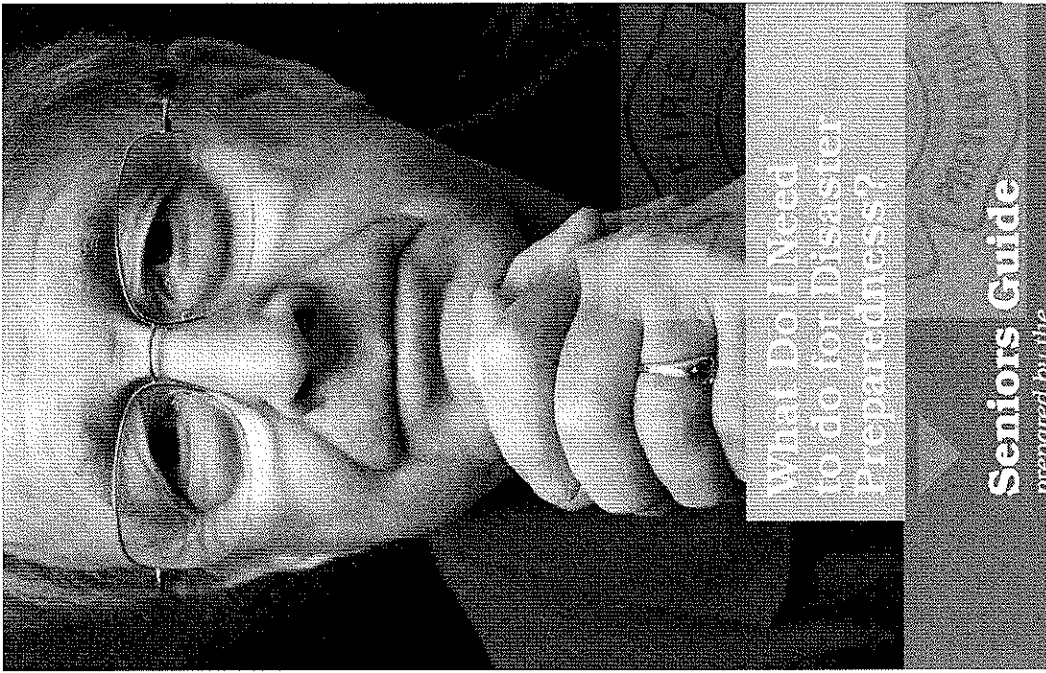
- A supply of water (one gallon per person per day). Store water in sealed, unbreakable containers. Identify the storage date and replace every six months.
- A supply of non-perishable packaged or canned food and a non-electric can opener.
- A change of clothing, rain gear, and sturdy shoes.
- Blankets or sleeping bags.
- A first aid kit and prescription medications.
- An extra pair of glasses.
- A battery-powered radio, flashlight, and plenty of extra batteries.
- Tools and supplies.
- Credit cards and cash.
- A list of important family information; the style and serial number of medical devices, such as pacemakers.
- Special items for infants, elderly, or disabled family members.

Create a similar kit within your vehicle and office.



*Sponsored by the
Vacaville Senior Roundtable,
the City of Vacaville
and the Vacaville
Fire Prevention Bureau*

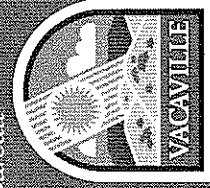
City of Vacaville
650 Merchant Street
Vacaville, CA 95688



**What Do I Need
to do for Disaster
Preparedness?**

Seniors Guide

*prepared by the
Vacaville Senior Roundtable
and the Vacaville
Fire Prevention Bureau*



Be Prepared Before A Disaster!

Disasters happen anytime and anywhere. The next time a disaster strikes, you may not have much time to act. Prepare now for a sudden emergency.

Learn how to protect yourself and cope with disaster by planning ahead. Planning what to do in advance is an important part of being prepared.

This guide will help you get started.

Discuss these ideas with your family, and then prepare an emergency plan. Post the plan where everyone will see it – on the refrigerator or bulletin board. Also...

- Ask your employer about emergency plans.
- Learn about emergency plans for your grandchildren's school or day care center.

Before A Disaster Strikes

The following are things you can do to protect yourself, your family, and your property in the event of an earthquake:

- Have all defective electrical wiring, leaky gas lines, and inflexible utility connections repaired.
- Bolt down and secure to the wall studs your water heater, furnace, and gas appliances. If recommended by your gas company, have an automatic gas shut-off valve installed that is triggered by strong vibrations.

Create an Emergency Plan TODAY!

- Meet with family members. Discuss the dangers of fire, severe weather, earthquakes, and other emergencies.
- Discuss how to respond to each disaster that could occur.
- Discuss what to do about power outages and personal injuries.
- Draw a floor plan of your home. Mark two escape routes from each room.
- Learn how to turn off the water, gas, and electricity at main switches.
- Post emergency telephone numbers near telephones.
- Instruct household members to turn on the radio for emergency information.
- Pick one out-of-state and one local friend or relative for family members to call if separated by disaster (it is often easier to call out-of-state than within the affected area).
- Take a basic First Aid and CPR class.
- Teach children how to make long distance telephone calls.
- Keep family records in a water and fire proof container.
- Pick **two** meeting places.
 1. A place near your home in case of a fire.
 2. A place outside your neighborhood in case you cannot return home after a disaster.

- Place large or heavy objects on lower shelves. Fasten shelves, mirrors, and large picture frames to walls.

- Store bottled foods, glass, china, and other breakables on low shelves or in cabinets that fasten shut.

- Locate safe spots in each room under a sturdy table or against an inside wall. Reinforce this information by moving to these places during each drill.

- Hold earthquake drills with your family members: Drop, cover, and hold on!

Have An Escape Route

In a fire or other emergency, you may need to evacuate your house, apartment, or mobile home on a moment's notice. You should be ready to get out fast.

- Develop an escape plan and draw a floor plan of your residence.

- Make sure to indicate two ways out of every room.

- Indicate the location of your Disaster Supplies Kit, in addition to your fire extinguishers and smoke alarms.

- Indicate your two meeting places: One outside of the home and one outside of your neighborhood.

- Practice emergency evacuation drills with household members two times each year.



April 14, 2006

Mr. David Okita
Solano County Water Agency
PO Box 349
Elmira CA 95625-0349

Project Number: 001-00-06-70.001

SUBJECT: Evaluation of December 30-31, 2005 Storm Event for the City of Vacaville

Dear David:

As a follow up to the March 2, 2006 report evaluating the December 30-31, 2005 storm event for Solano County, the following information is a summary of the storm event that occurred within the City of Vacaville (City).

RAIN GAUGES

The City has nine reporting rain gauges; however, only four appear to have reliable data for the storm event. These gauges measured between 3.58 and 5.17 inches of rain over the 12 hour period between 7:45 PM on the 30th to 7:45 AM on the 31st. These same gauges measured between 4.31 and 6.06 inches of rain for a 24 hour period between 10:30 AM on the 30th and 10:30 AM on the 31st. For the 12 hour event, when a majority of the rainfall fell, it is estimated that the return frequency ranged from a storm that has a likelihood of occurring once in a 28 year period to once in over a 900 year period, depending on the selected rain gauge. The varying depths of rainfall are due the non-uniform pattern of rainfall throughout the City. As storm cells pass, some areas can receive significant amounts of rainfall, while other portions of the City can receive little or no rainfall.

The intense rainfall that occurred between 7:45 PM on the 30th and 7:45 AM on the 31st was preceded by several days of rain that saturated the ground and contributed to the flooding. When the ground becomes saturated most of the rain becomes runoff thereby increasing the flows in the creek systems. This is evident in the fact that most of the rain gauges had an estimated return frequency of less than 40 years, but the measured flow in many of the creeks was near or above the estimated FEMA 50-year peak flows despite the significant overflows that occurred. Further, the resulting flooding throughout much of the City was consistent with the FEMA 100- and in some cases 500-year floodplains.

STREAM GAUGES

The City operates five stream gauges within its Creek System. The gauges are located on Gibson Canyon Creek at Browns Valley Road, Horse Creek at Leisure Town Road, Ulatis Creek at Leisure Town Road, and Alamo Creek at Marshall Road and Vanden Road. The following is a summary of each stream gauge.

Gibson Canyon Creek

This gauge is located in the northern portion of the Ulatis Creek System Watershed, and experienced flows less than the FEMA 10-year flow rate at the stream gauge located on Browns Valley Road. However, there was significant flooding downstream of the stream gauge along Gibson Canyon Creek, primarily along Leisure Town Road and downstream to the PG&E substation. Sweeney Creek, which lies approximately two miles north of Midway Road in the unincorporated area, overtopped its banks, with some of the overflow water making its way under and over I-505 to the Gibson Canyon Treatment Plant.

The total rainfall, at the Gibson Canyon Wastewater Treatment Plant, that fell over the most intense 12 hour period is estimated to have a frequency of 38 years; meaning that this total rainfall depth has a 2.6 percent probability of occurring in any given year.

Horse Creek

This gauge is also located in the northern portion of the Ulatis Creek System Watershed and experienced flows less than the FEMA 10-year flow rate. However, the peak flow rate recorded at this gauge was nearly 200 cubic feet per second (cfs) greater than the peak flow recorded during the December 16th, 2002 storm event and the highest peak recorded during the last nine years of stream gauging.

Ulatis Creek

Ulatis Creek experienced measured flows in excess of the FEMA 100-year flow rate at Leisure Town Road. Ulatis Creek overtopped its banks at several locations downstream of Interstate 80, including the Creekside Mobile Home Park on Aegean Way and immediately upstream and downstream of Nut Tree Road on the improved Project channel. The peak flow recorded at this gauge was nearly 250 cfs greater than the peak recorded during the December 16th, 2002 storm event and the highest peak recorded during the last nine years of stream gauging.

The total rainfall, at the Water Treatment Plant, for the most intense 12 hour period is estimated to have a frequency of 69 years; meaning that this total rainfall depth has a 1.5 percent probability of occurring in any given year.

Alamo Creek (Marshall Road)

Major overflows along Laguna Creek, Encinosa Creek, and Alamo Creek occurred upstream of the first recording stream gauge location along Alamo Creek at Marshall Road. Despite the significant outflows from the three tributary creeks upstream of the gauge, the measured peak flow recorded at this location is above the estimated FEMA 10-year storm flow, but below FEMA

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50-year storm flow. The measured peak flow at this location is estimated at close to 4,600 cfs, where downstream reaches between Peabody Road and Nut Tree Road have a carrying capacity between 3,000 and 3,500 cfs. The peak flow recorded at this gauge was more than 500 cfs greater than the peak recorded during the December 16th, 2002 storm event and the highest peak recorded during the last nine years of stream gauging.

The rain gauge closest to this stream gauge did not appear to be functioning during the storm event; however, there are two other rain gauges near this location (both are located downstream of the gauge). The total rainfall depth during the most intense 12 hour period had an estimated frequency from 28 years to 69 years; meaning that the rainfall has a 3.6 to 1.5 percent probability of occurring in any given year.

Alamo Creek (Vanden Road)

Alamo Creek at Vanden Road experienced measured flows just below the FEMA 50-year flow rate, despite the overflows identified upstream of Interstate 80 and the overflows between Peabody Road and the Putah South Canal. The measured peak flow at this location is estimated at over 5,400 cfs, which is nearly 1,900 cfs greater than the peak recorded during the December 16th, 2002 storm event and the highest peak recorded during the last nine years of stream gauging. It is estimated that the frequency of the storm flows for Alamo Creek would be in line with the measured flows of Ulatis Creek (100-year storm flow), even though the measured peak flow is estimated around the FEMA 50-year flow rate. The lower measured flows in Alamo Creek are due to the severity of the over bank flows on Laguna, Encinosa, and Alamo Creek. Many of the areas that flooded in the Alamo Creek Watershed are shown to be in the FEMA 100- and 500-year floodplains validating this conclusion.

The total rainfall, for the rain gauges closest to this stream gauge, for the most intense 12 hour period had an estimated frequency of 30 years; meaning 3.3 percent probability of occurring in any given year.

The following photographs show some of the flooding that occurred within the Vacaville area.

Sincerely,

WEST YOST ASSOCIATES



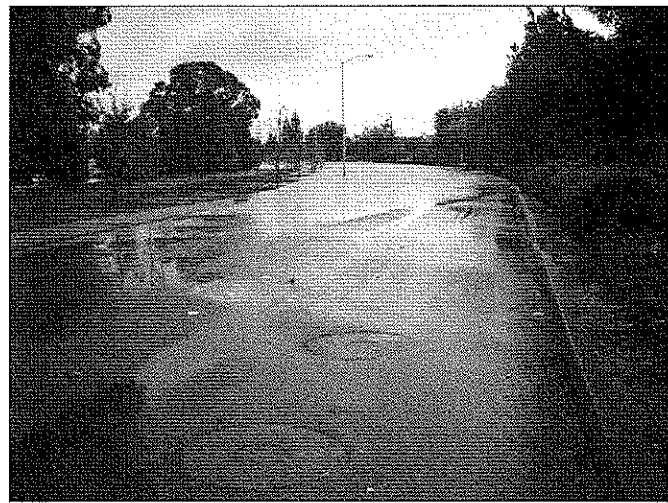
Jeffrey L. Wanlass
Senior Engineer

JLW:nmp

cc: Rod Moresco
Dale Pfeiffer



Gibson Canyon Creek - Looking at the Leisure Town Road crossing of Gibson Canyon Creek (10:15 AM, 12/31/05)



Nut Tree Road near Ulatis Creek (8:37 AM, 12/31/05)



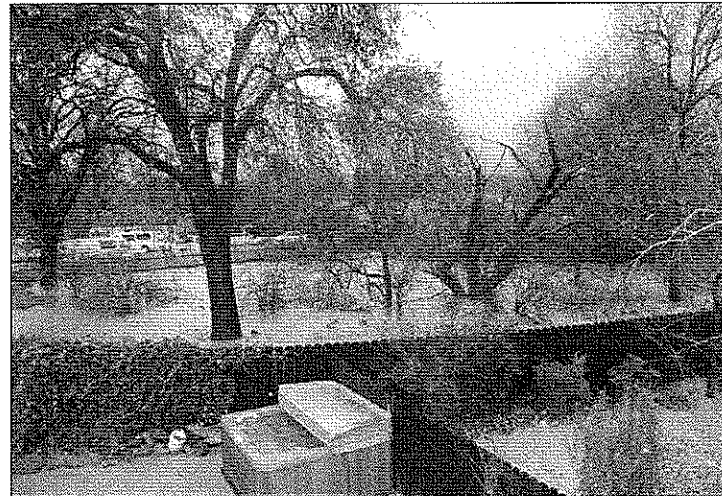
Ulatis Creek drop structure just downstream of Nut Tree Road
(12/31/05)



Ulatis Creek from the Nut Tree Road Bridge, looking
upstream (12/31/05)

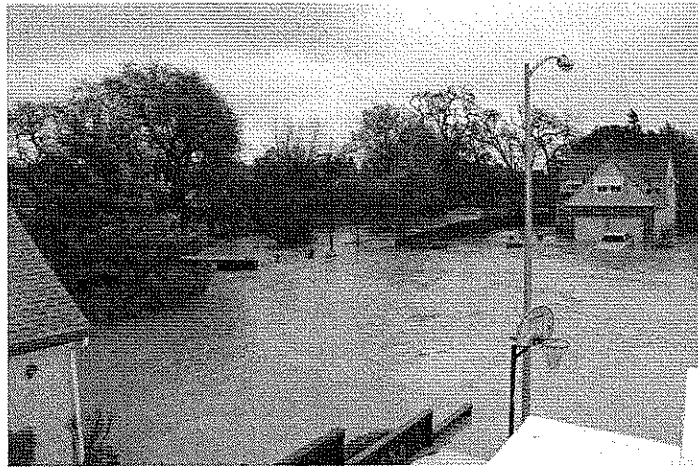


Ulatis Creek drop structure just upstream of Leisure Town Road (12/31/05)



Alamo Creek just downstream of the Tulare Drive bridge (12/31/05)

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Alamo Creek at Princeton Court (12/31/2005)