2014-2015

BUTTE COUNTY

GRAND JURY REPORTS

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2014-2015 BUTTE COUNTY GRAND JURY REPORT
BUTTE COUNTY JAIL TOUR

Summary

The 2014-2015 Butte County Grand Jury, in compliance with state law, conducted an inspection of the operation and management of the Butte County Jail (BCJ) on Oct 9, 2014. The Jury also toured the Butte County Day Reporting Center on January 21, 2015. The Butte County Sheriff's Office and staff conducted each tour.

Glossary

AB 109 - California Assembly Bill 109: The Public Safety Realignment Act

ACS - Alternative Custody Supervision

BCJ - Butte County Jail

BCSO - Butte County Sheriff's Office

CSUC - California State University, Chico

DRC - Day Reporting Center

PRCS - Post Release Community Supervision

Recidivism - The rate of those released from prison who are returned

Approach

The 2014-2015 Butte County Grand Jury performed the following:

- Toured the Butte County Jail;
- Toured the Day Reporting Center;
- Interviewed the Sheriff;
- Interviewed Butte County Jail Management; and
- Reviewed the Alternative Custody Supervision Report.

Background

The Butte County Jail is a Type II facility mandated by the California Constitution. It is the largest jail north of Sacramento. A Type II facility houses felony and misdemeanor inmates. The facility is located in the Butte County Center in Oroville.

The Butte County Jail was constructed in 1964 with a total of 194 beds. The bed count was increased by the addition of dormitories to 293 beds in 1968. The latest remodel was in 1994 and brought the bed count to its present day number of 614 beds. Eighty of those beds are for female prisoners.

With an operating budget of $25 million, the BCJ has a staff of approximately 120 employees. Mostly made up of sworn correctional deputies, clerks, cooks, and medical personnel.

As a result of AB 109, there is an increase of adult offenders under the Sheriff's supervision:

- 570 inmates are incarcerated.
- 130 adults are monitored electronically using ankle bracelets and are currently in alternative custody.
- Only 10% fail the requirements of the ACS program and are returned to jail.
- Prisoners are segregated based on violent or non-violent offenses. There are differing colors of prison uniforms which assist in readily identifying the classification of each prisoner. For example, orange denotes general population; yellow- administrative segregation; red- maximum security; green- protective custody.

Discussion

Our discussion included statistics relating to the jail's budget, the number of inmates, the number of staff and the issue of overcrowding and the options to resolve that matter. We also discussed the Public Safety Realignment Act (AB 109), the Day Reporting Center, Alternative Custody Supervision along with inmate processing, medical and mental health issues.

Grand Jurors visited the viewing area over the housing pods. We examined visiting rooms and visiting procedures. We discussed gang issues in the jail as well as mental health issues.

The Grand Jury concluded that the jail is run effectively and efficiently. The staff was professional and dedicated to the safety of the Public as well as to the rehabilitation of incarcerated offenders and to those in the ACS program.

Public Safety Realignment Act (AB109)

Due to overcrowding in the California State prisons, the U.S. Supreme Court ordered California to reduce the prison population in the California State prisons. The Public Safety Realignment Act (AB 109) was signed into law by Governor Jerry Brown on April 4, 2011. AB109 shifts the responsibility for certain offenders from the State to the County government.

AB 109 became effective on October 1, 2011. It mandates that current non-violent and non-sex offenders be supervised and housed at the local county level. To cover the cost, the State of California pays Butte County twenty dollars a day per inmate. The actual cost for Butte County to house an inmate is approximately one hundred dollars per day.

Alternative Custody Supervision and the Day Reporting Center

The Day Reporting Center is a non-resident facility that supervises offenders in Alternative Custody Supervision by court ordered conditions of their supervision.

ACS is an alternative to serving in-house jail time. This alternative program allows correctional staff to make custody decisions on a case by case basis.

Rehabilitation programs such as the DRC are designed to offer participants an opportunity to enroll in educational programs and job training. Some participants must report daily and all must report on a regular basis in order to meet the terms of their release.

The Sheriff's Office operates the DRC and contracts with Sentinel Offender Services, who manages the electronic monitoring of the inmates.

Programs and services offered through the DRC include on-line GED programs, employment readiness, and cognitive behavioral therapy programs. Also available to participants are parenting and family value programs. Programs on theft awareness, drug education and computer literacy are also offered.

The Sheriff's Office has formed a partnership with CSUC Criminal Justice Program. Research is being conducted by CSUC students and overseen by professors through the Consortium for Public Safety in order to determine if policies are working for the DRC.

The Consortium for Public Safety found positive results in the participants who enrolled in the program. Felons participating in the program had a recidivism rate of about 15%. AB 109 inmates in Butte County were more likely to need rehabilitative and therapeutic services over the misdemeanor inmates.

This report shows that ACS has reduced recidivism rates in Butte County. Relationships with professors and law enforcement personnel provide learning opportunities and a greater sense of community.

The DRC programs are clearly successful yet the Butte County Sheriff-Coroner web site contains little information regarding available programs or staffing of the programs. The two sentences provided on the web site describe the DRC program in the barest of terms.

Butte County is in need of a new jail facility. The Sheriff is in the process of pursuing a $40 million grant needed to build a new facility.

Findings

F1 The Butte County Jail is operated by a professional and dedicated staff.

F2 The Butte County Jail is not designed for long-term inmate housing as mandated by AB 109.

F3 Butte County is in need of a new jail facility.

F4 The Butte County Sheriff has been innovative in managing the jail and helping those individuals sentenced by the court and who are placed in his custody with a priority for public safety.

F5 Valuable internship experience for students was achieved through a partnership between the Sheriff and CSUC's Criminal Justice Program.

F6 The Butte County Sheriff-Coroner website contains little information regarding the DRC programs.

Recommendations

R1 The Butte County Board of Supervisors and the Sheriff should continue to search for adequate funding for a new jail facility.

R2 The partnership between the Sheriff and CSUC's Criminal Justice Program should continue.

R3 ACS and visitation programs that have been successful should continue.

R4 The Sheriff should provide additional information on the Sheriff-Coroner website regarding the array of programs available to participants.

Responses

Pursuant to Penal Code §933 and §933.05, the following ***responses*** are required:

- Butte County Sheriff: A response to Findings F1 through F6 and Recommendations R1 through R4.

- Butte County Board of Supervisors: A response to Findings F1 through F6 and Recommendations R1.

The governing body indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

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2014-2015 BUTTE COUNTY GRAND JURY REPORT
BUTTE COUNTY JUVENILE HALL AND
TABLE MOUNTAIN SCHOOL

Summary

Under California Penal Code §919(B), the Butte County Grand Jury is required to annually inspect the operation and management of the Butte County Juvenile Hall. The 2014-2015 Grand Jury conducted an inspection on October 30, 2014. They were greeted by BCJH Chief Deputy Probation Officer and the Manager of BCJH Juvenile Hall. Juveniles are from eight to twenty-one years of age. BCJH has six pods of twenty beds each which contain cells and a meeting area with tables used for meals and recreation. There is an outside yard, a security office and a classroom. The Table Mountain School was visited on February 5, 2015, by several jury members and they met with the principal of TMS. They have a rigorous routine and the youth are assessed and classified according to where they may fall into a certain curriculum.

Glossary

BCJH - Butte County Juvenile Hall

BCLU - Beaman, Conrad, Lascomb, Union Community School District

BCOE - Butte County Office of Education

BCPD - Butte County Probation Department

D-RAY - Detention Risk Assessment

GED - General Education Development tests for adults and juveniles to receive high school equivalency certificates

IN CAMP PROGRAM - a four-phase program designed to teach proper behavior

JUVENILE - An individual under the age of 18. In some circumstances the juvenile court can retain jurisdiction on individuals until age 21, and in certain case up to age 25

TMS - Table Mountain School

Approach

- Toured the BCJH;
- Interviewed the BCJH Chief Deputy Probation Officer and BCJH Manager;
- Toured the TMS located within the BCJH;
- Interviewed the Principal of TMS;
- Talked to several juveniles;
- Reviewed responses from the 2013-2014 Grand Jury; and
- Talked to the clinical psychologist at the BCJH.

Background

The Butte County Juvenile Hall is located at 41 County Center Drive in Oroville and is administered by the Butte County Probation Department. The current facility opened in November 2003 and was built to handle 120 beds (six pods). They are currently staffed and operate at a capacity of 60 juveniles, two pods for males and a third is a co-ed pod. One pod was converted for use as a Boys and Girls Club and the two remaining pods are used for storage and training. Each pod also has tables and chairs used for recreation and meals. The three pods are named Condor, Eagle and Falcon. The pod assignments are based on classification type (type of crime, gang affiliation etc.). The facility is a highly structured environment and the juveniles are guided through the day with both social and physical activity with lights out at 10pm.

Juveniles are given a physical examination within 24 hours of their arrival at BCJH. Medical services are provided through a contract with the California Forensic Medical Group. Offenders range in age from 8 to 21 years of age. There is no limit on the number of days in residence. Long term is over 90 days; the average stay is 17 days. In addition to those being housed in BCJH, some are also on the electronic monitoring program, serving their time outside the facility similar to the Day Reporting Center Facility operated by the Sheriff's Office.

They have staff for all medical or psychological problems that may arise and they put their education and social interactions at a priority. They also have a 5 year grant from BCLU that provide services for the Boys and Girls Club.

The 2014-2015 Butte County Grand Jury visited the BCJH on October 30, 2014. On the day of the tour there were 30 males incarcerated and 10 females. The BCJH is currently able to handle 60 juveniles.

Discussion

The intake process is as follows:

> An arresting officer will escort the offender to the intake unit of the BCJH. The juvenile will sit at a bench while the arresting officer will give details of the youth's alleged crime to the on-duty BCJH staff. The staff will also look at the youth's previous record (if any) and determine whether to release or detain the youth. If necessary, a doctor or nurse may also be required to check the youth. Once the process is complete, the youth will occupy a holding cell while the staff begins the extensive paperwork. Parents are notified of the youth's detention and the youth is allowed a single phone call. If the youth does not want to make the phone call, a BCJH staff person may do so. After further assessment and evaluation, the youth is referred for judicial processing. The next day, another part of the intake process is performed in what is called a Detention Risk Assessment or D-RAY for short. The BCJH staff will go through this process and calculate a score to determine what will happen with the youth.

Depending on how they score on the D-RAY, once the youth is processed into Juvenile Hall, they may get a chance to enter a four phase program lasting eight to fourteen months also referred to as the In Camp Program. Each phase has areas of improved behavior and responsibilities the youth must exhibit, along with academic and physical tasks to complete. This program is conducted in order to prepare the youth for release. Some of the other skills that the youths may learn, include welding and gardening.

The TMS works within guidelines of the BCOE. They are using books from Stefan and other publishers. The staff continues to work online by using Aztec GED testing, but the juveniles are not allowed on the internet, so it makes it difficult to use that form. The school gives an equivalence test that the State of California has approved and is done with paper and pencil. This is to attain a GED certificate. Currently, the juveniles are taken to Butte College for testing on the Person View GED. They have started the procedure of applying for accreditation through the Western Association of Schools and Colleges, which will help when the juvenile is released and they want to either go to college or go into the Armed Services.

Findings

F1 2014-2015 found the Butte County Juvenile Hall has a highly motivated and dedicated staff of professionals.

F2 The In Camp Program is a challenging program for the youths and produces positive results.

F3 The D-RAY program produces results that classify the juveniles so that they are placed correctly at the juvenile hall.

F4 The BCOE with the Butte Community College gives the juveniles another opportunity to be a positive force in the community.

F5 The Boys and Girls Club is an ongoing program at the BCJH.

F6 The BCJH is a highly motivated all around positive force in our community striving to help our youths make correct decisions on a day to day basis.

F7 The TMS Principal is highly motivated and works well with her staff.

F8 The TMS is highly committed to helping their students achieve success in school as well as beyond incarceration.

Recommendations

None

Responses

Pursuant to Penal Code §933 and §933.05, the following responses are ***required***:

- Butte County Board of Supervisors: A response to F1 through F8
- Butte County Office of Education Superintendent: A Response to F1 through F8.

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ADDENDUM

Subsequent to writing this report, the Butte County Grand Jury was informed that the Table Mountain School achieved accreditation by the Western Association of Schools and Colleges. **Congratulations Table Mountain School!**

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2014-2015 BUTTE COUNTY GRAND JURY REPORT
BUTTE COUNTY AUDIT

Background

California State Law requires the Grand Jury to look at how the County conducts an audit of its operations and the results of that study.

Approach

The 2014-2015 Grand Jury conducted its review in the following ways:

- Reviewed the Fiscal Year 2014-2015 Adopted Budget as submitted to the Board of Supervisors by the County Chief Administrative Officer and Auditor-Controller;
- Reviewed the County of Butte Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2014, prepared under the supervision of the County Auditor-Controller;
- Reviewed the County of Butte, Single Audit Report, dated June 30, 2014, compiled by the Independent Auditor; and
- Attended the semi-annual meeting of the County Audit Committee of Butte County, held on May 12, 2015. Committee Members included a Member of the Board of Supervisors, the Chief Administrative Officer, the Auditor-Controller, the Treasurer-Tax Collector, and a Deputy Administrative Officer.

Conclusion

The Independent Auditor's Report indicated the County of Butte properly responded to all findings and recommendations. The Independent Auditor performed a random sampling of 40 areas, and out of these 40, he only had one finding or problem area. The County remedied the problem, meaning that the recommendation was fully implemented. The Grand Jury finds the County is doing everything it can to receive an audit with a minimum amount of negative findings.

The governing body indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

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2014-2015 BUTTE COUNTY GRAND JURY REPORT
CITY OF CHICO FINANCES

Summary

This City of Chico Finances Report is a follow-up to the 2013-2014 Grand Jury investigation. In the prior investigation, it was found that the City of Chico had a General Fund deficit of over $15 million. Since that time, many practices and policies have been changed. By 2014 the deficit was down to $7.8 million. Following the 2014 Fiscal Audit there are positive indicators indicating that a return to solvency has begun.

Transparency has been addressed and is mostly resolved. The City Council and the Finance Committee are also being given many more documents than in prior years. The City Manager and the Administrative Services Director have worked hard to accomplish these improvements.

Future Grand Juries need to monitor how the General Fund Restoration Plan is working.

Glossary

City – City of Chico

City Council or Council – City Council of Chico

City Manager – City of Chico City Manager

Council-Manager – A form of government in which the city council establishes policy and the city manager handles day-to-day management.

Background

The City of Chico was incorporated in 1872 and now encompasses over 33 square miles. Chico is the largest city in Butte County with a population of just under 90,000 or approximately 40 percent of Butte County's 221,000 citizens. A seven-member City Council governs the City. Under Chico's council-manager system, Council members are elected to four-year terms of office. Terms are staggered with elections held every two years. The Mayor is selected by a majority of the City Council and serves a two-year term. Council members, who are part-time modestly paid citizens, hire a professionally trained City Manager.

The Council also forms liaison committees of three members each to review internal, intergovernmental, and financial matters. For example, the Finance Committee meets with the City Manager and City staff on a variety of fiscal matters and circulates monthly reports to the full Council regarding the City's financial health.

The City Manager is responsible for the day-to-day operation of the City. He/she is also responsible for the hiring and firing of all city employees, with the exception of the City Attorney and the City Clerk, who report directly to the City Council (See Attachment A*).*

Daily operation of the city and fiscal matters (other than passing a budget) are typically left to the City Manager and the management staff. A level of trust and free exchange of information between the Council and the City Manager is essential. Without the proper checks and balances in place and continued oversight, the City Manager and administration can overstep their authority and compromise the council-manager separation of powers.

Under the council-manager government structure, the city manager has a powerful role. The council must trust and rely on the city manager for accurate information.

Approach

The Grand Jury performed the following activities:

- Conducted numerous interviews with the current City Manager, Administrative Services Director, and the Mayor;
- Observed City Council meetings; and
- Analyzed information in local news articles and websites.

Discussion

This follow-up was prompted by the inconsistencies of responses to the 2013-2014 Grand Jury recommendations. In its responses, the City said it had a deficit mitigation plan to repay the $15.1 million. After a routine audit was finished, however, the deficit was found to be $13.1 million. The City was also able to reduce the deficit to $7.8 million by using the entire Emergency Reserve Fund of $5.3 million.

When the audit for the fiscal year ending June 30, 2014 confirmed that the City General Operations Fund (Fund 001) ended the fiscal year with a positive $4.8 million change in fund balance the Council directed staff to return with a report on the possible uses of these funds as Fiscal Year 2015-16 budget was developed. A City Council Agenda Report, for the March 3, 2015 meeting, provides details on staff recommendations, which were approved by the Council, regarding how the carryover funds should be spent. The amount and category for each expenditure fit within priorities previously established. The March 3, 2015 report also explains how the carryover occurred. Of the $4.8 million carryover, $2.45million was approved to pay down debt. (See Attachment B.)

The City Council and City Manager are optimistic that the deficit can be reduced on an accelerated schedule. The upturn of the economy is bringing more revenue into the City. Expenditures have also been reduced through decreases in staff, salary, and through outsourcing the legal department. Moreover, the Council has no intention to rehire former employees. Deficit reduction is dependent on the City Council's implementation of the accelerated restoration plan. (See Attachment C.)

The City Council has approved a number of policies that dictate what can or cannot be done and provides safeguards such as fiscal policies that don't allow funds to go into deficit or how inter-fund loans may be administered. Examples of the new fiscal policies that the City Council adopted are shown in Attachment D.

Transparency between the Council and management has improved. There are more documents provided to the Council as well as more verbal communication between management and Council. Management is trying to balance providing too much information versus providing information that has been too simplified. Monthly reports are now being given to the Finance Committee.

The internal Self Insurance Fund is an area that has not made positive growth. This is due mainly to the Workers' Compensation Fund that has gone from a positive balance of $2 million to a deficit of just under $2 million in just a few years. In response, the Administrative Services Director recommends discontinuing the process of assessing all the departments a flat assessment to cover Workers' compensation liability and costs. Instead each department would have an assessment that reflects the proportional costs of claims received by each department. In addition, the relevant department should be charged a percentage that reflects the cost of claims by department instead of charging Workers' Compensation Fund. This change would avoid an artificial savings to the relevant department and reduce the Workers' Compensation Fund.

Findings

F1 The deficit has been reduced from $13.1 million to $7.8 million.

F2 Transparency between management and The City Council has improved.

F3 New administrative, departmental, and fiscal policies have been implemented.

F4 The Self-insurance fund is in need of a comprehensive review.

F5 A repayment schedule for the Self-Insurance Fund deficit has not been identified.

Recommendations

R1 The Grand Jury recommends that The City Council implement the accelerated restoration plan.

R2 Continue dialogue between the City Council and staff.

R3 The City Council and management need to keep reviewing and updating policies.

R4 City management should consider out-sourcing Workers' Compensation Insurance and consider joining the Northern California Self-Insurance Fund (NCCSIF).

R5 The City should consider developing a plan to restore the Workers' Compensation Fund by developing a restoration plan similar to the General Fund Reserve Restoration Plan.

Responses

Pursuant to Penal Code §933 and §933.05, the Chico City Council is ***required*** to respond to all Findings and Recommendations of the Grand Jury Report.

The Grand Jury ***invites*** the Chico City Manager to respond to all Findings and Recommendations of the Grand Jury Report.

The governing body indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

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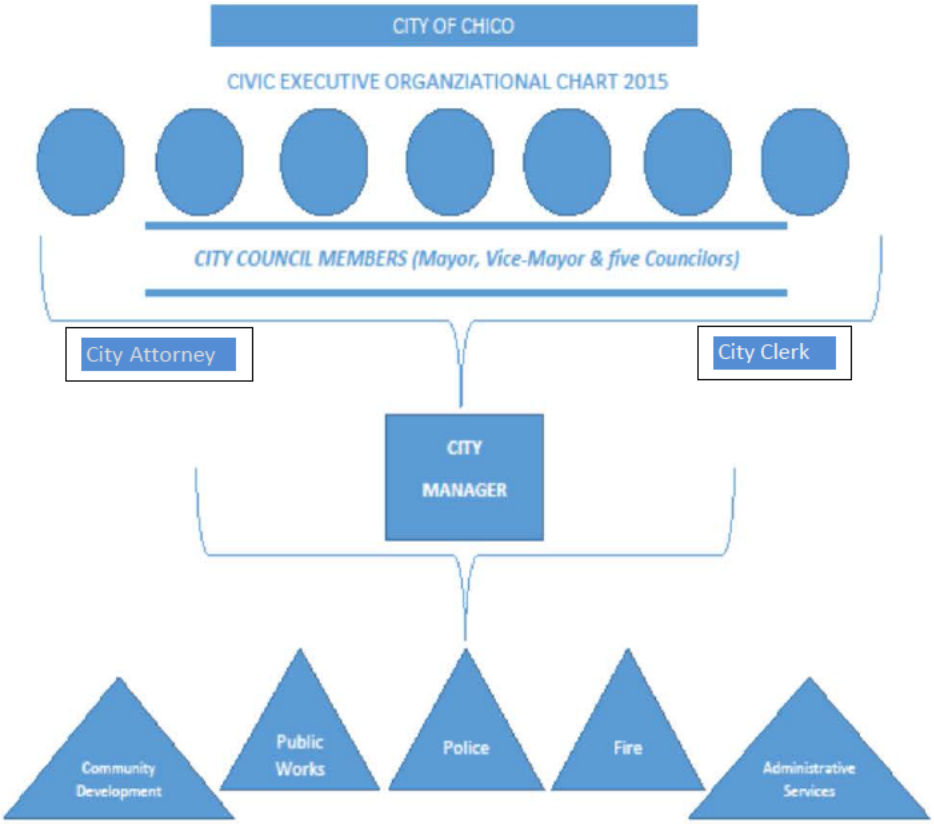
Attachment A

Chico City Organization



Attachment B

General Fund—Use of Fund Carryover from June 30, 2014
City Council Agenda Report—Meeting Date 03/03/2015

Exhibit B - Provides for a 51% ($2.45M) transfer to the General Fund Deficit (Fund 004) and loan is written off, Airport Fund ($100k), and allows for a ($1.2M) fund balance in Fund 001 that can be used as beginning fund balance for the fiscal year 2015-16 budget.

General Fund - Exhibit B - Maximizes fund balance carryover in Fund 001 General Fund (Fund 001) fund balance reconciliation: Fund balance at 6/30/14 $ 4,860,207

Items Previously Approved:

• Allocation of 3 Police Officers		$190,000
• Waste Hauler Consultant		$120,000
• Exp Bancroft Agreement - 1st Payment		$120,000
• Sycamore Pool Total		$48,000
• Items Previously Approved		
•	$ 478,000	10%

Additional Items Proposed:

• PW Preventative Maint Software	$2,500
• Citywide Cyber Security Assessment	$20,000
• P. D. Interview Rooms - Monitoring Equipment	$25,000
• Library Funding	$25,000
• Citywide Document Management System (including P.D. workflow)	$40,000
• City Hall - Monitoring Equipment	$50,000
• LED Street Lights – Critical Intersections	$50,000
• P.D.-Laser Mapping System for the CSI and Major Accidents	$74,000
• City-Wide Timekeeping/P.D. Advanced Scheduler Program	$75,000
• PW Street Condition Assessment Total	$85,000

Items Previously Approved		$446,500	9%
Additional Transfers Proposed:			
• Recommended fund balance carryover (Fund 001)		$1,200,000	
• Recommended transfer to Fund -Zone l Neighborhood Parks		$181,000	
• Recommended transfer to Fund 856 - Airport Fund Total		$100,000	
Total Additional Transfers		$1,481,000	30%
Recommended Transfer to General Fund Deficit	$2,454,707		51%

Attachment C

Chico Fund Reserve Restoration Plan

Estimated Deficit Reduction and Reserve Contributions

Fiscal Year	Annual Contribution	Total Contributed	Deficit GF Remaining	General Fund Reserve
2014-15	$ 800,000	$ 800,000	($7,000,000)	
2015-16	$ 900,000	$ 1,700,000	($6,100,000)	
2016-17	$ 1,000,000	$ 2,700,000	($5,100,000)	
2017-18	$ 1,100,000	$ 3,800,000	($4,000,000)	
2018-19	$ 1,200,000	$ 5,000,000	($2,800,000)	
2019-20	$ 1,300,000	$ 6,300,000	($1,500,000)	
2020-21	$ 1,400,000	$ 7,700,000	($100,000)	
2021-22	$ 1,500,000	$ 9,200,000		$ 1,400,000
2022-23	$ 1,500,000	$ 10,700,000		$ 2,900,000
2023-24	$ 1,500,000	$ 12,200,000		$ 4,400,000
2024-25	$ 1,500,000	$ 13,700,000		$ 5,900,000
2025-26	$ 1,500,000	$ 15,200,000		$ 7,400,000
2026-27	$ 1,500,000	$ 16,700,000		$ 8,900,000
2027-28	$ 1,500,000	$ 18,200,000		$ 10,400,000
2028-29	$ 1,500,000	$ 19,700,000		$ 11,900,000
2029-30	$ 1,500,000	$ 21,200,000		$ 13,400,000

Attachment D

City Council Approved New Fiscal Policies

In order to move the City towards fiscal health Council approved the following new fiscal policies (See the following Budget Policies):

“A budget must be sustainable into the future, not balanced with one-time fixes, such as transfer of reserves or set-asides, and must reasonably reflect expenditures that match available revenues."

“The City shall establish a plan to reduce the current deficits and to structurally balance the City's budget."

"The City will dedicate new ongoing revenue sources in the following manner and priority:

Priority 1: Reducing fund deficits, addressing anticipated fund deficits, funding significant long-term liabilities and replenishing established Fund balance targets.

Priority 2: Fixed cost increases outside Council control (e.g., health benefit escalators).

Priority 3: Replenishing internal service funds, such as Vehicle Replacement, Building Maintenance, etc.

Priority 4: Discretionary expenditures and negotiable items.

“One-time revenues not anticipated during the fiscal year will be primarily dedicated to reducing fund deficits, addressing anticipated fund deficits, funding significant long-term liabilities, and replenishing reserve and internal service funds to established targets.”

This (next) section increased the safeguards and tightened controls over the use and appropriation of department expenditures.

"The City will refrain from allowing funds to fall into deficit positions or continuing growth in existing fund balance deficits. Annual fund deficits should be eliminated by transferring funds into the deficit fund to maintain the previous year's fund balance."

"Fund Deficit Mitigation and General Fund Reserve Restoration Plan" This section details the General Fund deficit repayment plan and the restoration of Fund Reserves through fiscal year 2029-30.

Source-City Council Agenda Report------March 3, 2015 Meeting, page 1

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2014-2015 BUTTE COUNTY GRAND JURY REPORT
OROVILLE: A CITY DEALS WITH TODAY'S PROBLEMS

Summary

In the past five years the City of Oroville experienced a stagnation of revenues, while at the same time an increase in expenses, implemented by City Councils in order to keep wages even with the rising cost of living. This is particularly true of the salaries and benefits paid to City employees that now represent 72% of Oroville's annual General Fund expenditures.

Because of these rising expenses, the City found itself in a deficit situation. The solution was to cut back the budgets of all the City Departments, which translated into the layoffs of personnel. Although layoffs solved the immediate problem of a deficit, it also created a host of other problems in the understaffing of Departments. This becomes especially relevant in the case of the Police and Fire Departments, which are at the same number of employees as they were in 1973, even though Oroville has doubled in size in the last 42 years.

Background

The Grand Jury began this investigation because of various news articles and Oroville City Council meetings, where the discussion centered on the escalating cost of City Police and Fire. The head of the Oroville Fire Department had resigned in order to save jobs within the fire department. Because of these rising costs, the City of Oroville had begun looking into using the Butte County Sheriff's Department and Cal Fire in lieu of using and paying for City Police and Fire Departments. These problems had similarities to what the 2013-2014 Grand Jury discovered about the City of Chico. This was a potential flag to hidden problems.

Due to major deficits totaling millions of dollars, the 2012-2013 and 2013-2014 Butte County Grand Juries investigated the finances of the City of Chico. Their findings showed that Chico's deficit condition existed as far back as five years and that "enterprise accounts were manipulated and used to shore up the General Fund." Although no evidence of illegal activity was found, these actions ran contrary to California State Law, which requires that the City's General Fund be balanced every year. Part of the deficit occurred because of the rising costs of salaries and benefits, which represented "80 percent of the General Fund." The largest portion of these General Fund expenditures went for Public Safety to pay the salaries and benefits of City Police and Fire personnel.

The reports and news items about the City of Oroville looking for other ways of operating its Police and Fire Departments indicated that Oroville might also be facing many of problems that Chico had encountered. After all, Police and Fire had been the City's largest expenditures so they would be the most likely to cause problems within the General Fund. Also, the Oroville Fire Chief resigned in order to save two firefighters from being laid off due to lack of funds. Appearances suggested that perhaps Oroville's financial status had begun to mirror Chico's.

In response, the members of the Grand Jury began formulating questions that included:

- If Butte County Sheriff's Department and Cal Fire were to assume the Police and Fire duties for the City of Oroville, what would happen to Oroville's current fire and police personnel who would be suddenly out of a job?
- Did the City's recent pay cuts include all City personnel, including the City Council and other management positions within the City administration?
- Is it better, financially and to the benefit of its citizens, for the City of Oroville to contract out its Police and Fire Departments to the County of Butte and the State of California?

The answers to these questions gave Grand Jury members a starting point for this investigation. They then looked back in the record of past Grand Jury Reports, and found that the Grand Jury had investigated Oroville in 2009-2010 and 2012-2013. These reports gave insights into the history of Oroville's governmental practices. It also provided the investigating committee a platform and reason for inquiring into the governmental workings of the City.

The Final Report of the 2009-2010 Grand Jury contained four different reports on different aspects of Oroville. These reports include:

- City of Oroville – Codes, Ordinances and Permits Report
- City of Oroville – Personal Service Contracts and Personnel Issues
- Oroville Cemetery District
- Oroville Mosquito Abatement District

In terms of the 2014-2015 Grand Jury, we focused our report on Personnel Service Contracts and Personnel Issues because it focused on the issues that most impact on the workings of Oroville City government. The Codes, Ordinances and Permits

Report also provided insights because it showed the past problems that occurred between the City Administrator, the City Council and the Department Heads.

The 2009-2010 Grand Jury cited examples of these problems in its opening paragraph of the Summary, "The issues brought to public attention include an email from one Oroville City Council Member to another which was considered by some as an attempt at extortion, public chastisement of the City Council by the Oroville City Administrator, and the ongoing division within the Oroville City Council over the administration of the City, including removal of the position of Personnel Officer from the City Administrator's duties."

Other examples include a quote from the 2009-2010 Grand Jury Report stating, "During this investigation, two employees and one Department Head left the City's service. The former Chief of Police stated he left employment with the City due to the "culture", which he described in his letter of resignation published in local newspapers, as "deeply rooted in mistrust which fosters uncertainty, suspicion, and fear." In addition, the Grand Jury's F8 Finding in the report stated, "The Grand Jury observed ongoing conflict among the City Council, Department Heads, and employees."

The 2012-2013 Grand Jury wrote a Final Report that analyzed the five incorporated cities in Butte County: Biggs, Chico, Gridley, Oroville and Paradise. This report prompted the 2013-2014 Grand Jury to investigate the City of Chico, which resulted in bringing to light the City's deficit of over $15 million.

In terms of Oroville, the 2012-2013 Grand Jury also discovered financial problems similar to those of Chico. As with Chico, Oroville had lost Redevelopment (RDA) revenue when the State of California ended the Redevelopment Program. The money represented four percent of the city's operating budget. Also, Oroville had lent the program $1.8 million for start-up costs, which was repaid, but when the RDA ended, the State demanded the money back. This added to the financial problems the city was encountering at the time.

These financial problems were summarized in the Grand Jury's 2012-2013 Final Report. It stated that Oroville's "current annual operating expenditures exceed revenues by approximately $4,300 per day. The City has been using its contingency fund to balance the operating budget. The largest operating expenditures are employee salaries (48%) and employee benefits (30%). The Interim City Administrator is developing various options to address the projected budget deficit of $2 million." Not as large as Chico's deficit, but none-the-less pointed out that Oroville's financial problems had occurred as early as 2013.

These two former Grand Jury Reports point to the fact that in the past Oroville has had problems with its main bodies of government working together and trouble with its finances. We had two questions at the forefront as we began our investigation:

1. Had Oroville dealt with its personnel issues between the various parts of City government?
2. What was the City's current financial status and outlook for the future?

During our investigation, the city of Oroville terminated the contract of their City Administrator, and the Planning Director became the interim Administrator. This left the City with the task of selecting another City Administrator, something that has been a challenge in its past. Also, Oroville hired a new Finance Director, replacing their longtime Director, whose contract was terminated without cause in April 2014. The City gave the departing Director full retirement benefits, including a substantial compensation package. All of these events added intrigue to the Grand Jury's investigation of Oroville.

Approach

We spoke with the Mayor of Oroville, all Department Heads and two City Administrators. In addition, we attended a Special City Council Meeting that included a presentation of their new software program intended to provide more financial transparency. Also, in the meeting, The City Council and Department Heads laid the foundation for next year's budget. Members of the Grand Jury were able to observe the interactions and operations of the City's government.

The Grand Jury reviewed documents and financial reports, including Comprehensive Annual Financial Reports (CAFRs) for the last five years. We also read the assessment of Oroville's current attempt to annex the area south of the city. This information had a significant bearing on our investigation.

We used news items and the minutes of City Council as a way of tracking the workings of the City of Oroville. The recent cutting of trees at the Oroville Cemetery had brought emotions to a boil and battle lines were drawn. We learned a lot about the dynamics of how the City government of Oroville works, which was our intention. To make an accurate determination, we accumulated as much information as we could through files posted by City and County agencies.

Discussion

Oroville city government consists of a Mayor and six City Council Members, a City Administrator and six Departments. Oroville voters elect the Mayor as a separate office, but ultimately the Mayor is part of the City Council, and as such, serves a four-year term and only has one vote when deciding matters brought before the council. The Mayor's main power derives from controlling the Agenda and setting the tone for City Council meetings. A stronger Mayor can use this power to influence the direction that City government takes.

The Oroville City Administrator oversees the day-to-day operations of the City. Contracted by the City Council, the City Administrator is responsible for implementing the policies of the Council. Other responsibilities include economic development, monitoring the General Fund and supervising the various City Departments.

Oroville has six Departments, which provide the basic services of the City. Department Heads, also known as Directors, supervise the internal operations of each of the Departments. The six City Departments are:

- Police
- Fire
- Planning and Development Services
- Parks and Trees
- Public Works
- Finance

Oroville's annual proposed budget derives from meetings between the City Council, City Administrator and the Department Heads to come up with a workable budget that balances the City's General Fund. This is the fund where the City tracks the major part of its revenues and expenses. By California State Law the General Fund must balance each year.

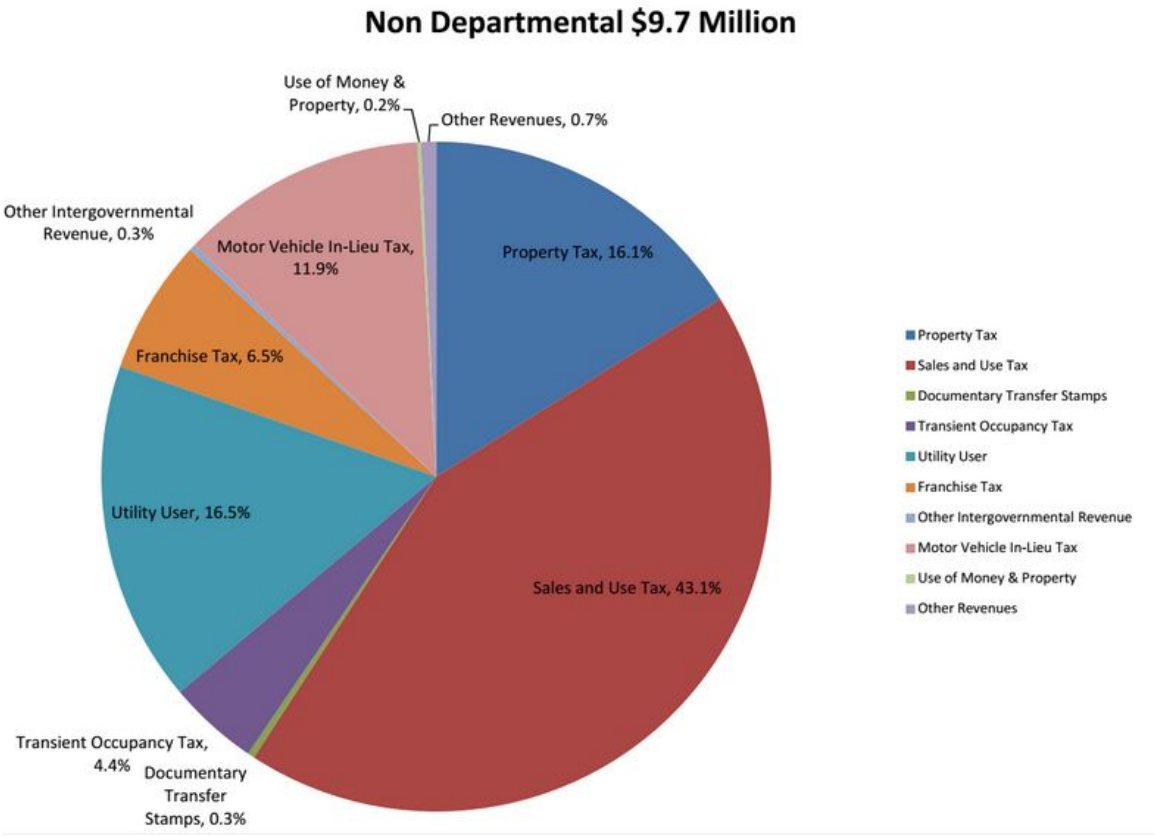
As reported by a prior Grand Jury in 2013, Oroville found itself in a deficit situation that required the City Council's immediate attention. The Interim City Administrator submitted the letter of transmittal for the City of Oroville's 2013-2014 budget and 2014-2015 Financial Plan. In the letter, the Interim City Administrator identified "a deficit spending problem of $2,065,705 annually." The Administrator recommended that each Department within the City take an 18.1% budget reduction. The three areas the reduction did not apply were: the Non-

Departmental, the Risk Management Sections and the City Attorney. The reason is because “the Non-Departmental and Risk Management Sections contain expenses that cannot be cut and the City Attorney’s budget is not under the jurisdiction of the City Administrator.”

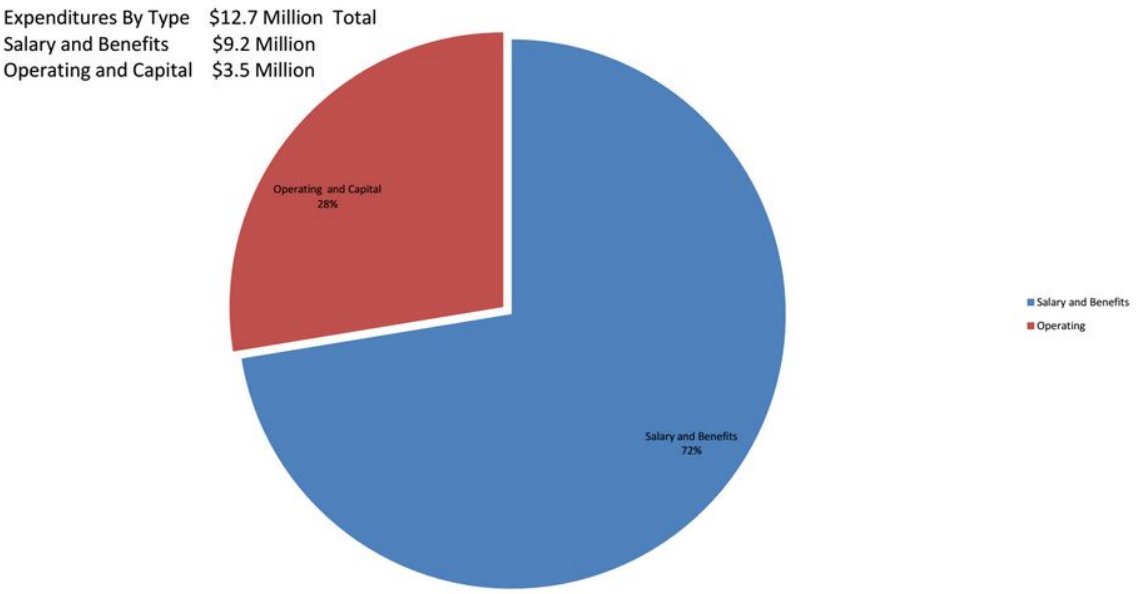
The large portion of these reductions came in the form of layoffs and vacant positions not being filled. This layoff of employees increased the $2,065,705 deficit by an amount between $574,331 and $777,510. “These expenses included leave accrual, cash-out, unemployment, severance and other departure costs.” These added expenses brought about a second round of budget cuts and layoffs within the many areas of Oroville City Government. All of these budget cuts and layoffs are still in effect as the City begins to develop its proposed budget for 2015-2016.

Overall, the 2014-2015 adopted budget for the City of Oroville shows an improvement over the 2013-2014 budget and it’s over $2.5 million deficit. In the General Fund Summary of Revenues, the 2014-2015 budget showed total revenues, including one time, to be $13,360,309 (See Attachment A). During this same period, the General Fund Summary of Expenditures Uses put the expenses at $12,699, 870 (See Attachment B), which showed the City had reduced its debt and had a positive cash flow of $660,439.

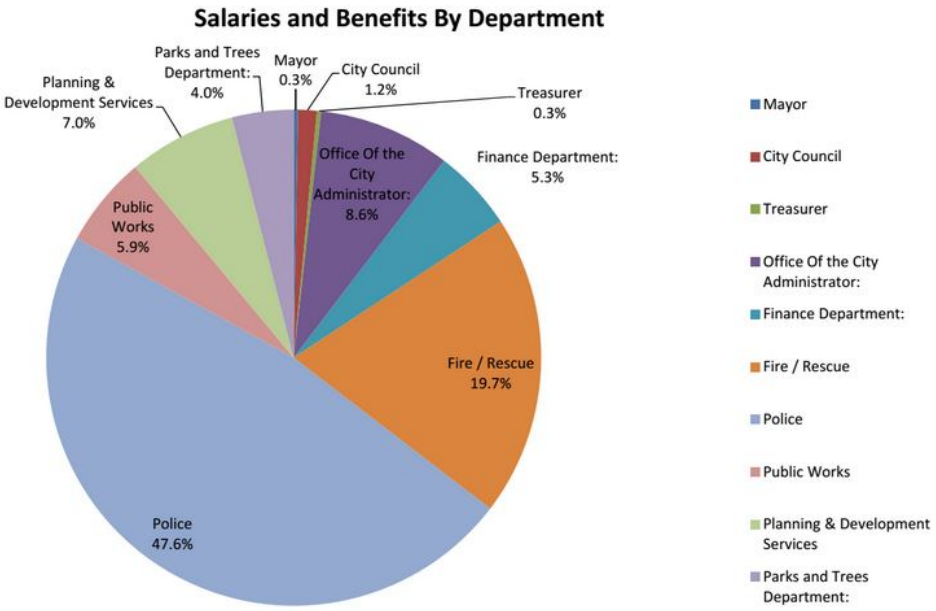
This shows a marked improvement in Oroville’s current financial situation from what was reported by the 2012-13 Grand Jury. The downside being that the Oroville City Departments are operating with less personnel, meaning the personnel they do have are spread thin and have to do a lot more work to keep the City running. Also, the reason Oroville had a positive balance in its General Fund was because of “one time” revenues totaling $1,682,310. “One time” revenues come from money awarded to the City. When members of the Grand Jury asked about it, they assured us that “one time” revenues are a common part of the budget.



Besides showing the City of Oroville had moved from a deficit to a positive cash flow, the 2014-2015 budget illustrates certain factors about the City's revenues and expenditures. In terms of revenue, the Non Departmental pie chart (see above) gives a view into the money that comes into the city budget from sources other than the City Departments. This amount is $9.7 million with 43.1% of it coming from sales tax, and another 16.5% coming from Utility User and 16.1% from property taxes. A common misconception is that cities get a large part of their income from property taxes, but in Oroville's case, it gets almost three times more revenue from sales taxes. This is why the City has recently asked voters to approve a one percent increase in the City's sales tax, from 7.5% to 8.5%.



The pie chart above shows Oroville's "General Fund Expenditures By Type" and it breaks the numbers into two categories, with Salaries and Benefits representing 72% of the expenditures.



The above pie chart, “Salaries and Benefits by Department” breaks this 72% down further into how the money is spent by the City. The largest portion, 47.6%, goes to the Police Department with another 19.7% going to Fire and Rescue. Added together, this figure adds up to 67.3%, which accounts for the largest expense in the City’s budget. Salaries and Benefits are almost three quarters of Oroville’s annual General Fund expenditures, and Police and Fire constitute over two thirds of that amount. This is a trend that is not only happening in Oroville, but in other cities as well. An example is last year’s Grand Jury Report, where it was also reported that Police and Fire represented a large part of the City of Chico’s annual expenditures.

Oroville’s Governmental Departments

A committee of the Grand Jury spoke with the various City Department Heads as a means of reviewing Oroville’s governmental process to see how well the parts were working together. Not only had each Department suffered layoffs during the 2013-2014 budget, but also the number of Department Heads was reduced from six to three. What this means is that one Department Head administers three Departments—Planning, Public Works, and Parks and Trees—and another Department Head administers two Departments—Police and Fire. Only the Finance Director remained with one Department to oversee.

Currently, the City of Oroville is in the process of annexing two areas south of the City. This annexation has impacted Oroville’s Governmental Departments, and the proposed annexation is an important issue in terms of the Departments. Police and Fire for example will have to supply personnel as the areas become incorporated into the City, Planning is looking into ways of developing the areas and Finance is trying to figure out how to pay for providing services to the two areas.

The areas have designated Area A and Area B. Area A contains 982 households or 88% of the population being annexed, and is mostly urban. Area B contains 162 households or 12% of the population being annexed, and is mainly rural. Both these South Oroville Areas have been designated as being Disadvantaged Unincorporated Communities,” pursuant to Senate Bill 244 of 2011. The Oroville Municipal Services Review approved by the Local Agency Formation Commission (LAFCO) in 2009 states, “The fact that these areas have not already been annexed by the City has resulted in concerns regarding social equity of the City’s annexation strategies.” As a result, Oroville is being given little choice but to annex the South Areas. However, there is a glitch to the annexation. Protesters have been gathering signatures, and if they get over 25% but under 50% of the property owners to sign, they can force an election on the issue. If they are able to

get over 50% of the signatures, the issue becomes nullified for the time being. At the time of this report, the City was awaiting the results of the petitions.

Public Safety

The Oroville Police and Fire Departments now come under the umbrella of Public Safety. The Director of Public Safety has been the Police Chief for over five years. In 2014, the Fire Chief resigned as a way of saving two Fire positions that were due to be cut. As a result, the Police Chief also became the Fire Chief and the combination was termed Public Safety. Interestingly, by law the Police Chief could become the Fire Chief, but the Fire Chief could not have become the Police Chief because of the duties performed by Police Personnel.

Several other California communities, such as Oxnard and Salinas, have combined their Police and Fire Departments under the heading of Public Safety. In some cases, the two Departments have been integrated into one another, but in the case of Oroville, the two departments have remained independent except for the fact they have the same Director of Public Safety. In other words, Police Personnel do not help put out fires, and Fire Personnel do not apprehend criminals. Beyond the Department Director, the only exception to this is one paid Administrative Assistant, who is being trained to work for both departments. Whether this will be a trend is undecided at this time.

Both the Oroville Police and Fire Departments remain understaffed in terms of the number of personnel available for duty. The Police Department has 22 officers, which is the same number it had in 1973. The problem is that Oroville has grown considerably in the last 42 years. The Fire Department consists of 12.5 Fire Personnel, meaning there are only three Firefighters on duty at any one time, which is the minimum number required by law.

The problem has been that the salaries of Police and Fire Personnel have risen, making it the main part of the City's General Fund Expenditures. The reason for this was due to an effort on the City's part to remain competitive in the hiring and retention of Police and Fire Staff. The result has become a well-paid staff, but the downside is that both Departments are understaffed.

The City of Oroville considered the possibility of contracting out their Police and Fire services to the Butte County Sheriff's Department and Cal Fire respectively. However, once the bids came in from the County and State, the City discovered that it was not cost effective. The other determining factor is that Oroville did not want an independent contractor coming into the City and controlling their Police and Fire Department. It was at this point that the Director of Public Safety asked

for a one percent sales tax increase from the voters. The Director has the support of the City Council and the other Department Heads.

The main reason the City considered using outside sources for Police and Fire is because of the proposed annexation. As pointed out earlier, the Police and Fire Departments are presently stretched thin, and if the area South of Oroville becomes incorporated into the City, the City will become even more overburdened in its efforts to protect the safety of the citizens of Oroville.

The primary reason the City needs the sales tax increase is to add Police and Fire Personnel. Presently, Butte County Sheriff's patrol both areas and the El Medio Fire Protection District provides fire support in Area A, but Area B is under Cal Fire. If the annexation is approved, the Butte County Sheriff's Department has indicated it will help the Oroville Police with patrolling the South Area, but even so, the study done on the annexation states that five additional patrol officers will be needed. In terms of Fire, the El Medio Fire Protection District has said it will continue to provide Fire Services to Area A. In the case of Area B, the City of Oroville's Fire Department will need to serve the area, which will require added personnel.

All of this adds up to greater expenses for Oroville in terms of Public Safety. These expenses then need to be offset with added revenues, or the City again risks having a deficit in its General Fund, which leads to budget cuts and less personnel to serve and protect the public.

Community Development

The Director of Community Development began working for the City of Oroville four and a half years ago as the Director of the Planning and Development Department. The Interim City Engineer was Director of the Public Works, and when his contract was not renewed, Public Works came under the umbrella of the Director of Community Development. The former Head of Public Works was hired as the Oroville City Engineer, and still works closely with Public Works and Planning. The Parks and Trees Department was added to the mix because its top position was vacant and never filled because of the cuts in 2013. Now, all three Departments come under heading of Community Development and have the same Director.

The Grand Jury wondered how this increased workload of managing three Departments affected the Director's job performance. Surprisingly, the Director answered that it made his work load smoother. As he says, "Development has to work with several other Departments, and having it all under one umbrella has

made it easier because there is not conflict between Planning and Public Works. There still might be conflict, but it's easier to iron it out. It's not two Department Heads bumping heads, but instead it might be two mid-managers bumping heads, and we straighten it out through our process."

In terms of how the Planning and Development process works, originally Oroville had a Development Review Board consisting of three Planning Commissioners that made discretionary decisions regarding applications for development. This is something that should not be done at that level of the process. The system was revamped into what the Planning and Development Department now calls the Development Review Committee, which is consistent with other planning agencies throughout the State of California. What happens is that all the Department Heads, managers and anybody who has something to do with a particular project, sit down with the applicant and iron out potential issues. It makes the process easier by setting priorities and relying on mid-managers to help things progress smoothly.

The City of Oroville does not develop property itself, but instead it accepts applications from people wanting to develop. The City stays away from telling applicants how to develop a project. Its approach is to set standards, and then it ensures the developers meet the minimum criteria. On the first and third Thursday of every month, the Director and mid-managers of Planning and Development meet together to discuss projects, including anything brought up in City Council Meetings, which happen on the first and third Tuesday. Everybody talks about what needs to be done. When it gets to the approval stage, the project moves to the Planning Commission, which meets on the fourth Monday of the month.

The Planning and Development Department brings in 28% of the City's Annual Departmental Revenue. This figure steadily increases as Oroville brings in more building projects. Two of the larger projects include the Super Walmart that has recently been approved and the Ford Dealership being built on Oro Dam Boulevard. At the request of Planning and Development, the Oroville City Council approved providing the Ford Dealership an incentive of $300,000 to build in Oroville, which the Director says has already partially come back to the City in revenues, and once the Dealership opens, the City will recoup the rest through sales tax. In addition to these commercial projects, applications for permits to build new houses have risen because Oroville is going through an "increased growth spurt."

At the same time this growth is happening, Oroville faces a number of problems that come with increased growth. Like other cities in California, Oroville has to contend with a growing homeless population. The Supervisor of Code

Enforcement, which is part of Planning and Development, was working with the Feather River Recreation Park District, to remove 11,000 pounds of garbage along Highway 162, left by people living in the area. In another area on Montgomery Street, Code Enforcement removed 40,000 pounds of garbage out of an area where 18 people were living. Because of this problem, Code Enforcement Officials ride the bike trail along the river every other day. The problem is that when the homeless are moved out of one area, they relocate to another area within the City.

Oroville has discovered that it cannot arrest the homeless because in a short time, these people are back on the streets and the problem is not solved. Because of this, the City is trying to take a different approach by coordinating with organizations, such as the Hope Center. The objectives of these organizations are to treat the mental health issues and to help people get off the streets.

Another problem the City of Oroville faces is water, especially when a city goes to all the effort to use less water, the Water Company responds by raising the price. But the result is that the Parks and Trees Department cannot continue to water the grass in the City Park Areas. When this happens and the grass turns brown, then the residents begin complaining about its unsightliness. This leaves the City with no other options, but to pave over the grass in an effort to move toward zero-water landscaping. Concrete is a one-time expense, and when combined with native plants, creates landscapes needing little or no water. This problem will become crucial if the drought continues and water costs continue to rise.

Finance

Hired in November 2014, the Director of Oroville's Finance Department came over from the Butte County Finance Department. When asked, the Director says the main difference between the City and the County is the number of personnel. At the County level, most of the work is done in-house, whereas the City relies more on outside consultants, who advise regarding the various aspects of municipal finance. An example is sales tax consultants who advise the City Finance Department on projecting sales tax revenues and getting the latest information from the State Board of Equalization.

Currently, the Oroville Finance Department has a staff of four that work under the Director. Even with consultants, they are understaffed for the amount of work they do. Part of the problem has been their financial software, MOM or Multiple Operations Management, which had not been updated in over 25 years and was severely obsolete. Some tasks, such as time cards, were being written out by hand and then entered into the computer system, meaning the task was done several times, thus increasing the workload.

Oroville has recently entered into a licensing agreement with SunGard Financial Systems to provide cutting edge software along with Information Technology (IT) Services. The Director states that the City Council was responsive to the Finance Department's needs in acquiring the five-year licensing with annual updates. The software will streamline many of processes, such as time cards, by eliminating paper copies and entering the information directly into the computer system, thus cutting down on the workload.

Besides the software, the Finance Department was also not up to date in its practices. The Finance Director solved this problem by attending conferences to find new ways of doing things. The Director believes in the importance of staying current and one of the ways of doing this is by talking to colleagues in the financial industry as to the best ways of preparing and managing the City's budget. The Director seeks out resources, such as the Government Finance Officers Association (GFOA), as a means of finding better ways of doing things. As a result, the Financial Department staff has been very responsive to the changes, and is excited with the prospects of learning new ways to do their jobs.

In addition, the Finance Director brought the cloud-based financial analysis platform OpenGov to the Oroville City Council so they could see its potential for the City. Grand Jury members saw a demonstration of the product at a Council Meeting and came away impressed by what it could do. It would appear as a window on the City's website, and when visitors click on it, they can download data that can be displayed as pictures, tables, graphs or spreadsheets. After viewing the presentation, the Council approved OpenGov for immediate implementation.

In terms of Oroville's financial condition in the upcoming budget, the Director of Finance explains that one of the main hurdles lies in the annexation of the area south of Oroville. Financially, it stands as an immediate burden to the City, particularly in terms of Police and Fire. If that was all there was to it, Oroville would drop the idea of annexation, but that is not the case. LAFCO and Butte County want the annexation in terms of social justice because the area contains a large percentage of economically disadvantaged residents. The City already owns the land around the two Areas so if it does not annex the two Areas, it makes the City's annexation policy look suspect. What this boils down to is that if Oroville does not go along with the annexation, they will be forced to do it anyway.

Conclusion

Unlike the conflicts observed in the 2009-10 Grand Jury Report, the different parts of Oroville City Government work together to make the processes run smoother. In the current projected budget, the City Council requested that the Department Heads give them their top three goals for the coming year. This shows a more cooperative effort on the part of the City Council and the Departments. All the Department Heads expressed they liked their jobs and that Oroville was making strides to move forward into the future.

Oroville has for the most part staved off the deficits that were prevalent when the 2012-13 Grand Jury wrote its Final Report on the financial woes of the City. It had the burden of paying back the loan they gave the Redevelopment Agency (RDA), who then, in compliance with an agreement, returned the loan to the City. Now, the State contends Oroville did not follow the regulations for the State paying the loan back to the City, thus forfeiting the loan. Besides this financial setback, Oroville has begun to get their finances on firm financial ground. Also, since the City is being forced into the annexation, it needs to look into ways for making it work to its benefit.

Oroville has been challenged when it comes to finding a City Administrator who both meets the City's needs and wants to be more than short term. In the last five years, their number stands at six. That is more than one Administrator a year. The Interim City Administrator is also the Director of Planning and Development. In the City Council Meeting that the members of the Grand Jury observed, the interim Administrator was commendable in his role as the connecting point between the Council and the Department Heads. The Council needs to be more selective when choosing the next City Administrator, by finding someone who has the experience to do the job and who wants to make Oroville a better place to live.

Findings

F1 Oroville's City Departments are understaffed due to the 2013 layoffs, which were done to balance the General Fund.

F2 Understaffing has resulted in a larger workload for City Employees.

F3 Oroville's 2014-2015 Adopted Budget shows the General Fund has a surplus rather than a deficit.

F4 The largest percentage of revenue for the City comes from its Sales Tax.

F5 Employee salaries and benefits are the City's largest budget expense.

F6 Police and Fire represent over two-thirds of the City's salary and benefits expense.

F7 There are three Department Heads that manage six Departments.

F8 Oroville is in the process of annexing two areas south of the City.

F9 The annexation will leave the Police and Fire Departments more understaffed than they already are.

F10 The City is seeking a one percent increase in Sales Tax to pay for more Police and Fire Personnel.

F11 Police and Fire now come under the heading of Public Safety, although they are still separate entities.

F12 Planning and Development utilizes mid-managers to help with the workload and make the development process run smoother.

F13 Finance has updated its procedures and outdated software to help with its workload.

F14 The City Council, Department Heads and Managers use meetings as a way to resolve conflicts.

F15 Dealing with homeless people has become a problem for the City.

F16 Water has begun to be a problem the City Parks will need to address, particularly if drought conditions continue.

Recommendations

R1 Oroville needs to find creative ways of adding staff to the City Departments, particularly Police and Fire.

R2 Pursue the one percent Sales Tax increase by letting the community know exactly how the funds will be used.

R3 Since the Annexation will likely be approved, Oroville should look into ways of generating revenue with Planning and Development.

R4 The City should continue to use mid-managers as a way to assist Department Heads, particularly with the understaffing happening in Departments.

R5 Oroville should update its computer software programs and procedures for each Department to ensure efficiency and transparency.

R6 The various elements of City Government should continue to use meetings as a way of communicating with one another and resolving any conflicts.

R7 Oroville needs to continue to manage its homeless problem by supporting programs that get people off the streets and into places that help them deal with their problems.

R8 The City needs to develop a plan for dealing with its water problem, including using native species as a way of keeping their parks and recreation areas from becoming brown or completely paved over with concrete.

Request for responses

Pursuant to Penal Code §933 and §933.05, the Oroville City Council is ***required*** to respond to all the Recommendations of the Grand Jury Report.

The governing body indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

Reports issued by the civil Grand Jury do not identify individuals interviewed. Penal Code §929 requires that the reports of the Grand Jury do not contain the name of any person or facts leading to the identity of any person who provides information to the civil Grand Jury.

ATTACHMENT A

GENERAL FUND SUMMARY OF REVENUES

	2011-12 Actual	2012-13 Actual	2013-14 Projected	2014-15 Nov. Rev.	2014-15 One Time
DEPARTMENTS:					
Admin., Eco.Comm. Enhance, Clerk, Human Resources, IT	$23,927	$90,440	$37,991	$5,402	$0
Risk Management	$115,574	$192,801	$0	$0	$0
Finance	$138,294	$95,409	$121,198	$15,393	$0
Accrued Leaves	$0	$0	$0	$5,500	$0
Fire/Rescue	$81,648	$115,823	$142,814	$42,900	$0
Police	$310,906	$386,553	$422,012	$315,197	$54,803
Public Works/Streets	$168,573	$61,075	$91,267	$106,614	$80,528
Planning & Development Services	$38,396	$44,672	$99,643	$55,468	$375,000
Building & Code Enforcement	$267,256	$131,613	$296,791	$419,204	$0
Parks and Trees	$84,982	$70,554	$73,594	$63,671	$0
Subtotal Departments	$1,229,554	$1,188,939	$1,285,310	$1,029,347	$510,331
Non-Departmental Revenues:					
Grants	$0	$5,000	$0	$0	$0
Property Tax/RDA City Pass Thru	$137,742	$149,604	$0	$0	$0
Property Tax	$1,128,188	$2,041,959	$1,640,166	$1,565,920	$0
Sales and Use Tax	$2,736,619	$2,864,104	$4,004,701	$4,186,740	$0
Documentary Transfer Stamps	$26,733	$23,356	$32,120	$32,120	$0
Transient Occupancy Tax	$363,530	$338,862	$426,190	$426,190	$0
Utility User	$1,553,442	$1,702,392	$1,594,686	$1,600,153	$0
Franchise Tax	$400,316	$434,600	$513,879	$633,879	$0
Other Intergovernmental Revenue	$768,063	$48,409	$8,924	$28,932	$0
Motor Vehicle In-Lieu Tax	$1,099,939	$1,121,937	$1,160,443	$1,160,443	$0
Use of Money & Property	$77,403	$99,834	$16,763	$16,763	$0
Other Revenues	$1,844,592	$188,116	$71,233	$71,233	$0
Subtotal Non-Departmental	$10,136,567	$9,018,173	$9,469,106	$9,722,374	$0
TOTAL REVENUES	$11,366,121	$10,207,113	$10,754,416	$10,751,720	$510,331
Transfers:					
Transfers-In Non-Departmental	$1,158,596	$602,961	$708,718	$12,231	$1,190,527
Net Transfers-Departments	$791,135	$678,153	$426,435	$914,048	($18,548)
Transfers-Other	$0	$0	$0	$0	$0
Subtotal Transfers	$1,949,731	$1,281,114	$1,135,153	$926,278	$1,171,979
TOTAL REVENUES & SOURCES	$13,315,852	$11,488,228	$11,889,569	$11,677,999	$1,682,310
Total Including one time				$13,360,309	

ATTACHMENT B

GENERAL FUND SUMMARY OF EXPENDITURES AND USES
FISCAL YEAR 2014 - 2015

Departments	Dept.#	Salary / Benefits	Service / Supplies Capital	Transfers Out	Total by Dept.
Mayor	1005	$25,388	$6,275	$0	$31,663
City Council	1000	$111,745	$5,598	$0	$117,343
Treasurer	1550	$25,242	$1,846	$0	$27,087
Office Of the City Administrator:					
City Attorney	1100	$0	$242,000	$0	$242,000
Human Resources	1300	$112,980	$32,760	$0	$145,739
City Administrator	1400	$222,372	$15,715	$0	$238,088
Economic Community Enhancement	1450	$27,896	$34,114	$168	$62,178
City Clerk	1200	$155,922	$46,218	$0	$202,140
Risk Management	7100	$0	$310,654	$0	$310,654
City Hall	1700	$56,579	$63,453	$0	$120,032
Information Technology	1475	$211,954	$240,695	$0	$452,648
Finance Department:					
Finance	1500	$397,772	$223,850	$0	$621,622
Non-Departmental	7200	$0	$58,276	$0	$58,276
Post Employment Liabilities		$90,904	$0	$0	$90,904
Fire Department:					
Fire / Rescue	2000	$1,795,652	$152,000	$0	$1,947,652
Police Department:					
Police	2500	$4,347,184	$866,057	$0	$5,213,241
Public Works					
Administration	3000	$210,146	$38,469	$0	$248,615
Streets	3100	$332,420	$424,664	$0	$757,084
Planning & Development Services					
Planning	1600	$268,885	$390,956	$0	$659,840
Building	2990	$373,684	$46,134	$0	$419,817
Parks and Trees Department:					
Administration	5000	$0	$66,150	$0	$66,150
Operations	5005	$360,897	$107,317	$0	$468,214
Centennial Cultural Center	1755	$0	$7,400	$0	$7,400
Pioneer Museum	5010	$0	$4,500	$0	$4,500
Bolt Museum	5015	$0	$10,600	$0	$10,600
Chinese Temple	5020	$23,300	$8,080	$0	$31,380
Lott Home	5030	$37,100	$67,500	$0	$104,600
State Theater	5040	$7,200	$33,200	$0	$40,400
Total Expenditures and Uses (by Dept.)		$9,195,222	$3,504,480	$168	$12,699,870

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2014-2015 BUTTE COUNTY GRAND JURY REPORT
OROVILLE CITY ELEMENTARY SCHOOL DISTRICT

Summary

The 2014-2015 Grand Jury visited the Oroville City Elementary School District. The elementary schools in The District are: Bird Street Elementary School, Oakdale Heights Elementary School, Ophir Elementary School, Stanford Avenue Elementary School and Wyandotte Avenue Elementary School. The two middle schools in The District are Central Middle School and Ishi Hills Middle School. With the changes to State funding and the standards to Common Core, The District has faced many challenges. The District and its teachers are rising to meet those challenges.

Glossary

Common Core – Common Core State Standards – Educational standards that describe what students should know and be able to do in each subject in each grade. In California, the State Board of Education decides on the standards for all students from kindergarten through high school.

BCOE – Butte County Office of Education

CELDT – California English Language Development Test

The District – Oroville City Elementary School District

LCAP – Local Control and Accountability Plan – Each school district must engage parents, educators, employees, and the community to establish these plans. The plans will describe the school district's overall vision for students, annual goals, and specific actions the district will take to achieve the vision and goals.

LCFF – Local Control Funding Formula

RSP – Resource Specialist Program

SDC – Special Day Class

STEM – Science, Technology, Engineering, and Mathematic

Background

There are fourteen school districts in Butte County (see Attachment A).

Five districts provide grade levels kindergarten through 12th grade.

1. Biggs Unified School District;
2. Chico Unified School District;
3. Durham Unified School District;
4. Gridley Unified School District; and
5. Paradise Unified School District.

In addition, Oroville Union High School District has multiple sites offering 9th through 12th grades and an Adult School program.

There are elementary districts offering kindergarten through 8th grade. Three of these districts have multiple school sites:

1. Oroville City Elementary District;
2. Palermo Union School District; and
3. Thermalito Union School District.

There are five districts that are a single school district:

1. Bangor Union Elementary School District;
2. Feather Falls Union Elementary;
3. Golden Feather Union Elementary School District;
4. Manzanita Elementary School District; and
5. Pioneer Union Elementary School District.

The Manzanita District students enter Gridley High School while students from the remaining four districts (Palermo, Bangor, Oroville City Elementary, Thermalito, Pioneer, Feather Falls, and Golden Feather) enter Oroville Union High School District.

The Butte County Office of Education operates Table Mountain School at Juvenile Hall.

The Oroville City Elementary School District includes the following schools:

Bird Street Elementary School is located at 1421 Bird Street, Oroville. It is one of five elementary schools and serves 166 students in grades K-4.

Central Middle School is located at 2565 Mesa Ave, Oroville. It is one of the two middle schools, which serves approximately 340 students in the 7th and 8th grades and offers a variety of programs for special needs students (5th-8th grades) as well as the district (K-8) independent study program.

Ishi Middle School is located at 1 Ishi Hills Way, Oroville. Ishi serves 6th to 8th grades, with an enrollment of approximately 370 students.

Oakdale Heights Elementary School is located at 2255 Los Plumas Ave, Oroville. Their approximate enrollment is 430 students in grades K-6.

Ophir Elementary School is located at 210 Oakvale Ave, Oroville. The approximate enrollment is 645 students in grades K-6.

Stanford Avenue Elementary School is located 1801 Stanford Ave, Oroville. Stanford serves approximately 490 grade K-6 students.

Wyandotte Elementary School is located at 2800 Wyandotte Ave, Oroville. Wyandotte serves approximately 330 K-6th grade students.

Approach

The 2014-2015 Grand Jury looked at the Oroville City Elementary School District to explore the quality of education being offered. A major change is that this is the first year that Common Core State Standards are being used by all schools.

The 2014-2015 Grand Jury interviewed the superintendent, two administrators from The District, and an interested party. Also two school sites were visited for observation. Websites of schools in The District, as well as The District's own website, were reviewed for additional information.

Discussion

The District is called "a program improvement district" because the students have not met the old state test standards. The task of meeting these standards is very difficult with a District having a high percentage of second language learners. Another factor is the socio-economic population that qualifies 80% of the students for free and reduced lunch. All sites offer breakfast as well. As part of the after school program, the schools are starting to offer free dinner. The use of instructional aides, bilingual sources, and parental liaisons are some of the strategies being used in the district to bring about improvement.

Common Core

The Common Core State Standards (CCSS) were created with the help of a broad range of stakeholders that included parents, teachers, and community leaders. The Standards are based on the best national and international Standards for English Language Arts and Math for students in K-12. These Standards define the knowledge and skills necessary for graduating students to succeed in college and careers.

The Common Core State Standards are not curriculum. They define a progression of skills from Grades K through 12 that students should know and master in order to be adequately prepared for college and careers. There are many ways to teach these Standards, meaning there are many approaches that could be used to help students reach these Standards. Therefore, the Standards are more about what students need to know in a general sense and not about how to teach the Standards. Several groups including participating states are, however, developing model lessons for the Standards, and these lessons can be found on various state websites.

The Common Core State Standards Assessment is being developed by two consortia: The Partnership for Assessment of Readiness for College and Careers (PARCC) and the SMARTER Balanced Assessment Consortium (SBAC). They have obtained federal grants to develop assessment tools, both formative and summative assessment instruments. All states will decide which consortium they will join, and by 2015, all students will be taking these new Common Core-based tests.

Further information regarding Common Core is available at:
https://www.learninga-z.com/commoncore/faqs.html

This is the first year that Common Core State Standards have been implemented in The District. Teachers have been in training for two years to prepare for the implementation. They have continued with additional training in grade level meetings. Teachers are going online, researching lessons, and exploring ways to teach the standards. Common Core allows teachers latitude in lesson planning to meet the needs of their students. Mathematics is the only area that has an officially adopted text.

Previously, curriculum under the “No Child Left Behind Act” did not encourage creative thinking or the ability to problem solve. Under Common Core the children are being taught the four C’s: Collaborate, Communicate, Create and think Critically. This results in children learning how to apply, share, and communicate

knowledge. The District has received one-time Common Core funding from the state, which is being used to purchase support materials for the teachers.

STEM (Science, Technology, Engineering, Math) has given the teachers a framework to implement Common Core because a curriculum does not exist for most of the Common Core standards. STEM education is used to identify: individual subjects, a stand-alone course, sequence of courses, activities involving any of the four areas, a STEM-related course, or an interconnected or integrated program of study. For more information regarding STEM, visit: http://www.cde.ca.gov/pd/ca/sc/stemintrod.asp

Technology

The state tests are now going to be given on the computer, so it is a state mandate that the schools continue upgrading their technology programs. All schools do have a computer lab, most with computers older than five years. They would like to be able to obtain new computers every five years. The District recognizes the need for keyboarding skills among students at all grade levels. Each school has one classroom set of one-on-one iPad devices and half of The District's teachers now have their own iPad.

The students have started using Google Docs to share and edit their writing with other students in the school. Power Point is being used more commonly for student presentations. There are software programs that help students that are struggling with the basic skills, showing areas where extra instruction is needed. This enables the computer program or the teacher to provide the extra instruction.

Fine Arts

Fine Arts have taken a back seat in the last few years due to the state budget. The state is starting to have a new focus on visual and performing arts again, but it is still a struggle. However the 6th, 7th and 8th grades have been able to continue their band program. Some schools in The District have parent groups that help find volunteers or fund the Fine Arts.

Special Needs Program

The Oroville District is a regional provider, which means small districts in Butte County that do not have the programs to support the students with severe needs, can send these children to the Oroville District. They are also the regional provider

for the severely handicapped preschool program, including a special program for autistic children.

Out of 2400 students, over 300 are identified with special needs, including speech. There are SDC (Special Day Class) classes and RSP (Resource Specialist Program) classes with additional aide time allotted, depending on the needs of the students.

State funding for schools is an ongoing issue. The state funding has changed by having additional funding if a school has a lower socio-economic population.

Class Sizes

Starting last year the state's goal, through the LCFF (Local Control Funding Formula) is that in eight years all of K-3 classes will have the ratio of 1:24. Currently in The District there are no K-3 classes over 26 students. The LCFF only focuses on K-3 classes. The District presently has an average of 31 students in grades 4-8 classrooms.

Second Language Students

There are various strategies used with second language students. Teachers do a lot of rhyming, pictures, and partnering with a peer. Second language students are routinely given a 30-minute session to work on language acquisition strategies. The District will begin giving the CELDT (California English Language Development Test) toward the end of the 2014-15 school year instead of in October to give a truer assessment of each student's language acquisition.

Bullying

Bullying is a challenge for the schools. The District has developed a Bullying Policy. This policy is not only for student-to-student but employee-to-student, and employee-to-employee. Last year there was a district-wide parent workshop on bullying, conducted by the staff. The schools have policies and some have contracts that students sign with their parents. Some policies include a series of steps to take with repeated offenses. Once the student is identified as a bully, that record is filed in The District system and follows the student throughout their school career. Assemblies on bullying happen throughout The District. Students are given awards for their positive behavior.

Part of the ongoing effort for student safety is having them monitored when they are not in class by teachers, principals, aides, or volunteers. The expectation is to keep the children safe and free from bullying.

See Oroville City Elementary School District website for the general district bullying policy, www.ocesd.org/view/3460.pdf.

See Attachments B and C for samples of bullying policies.

Findings

Common Core

F1 Common Core encourages collaboration, communication, creativity and critical thinking.

F2 Teachers have been undergoing training for two years.

F3 STEM has given teachers a framework to implement Core.

F4 Textbooks are not available for all subject areas.

Technology

F1 The need for keyboarding skill instruction is recognized.

F2 There is only one classroom set of tablets (iPads) for each school.

F3 Each school has a computer lab, many with old computers.

Fine Arts

F1 There are few Fine Arts programs offered.

Special Needs Student Programs

F1 The District is a regional provider.

F2 There is a large population of special needs students in The District.

Class Size

F1 The goal two years ago was to have K-3 classes at 24 students in eight years. Currently K-3 class size is already down to 26.

F2 The District presently has an average of 31 students in the grade 4-8 Classes.

Second Language Students

F1 Various strategies are being used.

F2 CELDT will be administered toward the end of the school year, instead of in October.

Bullying

F1 Bullying is a challenging problem.

F2 Identified student-bullies are tracked in the district.

F3 Positive behavior is rewarded.

Recommendations

Common Core

R1 Continue with trainings for Common Core.

R2 The District needs to lobby the state for textbooks and/or teacher guides in all subject areas.

Technology

R1 Search for grants for classroom technology, such as computers and tablet devices.

R2 Continue with the goal of teaching keyboarding skills.

Fine Arts

R1 Research grants and other means of funding and promoting Fine Arts programs.

Special Needs Student Programs

None

Class Size

None

Second Language Students

None

Bullying

R1 Develop a stronger district-wide anti-bullying policy with more strategies to combat bullying.

Responses

Pursuant to Penal Code §933 and §933.05, the Butte County Superintendent of Schools is ***required*** to respond to all Findings and Recommendations of the Grand Jury Report.

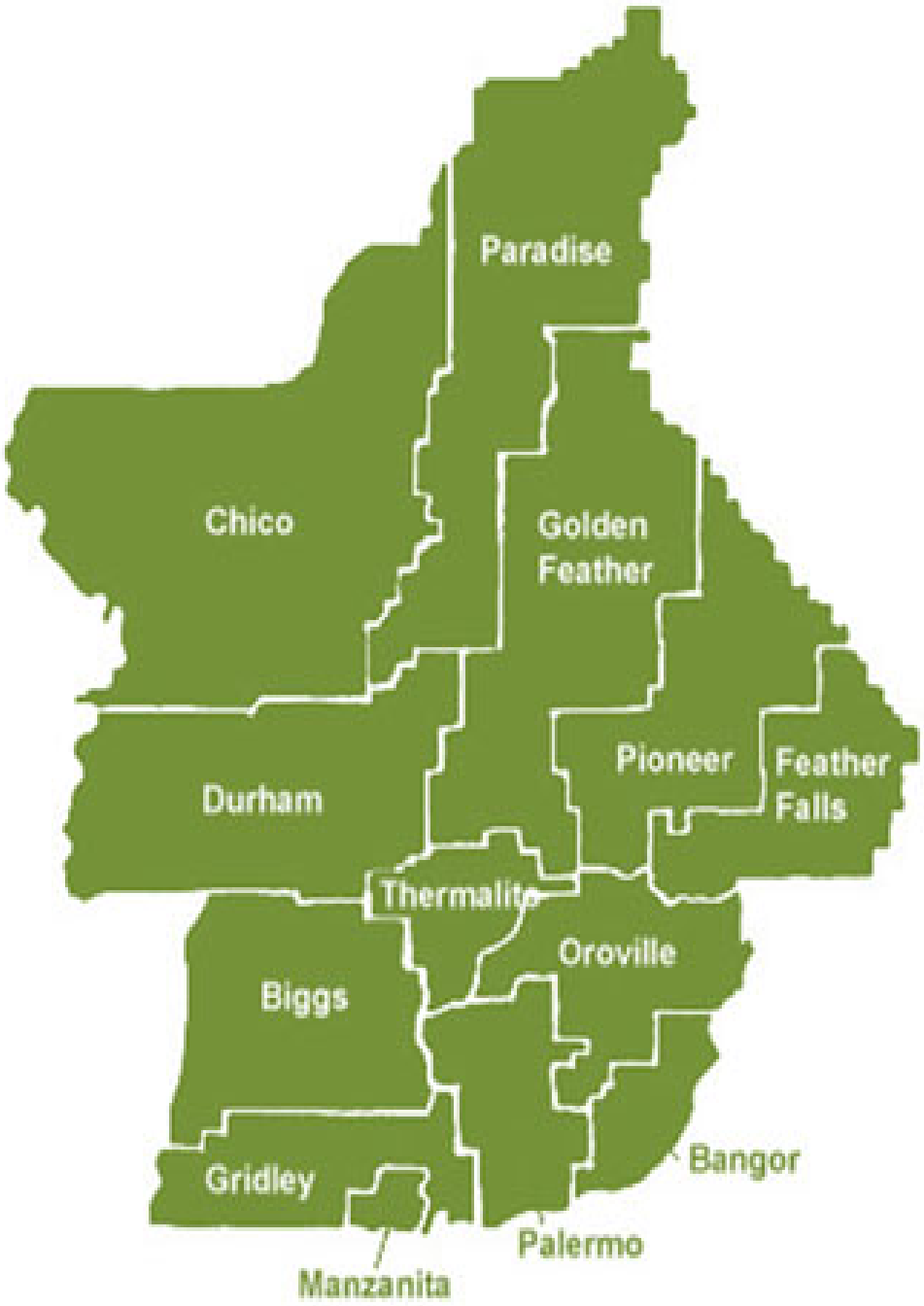
The Grand Jury ***invites*** the Superintendent of the Oroville City Elementary School District to respond to all Findings and Recommendations of the Grand Jury Report.

The governing body indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

Reports issued by the civil Grand Jury do not identify individuals interviewed. Penal Code §929 requires that the reports of the Grand Jury do not contain the name of any person or facts leading to the identity of any person who provides information to the civil Grand Jury.

Attachment A

Map is from BCOE showing 13 school districts in Butte County. The 14th district is Oroville Union High School.



Attachment B

All Personnel BP 4119.12(a)
BULLYING BEHAVIOR
The Board of Education believes that all employees have the right to a safe and healthy school environment. The Board is committed to providing an educational environment that promotes mutual respect, tolerance, and acceptance of all persons. Consistent with this commitment, the District strictly prohibits acts of bullying behavior against employees or students.
(cf. 0410 - Nondiscrimination in District Programs and Activities) (cf. 4030 - Nondiscrimination in Employment)
The Superintendent shall take all actions necessary to ensure the prevention, investigation, and correction of bullying, including but not limited to:

1. Providing training to employees in accordance with law and administrative regulation;
2. Publicizing and disseminating the District's bullying policy to staff;
   (cf. 4112.9/4212.9/4312.9 - Employee Notifications)
3. Ensuring prompt, thorough, and fair investigation of complaints; and,
4. Taking timely and appropriate corrective/remedial action(s).

All complaints and allegations of bullying shall be kept confidential to the extent necessary to carry out the investigation or to take other subsequent necessary actions. (5 CCR 4964)
Any District employee who feels that he/she has been bullied, or who has knowledge of any incident of bullying by or against another employee, shall immediately report the facts of the incident(s) and the name of the individual involved to his or her supervisor, principal, and/or the superintendent.
(cf. 4031 - Complaints Concerning Discrimination in Employment)
Any District employee who engages or participates in bullying behavior or who aids, abets, incites, compels, or coerces another to commit bullying behaviors against a District employee or student is in violation of this policy.
(cf. 4117.4 - Dismissal)
(cf. 4118 - Suspension/Disciplinary Action)
(cf. 4218 - Dismissal/Suspension/Disciplinary Action)

Attachment C

Rubric of Consequences for Poor Behaviors at Wyandotte Avenue School

Problem Behavior	First Time	Second Time	Third Time
• **Teasing/minor harassment.** • **Class Disruption** • **Personal Property Damage** • **Theft/Stealing** • **Profanity** • **Unsafe, disrespectful, or Irresponsible**	• Meeting with staff member to review rules and consequence(s) of continued poor behavior choices. • Incident will be documented in Aeries • Parent will be contacted. Document in Aeries.	• Detention or • Suspension (1-2 days). • Parent contact to arrange meeting with parent/teacher/ student. • Develop a plan.	• Review of Plan • Suspension (2-3 days). • Meeting with student, Parent, teacher, and principal.
• **Physical Aggression** • **Harassment** • **Ongoing class disruption**	• Meeting with staff member to review rules and consequence(s) of continued poor behavior choices. • Detention or suspension. • Incident will be documented (Aeries) and referred to principal. • Parent will be contacted. (Aeries documentation)	• Meeting with principal. • Parent will be contacted. • Suspension 1-3 days	• Suspension (3-5 days). • Meeting with student, parent and principal.
• **Severe Physical Aggression** • **Threats – Serious Violence**	• Meeting with principal, student and parent to review bully policy and consequence(s) of continued poor behavior choices. • Suspension (2-5 days) • Incident will be documented. • Police may be contacted (depending on offense).	• Meeting with principal, student and parent to review rules and consequence(s) of continued poor behavior. • Suspension (5 days) • Incident will be documented. • Police will be contacted • Possible expulsion	

2014-2015 BUTTE COUNTY GRAND JURY REPORT
BAKKEN OIL AND OTHER HAZARDOUS MATERIAL TRANSPORTED THROUGH THE FEATHER RIVER CANYON

Summary

The 2014-2015 Butte County Grand Jury wanted the Board of Supervisors (BOS), along with the citizens of Butte County, to be aware of the potential for disaster and the possible consequences of the derailment of a train carrying hazardous material and subsequent spill occurring in a high risk area of Butte County.

What began as a report on the responsibilities of the Butte County Office of Emergency Management (OEM) regarding a hazardous material spill, expanded into an investigation on the ability of the County to manage a major train derailment involving numerous rail cars. The OEM is more than capable of handling a tank truck incident on a highway, or a train derailment involving a small number of cars with County resources, or with help from adjacent counties. It became evident, however, that the County would be unable to successfully manage the derailment of a significant number of tank cars that results in the release of crude oil or other hazardous material in a populated area or into a body of water. An incident of such magnitude would overtax local resources, including those from adjacent jurisdictions, and would require assistance from state and federal agencies as well as from industry.

The cities of Oroville and Chico, along with many smaller communities including the Feather River upstream from Lake Oroville are located in areas subject to damage from hazardous material spills. This report will focus on the residents and resources of Butte County that may be in jeopardy from a major crude oil train derailment and the options available to the County regarding planning, equipment and training available to minimize damage.

Glossary

BNSF - Burlington Northern Santa Fe Railway

BOS – Butte County Board of Supervisors

CPC-1232 tank car - A tank car used to carry flammable liquids constructed to more stringent specifications than those required for DOT 111 tank cars but less stringent than those required for DOT 117 tank cars. See DOT-111 and DOT-117

below and report section titled *Rail Cars* for additional detail.

CPUC - California Public Utilities Commission

DOT - United States Department of Transportation

DOT 111 tank car - The oldest and most common tank car used to carry flammable liquids. Minimal upgrades have been required.

DOT 117 tank car - A tank car used to carry flammable liquids constructed to recently adopted DOT specifications including a 9/16 inch tank shell, 11 gauge jacket, 1/2 inch full-height head shield, thermal protection, improved pressure relief valves and improved bottom outlet valves.

FRA - Federal Railroad Administration

GRP - Geographic Response Plan

HHFT - High-Hazard Flammable Train

LEPC - Local Emergency Planning Committees

OEM - Office of Emergency Management

OSPR - Office of Oil Spill and Prevention Response

PHMSA - Pipeline and Hazardous Materials Administration

SERC - State Emergency Response Commission

UP - Union Pacific Railroad

Approach

Background information for this report was derived from:

- Interviews with Butte County employees including OEM, Butte County Supervisors and staff;
- Consultation with Butte County Counsel;
- Research of online articles and websites;
- Review of various newspaper, industry magazines and articles;

- Research of past Grand Jury Reports from the entire state @ www.cgja.org ;
- Attendance at a Butte County Supervisors meeting where crude oil transport through Butte County was discussed on January 13, 2015; and
- Attendance at a Hazardous Materials Response Briefing and Demonstration in Sacramento on February 6, 2015.

Background

The Bakken oil boom has had a significant impact on domestic oil production. It has brought prosperity to North Dakota and reduced dependence on foreign oil imports. These benefits, while of national importance, have also brought with them serious problems that are slowly being addressed. Bakken crude oil must be transported long distances by rail due to a lack of nearby refineries and pipelines linking producing areas to refineries. A series of train derailments and subsequent fires involving Bakken crude oil have raised questions regarding the adequacy of railroad infrastructure, current tank car standards, regulatory oversight and operating practices.

The Bakken Formation underlies approximately 200,000 square miles of Montana, North Dakota, Saskatchewan and Manitoba. The formation is entirely subsurface and is named after Henry Bakken, a farmer who owned the land where the formation was originally identified while drilling for oil. (See Figure 1)

Figure 1-Geographic Extent of the Bakken Formation

The recent Bakken energy boom was made possible by hydraulic fracturing, or fracking, together with horizontal drilling. Horizontal drilling allows access

potentially to thousands of feet of oil bearing substrate from a single well. Hydraulic fracturing of the rock occurs when a pressurized liquid composed of water, sand and chemicals create cracks through which the oil will flow more freely.

The dramatic increase in oil production has occurred in an area with few refineries. Most refineries are located on the east and west coasts as well as the Gulf of Mexico. In addition to a lack of local refineries, few pipelines capable of moving the oil to refineries exist, leaving rail transportation as the only short-term alternative. The transport of oil by rail, while more expensive than by pipeline, has the advantage that oil can be shipped to any refinery based on the price the refineries are willing to offer. In 2013, crude oil deliveries by rail car jumped 506 percent to 6.3 million barrels a year. It is estimated by 2016, the volume could rise to 150 million barrels per year being transported by rail.

Bakken composition is a mixture of volatile components that act more like refined products such as gasoline when involved in fire. It contains a variety of other chemicals such as benzene and hydrogen sulfide, creating additional dangers to first responders, the most notable being respiratory harm.

Bakken crude is not a uniform substance and its physical and chemical properties may vary from oilfield to oilfield or within wells located in the same oilfield. The composition depends on the area of origin and the depth from which it is removed. The specific gravity of Bakken oil varies, but the majority of it floats on water.

This oil has a higher gas content, higher vapor pressure, lower flash point and boiling point and thus a higher degree of volatility than most other crudes in the United States. These characteristics result in enhanced flammability and ignitability and it is highly explosive. It is sensitive to static discharge and it vaporizes much more quickly than other crude oils. It has been involved in several explosions following derailments, including the disaster in Quebec in July 2013 and more recently in Mount Carbon, West Virginia in February 2015 and Heimdal, North Dakota on May 6, 2015.

The federal government has authority over railroad safety issues, primarily through the Federal Railroad Administration (FRA). The California Public Utilities Commission (CPUC) enforces federal and state rules regarding railroads within California. State and local agencies govern areas of emergency planning, preparedness and response. Federal regulations typically preempt states from imposing their own restrictions on railroads.

Responding to the increasing number of rail incidents involving Bakken crude oil, the FRA and the Pipeline and Hazardous Materials Safety Administration (PHMSA) have issued nearly 30 emergency orders, safety advisories and other actions regarding transport of Bakken crude oil since September 2012. On July 23, 2014, the United States Department of Transportation (DOT) released a comprehensive rule-making proposal for the transport of large quantities of flammable liquids by rail.

On April 7, 2015, the President of the CPUC and the Director of the California Governor's Office of Emergency Services submitted supplemental comments to the DOT and the Director of the Office of Management and Budget regarding the July 23, 2014, rulemaking proposal. Concern was raised over the number of train derailments involving crude oil, the adequacy of CPC-1232 tank cars, and the threat to water quality from train derailments. Comments regarding the potential impact of a derailment on water quality are significantly relevant given the extended drought now being experienced in California. The full text of the document may be found at:

http://www.cpuc.ca.gov/NR/rdonlyres/453B1AF0-3753-4341-B930-F742D041A310/0/CPUCCalOESPHMSARIAcomments472015final.pdf

Particular emphasis was placed on the threat to Lake Oroville and the State Water Project from a derailment in the Feather River Canyon. Lake Oroville is a critical component of the State Water Project and a major driver of the state economy since it serves a variety of functions including drinking water supply, flood control, hydroelectric power, irrigation, and recreation. The November 2014 derailment of a train in the Feather River Canyon transporting corn was noted. Had the derailment involved oil rather than corn, the outcome would have been quite different. Mentioned also was the derailment of a tank car containing the soil fumigant metam sodium near Dunsmuir in 1991 and the impact on the Sacramento River. The spill killed wildlife and vegetation for 40 miles from the spill point to the river mouth at Lake Shasta.

The submittal also emphasized the potential benefits of electronically controlled pneumatic brakes. Electronic activation of train car brakes has a number of advantages over the current method of actuating train brakes such as shorter stopping distances, an increase in brake signal transmission, and improved train handling.

The document reflects many of the concerns regarding the safety of transporting oil by rail through the Feather River Canyon expressed in letters sent by the BOS

to the State of California Governor's Office and the CPUC Office of Rail Safety and Enforcement Division. The BOS also emphasized the need for adequate training and preparation for a major oil train derailment.

On May 1, 2015, the FRA and PHMSA issued a final rule titled *Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains*. The rule includes:

- The definition of a "High-Hazard Flammable Train" (HHFT) as a train carrying a continuous block of 20 or more tank carloads of flammable liquids or 35 or more tank cars loaded with a flammable liquid dispersed through a train;
- Requirements for more accurate classification of unrefined petroleum-based products;
- The requirement that railroads perform a routing risk analysis of, at a minimum, 27 safety and security factors;
- A requirement for notification of State Emergency Response Commissions (SERC) and that State, local and tribal officials who contact a railroad to discuss routing decisions are provided appropriate contact information regarding routing of HHFTs;
- Restrictions on all HHFTs to 50 mph in all areas and specifies lower speed restrictions for HHFTs that contain any tank cars not meeting the enhanced standards contained in the rule;
- A requirement that all HHFTs be equipped with enhanced brake signal propagation systems; and
- Requirements for enhanced standards for both new and existing tank cars.

Additional information may be found at:

http://www.dot.gov/briefing-room/final-rule-on-safe-rail-transport-of-flammable-liquids and http://www.dot.gov/mission/safety/rail-rule-summary

Discussion

Derailments of trains transporting Bakken crude oil have prompted a rigorous review of existing transportation regulations as well as the ability of local emergency services to respond effectively to a derailment. The imposition of regulations such as oil conditioning, tank car design, train velocity and the route taken, are beyond the authority of Butte County. However, the County does have the ability to influence and benefit from State regulations regarding oil fees, bridge inspection, emergency planning and preparation of Geographic Response Plans

(GRP). This *Discussion* will include some details regarding the Federal response to train derailments, but the focus of the *Discussion* will be on issues directly related to and within the influence of Butte County.

The increase in oil shipments by rail has been sudden. The California Energy Commission projects that rail could deliver 25 percent of the state's petroleum needs in a few years. Large volumes of crude oil from production sites in Canada and North Dakota are now traveling through California by rail. Oil entering California from the north arrives by one of two routes. Both routes pass through Butte County, down the Feather River Canyon and Oroville or through Chico and are owned and maintained by Union Pacific Railroad. Burlington Northern Santa Fe Railway (BNSF) has the right to operate on both routes. Crude oil enters the state from other rail routes as well.

Approximately three million gallons of Bakken oil are transported by rail each week through the Feather River Canyon. Most first responders are trained and equipped to handle a tank truck spill. A tank truck is the type you see parked at the local gas station refilling the underground tanks. They hold approximately 9,000 gallons. In comparison, each rail car holds 30,000 gallons and there are 100 cars in a typical train.

Extending a railroad through the Feather River Canyon was a significant engineering endeavor requiring the construction of tunnels, high bridges and carving out a narrow shelf through steep bedrock terrain for the track. Maintaining a railroad through the Feather River Canyon is a continuing challenge in spite of track upgrades made by Union Pacific including installation of concrete ties and continuous welded rail. While many areas have been buttressed against undermining by the river and sliding of loose rock from above the track, all risks cannot be eliminated. Rock slides, trees falling on the track, and undermining of the track are an ever-present danger requiring constant vigilance. Access to the track by road is severely limited, particularly in the Butte County portion of the Feather River Canyon. (See Figure 2)

Figure 2- Steep canyon terrain of the Feather River Canyon
Photo courtesy of Mike Taylor

Inland oil spills are difficult to manage due to terrain conditions and the possibility of rivers dispersing oil over a large area. The environmental consequences of a crude oil spill in the Feather River Canyon could be substantial. Oil may flow for miles in the river eventually reaching Lake Oroville. The oil could kill wildlife, smother fish, and cling to rocks. Successful cleanup would be problematic. The derailment of a tank car containing metam sodium on the Sacramento River in 1991 still ranks as the largest hazardous chemical spill in California history. It was over three years before vegetation was restored and fish populations were re-established.

In response to the November 2014 derailment and spill of 11 rail cars of corn, UP has increased track inspections in the Feather River Canyon with advanced scanning equipment that uses ultrasound waves to detect rail abnormalities. UP officials say the company has spent $1.4 billion in California on track upgrades between 2009 and 2013, including replacing a quarter of its ties every eight years. Many of the new ties, especially in the mountains, are composed of pre-stressed concrete. Pre-stressed concrete ties have a longer service life, greater strength, and lower maintenance costs than wooden ties. Use of continuous welded rail, also known as ribbon rail, improves track stability by eliminating rail joints and reduces maintenance cost. At the time of writing this report, Union Pacific is preparing to

replace more than 36 miles of track between Keddie and Lake Oroville in the Feather River Canyon.

Oil Fee

In the past several months, California has begun to create new rail safety programs. The Legislature has approved new fees on oil being carried by train. A fee of 6.5 cents per barrel of crude oil transported through the state by rail or pipeline was approved in mid-June 2014. This provides a dedicated source of money to help respond quickly to both maritime and inland spills involving pipelines and rail tanker cars bringing crude to refineries. An inland spill and prevention program has been started by the California Department of Fish and Wildlife. The Department oversees the State Office of Oil Spill and Prevention Response (OSPR). Additional detail may be found in the report section titled *Emergency Planning Committees*.

The CPUC is hiring additional track inspectors to work with their federal counterparts. Plans also include ongoing safety drills and placement of safety equipment at dangerous rail points. These points include the Feather River Canyon, Donner Pass and Tehachapi Pass, along with urban corridors.

Bridges

The CPUC Risk Assessment Section has identified California's railroad bridges as a potential significant safety risk, yet railroad bridges, unlike highway bridges, are not inspected by any California state entity. While the FRA has new and broadly based bridge regulation authority, it employs only five bridge specialists for the entire United States. The federal government relies on the railroads to inspect their bridges and prepare Bridge Management Programs that are to be made available to the FRA, but only when requested by FRA. One federal inspector is currently assigned to cover California. No comprehensive inventory of California railroad bridges exists. Individual railroads maintain their own inventories as required by the FRA. The CPUC has recently hired two railroad bridge inspectors.

The CPUC Risk Assessment Section is assessing risks of railroad bridges by developing evaluations, concerns, and assumptions regarding the integrity, load capacity, maintenance and inspection practices on all bridges including bridge age. After the bridges are ranked, the inspectors will identify deficiencies in the bridges, if any, and make recommendations to the railroads to either repair or replace bridges located in the most vulnerable high-consequence areas. Risk ranking includes proximity to populated areas, whether the bridge crosses major

waterways, and frequency of passenger trains and other trains that transport volatile hazardous materials and petroleum products.

The September 16, 2014, CPUC Supplemental Report titled *The Railroad Bridge Inspections Implementation Plan* details the process used by the CPUC to select bridges for inspection, training required for bridge inspectors, and a listing of the bridges selected for inspection in 2015. Of the initial 30 bridges selected for inspection, three are located on the Feather River.

Rail Cars

Federal officials are proposing a host of safety changes for crude oil shipments, including stronger tank cars, reduced train speed, better braking systems, computerized train controls, and rail route risk assessments.

Rail cars used to transport oil are designated by the Department of Transportation as DOT-111 tank cars. They were originally designed and built in the 1960's for use as corn oil transport and other non-hazardous materials. They have a thin shell or hull. They are called the workhorse cars of the railway because there are so many of them and because they have been widely used over the years. They are minimally reinforced and have a well-documented tendency to puncture or rupture in derailments.

A newer car designated CPC-1232 is considered an improvement over the DOT-111 cars. It has a thicker shell, extra shielding on the ends of the cars, and features intended to protect the top and bottom valves in case of derailment. However, CPC-1232 cars were involved in the recent Mount Carbon, West Virginia and Heimdal, North Dakota incidents. The DOT has proposed to phase out or retrofit all DOT-111 cars, including the CPC-1232 beginning in 2017-2018.

The West Virginia and the nearly concurrent Canadian derailment and explosions in Ontario involved the newest CPC-1232 tank cars, underscoring the fact that the overwhelming risk factor is the explosivity of untreated crude oil, not the inadequacy of the DOT-111 car. The DOT-117 tank car specifications are much like the CPC-1232 but with a 1/8 inch thicker shell. Final DOT-117 construction standards have been adopted by PHMSA.

Oil Conditioning

Oil conditioning is the removal of more volatile components such as natural gas and other lighter elements from crude oil by the application of heat, pressure and

retention time before shipping for the purpose of improving stability during transport.

There is disagreement over the volatility of Bakken oil with some producers contending that the oil is no more volatile than others and should not be subjected to conditioning. The oil industry has argued that railroads are to blame for not keeping their trains on the track. However, one must also consider the matter of so-called “hot oil” being loaded directly from wells to tank cars without first conditioning the oil by removal of explosive dissolved gases prior to transport.

On December 9, 2014, the Industrial Commission of North Dakota issued an order to establish testing and conditioning standards to improve transportation safety of crude oil. The order took effect on April 1 of this year. The Commission acted in response to concern that oil extracted from the Bakken Formation contains volatile components that make the oil more hazardous to ship by rail than other crude oil. The order specifies standards for temperature and pressure under which the conditioning equipment must operate in order to ensure that light hydrocarbons are removed before the oil is shipped. The order will reduce the volatility of Bakken crude. To bring the crude in compliance, operators will need to remove many of the natural gas liquids such as butane, propane, ethane and others from the hydrocarbon stream. The order also specifies maximum vapor pressure following conditioning, record keeping, and a notification process if the operator of a rail facility discovers that any crude oil received from the Bakken Formation violates federal crude oil safety standards. Those found in violation of the standards will face a $12,500 fine for each day the oil is left unconditioned. Conditioning increases cost of production and produces byproducts that must be transported for further refinement or flared at the well.

Flaring of natural gas at North Dakota well heads has been declining due to air quality concerns and the increasing ability to utilize the gases ordinarily flared for conversion to commercial products. Compliance with the conditioning order will be complicated to some extent by a July 2014 Industrial Commission policy to reduce the volume of natural gas flared from oil wells in the Bakken and Three Forks formations. The Commission’s goal is to reduce gas flaring over time in order to improve air quality.

How the County Can Prepare

The two railroads that ship hazardous materials through Butte County are Union Pacific Railroad (UP) and the Burlington Northern Santa Fe Railway (BNSF).

Both UP and BNSF have made information and equipment available to help first responders in times of emergency. Members of the Butte County Grand Jury attended a Hazmat Emergency Response Briefing at the California State Railroad Museum on February 6, 2015. The briefing was a joint presentation by UP and BNSF, the Western States Petroleum Industry, and the American Chemistry Council. Due to the volume of material presented, the Grand Jury will focus only on the information concerning resources and equipment available to hazardous material spill first responders.

Emergency Response

UP and BNSF have extensive emergency response functions to assist communities in the event of an accident involving crude oil or other hazardous materials. They include:

- Teams of full-time personnel whose primary focus is hazmat safety and emergency response, as well as environmental, industrial hygiene, and medical professionals that are available to assist;
- Maintaining networks of hazmat response contractors and environmental consultants, strategically located throughout their service areas and who are on-call at all times; and
- Having comprehensive "standard of care" protocols that ensure the impacts to the community are addressed promptly and professionally.

Each year the railroads instruct over 20,000 emergency responders throughout the country. This training includes traveling classrooms and safety rail cars that allow for hands-on instruction for local first responders. They provide tabletop drills and self-study courses for first responders, including visits to local fire agencies.

The railroads also support emergency response capability through the Security and Emergency Response Training Center (SERTC) in Pueblo, Colorado that is operated by the Transportation Technology Center, Inc. Since its inception in 1985, SERTC has provided in-depth hazmat emergency response training to more than 50,000 local, state and tribal emergency responders. It also provides training to railroad, chemical and petroleum industry employees from all over the country. UP and BNSF, along with the rest of the railroad industry, are also providing:

- **Crude by Rail Response Training:** Funding totaling $5 million has been committed to develop a crude-by-rail training and tuition assistance program for local first responders.

- **Information to State Agencies:** In the past, the railroads provided authorities with information about hazardous materials transport upon request. However, on May 7, 2014, the DOT issued an emergency order requiring railroads operating trains containing one million gallons of Bakken Crude oil to notify state emergency response agencies.
- **Real Time Data for First Responders:** The railroads have developed ASK RAIL.com, an invitation app designed for first responders dealing with an incident, to get the information they need to respond appropriately. ASKRAIL can identify the contents of every railcar in a train manifest.
- **Emergency Response Inventory:** The inventory also includes locations for the staging of emergency response equipment and contact information.
- **Accident Remediation:** Emergency responders have control of railroad hazardous material accidents, but railroads provide the resources for mitigating the accident.
- **Railroads Reimbursement:** Railroads reimburse local emergency agencies for the cost that the agencies expend in their response efforts.

Emergency Planning Committees

The Office of Spill Prevention and Response (OSPR) is one of the few State agencies in the nation that has both major pollution response authority and public trustee authority for wildlife habitat. OSPR's mission is to provide the best achievable protection of California's natural resources. The agency accomplishes this by preventing, preparing for, and responding to spills of oil and other hazardous materials and through restoring and enhancing affected resources.

OSPR was formed by the State Legislature in 1990 in response to the 1989 Exxon Valdez oil spill. The legislation covered all aspects of marine oil spill prevention and response in California and established an Administrator with broad powers to direct prevention, removal, abatement, response, containment, and cleanup efforts with regard to all aspects of any oil spill in marine waters of the state. The creation of Area Contingency Plans for marine resources has been a significant OSPR achievement.

As the oil boom in North Dakota and Canada gained momentum, the means of transporting crude oil into California shifted from dominantly marine transport to marine and rail transport. It was recognized that while the marine spill response program was functioning satisfactorily, inland response to spills was inadequate. In 2014, Governor Brown expanded the OSPR program to cover all state surface waters at risk of oil spills from any source, including pipelines, production

facilities, and the increasing shipments of oil transported by railroads. This expansion provided critical administrative funding for industry preparedness, spill response, and continued coordination with local, state and federal governments along with industry and non-governmental organizations.

Senate Bill 861, passed by the Legislature in 2014, authorized the expansion of, and provided the additional statutory and regulatory authority for, the prevention, preparedness and response activities in the new inland areas of responsibility. Components of the bill include targeting critical locations to stage spill responders and equipment for the best response to rail and pipeline incidents and the creation of inland response plans.

Specifically, response plans will identify public safety concerns, resources at risk, and equipment needs. Plans will also focus on strategies for water protection and response as well as economic resources at risk. Planning efforts will be accomplished in coordination with, and with the cooperation of, local governments, the public, and industry.

In addition to the duties of OSPR, the California Legislature has also established the State Emergency Response Commission (SERC) located within the California Department of Emergency Services. Local Emergency Planning Committees (LEPC) have been established by SERC. Butte County is a member of the Region III LEPC. Each planning committee is responsible for preparing a regional hazardous materials plan under the direction and coordination of SERC. Enhanced emergency planning required by Senate Bill 861 will be coordinated at the state level by OSPR and OES, but planning responsibilities will also be delegated to the regional LEPC. Dominantly rural regions, such as Region III, have been faced with both local and state budget cuts and are often resistant toward state mandates. Additionally, the volunteer basis of the LEPC participants makes regional planning difficult. Butte County OEM and the Region III LEPC are actively engaged with the state regarding provisions of Senate Bill 861.

Locally, the rail corridor running down the North Fork Feather River is the area at greatest risk from an oil train derailment and would be a logical candidate for the planning effort envisioned by Senate Bill 861. To be most effective, any planning effort should be coordinated with Plumas County since both Butte and Plumas Counties share the railroad and the river.

Geographic Response Plan

A Geographic Response Plan (GRP) contains site-specific strategies for the initial response to a spill of oil or oil products on water. It is created in order to provide guidelines for responders in the event of a spill, which significantly reduces the time needed to make decisions during the initial response. A GRP provides the responders with essential information about the site, the equipment needed to carry out an effective response, access details, and other information. The goal of a GRP is to ensure that the response to a spill is fast, effective, and that sensitive resources are protected. A collaborative process is used when developing the plan. The process involves representatives from various levels of government, responders, resource specialists, and industry working together to identify spill risks, sensitive resources, and strategies for spill containment and cleanup.

Butte County does not have a GRP for the Feather River. The plan format adopted by the U.S. Environmental Protection Agency would be the most suitable plan template. Regionally, GRPs have been adopted for the Truckee River and the Upper Sacramento River. A GRP for the Feather River prepared by Plumas County in the 1990's is currently under review by Plumas County.

The Feather River GRP would likely be developed in partnership with OSPR, the Region III LEPC, and EPA Region 3. Participants would include Butte, and ideally Plumas Counties, Union Pacific Railroad, BNSF Railway, Pacific Gas and Electric Company, Cal-Trans, tribal councils, and local, state and federal resource agencies. Initiation of the GRP planning process would most likely be through the Region III LEPC organizational structure. Any number of details, not the least of which is funding, would need resolution prior to commencement of the planning process.

Findings

F1 Bakken Oil is being transported by rail through Butte County in trains of approximately 100 cars carrying up to 3 million gallons of crude oil.

F2 Butte County has no direct influence over routing or frequency of trains, equipment utilized, shipment content, or oil conditioning.

F3 The CPUC Risk Assessment Section has identified California's railroad bridges as a significant safety risk.

F4 The CPUC has recently hired two railroad bridge inspectors. Inspection results will not be available until the end of 2015.

F5 There is no comprehensive inventory of railroad bridges located in California.

F6 A Geographic Response Plan is a vital planning tool for an efficient and effective response to an oil spill.

F7 Butte County does not have a Geographic Response Plan or equivalent for the Feather River.

F8 Senate Bill 861 provides a dedicated source of money for preparedness and response activities on inland waterways including training and equipment.

F9 Communication between the state and the Region III LEPC regarding provisions of Senate Bill 861 and other spill preparedness opportunities are continuing.

F10 It is the opinion of the 2014-2015 Butte County Grand Jury that the Butte County OEM is operated efficiently and effectively.

F11 Butte County emergency service personnel would likely be among the first responders to a derailment in the Feather River Canyon.

Recommendations

R1 The Butte County BOS should petition the CPUC to inspect Butte County's critical railroad bridges.

R2 The Butte County BOS should initiate discussion of the Feather River GRP concept with the Plumas County BOS with the goal of jointly pursuing the creation of a GRP.

R3 The Butte County BOS should remain actively engaged in informing the California Office of Emergency Services and California Department of Fish and Wildlife, either directly or through the Region III LEPC, regarding oil spill preparedness measures most suited to Butte County.

R4 The Butte County Grand Jury recommends that the Butte County BOS monitor County participation in training offered by the railroad industry and Region III LEPC.

R5 The Butte County OEM should continue to look for state grant or railroad industry funding for pre-positioning of spill-containment and clean-up equipment at strategic points in the FRC and Lake Oroville.

R6 The Butte County Grand Jury recommends that the Butte County OEM utilize all information and resources made available by the railroad industry such as AskRail.com

R7 The Butte County BOS should continue communicating with the Governor's Office and the CPUC regarding adoption of practices that will help to increase the safety of oil trains traveling through Butte County.

R8 The Butte County BOS should communicate directly, or through county associations with our congressional representative, regarding legislation regulating rail transport of crude oil and other hazardous materials through Butte County.

R9 The Butte County BOS should communicate its concern that the citizens of Butte County could be at unreasonable risk as long as railroad bridges located in Butte County remain uninspected by the CPUC.

RESPONSES

Pursuant to Penal Code §933 and §933.05, the following responses are ***required****:*

- Butte County Board of Supervisors: A response to Findings F1 through F11 and Recommendations R1 through R9.

The Butte County Grand Jury ***invites*** the following individuals to respond:

- Butte County Chief Administrative Officer: A response to Findings F1, F2, and F6 through F11, and Recommendations R5 through R6.

The governing body indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

Reports issued by the civil Grand Jury do not identify individuals interviewed. Penal Code §929 requires that the reports of the Grand Jury do not contain the name of any person or facts leading to the identity of any person who provides information to the civil Grand Jury.

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2014-2015 BUTTE COUNTY GRAND JURY REPORT
BUTTE COUNTY OFFICE OF EMERGENCY MANAGEMENT
"DIAMOND INCIDENT" EXERCISE
MARCH 11, 2015

Summary

The Butte County Office of Emergency Management (OEM) conducted a Functional Exercise (FE) known as the "Diamond Incident" at the Butte County and City of Chico Emergency Operations Centers (EOC) on March 11, 2015. The exercise was designed and conducted under guidelines established by the Homeland Security Exercise and Evaluation Program (HSEEP) developed by the Department of Homeland Security.

The purpose of the exercise was to assess EOC actions at a Mass Evacuation Incident (MEI), a train derailment involving fire and the potential for a Boiling Liquid Expanding Vapor Explosion (BLEVE) all occurring simultaneously. Participants included Butte County agencies, the City of Chico, private organizations, industry, and local media. The exercise duration was approximately six hours. The exercise was as realistic as possible without deploying responders in the field.

The function of the OEM is to coordinate the overall response through the EOC during disasters or large scale incidents. When activated, the EOC provides a central location for responding and supporting agencies to collaborate response and recovery efforts in order to effectively and efficiently provide information and deploy resources. In non-disaster times, the OEM supports and coordinates disaster planning, community preparedness, mitigation, and training.[1]

Glossary

Emergency services, as is the case with most specialized endeavors, use abbreviations for commonly used terms. Use of this shorthand language is easily understandable to those using it on a daily basis but frustratingly complex to those with no or only a casual understanding of the terms. This exercise was no exception. Careful reading and frequent reference to this glossary is recommended.

[1] www.buttecounty.net/oem/Home.aspx

BLEVE – Boiling Liquid Expanding Vapor Explosion: Ordinarily an explosion caused by the rupture of a vessel containing a pressurized liquid above its boiling point. Such an explosion is commonly caused by fire weakening the containment vessel holding a volatile liquid.

EOC – Emergency Operations Center

FE – Functional Exercise: A functional exercise simulates an emergency in the most realistic manner possible short of moving people and equipment to an actual site. It is designed to challenge the entire emergency management system.

Haz Mat – hazardous materials

HSEEP – Homeland Security Exercise and Evaluation Program

ICS – Incident Command System: See text under Background for a description of ICS and Attachments A and B for diagrammatic depictions of command hierarchy.

Incident – An occurrence or event, natural or human caused that requires an emergency response to protect life or property

MEI – Mass Evacuation Incident

NIMS – National Incident Management System: NIMS is a standardized approach to incident management developed by the Department of Homeland Security.

OEM – Butte County Office of Emergency Management

OES – California Office of Emergency Services

SCC – Simulation Control Center

SEMS – Standardized Emergency Management System: SEMS provides the basic structure for managing multiagency and multijurisdictional responses to emergencies in California. Adoption of the system was a requirement of the California Emergency Services Act.[2]

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[2] *http://www.calema.ca.gov/planningandpreparedness/pages/standardized-emergency-management-system.aspx*

Unified Command – In incidents involving multiple jurisdictions, a single jurisdiction with multiagency involvement, or multiple jurisdictions with multi agency involvement, Unified Command allows agencies with different legal, geographic, and functional authorities and responsibilities to work together effectively without affecting individual agency authority, responsibility, or accountability.[3]

Approach

On March 11, 2015, the Grand Jury observed an exercise at the Butte County Emergency Operations Center involving the Operations Center and the City of Chico Emergency Operations Center.

Background

Much of the material appearing in this section was taken from the incident exercise plan.

This was the first exercise of such magnitude in Butte County in over nine years and was developed under HSEEP guidelines and policies. Funding was provided through a Fiscal Year 2013 Homeland Security Grant Program. The intent was to make the exercise as realistic as possible without deploying responders. The exercise was designed to simulate a realistic possibility. A script controlled by personnel at a remote location in the Simulation Control Center (SCC) was used to generate messages to the Butte County and City of Chico EOCs requiring action to respond to an evolving incident. The EOCs were thus required to devise innovative solutions to non-recurring problems and issues as would be the case during an actual incident. Only personnel in the SCC had access to the script.

The "Diamond Incident" consisted of a train derailment in Chico involving fire and the potential for a Boiling Liquid Expanding Vapor Explosion (BLEVE) with a resulting Mass Evacuation Incident (MEI). The exercise included activating the Butte County and City of Chico EOCs; coordinating the activities of the separate EOCs; and communicating between the EOCs, including control of critical information.

[3] https://training.fema.gov/emiweb/is/icsresource/assets/reviewmaterials.pdf

Organization of personnel within the EOCs followed the Incident Command System (ICS) format. See Attachment A for a generalized description of the major ICS subdivisions and Attachment B for a typical ICS structure for wildland fire. ICS allows personnel from different agencies to work together to control an incident such as a flood, fire, tornado, train derailment, or earthquake by using a common terminology, organizational structure, and operational procedures.

Prior to the adoption of the ICS format, coordination between agencies was critically handicapped by a lack of standardized equipment, terminology, command structure and the inability of different agencies to communicate by radio. The concept for ICS grew out of a series of devastating wildland fires in Southern California in 1970.[4] The ICS system is scalable to respond to incidents of any magnitude. ICS is a subcomponent of the National Incident Management System (NIMS).

During an incident, the Butte OEM provides support. The OEM does not manage or control the incident. They are the hub that supports a Unified Command.

Evaluators from Plumas, Yuba, and Sutter counties and the Town of Paradise were present to monitor the drill and provide comment at the conclusion of the exercise. Observers from the California Office of Emergency Services (OES) and Cal Fire headquarters in Sacramento were also present.

The exercise was designed to test the capabilities of the two EOCs to function under the rules of the Standardized Emergency Management System (SEMS) and NIMS by placing the EOCs under considerable stress. The EOCs would be required to:

- Activate rapidly with a briefing closely following the activation.
- Expect close attention to clear communications.
- Follow established procedures.
- Utilize check lists.
- Come to full agreement on consistent public messages.
- Effectively respond to community logistical needs.
- Come to quick and amicable resolution of jurisdictional disputes.

[4] *http://www.fema.gov/txt/nims/nims_ics*

The exercise focused on the following evaluation objectives:

- Organization: Evaluate the capability to implement the EOC organization in response to a Haz Mat (hazardous materials) related mass evacuation incident and utilizing the EOC organizational structure to manage the incident while working effectively with the City of Chico EOC.

- Communications: Assess the ability to establish and maintain internal, multi-jurisdictional and multi-agency communications in response to a Haz Mat mass evacuation incident.

- Checklists: Evaluate the ability of EOC staff to routinely refer to checklists as the exercise continues and refer back to the checklist at the end of the exercise.

Discussion

The training plan indicated that up to 70 participants would likely take part in the exercise with as many as 50 having an active role in the exercise. An exercise of this complexity requiring days of planning, travel by observers and evaluators from outside the county and the need for other county employees to cover for those taking part in the exercise does not occur without incurring substantial cost. The cost is returned by efficiencies achieved during actual incidents.

Prior to the start of the exercise, participants were asked to note any changes that might be made to improve the efficiency of the Emergency Operations Center.

The exercise, once underway, appeared chaotic but the visual appearance hid a clearly defined organization with each participant assuming a unique role or duty. The ICS system has taken all of the tasks necessary to manage an incident, broken them into stand-alone duties, each of which contributes to the efficient management of an incident under the guidance of an Incident Commander. Following the ICS structure, the Butte OEM is led by a Director. Communication between the various functions is critical and adds to the chaotic appearance.

Early in the exercise, the Director called a meeting of the section chiefs including public information, safety, and liaison officers to assess the status of the start-up of the Operations Center and to determine issues or problems.

Participants, either singly or in groups filled the generalized roles outlined in Attachment A. The focus was to not only manage the incident as it unfolds, but to generate a plan of action for the next operational period.

Occurring simultaneously were:

- Ordering of resources with an estimated time of arrival.
- Logging in arriving resources.
- Maintaining financial records.
- Coordination with non-governmental agencies such as the Red Cross.
- Maintaining uninterrupted or establishing multiple forms of communication.
- Mapping of the incident.
- Utilizing expertise and resources of private industry.
- Ensuring that the public is informed.
- Planning for the next operational period.

Exercise observers and evaluators roamed about the Operations Center using evaluation forms and check lists to note progress for use during the exercise evaluation.

The SCC assumed the role of the Incident Commander dealing with the derailment, fire and potential BLEVE and passed messages to both the Butte EOC and Chico EOC as if they were from the Incident Commander.

Representatives of private organizations and industry participated in the exercise. They each have a critical role in emergency management by providing, for example, relief to those displaced and industry expertise and resources.

A “shift change” was practiced enabling additional participants to become involved.

A simulated news report was prepared and “broadcast” to the Operations Center.

Situational updates were inserted into the exercise requiring adjustment to those new conditions. One of the issues needing resolution during the exercise was the coordination of the mass evacuation. Neither the Butte OEC nor the City of Chico OEC had complete control of the evacuation since both City and County residents were involved. Both EOCs had to coordinate an efficient evacuation.

A comment was made by OEM staff that Butte County agency personnel are not reluctant to participate and willingly become involved in drills such as this. Willing

participation and the resulting competence is an asset to the county that is not necessarily readily apparent to those outside of county government.

A debriefing took place at the end of the exercise in order to capture participants' input about what they felt went well and what needs improvement.

Among the findings of the debriefing was the need for additional follow up training. It was also found that the exercise promoted the building of a working relationship between the Butte OEC and the City of Chico OEC and provided an opportunity to build relationships with industry.

Findings

F1 This exercise was the first of its kind in over nine years.

F2 The emergency scenario was based on a realistic possibility.

F3 An exercise of this magnitude requires the active participation of several county departments.

F4 Exercises of this complexity help to build working relationships between jurisdictions.

F5 Competency requires numerous drills and training if an actual incident is to be managed in an efficient manner while providing for the safety of responders and the public.

F6 The Mass Evacuation was jointly coordinated by the Butte County and City of Chico EOCs.

Recommendations

R1 That Butte County OEM conduct exercises of this scale as often as fiscally feasible.

R2 That Butte County OEM continue including private organizations and industry representatives in exercises.

Response

Pursuant to Penal Code §933 and §933.05, the following responses are ***required:***

- Butte County Board of Supervisors: A response to Findings F1 through F5 and Recommendations R1 and R2.

The Grand Jury ***invites*** the following individual to respond:

- Butte County Chief Administrative Officer: A response to Findings F1 through F5 and Recommendations R1 and R2.

The governing body indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

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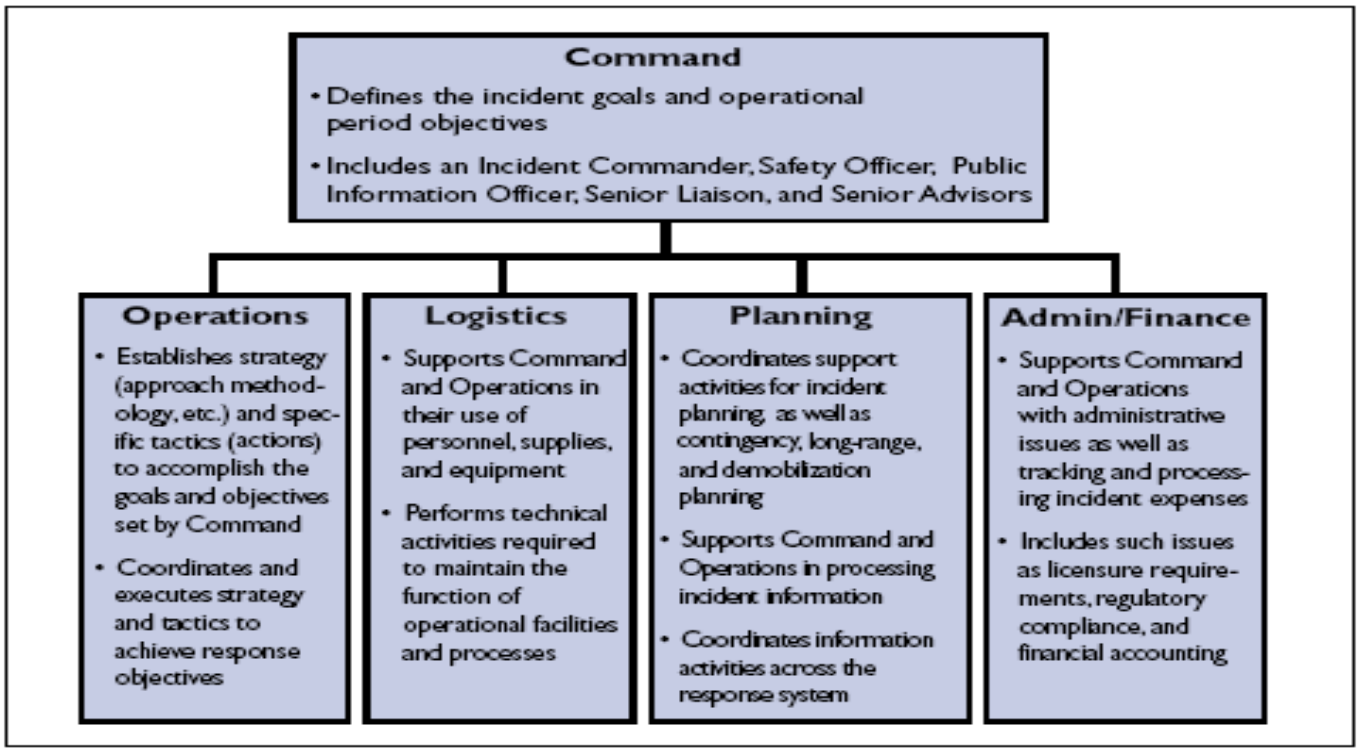
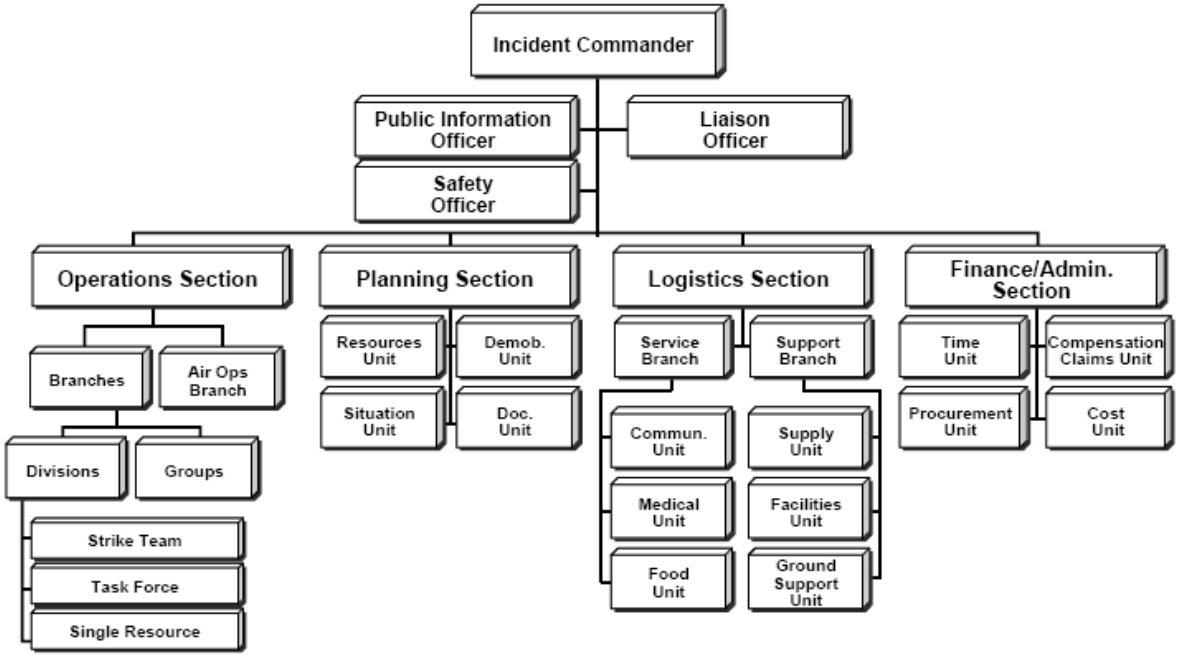
Attachment A

Generalized ICS system with brief description of duties of each section



Attachment B

Typical Incident Command System structure for wildland fire. Each component can be expanded depending on the magnitude of the incident. The Operations Section is modified to suit other classes of incidents but follows the same hierarchal system



2104-2015 BUTTE COUNTY GRAND JURY REPORT
BUTTE COUNTY PUBLIC HEALTH DEPARTMENT AND THE OFFICE OF EMERGENCY MANAGEMENT EBOLA VIRUS TABLETOP EXERCISE

Summary

Butte County seems an unlikely spot to suffer from the threat of the Ebola virus. Far removed from West Africa, the region most affected by the current epidemic. Yet Butte County is an area with college students, faculty and missionaries making many trips out of the country each year, raising worries about the influx of contagious diseases. It is natural to be concerned about the infectiousness of this disease given the increase in other tropical diseases such as West Nile Virus.

The highly infectious Ebola virus is not airborne, but instead spread through bodily fluids. The disease has suddenly expanded from no cases in the United States to 11 cases in the United States, with the most recent case being March 2015.[9]

In response to these developments, the Butte County Public Health Department planned an Ebola tabletop exercise, with the assistance of the Butte County Office of Emergency Management. The Grand Jury was invited to attend the exercise.

Cases of Ebola in the United States as of March 20, 2015

United States	Case reported	Ebola acquired in US	Status of Patient
Aid Worker	Aug. 2, 2014	no	Recovered
Missionary	Aug. 2, 2014	no	Recovered
Doctor	Sept. 5, 2014	no	Recovered
Doctor	Sept. 9, 2014	no	Recovered
Visitor	Sept. 30, 2014	no	Died
News Cameraman	Oct. 6, 2014	no	Recovered
Nurse	Oct. 11, 2014	yes	Recovered
Nurse	Oct. 15, 2014	yes	Recovered
Doctor	Oct. 23, 2014	no	Recovered
Doctor	Nov. 15, 2014	no	Died
Aid Worker	Mar. 16, 2015	no	In Treatment

[9] http://www.cnn.com/2015/03/14/health/cdc-americans-ebola/ *retrieved April 3, 2015.*

Glossary

Ebola Hemorrhagic Fever - One of a group of viral diseases that cause multiple organ failure, most generally damaging the circulatory system and related organs.

FEMA - Federal Emergency Management Administration's Exercise definitions:[10]

> **"An exercise** is a *coordinated, supervised exercise activity, normally used to test a single specific operation or function*. With an exercise, there is no attempt to coordinate organizations or fully activate the OEM. Its role in an exercise program is to practice and perfect one small part of the response plan and help prepare for more extensive exercises, in which several functions will be coordinated and tested. The effectiveness of an exercise is its focus on a single, relatively limited portion of the overall emergency management system. It makes possible a tight focus on a potential problem area. [2]
>
> **"A tabletop exercise** is a *facilitated analysis of an emergency situation in an informal, stress-free environment*. It is designed to elicit constructive discussion as participants examine and resolve problems based on existing operational plans and identify where those plans need to be refined. The success of the exercise is largely determined by group participation in the identification of problem areas. There is minimal attempt at simulation in a tabletop exercise. Equipment is not used, resources are not deployed, and time pressures are not introduced. [2]
>
> **"A functional exercise** is a *fully simulated interactive exercise that tests the capability of an organization to respond to a simulated event*. The exercise tests multiple functions of the organization's operational plan. It is a coordinated response to a situation in a time-pressured, realistic simulation. A functional exercise focuses on the coordination, integration, and interaction of an organization's policies, procedures, roles, and responsibilities before, during, or after the simulated event. [2]

[10] http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0CDIQFjAD&url=http%3A%2F%2Ftraining.fema.gov%2Fhiedu%2Fdocs%2Fdrom%2Fsession%252040%2520-%2520emergency%2520operations%2520centers%2520%25282%2529.doc&ei=RikUVYLvK8yzyATVv4CwCw&usg=AFQjCNG92b2_mHJLj-FRqMYdf7HvfKyUWA&sig2=wh7a5kABVt8CQMlMp4yjag *retrieved March 26, 2015.*

"A full-scale exercise *simulates a real event as closely as possible*. It is an exercise designed to evaluate the operational capability of emergency management systems in a highly stressful environment that simulates actual response conditions. To accomplish this realism, it requires the mobilization and actual movement of emergency personnel, equipment, and resources. Ideally, the full-scale exercise should test and evaluate most functions of the emergency management plan or operational plan. A full-scale exercise differs from an exercise in that it coordinates the actions of several entities, tests several emergency functions, and activates the EOC or other operating center. Realism is achieved through:

- On-scene actions and decisions.
- Simulated "victims."
- Search and rescue requirements.
- Communication devices.
- Equipment deployment.
- Actual resource and personnel allocation." [2]

DOC Department of Operations Center – "is a location where key decision makers gather information about the disaster"[11]

EOC Emergency Operations Center - An "Emergency Operations Center Grant Program provides funding to improve emergency management and preparedness capabilities by supporting flexible, sustainable, secure, strategically located, and fully interoperable EOCs with a focus on addressing identified deficiencies and needs."[12]

ICS Incident Command System - The Incident Command System (ICS) is a management system designed to enable effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.

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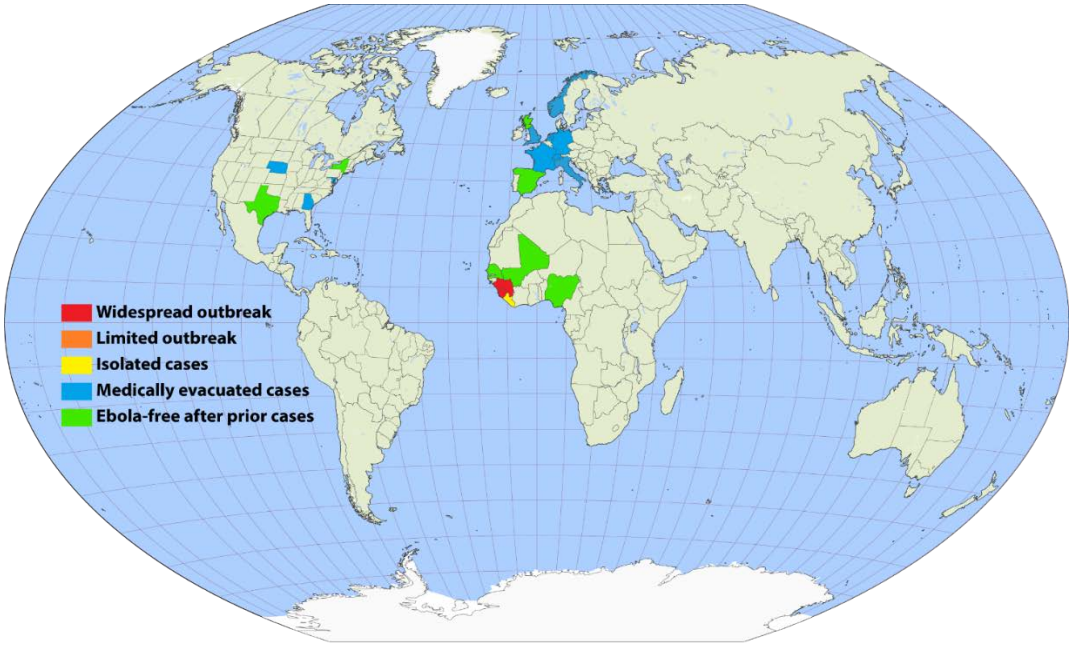
[11] http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0CDIQFjAD&url=http%3A%2F%2Ftraining.fema.gov%2Fhiedu%2Fdocs%2Fdrom%2Fsession%252040%2520-%2520emergency%2520operations%2520centers%2520%25282%2529.doc&ei=RikUVYLvK8yzyATVv4CwCw&usg=AFQjCNG92b2_mHJLj-FRqMYdf7HvfKyUWA&sig2=wh7a5kABVt8CQMlMp4yjag *retrieved March 26, 2015.*

[12] https://www.fema.gov/fy-2011-emergency-operations-center-grant-program, *retrieved March 26, 2015.*

Background

Initially identified in Liberia in 1976, the Ebola virus has frightening characteristics. It can be transmitted from animals to humans, and human to human. The original species crossover was determined to be bats. The beginning symptoms resemble influenza, with fever, diarrhea, and vomiting.[13] Like influenza, hemorrhagic infections are highly contagious. Unlike influenza, the death rate for many hemorrhagic fevers is very high, resulting from fevers and shock from extensive internal bleeding.[14] A few of the hemorrhagic fevers, such as the Scandinavian hemorrhagic fever, a Hanta virus, are relatively mild.



Geographic distribution of Ebola cases March 2015[15]

Prior to 2014, there were no cases of the Ebola virus reported in the United States. However, an explosion in the number of cases in West Africa in 2014 altered this situation. This is the age of international health care workers, medical missionaries and casual air travel. Workers and tourists from Africa in 2014 brought eight cases into the United States. Two additional cases resulted from nurses, unknowingly exposed while treating an undiagnosed patient, one of those eight cases. The 2015

[13] http://www.cdc.gov/vhf/ebola/pdf/what-need-to-know-ebola.pdf *retrieved March 15*, 2015

[14] http://en.wikipedia.org/wiki/Viral_hemorrhagic_fever, *retrieved March 26, 2015*.

[15] "Ebola Outbreak Map (ongoing)" by Раціональне анархіст - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commonshttp://commons.wikimedia.org/wiki/File:Ebola_Outbreak_Map_(ongoing).png#/media/File:Ebola_Outbreak_Map_(ongoing).png, *retrieved April 3, 2015.*

case is also an afflicted United States medical worker evacuated from Sierra Leone. Fifteen co-workers were also returned and are presently under quarantine.

Two of the 10 patients died despite the excellent medical facilities in the United States. Still the United States death rate of 20% proves exceptionally low. In Africa the death rate can be as high as 65%.[16] After the first cases in the United States, and additional cases worldwide, the supply of effective experimental drugs was exhausted.

The Centers for Disease Control and Prevention, most often referred to as the CDC, issued new federal guidelines for Ebola contacts. These were adopted by all states, whether or not they had confirmed cases of Ebola.[17] In response to these developments, the California Department of Public Health then requested all California counties insure they met these CDC requirements.[18]

Coincidentally, the California State Universities Chancellor's Office prohibited all tours of the affected countries. In a statement issued "Until further notice and to maintain as safe an environment as possible, I have directed all campuses to prohibit campus-sponsored *non-essential* travel to countries where the CDC has issued a travel **warning**. Individuals returning from West African countries affected by the Ebola virus are urged to follow the important guidance provided by the campus and local health agencies."[19]

Approach

By invitation, Butte County Grand Jury members attended a tabletop exercise involving a suspected infectious Ebola virus patient. The Butte County Public Health Department organized this exercise, with the Butte County Office of Emergency Management providing an advisory role as part of the Planning Committee.

The exercise was necessary to ensure the proper assistance and responses from various Butte County agencies, assuming the Ebola virus were to reach Butte County. The Butte County Grand Jurors in attendance, identified through special badges, were encouraged to ask questions regarding the personnel and process

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[16] http://en.wikipedia.org/wiki/Ebola_virus_epidemic_in_West_Africa, *retrieved March 11, 2015.*

[17] http://www.chicoer.com/health/20141029/butte-glenn-agencies-prepare-for-possibility-of-ebola, *retrieved November 9, 2014.*

[18] http://www.cdph.ca.gov/programs/cder/Documents/CDPH%20Ebola%20Scenario%20and%20Template%20for%20Hospital%20Exercise%202014.pdf, *retrieved March 10, 2015.*

[19] http://calstate.edu/ebolaupdates/ *retrieved March 20, 2015.*

throughout the exercise. They also attended the Planning Meetings which were held in a separate room, and involved the team leaders.

Discussion

The Butte County Office of Emergency Management supports all county efforts responding to emergency situations threatening life and/or property in Butte County. These exercises are mandated by FEMA (Federal Emergency Management Agency), with the assistance from several state offices, including California Homeland Security and Exercise Evaluation Program with additional funding from the California Governor's Office. The Office of Emergency Management conducts exercises, often in combination with other Butte County agencies at least once a year. The Office of Emergency Management often invites county officials to attend these exercises as observers.

While this Ebola Exercise was sponsored by Butte County Public Health Department, many exercises actually originate with the Office of Emergency Management. Below is a list of those actually hosted by the Office of Emergency Management from 2004 through 2015. The personnel indicated that the major Humboldt and POE fires had major impacts from 2008-2010, so exercises were suspended during that time frame.

Exercises Hosted by the Office of Emergency Management[20]

Date	Type of Exercise
12/8/2004	Weapons of Mass Destruction Table Top Exercise
5/17/2005	Mass Casualty Incident Full Scale Exercise
1/26/2006	Emergency Operations Center Functional Exercise
12/06/2007	Flood Scenario Table Top Exercise
5/17/2011	Flood Scenario Functional Exercise
10/18/2011	Animal Shelter Full Scale Exercise
9/12/2012	Logistics Section Table Top Exercise
6/20/2013	Plans & Intel Section Table Top Exercise
3/26/2014	Logistics Section EOC Training
3/11/2015	EOC Functional Exercise

There are three sources of funding for emergency exercises. Butte County's Office of Emergency Management exercises are funded by either Homeland Security Grants or Emergency Management Performance Grants. Both are federal grants that come through the state. The Butte County Public Health Department

[20]Butte County Office of Emergency Management, *personal communication, March 3, 2015*

receives grants from the California Department of Public Health for its exercises.[21]

The tabletop exercise was held at the Butte County Public Health Department conference rooms on Mira Loma Drive in Oroville on November 20th, 2014. The Grand Jury members were kept informed at each level of the exercise. The observers were frequently updated on each step of the exercise.

Entering a large room, the observers saw a wall of charts and graphs with updates posted on the wall to the right (see attachment A.) On the left was a line of desks and chairs, with a group that was identified to include the Butte County Public Health Director, Operations, Planning, Logistics and Finance Chiefs.

Further down the room were a larger group of medical and health professionals, including those responsible for Environmental Health, Nursing, Laboratory, Animal Control, the California State University, Chico Student Health Center and the Hospital Contacts.

Beyond them, were a group of emergency fire personnel acting as observers. Against the far wall was another table and group of people identified as the Finance and Logistics personnel.

The single room contained more than 30 of these individuals, with all active participants identified by badges. Each was equipped with a phone and some had laptop computers as well.

The scenario enacted involves a patient being admitted to a local hospital with what was identified as a possible case of Ebola disease. By the next morning, when the results of testing were confirmed, the team assembled at the Public Health Department Offices.

The exercise moved in real time through the first five hours of the emergency, with two side conferences of the team leaders, termed the Planning Meetings. These sessions are part of the planning process when following the Incident Command System. Command and General Staff review and validate the plan for the next operational period during these sidebar sessions.

Emergency personnel responded to the realistic situation with proper incident action planning. The exercise was conducted in an organized and focused manner.

[21] Butte County Office of Emergency Management, *personal communication, March 3, 2015*

With respect to the Finance team, a single code is assigned to each emergency to be able to identify all purchases and personnel expenses. This code is used to ensure that personnel are paid and that all supplies are tracked.

The County also provides a Supply and Logistics team to locate and deliver all essential supplies. This team recorded each delivered supply and personnel expense, providing the information needed for the Finance team.

Butte County Public Health Department funded the exercise from the Public Health Emergency Preparedness Grant, California Department of Public Health. Each grant has to be applied for separately. Some grants are for one year, while others are for two or three years in a row.

In this particular case, the Office of Emergency Management provided consultation and personnel support.

An experienced consultant was brought in from Montana, providing extensive training and organization to the session. Retired from the military and having a background in law enforcement, the consultant is a FEMA Master Exercise Practitioner, Certified Hospital Emergency Coordinator and a member of the International Association of Emergency Managers. The consultant was originally chosen several years ago through the RFP (Request for Proposal) process to help design the Medical and Health Department Operations Center, this consultant also has specialized knowledge of Butte County's plans and procedures.[22]

A hotline for the general public will be established should such an incident occur in real life. However no member of the press was present to record these observations or comments by the staff conducting the exercise.

Appended is Attachment A, demonstrating the interrelationships of the units attending this particular exercise. Attachment B shows the conceptual relationships within most exercises held in Butte County.

Findings

F1 The team approach to tracking and supplying appears to be an efficient method to track expenses and supplies.

F2 Funding of these exercises appears to be heavily dependent upon the availability of state and federal grants.

[22] Butte County Office of Emergency Management, *personal communication, March 6, 2015*

F3 Consultants maybe brought in to assist in the exercises.

F4 Because no members of the media were present, the exercise was not covered in the press.

F5 The sole representation of the various educational institutions within the county was California State University Chico's Student Health Services.

Recommendations

R1 That emergency exercises by the Butte County Public Health Department be continued, with emphasis given to highly infectious fatal diseases.

R2 That emergency exercises by the Butte County Public Health Department be advertised to members of the news media, to increase public awareness and support of these exercises and community preparedness.

R3 That Butte Community College Health Center and Butte County Office of Education Health professionals be invited to participate in the Exercises.

Responses

Pursuant to Penal Code §933 and §933.05, the following responses are ***required:***

- Butte County Board of Supervisors: A Response to Recommendations R1 through R3.

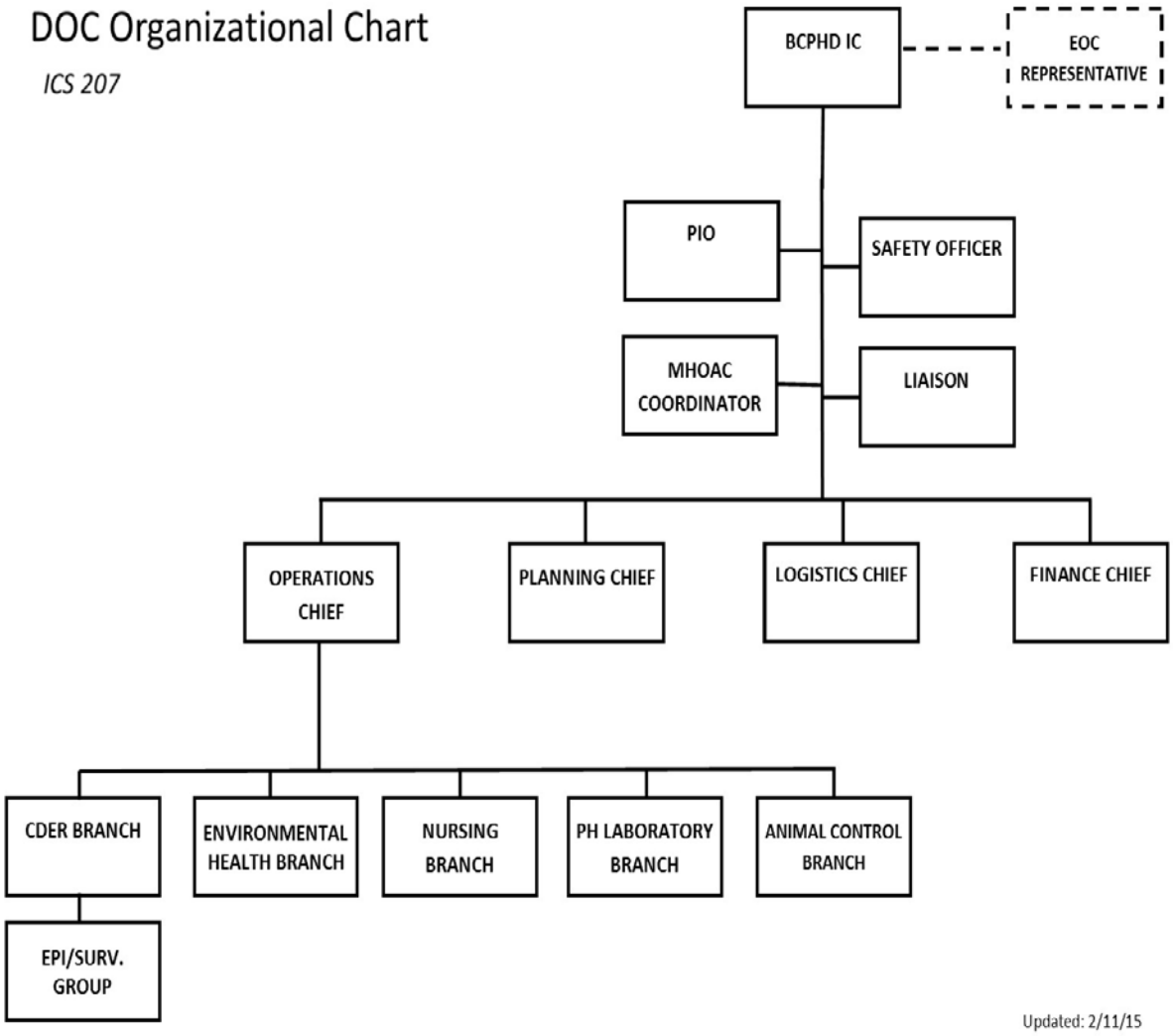
The Butte County Grand Jury ***invites*** the following individuals to respond:

- Butte County Office of Education and the Director of the Butte County Public Health Department: A response to Recommendations R2 and R3.

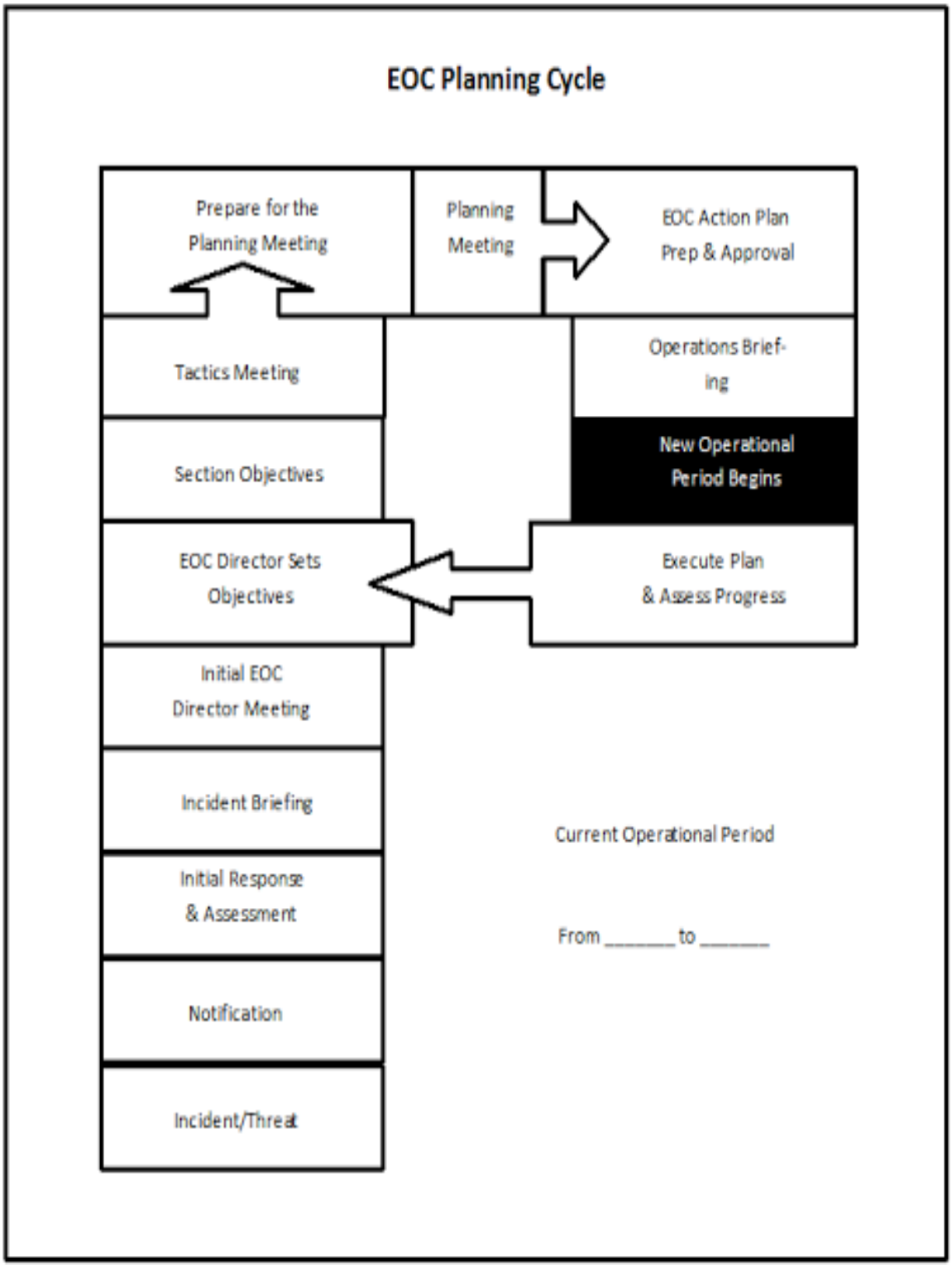
The governing body indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

Reports issued by the civil Grand Jury do not identify individuals interviewed. Penal Code §929 requires that the reports of the Grand Jury do not contain the name of any person or facts leading to the identity of any person who provides information to the civil Grand Jury

Attachment A



Attachment B



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2014-2015 BUTTE COUNTY GRAND JURY REPORT
SOLAR STORMS AND ELECTROMAGNETIC PULSES
BUTTE COUNTY PREPAREDNESS FOR POWER OUTAGES

Summary

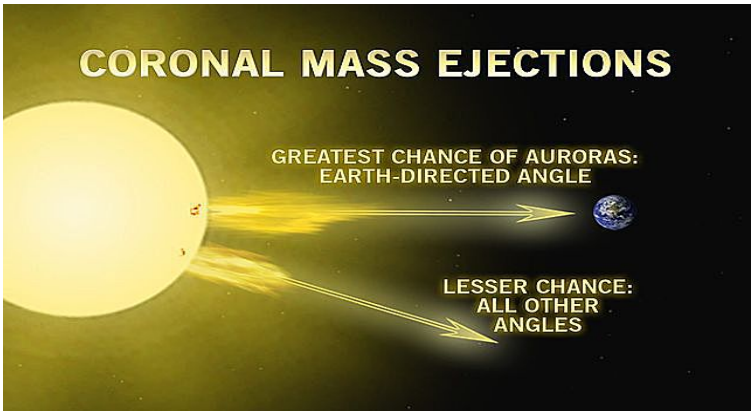
Massive power outages are no stranger to the Butte County area. They can be manmade, in the 1990s, a car hit electrical equipment in Chico and parts of the city were without power for five days. They can also be caused by natural occurrences such as earthquakes, fires, cyclonic storms and solar flares. Why should we be worried? What were solar flares all about, and why should they be dangerous to electrical circuitry? Is Butte County prepared for a solar event and possible long term power outages?

Glossary

40th Parallel - Most strong solar storms have their greatest impact near and above the 40th parallel. Butte Meadows is above the 40th meridian, Chico is at 39.47 degrees, San Francisco is at 37.7 degrees north.

Carrington Event - A massive solar storm in 1859. Modern solar storms are often compared to this one, the first to damage electrical technology.

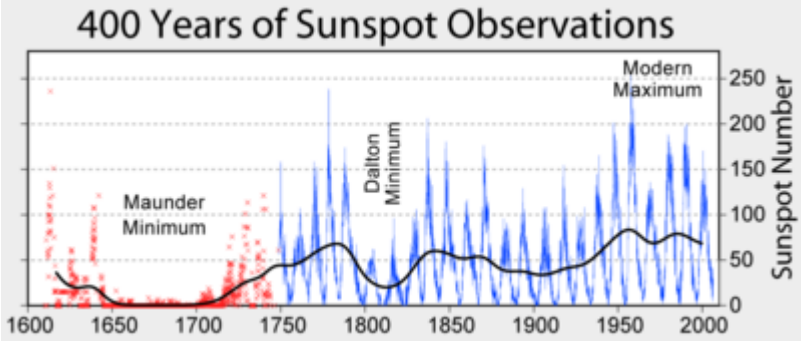
Coronal Mass Ejection CME - The massive release of energy of solar flare. A very dangerous release if the Earth is in the path.



Coronal mass ejection varying trajectories[1]

EMP - Electronic Magnetic Pulse. The electrical charge caused by either a solar flare or a high altitude (250 miles) hydrogen bomb explosion.

Eleven Year Solar Cycle -The solar cycle (or solar magnetic activity cycle) is the periodic change in the Sun's activity. Solar cycles have an average[23] duration of about 11 years, when it reverses the earth's polarity, for another eleven years. Solar cycles have been tracked for hundreds of years, mostly based on historical records of aurora borealis and sunspots. [24]



Historical Data of Sunspot Cycles

Faraday Cage - Simply constructed metallic enclosure, such as a modified garbage can, that prevents damage to contents by electromagnetic fields, such as those created by solar flares. When properly grounded, can prevent damage to contents even by strong EMPs.[25]

JIT - The Just-in-Time inventory system refers to having "the right material, at the right time, at the right place, and in the exact amount", without the safety net of local inventory. The three day back stock limit of the JIT system has broad implications for all emergency preparations.

NASA - National Aeronautics and Space Administration

NOAA - National Oceanic and Atmospheric Administration

Power Grid - Network of transformers across the United States relaying electricity.

Solar Event - A significant occurrence of a solar flare, solar storm or sunspot activity.

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[23] http://en.wikipedia.org/wiki/Solarcycle, retrieved April 8, 2015.

[2] http://readynutrition.com/resources/diy-faraday-cage-ideas_09052012/ retrieved April 9, 2015.

Solar Flare - Resembles a fountain in images, may contain a massive emission of energy called a Coronal Mass Ejection.

Solar Storm - The geomagnetic event that identifies a solar flare when it hits the earth's atmosphere, it is rated by NOAA with a tenfold scale similar to tornados and earthquakes, each level an exponential increase of ten. With Active being K=4, minor storm being K=5 and major or severe storm being at or above K=6, another scale designation is rated with X being most intense.

Solar Wind - Solar wind is the plasma of charged particles (protons, electrons, and heavier ionized atoms) coming out of the Sun in all directions at very high speeds around a million miles per hour. It is responsible for the anti-sunward tails of comets and the shape of the magnetic fields around the planets. Solar wind can also have effects on the flight paths of spacecraft.

Sunspot - An explosion on the sun's surface resulting in a solar flare, often containing a massive stream of energy plasma.

Background

On April 6, 2015, when a single unit in the local power grid failed, Butte County was without power for up to four hours.[26] Throughout Butte County that day, ATMs were out of service. The California State University, Chico, with its elevators and windowless hallways, was forced to close for nine hours. Doctors in clinics without backup generators closed their doors for the day. The few stores open were cash only, since the debit/credit card machines and registers did not work. Gas stations could not pump fuel. Cars ran out of gas leaving drivers stranded. The police tried to keep traffic flowing, pushing the stranded vehicles to the road side. The guards outside locked banks were writing on clipboards the names of customers for new appointment times.

In Paradise, the Grand Jury threw open the blinds in the old courthouse building and read documents by natural light, made dim by the overcast skies and frosted privacy windows. Automated door locks did not work.

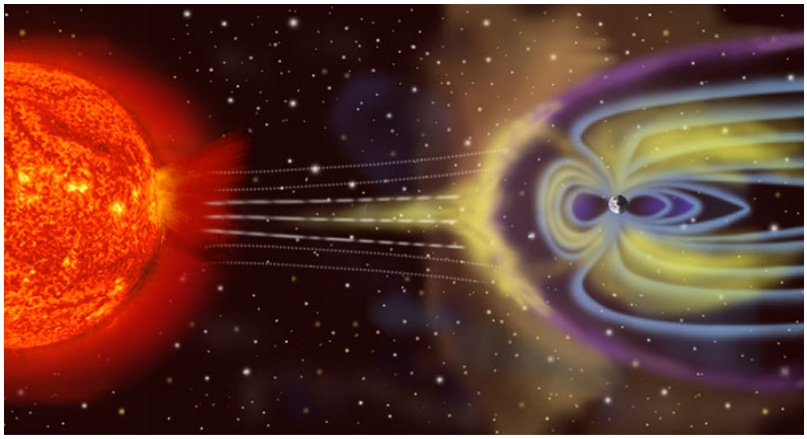
In Oroville the taco trucks, working with propane tanks, did a booming business. Hot coffee was in high demand with all the coffee shops closed. All this was caused by an insulator failure at one PG&E substation. Imagine this continuing for

[26] http://www.chicoer.com/general-news/20150406/79000-customers-lose-power-in-butte-county, retrieved April 8, 2015.

days, as it was in the 1990s, when a car hit a transformer, sending areas of Chico into darkness for several days.

Co-incidentally the next day, April 7, 2015, most of the nation's capital went dark when a high voltage conductor fell to the ground in Maryland. This left close to a million citizens, including the White House residents, dependent upon their backup generators.[27]

Is Butte County prepared for such events? Moreover, are we adequately prepared to handle massive power outages caused by strong solar storms such as those that occurred in 1857, 1882, 1922 and 1989? What about a high atmosphere EMP electromagnetic pulse like the one produced by the 1962 Bimini Starfish high atmosphere test or by a mass coronal ejection cause by a sunspot?



Demonstration of Solar Flare hitting Earth's protective field[28]

Most at risk during a solar flare are the Grid systems that deliver electricity. The United States high voltage power system is routed through three major grid interconnectors. The Western interconnector includes all of the West Coast and Rocky Mountain States. These interconnectors are able to re-route power in the event of a failure in various points in the grids.[29] The electricity comes to the Butte County consumer through the high voltage wires, to substations, which step down the high voltage by the use of transformers.

These transformers are vulnerable to an attack by an individual with a high powered rifle as happened in the Silicon Valley in 2013. A small group of masked snipers went after one substation, destroying 17 transformers in less than 20

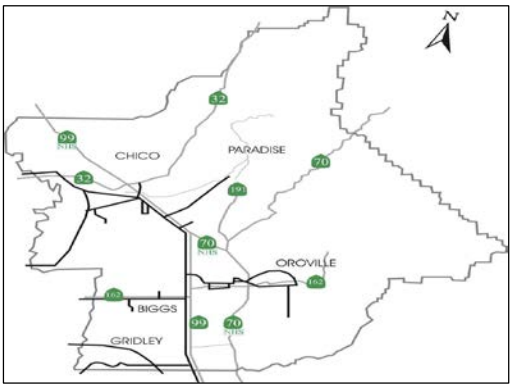
[27] http://time.com/3774380/washington-dc-power-outage-white-house/ retrieved April 10, 2015.
[28] http://www.abc net.au/news/2014-09-12/how-solar-storms-affect-earth/5740454 retrieved, March 31, 2015.
[29] http://energy.gov/articles/top-9-things-you-didnt-know-about-americas-power-grid retrieved, April 10, 2015.

minutes.[30] The estimates to replace the damaged equipment ran into the millions and took more than three weeks to repair. The power grid was able to re-route currents, preventing a cascade of power failures across the Western United States. When great solar storms occur most of that grid may be put out of commission, since the western interconnector is well north of the 40th parallel.

The 2010 Grid Reliability and Infrastructure Defense Act of the U.S. Congress predicts that it may cost $100 million to protect the United States' power grid against solar EMPs. Without that protection, Congress estimates trillions of dollars in damages and 4 to 10 years to recover, should a major solar event catch us unprepared.[31] The National Science Foundation has recommended standards.

There is a 12 percent chance of a crippling solar storm in the coming decade, says senior scientist Peter Riley at Predictive Science in San Diego, California. On March 16, 2015, the National Oceanic and Atmospheric Administration, NOAA, described the possible impacts of the March 17, 2015 solar event:

- **Potential Impacts-** Area of impact primarily north of 40 degrees Geomagnetic Latitude. Parts of Butte County are north of the 40th.
- **Induced Currents -** Possible widespread voltage control problems and some protective systems may mistakenly trip out key assets from the power grid. Induced gas pipeline currents intensify.



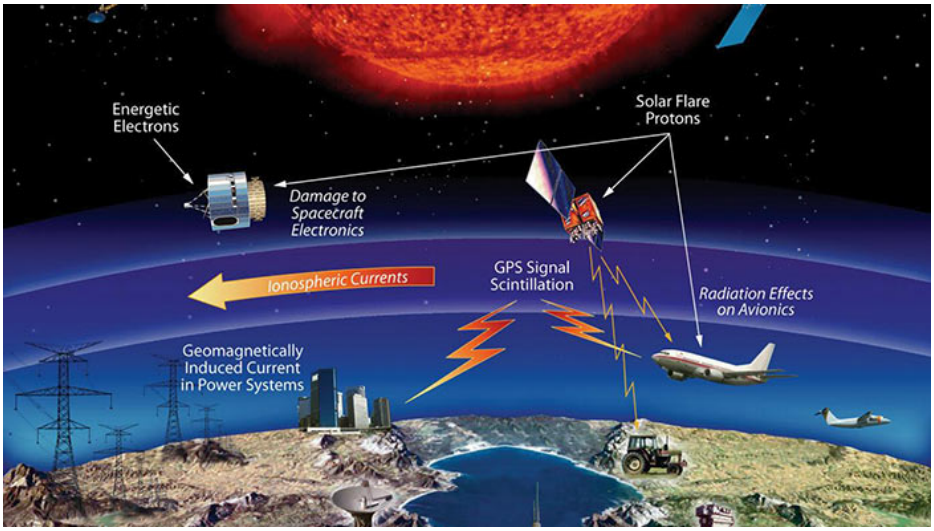
Susceptible Natural Gas Pipelines around Butte County[32]

- **Spacecraft -** Systems may experience surface charging; increased drag on low earth orbit satellites, and tracking and orientation problems may occur.
- **Navigation -** Satellite navigation (GPS) degraded or inoperable for hours.

[30] http://www.wsj.com/articles/SB10001424052702304851104579359141941621778 , retrieved April 14, 2015.
[31] http://fas.org/irp/congress/2010_cr/grid.html, retrieved April 3, 2015.
[32] http://www.bcag.org/documents/planning/2012_MTP_SCS/Document/12%20-%202012%20MTP%20ACTION%20-%20Goods%20Movement.pdf, retrieved March 31, 2015.

- **Radio -** HF (high frequency) radio propagation sporadic or blacked out.
- **Aurora -** Aurora may be seen as far south as Southern California.

The plasma clouds generated from these solar events have the potential to cause geomagnetic storms that can interfere with terrestrial communications and other electronic systems. Earth-orbiting satellites recently detected the strongest magnetic storm in more than 4 years resulting from a solar flare and CME event.[33]



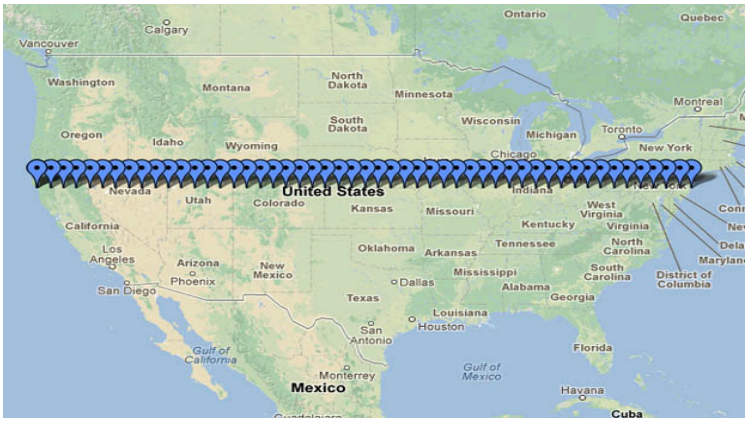
Effects of Solar Flares[34]

In January 2014, the National Weather Service noticed a flare was aimed in the direction of the earth, and would likely produce a greater than usual Aurora Borealis. Meteorologists warned the public to protect all vulnerable electronics.

The erratic nature of such storms found some in the San Francisco Bay area who failed to note or hear the warnings, suffering from damaged electronic equipment. Warnings were issued again in August of 2014 and March of 2015. Fortunately, these occurrences were not as severe as had been anticipated.

The greatest Solar Storm danger is north of the 40th parallel. Butte Meadows is above the 40th parallel.

[33] https://ics-cert.us-cert.gov/advisories/ICSA-11-084-01 retrieved March 28, 2015.
[34] http://www.abc net.au/news/2014-09-12/how-solar-storms-affect-earth/5740454 retrieved March 28, 2015.



United States 40th Parallel[35]

Solar Flares were first seen and identified in 1859 by British amateur astronomers Richard Carrington and Richard Hodgson while studying sunspots. These flares caused worldwide destruction of the only use of electricity at the time, the telegraph system. The wires melted, the paper tape burst into flames, and the operators suffered burns.

Today electricity is the driving force of modern technology. The electronics industry is highly vulnerable to destructive EMP solar events. Military equipment has been hardened to protect from these events. Commercial aircraft have some protection in place as well. Even the general public can buy some hardened equipment such as laptops, Faraday cages and walkie talkies on Amazon.

In recent years, insurance companies paid out millions in solar flare damages to businesses owning satellite equipment. Solar storms can also disrupt GPS satellites and radio transmissions causing airlines to re-route planes flying over the North Pole. On July 23, 2012, NASA observed a "Carrington-class" Solar Superstorm. The trajectory narrowly missed Earth. NASA made this information public in 2014.

What are some of the effects of EMPs in the modern technological world?
On July 9, 1962, Starfish Prime, a United States nuclear test, exploded 250 miles above the surface of the Pacific Ocean. Two immediate effects occurred in Hawaii nearly 900 miles away. Some new cars refused to start. Street lights failed in long strings. This was caused by a man-made EMP, a hydrogen bomb.

[35] http://petapixel.com/2012/10/29/photographer-capturing-the-40th-parallel-all-across-the-united-states/ retrieved March 31, 2015

The U.S.S.R. shortly thereafter exploded a similarly constructed hydrogen bomb called Test 184. To their shock, diesel generators, underground and surface electrical wiring in a city 600 miles away melted, transformers blown. Shortly thereafter the U.S.S.R. and the United States signed a mutual treaty banning atmospheric testing of atomic weaponry.

"Most people who have some knowledge in this subject, consider the probability of an EMP attack on the United States during the next ten years at somewhere between 20 and 70 percent. The probability of a solar storm large enough to destroy hundreds of the largest transformers in the United States power grid…during this century is widely considered to be in the range of 50 to 90 percent." [36]

"Every hundred years or so, a solar storm comes along so potent it fills the skies of Earth with blood-red auroras, makes compass needles point in the wrong direction, and sends electric currents coursing through the planet's topsoil. The most famous such storm, the Carrington Event of 1859, actually burned telegraph operators, melted wiring, and set telegraph offices on fire." [37] A similar event occurred 23 years later during twelfth solar cycle.

A 2008 report by the National Academy of Sciences warns that if such a storm occurred today, we could experience widespread power blackouts with permanent damage to many key transformers.

The National Academy of Sciences produced a report in 2014 entitled "Carrington-class CME Narrowly Misses Earth."[38] The report indicated that multi-ton transformers damaged by such a solar storm might take years to repair. Many transformers are no longer being built in the United States, but are now imported. Transformers produced in the United States are sufficiently intricate for a factory to take up to one month to produce a single transformer. As much as six months is needed to construct a transformer to an individual power plant's special requirements. [39] The total economic impact of a solar storm could exceed $2 trillion or 20 times greater than the costs of a Hurricane Katrina.

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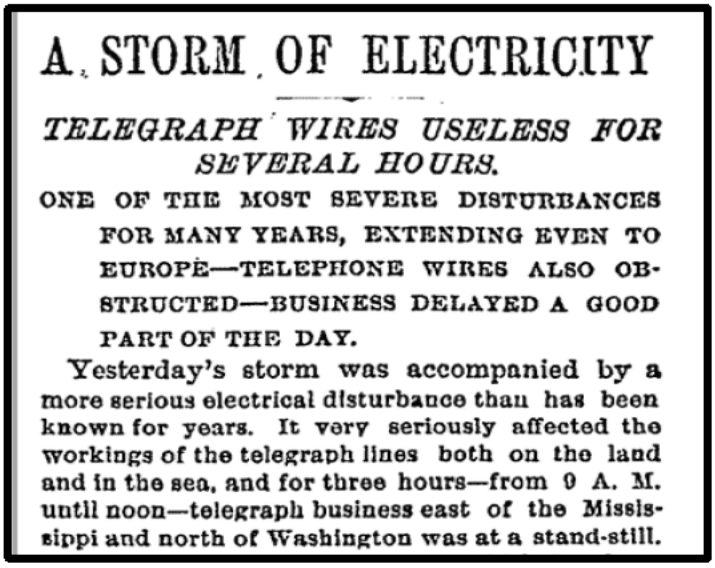
[36]Emanuelson, J. An Introduction to Nuclear Magnetic Pulses. http://www.futurescience.com/emp.html, retrieved March 21, 2015.

[37] http://science.nasa.gov/science-news/science-at-nasa/2010/26oct_solarshield/, retrieved March 29, 2015.

[38] http://science.nasa.gov/science-news/science-at-nasa/2014/23jul_superstorm/ retrieved March 28, 2015.

Major Solar Storms of the Past 150 years

DATE	NOTED EFFECTS	SOLAR CYCLE	RATED
1859	Telegraph lines melted, fires in office by outlets	10	X40
1882	Telegraph lines melted, transatlantic cable damage	12	X
1920	New York to Chicago cable, telegraph, telephone service interrupted, fires in telegraph offices	15	X
1940	Transatlantic cable surged 2600v, high voltage surges damage equipment from St. Louis to New York	17	X
1972	230000K Transformer destroyed in British Columbia	20	X
1989	New Jersey nuclear plant transformer melted Quebec 11 hr. blackout, Toronto Stock market froze 3 hrs. Trans-Siberian pipeline blows, 500 killed in nearby trains	22	X
1992	TV Satellite damaged Space station astronauts suffer visual disturbances	22	X34



A STORM OF ELECTRICITY

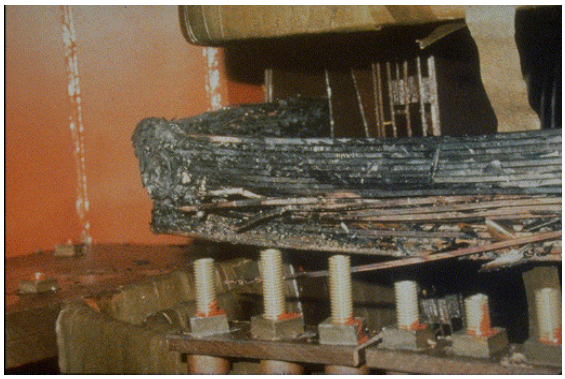
TELEGRAPH WIRES USELESS FOR SEVERAL HOURS.

ONE OF THE MOST SEVERE DISTURBANCES FOR MANY YEARS, EXTENDING EVEN TO EUROPE—TELEPHONE WIRES ALSO OBSTRUCTED—BUSINESS DELAYED A GOOD PART OF THE DAY.

Yesterday's storm was accompanied by a more serious electrical disturbance than has been known for years. It very seriously affected the workings of the telegraph lines both on the land and in the sea, and for three hours—from 9 A. M. until noon—telegraph business east of the Mississippi and north of Washington was at a stand-still.

Solar Storm of 1882 Reported in the NY Times:[40]
Washington D.C. is at 38.9 North Latitude

[14] http://www.solarsystemcentral.com/solar_storm_page.html# retrieved April 9, 2015.
[40] http://www.abc.net.au/news/2014-09-12/carrington-sunspots/5739762 retrieved March 28, 2015.



Salem New Jersey transformer at nuclear plant damage from solar flare, 1989[41]
Salem New Jersey is at 39.58 North Latitude

Modelling by the U.S. Department of Energy's Oak Ridge National Laboratory indicates a 1-in-100 year solar storm, such as those that struck the United States in 1859 and again in 1921, would cause as many as 300 high-voltage transformers to fail and suffer permanent damage.[42] There are limited stocks of spare high-voltage transformers. Lengthy lead times for ordering and manufacturing new transformers can leave customers without power for weeks or even months.

A portable high-voltage transformer, called RecX, sits ready to go on its site in Houston. RecX was completed in 2012 by ABB Inc. in St. Louis in cooperation with the Department of Homeland Security and the Electric Power Research Institute, but the recovery transformer is still one of a kind. "In a worst-case scenario, parts or all of cities could be without power for months unless something were done quickly. Portable transformers could get power restored to critical services until permanent replacements were in place" said Electric Power Research Institute's (EPRI's) Project Manager Lordan.

"But while government agencies and utility companies are working on plans for stockpiling mobile replacement transformers, there is not a consensus about how they should share the costs and there has not been any real progress…I hope it won't take the equivalent of a Hurricane Sandy or worse to kick-start consensus building," he added.[43]

The Department of Energy warns that "Should a storm of similar magnitude (to 1859 or 1921) strike today, it could interrupt power to as many as 130 million people in the United States alone, requiring several years to recover."

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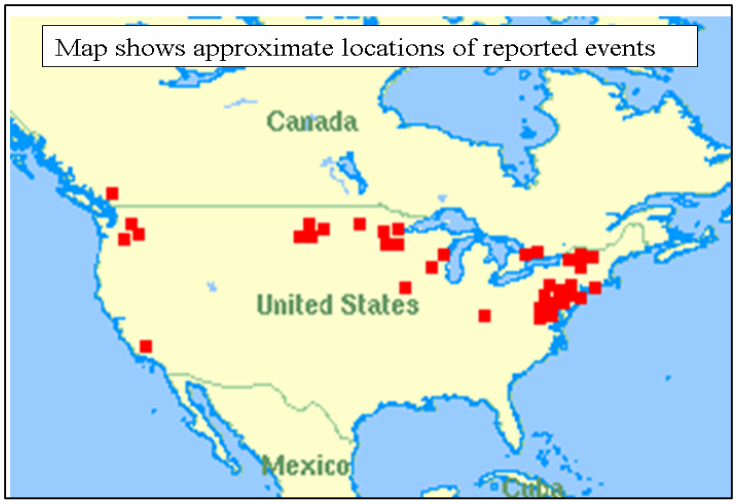
[41] http://science.nasa.gov/science-news/science-at-nasa/2010/26oct_solarshield/retrieved March 29, 2015.
[42] http://web.ornl.gov/sci/ees/etsd/pes/pubs/ferc_Executive_Summary.pdf retrieved April 10, 2015.
[43] http://www.solarsystemcentral.com/solar_storm_page.html%23past_storms retrieved April 9, 2015.



Effects of the March 1989, solar event on power plants across the US[44]

Questions were raised in the minds of some, particularly those in Northern California and points north. What were solar flares all about, and why should they be dangerous to electrical circuitry? Was Butte County prepared for a solar warning and emergency? The Grand Jury believes that a study of power outage preparedness by Butte County government would help determine the status of awareness and plans to address the issue.

Approach

How prepared is Butte County to meet the demands of a major grid failure caused by, in this case, a solar storm? The Grand Jury identified three Butte County offices to be the most impacted when public safety and power outages occur: The Office of Emergency Management, the Sheriff's Office, and the Information Systems Department. A series of questions were derived regarding the state of preparedness within those units in the event of a massive solar storm. How would Butte County develop the protection against an EMP? These six questions should help the Grand Jury decide if the public safety was at risk.

1.When a large solar flare is due, which has happened twice already in the past months, does Butte County have in place a method to warn the general public, with such suggestions as unplugging electronic devices and storing back up batteries in Faraday boxes, or link to a website that will provide that information?

[44] http://web.ornl.gov/sci/ees/etsd/pes/pubs/ferc_Executive_Summary.pdf retrieved April 10, 2015.

2. What simple steps can citizens do to be prepared for such an event?

3. Given that most grocery stores stock only 3-4 days supplies of food and consumables such as batteries and toilet paper, under the present JIT system is there a website that includes solar flares and resultant activities.

4. Is there a link within the county website that provides information on the recommended one week or longer storage of necessary supplies including fuel, needed to support an individual or family for that time period in the event of a natural disaster such as a major earthquake, eruption, flooding all of which would result in the interruption of supply deliveries?

5. What has the county have planned in the event of a longer term telecommunications failure?

6. What preparations are recommended for the possibility of interruption in services of up to a week?
Members of the committee also researched solar events, and their associated potential impacts, searching historical records to see if local or regional effects were noted in the regional newspapers published during relevant years.

Discussion

Using the opportunity presented by a series of preplanned interviews and tours, the Grand Jury members derived most of the needed answers. In a few cases, follow-up calls and appointments were made to assure the information was correctly recorded and understood.

Office of Emergency Management

The Grand Jury met with the Director of the Office of Emergency Management. During the interview, the staff was asked if there is a website that the county has established with links or suggestions on what to do is such an event occurs. The Office of Emergency Management responded there is a website that contains items individuals should store in the event of an emergency, such as power outages, earthquakes or major fire evacuations.[45] The Grand Jury later examined the website and discovered that this website does not address protection of electronically vulnerable equipment (see Attachment A). Moreover, there is no information or link given on how the public can construct low cost simple Faraday cages to protect their batteries and electrical equipment.

[45] http://www.buttecounty.net/Portals/19/PrinterFriendlySpecialNeeds.pdf, retrieved April 17, 2015.

Sheriff's Department

During a tour of the Butte County Jail, personnel leading the tour were asked what would happen during a power outage. Employees answered with information on short term power outages. They had backup generators adequate for only three days. Most operations of the jail entail the use of electronic components, from the sally port, where the prisoners enter the jail, to the doors of the cells. If damaged by EMPs, they will no longer be effective deterrents. When pressed to consider a longer term outage, they opined that it would be a very difficult situation since they would not be able to deliver food and feed prisoners. Raising some serious questions about the humanitarian need to feed prisoners, with the issue of public safety.

Prisoners that were Released on Own Recognizance (ROR) even with ankle bracelets shorted out, the personnel responded that they "would probably report to help." This group with bracelets include those with convictions for minor offenses, but also more serious offenses such as spousal abuse and sexual predators. There are no official paper records to be able to track the prisoners in the event of a long term power outage.

Information Systems

The Information Systems personnel were also questioned. The official, with a background in the US Air Force, was aware of the extent and complexity of the problem of EMPs. Some of the elements could be answered with budget approval, others await answers, and some have no answers.

Information Systems is able to store information in the Cloud environment, which allows them to back up their information into duplicate systems in various parts of the country. In the case of Butte County, these records are in Denver, and in North Carolina.

Information Systems has had no drills with other county operations involving power outages. The Director indicated that there has been no in-depth study of the extent and methods various county offices use to store or protect their records. The Information Systems Department has asked in its budget to update equipment, and expand services that would replace some of the outdated equipment with state of the art built in protection.

The Just-In-Time inventory system was discussed and agreed that it works against all California populations regardless of size. Three days' worth of inventory is not

adequate enough in the event of a massive long term emergency. There are Butte County websites that link to preparedness lists for long term emergencies. But once again there is a paucity of links that address very long term power outages.[46]

Telecommunications, the 911 system, police, fire and hospital protection are all vulnerable. The only transmission tower is placed in a highly advantageous position, which is also quite vulnerable to solar flare activity, as well as fire and earthquake, and could not be readily shielded. While there is a secondary communications channel, it is also part of this same distant communications tower.

Most of those questioned had no answers. It was agreed during these discussions with officials that the smaller size of Butte County works in its favor in terms of sharing local resources amongst neighbors. Its' small population base is of concern if a major EMP damages transformers throughout the Western United States. Our research through the literature indicates that it is most likely that equipment replacement will be given priority to large population areas.

Findings:

F1 The jails in Butte County have backup generators with enough fuel to last three days.

F2 There is no long term power outage plan for the jail system.

F3 The prisoners released to the community with ankle bracelets are tracked by these bracelets. They cannot be tracked if the bracelets damaged by EMPs.

F4 There are no hard copy backups for the information needed in order to locate these released prisoners.

F5 The Office of Emergency Management has prepared procedures to allow for major power outages.

F6 The Department of Information Systems is aware of the inherent weaknesses of the present county computing and telecommunications systems.

F7 Butte County does not have the budget allocation to fund updates of electronic equipment, leaving the telecommunications system to attack.

[46] http://www.buttecounty net/Portals/19/PreparingMakesSensePrinterFriendly.pdf,retrieved March 7, 2015.

F8 At present there is not a Butte County supported website with recommendations for solar flare EMP preparedness, for our citizens.

F9 There are no drills presently in place to test the overall response to a major solar event by the county government.

F10 There will likely be no immediate state or federal help for smaller population centers during a major catastrophic power failure as priorities will be given to major population areas.

Recommendations:

R1 That the OEM's website for the public include information on protecting needed batteries and electronics from EMPs. The information should be made available on print, encouraged to be printed and stored offline, either through the local print media and handouts. [47] (See Attachment B).

R2 That the Butte County Jail also develop a plan for longer term power outages to protect electronic equipment, including the locking system, prisoner locator devices, and prisoner records.

R3 That police and fire vehicles be updated to include electronic hardening similar to those of the military.

R4 That police and fire vehicles have alternate methods of communications with the county dispatch that can bypass the present mountain top relay system.

R5 That Butte County ensure the telecommunications and information systems be electronically hardened, with vital records, backed up daily.

R6 That the Board of Supervisors question the various utilities to insure that gas pipelines and the power grid will be adequately prepared for a solar emergency.

R7 That Information Systems develop an exercise, or series of exercises, that tests and spots deficiencies in various county offices dependent upon the storage of records and telecommunications.

[47] http://beprepared.com/blog/tag/faraday-cage/#sthash.nqwIbaa7.dpuf, retrieved April 17, 2015.

R8 That strong consideration be given to funding of services and equipment that will ensure the health, safety and well-being of the county's citizens during and following massive power outages.

R9 The Butte County Supervisors should establish a committee to prepare a budget and explore opportunities for funding sources to correct these deficiencies.

Commendations

To the Information Systems Director for the clearest view of what needs to be done to protect the resources and well-being of the citizens of Butte County from solar flares.

To the Office of Emergency Management for its excellent website, Preparing makes sense, for people with disabilities.[48]

Response Requests

Pursuant to Penal Code §933 and §933.05, the following response is ***required***.

- The Butte County Board of Supervisors; a response to Recommendation R6, R8 and R9.

The Grand Jury ***invites*** the following individuals to respond.

- The Butte County Information Services Director to Recommendations R1, R5, R7 and R8.
- The Sheriff of Butte County to Recommendations R2, R3 and R4.
- The Director of Emergency Management to Recommendations R1 and R7.

[48] http://www.buttecounty.net/Portals/19/PrinterFriendlySpecialNeeds.pdf, retrieved April 17, 2015.

Attachment A

Butte County Office of Emergency Management
Basic Disaster Supplies Kit Checklist

Disasters happen anytime anywhere. When disaster does strike you may not have much time to respond so it is important to prepare prior to an event. Be aware of the hazards in your community and how to react if things go bad. A highway spill of hazardous material could mean instant evacuation or shelter in place. A winter storm could confine your family at home. An earthquake, flood, wildfire could cut off basic services—gas, water, electricity and telephone—for days or even weeks.

Water

☐ 3 to 7 day supply (one gallon a day per person). Additionally, in determining adequate quantities, take the following into account:

Individual needs vary, depending on age, physical condition, activity, diet, and climate.

Children, nursing mothers, and ill people need more water.

Very hot temperatures can double the amount of water needed.

A medical emergency might require additional water.

Food

Store at least a three-day supply of non-perishable food. Select foods that require no refrigeration, preparation or cooking and little or no water. If you must heat food pack a can of sterno or other heating systems. Select foods that are compact and lightweight. Be sure to inspect and rotate supplies regularly.

☐ Ready-to-eat canned meats, fruits and vegetables (don't forget a non-electric can opener)

☐ Canned juices, milk, soup (if powdered, store extra water)

☐ Staples—Sugar, salt, pepper

☐ High energy foods—peanut butter, jelly, crackers, granola bars, trail mix

☐ Vitamins

☐ Foods for infants, elderly persons or persons on special diets

☐ Comfort/stress foods—cookies, hard candy, sweetened cereals, lollipops,instant coffee, tea bags

Clothing and Bedding

☐ Sturdy shoes or work boots ☐ Long sleeve shirt and pants

☐ Rain gear

☐ Blankets or sleeping bags

☐ Hat, gloves and sunglasses

☐ Thermal underwear

First Aid Kit

Assemble a first aid kit for your home and one for each car. A basic first aid kit should include:

- ☐ Sterile adhesive bandages in assorted sizes
- ☐ 2-inch sterile gauze pads (4-6)
- ☐ 4-inch sterile gauze pads (4-6)
- ☐ Hypoallergenic adhesive tape
- ☐ Triangular bandages (3)
- ☐ 2-inch sterile roll bandages (3 rolls)
- ☐ 3-inch sterile roll bandages (3 rolls)

Non-prescription drugs

- ☐ Aspirin or non-aspirin pain reliever
- ☐ Anti-diarrhea medication
- ☐ Antacid (for upset stomach)
- ☐ Syrup of Ipecac and activated charcoal (use if advised by the Poison Control Center)
- ☐ Laxative
- ☐ Needle

Tools and Supplies

- ☐ Mess kits, or paper cups, plates and plastic utensils
- ☐ Emergency preparedness manual
- ☐ Battery operated radio (NOAA weather alert capability)
- ☐ Flashlight and extra batteries
- ☐ Cash or traveler's checks, change
- ☐ Non-electric can opener
- ☐ Fire extinguisher: ABC type
- ☐ Tent
- ☐ Plastic storage containers
- ☐ Paper, pencil
- ☐ Needles, thread
- ☐ Medicine dropper
- ☐ Whistle
- ☐ Scissors
- ☐ Tweezers
- ☐ Tube of petroleum jelly or other lubricant
- ☐ Assorted sizes of safety pins
- ☐ Cleansing agent/soap
- ☐ Medical grade non-latex gloves (2 pair)

- ☐ Moistened towelettes
- ☐ Antiseptic
- ☐ Thermometer
- ☐ Tongue Depressor
- ☐ Sunscreen
- ☐ Bug repellant

- ☐ Plastic sheeting
- ☐ Shut-off wrench, to turn off household gas and water
- ☐ Pliers
- ☐ Tape
- ☐ Compass
- ☐ Matches in a water proof container
- ☐ Aluminum foil
- ☐ Signal Flare
- ☐ Local area map

Attachment B

FARADAY CAGE

Faraday cages, or shields, are used all throughout our society. Some are used in the scan-rooms of MRI machines, in which the "cage" effect prevents radio frequency signals from being added to the data from the patient's image. Some electrical linemen wear "Faraday suits" when working on live, high-voltage power lines to prevent accidental electrocution. Many people buy Faraday bags to protect their cell phones and laptops both from electrical surges and from unwanted surveillance or tracking.

According to the National Weather Service, an automobile is essentially a Faraday cage, and it's the metal surrounding you, not the rubber tires, that protects you from lightning (as long as you're not touching metal inside the car). A smaller example is a microwave oven, which is a Faraday cage in reverse, trapping the waves inside the device instead of keeping them out. In fact, an old microwave oven makes a good Faraday cage for small electronics!

Typical items that can be stored in a Faraday cage include

- Laptop or notebook computers
- Thumb drives or external hard drives
- Cell phones
- Ipads, iPods, and e-readers
- Portable AM/Shortwave radios, ham radio equipment, and walkie-talkies
- DC/AC inverters
- Battery-powered radios

How to Make a Faraday Cage

To be effective, a Faraday cage must:

- Be covered with conductive metal or mesh. Copper is the most conductive metal, followed by aluminum. (Well--gold and silver are better, but we assume you won't be covering your cage with those!)
- Be properly grounded (according to some experts, to prevent shocks when touched)
- Adequately surround whatever it's protecting.

In addition, whatever is inside should be adequately insulated from the cage itself, such as being placed on wood, in a cardboard box, or on a rubber mat so that it doesn't touch any metal.

Faraday Box # 1—The Galvanized Trash Can

You will need

- A galvanized metal trash can with a tight-fitting lid
- Several boxes of heavy-duty aluminum foil
- Enough metal screening or mesh to wrap around the top of the can and fit over the lip
- Cardboard boxes of assorted sizes that fit inside the can
- Plastic garbage bags or plastic wrap
- Cloth pieces to wrap items

Wrap the items you wish to protect first in cloth, then plastic, then 3-4 layers of heavy-duty foil, being sure that the foil is molded to the shape of the item and that each layer completely covers the previous one, with no tears or holes.

Place your wrapped items in cardboard boxes. Tape shut, then wrap the entire box with 2 layers of foil.

Line the trash can with cardboard, including the bottom, making sure there are no gaps. The foil-wrapped boxes must not touch the metal of the can. Set the can on wood or cardboard, not touching any other metal.

Several experts say that simply putting the lid on the can, even if it fits tightly, is an insufficient seal. They suggest folding a sheet of metal screening around the top of the can and over the top lid and then forcing the lid over that to maintain a constant, tight-fitting metallic connection.

Remember, this is for long-term storage of the appliances inside, not something that you can take your appliances out of to use and then return to the container without a great deal of trouble. A good idea is to look around for good deals on duplicates of things you use every day. Another important thing to remember is that you will need some type of charger—hand-cranked or solar-powered—to power up your devices once a crisis has passed. If you can wrap and store one of these in a protected Faraday container, you'll be glad to have it.

Faraday Cage # 2—A Metal-Clad Box

Any box made of non-conductive material such as plywood, and then totally covered with metal, metal mesh, or metal screening can serve as a Faraday cage. The metal must touch at all the corners and over and all around any opening for the protection to be complete, as an electrical charge will find its way through any gaps or crevices in the construction. The smaller the holes in the mesh or screen, the better the protection—but either mesh or screen is believed to work better than solid metal. The metal can be attached to the wood with staples or screws, whichever seems to work best for you. You might consider applying the metal mesh so that it folds around the corners. Then let the next piece overlap the edge of the first, securely fastened together and to the wood so that there is no break in the conductive shield.

There are many uncertainties about exactly what would happen in the case of an enormous release of electromagnetic energy in our civilized, plugged-in world. We can hope that nothing will happen to damage our electronics, but in case our hopes are vain, we'll be happy for every measure we've taken to prepare!

http://beprepared.com/blog/tag/faraday-cage/#sthash nqwIbaa7.dpuf

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2104-2015 BUTTE COUNTY GRAND JURY
MANAGING BUTTE COUNTY GROUNDWATER: EMPHASIZING DROUGHT YEARS 2012 THROUGH 2014

Summary

Water is important to Butte County. During drought years, groundwater takes on a significance it doesn't have during years of normal precipitation. For example, during a normal year the percentage of total water use (i.e., agricultural, urban, and managed wetlands) met by groundwater is about 30 percent, in drought years the percentage could increase to 50 percent or more.

During a drought, groundwater surface levels rapidly decrease, wells go dry and, sometimes, cities and towns are obligated, by law, to cut water use. Moreover, tapping groundwater is analogous to tapping a savings account and if income (i.e., precipitation) isn't forthcoming, Butte County, with its agriculturally-based economy could become especially vulnerable.

With that in mind, Butte County, and the Department of Water and Resource Conservation, in particular, has done an excellent job of managing Butte County groundwater for its citizens, the economy and the environment.

Glossary

ANR – Agriculture and Natural Resources

BBWUA - Butte Basin Water Users Association

BMO – Basin Management Objective

Board – Butte County Board of Supervisors

Bulletin 118 – A DWR publication which defines groundwater basin boundaries in the SGMA

BYSWQC – Butte-Yuba-Sutter Water Quality Coalition

CASGEM – California Sustainable Groundwater Elevation Monitoring

CEQA – California Environmental Quality Act

CVP – Central Valley Project

DEH – Department of Environmental Health

DWR – Department of Water Resources (State)

DWRC - Department of Water and Resource Conservation (County)

EC – Measure of electrical conductivity (salts)

GSR – Groundwater Status Report

GWL – Groundwater Levels

GWMP – Groundwater Management Plan (County)

IRLP - Irrigated Lands Regulatory Program

IWRP- Integrated Water Resource Plan

pH – Measure of acidity

SGMA – Sustainable Groundwater Management Act (State)

SWP – State Water Project

SWRCB – State Water Resources Control Board

USBR – United States Bureau of Reclamation

Background

The driest three consecutive years in terms of statewide precipitation in California were 2012 to 2014. The 2013 California aggregate precipitation was seven inches and in 2014, 12.08 inches. The season runs from October 1 through September 30. Total statewide precipitation for 2012 to 2014 was 44.5 inches. Average yearly precipitation for California is 22.2 inches. Over an average three year period, statewide precipitation should be about 67 inches.

As of April 1, 2015, the Sierra snowpack's water content was 1.4 inches or just 5 percent of its 28 inch average. The winter of 2015 was California's driest winter in the state's written history. The snowpack supplies about one-third of the water needed by state residents, industry and agriculture. A higher snowpack renders more water for reservoirs to meet the state's demands. On the other hand, low snowpack can have dire consequences for water users throughout the state.

Two of California's major reservoirs, Shasta and Oroville have continued to see their storage shrink. At the end of April, Shasta and Oroville were at 68 and 62 percent of their average storage capacity, respectively. Inflow was about half the outflow for both reservoirs. Cumulative reservoir storage in California's driest

year, 1977, was about five million acre feet less than water year end September 30, 2014, but the state, in 1977, had 16 million fewer people or about 60 percent of the state's current population.

California has had droughts in the past. The state experienced a two year drought in 1976-1977, a six year drought in 1987-1992, a three year drought in 2007-2009, and a continuing drought now at four years, in 2012-2015. However, the severity of the drought of 2012-2015 compelled Governor Brown, for the first time in state history, on April 1, 2015, to issue an executive order mandating that local agencies (towns and cities) cut water use by 25 percent compared with 2013 levels. In further response to the drought, the United States Bureau of Reclamation (USBR), a federal agency, and the Department of Water Resources (DWR), a state agency, cut the normal allocations to water districts along the Sacramento River and the Feather River to 75 per cent and 50 per cent of their normal allocation, respectively. The cut affected some north state farmers with the best water rights in the state and will likely mitigate against any surplus water availability and water transfers to cities, water districts and farms south of the delta.

A drought can be defined as a prolonged period of abnormally low precipitation (water from snow and rain) resulting in a shortage of water. Ultimately, drought in California stems from a lack of winter precipitation. However, drought is a general phenomenon with slow onset. Impacts of drought are typically felt first by those most dependent on annual rainfall, such as ranchers engaged in dryland grazing or rural residents relying on wells in low-yield rock formations. Drought impacts increase with the length of the drought, as carryover storage in reservoirs is depleted and levels in groundwater basins decline." (California's Most Significant Droughts: Comparing Historical and Recent Conditions, California DWR, February, 2015, page 5)[49]

Maximum benefits are gained from groundwater when surface water is available for recharge. Most precipitation in the winter yields surface water in the warmer months which, in turn, recharges groundwater. In business or home budgeting terms, precipitation is analogous to income, surface water to a checking account and groundwater to a savings or retirement account. When precipitation (i.e., income) is low, the surface water (checking account) is diminished and groundwater (savings) is tapped.

Butte County has not avoided the drought. To be sure, it hasn't felt the devastating effects the drought has had on counties in the San Joaquin Valley. However, the

[49]http://www.water.ca.gov/waterconditions/docs/California_Signficant_Droughts_2015_small.pdf, retrieved May 18, 2015.

County has had wells go dry, fields left unplanted, and residents of towns and cities legally required to cut water use by 25 percent.

What's the County doing to improve this situation and how is it working to sustain groundwater levels and quality to benefit the citizens, the economy, and the environment of Butte County?

Approach

The 2014-2015 Butte County Grand Jury performed the following activities:

- Interviewed Department Heads at Butte County's Environmental Health, Agriculture, Water and Resource Conservation, a member of the Board of Supervisors, and a manager of an Irrigation District;
- Observed online Butte County Water Commission and Board of Supervisors meetings;
- Attended Butte County Water Commission and Board of Supervisors meetings;
- Reviewed documents from the California State Department of Water Resources, the Department of Water and Resource Conservation, the Agricultural Department, the Environmental Health Department, the Water Commission, the Butte County Board of Supervisors and Butte County Irrigation Districts;
- Attended the 2015 Northern Sacramento Valley Water Dialogue sponsored by the University of California Cooperative Extension Service; and
- Analyzed information in news articles, editorials and websites.

Discussion

Groundwater Elevation Monitoring

In 1996 the voters of Butte County passed measure G, "An ordinance to protect the groundwater resources in Butte County." The measure was codified in Chapter 33 of the Butte County Code. In 1997, upon the recommendation of the Butte County Water Commission, the Board of Supervisors (Board) established the Water Division of the Department of Agriculture.

In 1999 the Water and Resource Conservation Department (DWRC) was formed and moved, along with staff, out of the Agriculture Department. The DWRC's mission is "To manage and conserve water and other resources for the citizens of Butte County."

The DWRC is housed in an office in Oroville. It has a director, three staff members and a budget of about $600,000. The DWRC is employed within a hierarchy that has the County Board of Supervisors at the top, then the Water Commission, the Technical Advisory Committee, and lastly the DWRC.

The DWRC works with the Agriculture Department and the Environmental Health Department to carry out Board policy with respect to groundwater issues. The DWRC also works closely with the California Department of Water Resources (DWR) on water issues that are important to the state and the county.

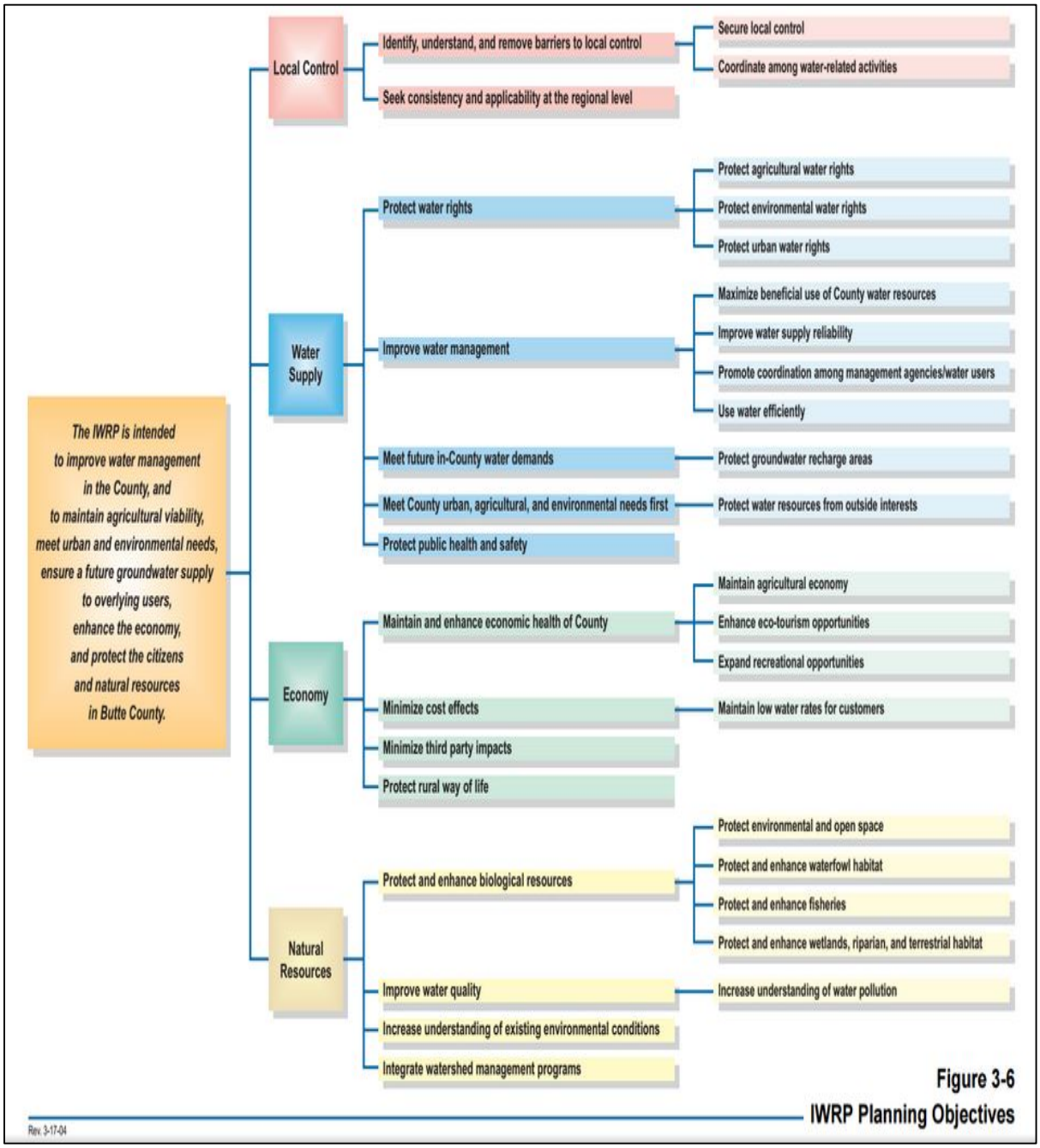
From the beginning, groundwater was important to the county and the DWRC. Coming off the drought of the early 1990's, the Department's first priority was to implement the 1996 voter approved Groundwater Conservation Ordinance.

"Besides providing one of the strongest county ordinances in the state, the Ordinance formalized the county role in monitoring and assessing groundwater. The Groundwater Conservation Ordinance provides the foundation for the Department's mission. As water resource issues evolved, the county developed programs, data and activities to advance resource management."(Butte County DWRC Strategic Plan: 2011-2015[50])

In 2004, as part of a county wide effort to develop an Integrated Water Resource Plan (IWRP) (See Figure 1), the DWRC contracted with CDM, an engineering firm, to review and update a groundwater study started by the Butte Basin Water Users Association (BBWUA). According to DWRC, the model was a crucial component necessary to complete the IWRP.

[50] http://www.buttecounty.net/Portals/26/Modeling/DWRC-Strategic-Plan-2011-2015.pdf retrieved May 18th, 2015.

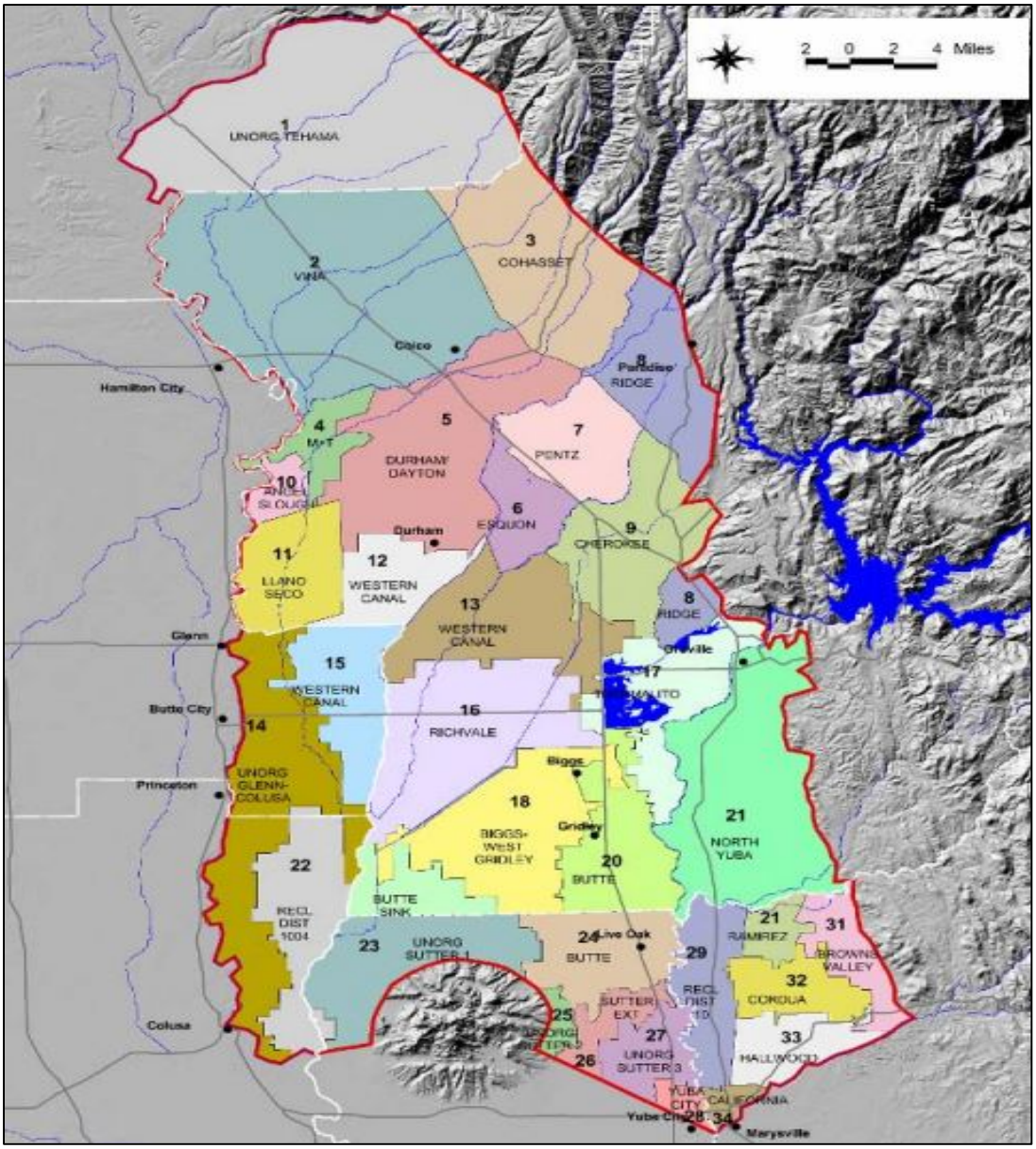
Figure 1



In 2008, the model was updated again concentrating on the development of water budgets for the Butte Basin's 34 regions (See Figure 2)[51]

[51] http://baydeltaoffice.water.ca.gov/modeling/hydrology/IWFM/UsersGroup/2008Archives/oct_28_2008/Heywood_Butte_IWFM_UsersGroup_20081028.pdf, retrieved May 21, 2015.

Figure 2



One of the stated purposes of the groundwater ordinance passed in 1996, and codified in Chapter 33 of the Butte County Code, was to declare that groundwater underlying Butte County is a significant water resource which must be reasonably and beneficially used and conserved for the benefit of the overlying land by avoiding extractions which harm the Butte Basin Aquifer, causing exceedance of the safe yield or a condition of overdraft (Butte County Code). To that end, in an effort to make sure that policy was carried out to protect Butte County groundwater, the Board of Supervisors amended Chapter 33 to require that a

Groundwater Status Report (GSR) be delivered in February of every year. In 2010, the Water Commission designated the DWRC to submit the report.

Except for 2011, the past eight years have been classified by the DWR, due to a lack of precipitation, as critical, dry or below normal years. The past three years have been classified as critically dry years. Any water carryover storage was used in 2014. Consequently, at the beginning of 2015, Lake Oroville was at 49 percent of its historic average for this time year and was at just 30 percent of capacity (Groundwater Status Report, DWRC, 2015)[52].

With an almost nonexistent snowpack and very limited rainfall, the resulting lack of surface water limits aquifer recharge. Over time the groundwater level will drop and well columns will need to be extended to pump the same amount of water at a higher price.

Given that we're going into the fourth year of a drought, it's not surprising that most of the county monitoring wells had lower groundwater levels (GWL) in 2014 than 2013. For example, out of the 113 wells monitored by the DWR and DWRC, between spring 2013 and spring 2014, 24 wells recorded average GWL increases of one foot and 89 wells had an average decrease of five feet. In the fall, 106 wells were monitored and the average GWL increase for 24 wells was seven feet and the average decrease for 82 wells was three feet. The maximum increase and decrease in the fall were 11 feet and 14 feet, respectively. Whereas the maximum increase in the spring was three feet and the maximum decrease was 21 feet. Moreover, where groundwater pumping is prevalent, the magnitude of the decline in groundwater levels is greater.

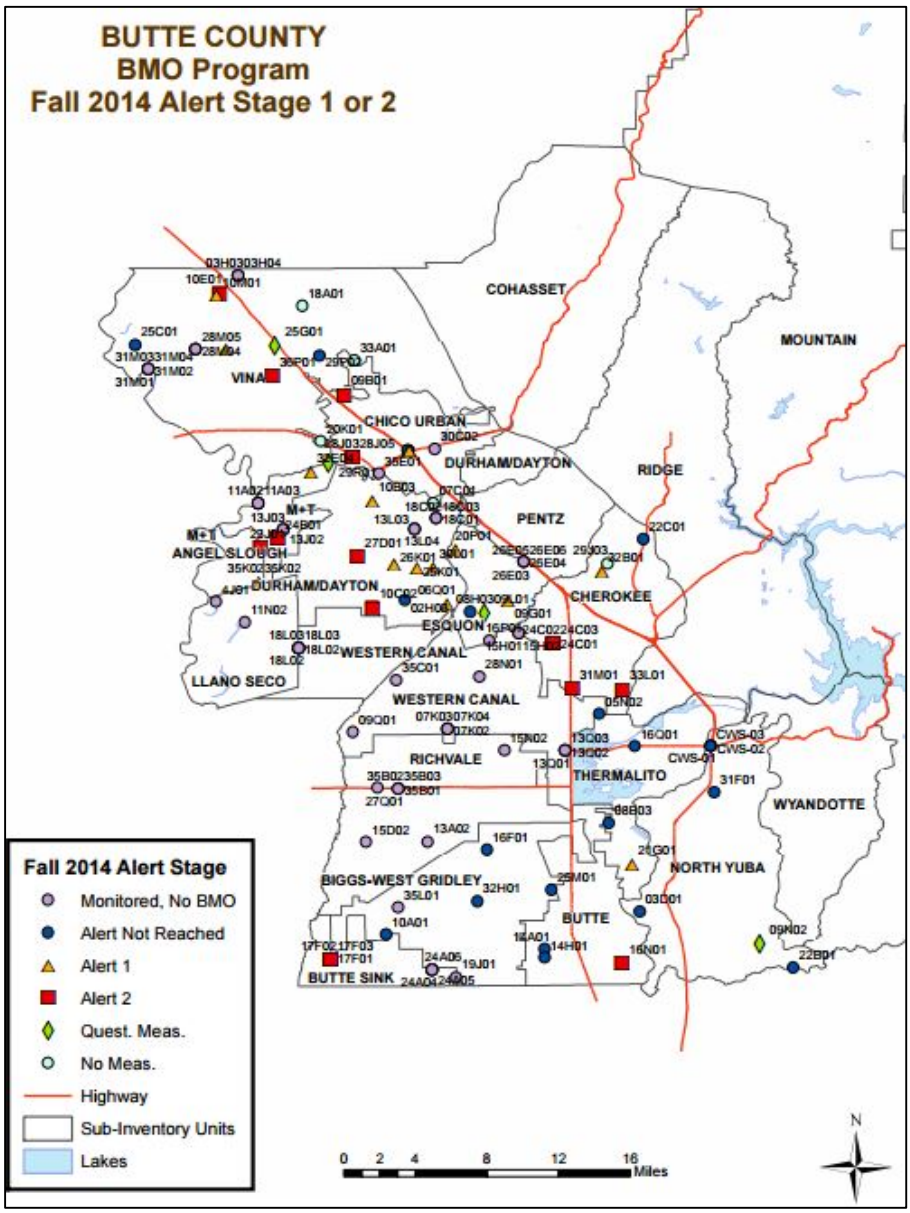
For example, where a comparatively large number of tree crops are grown, in the Vina, Durham-Dayton and M&T sub-regions, maximum GWL decreases are 21, 19, and 13 feet, respectively. In the Esquon and Llano Seco sub-regions, where comparatively more annual crops are grown, maximum GWL decreases are three feet for each sub-region (Numerical Figures from DWRC, GWS Report, 2014).

When groundwater reaches a certain critical level using basin management objectives (BMOs) as a standardized way to evaluate spring and fall changes in GWL and employing the legally mandated California Sustainable Groundwater Elevation Monitoring (CASGEM) technique[53], alert stages for some wells are reached. Alert Stage 1 refers to measurements below the BMO and above the

[52] https://www.buttecounty net/wrcdocs/WC/Agenda/150204/WCAgendaItem4.pdf retrieved May 18th, 2015.
[53] http://www.water.ca.gov/groundwater/casgem/ retrieved May 18, 2015.

historic low for that well. Measurements at or below the historic low indicates an Alert Stage 2 (See Figure 3). [54]

Figure 3

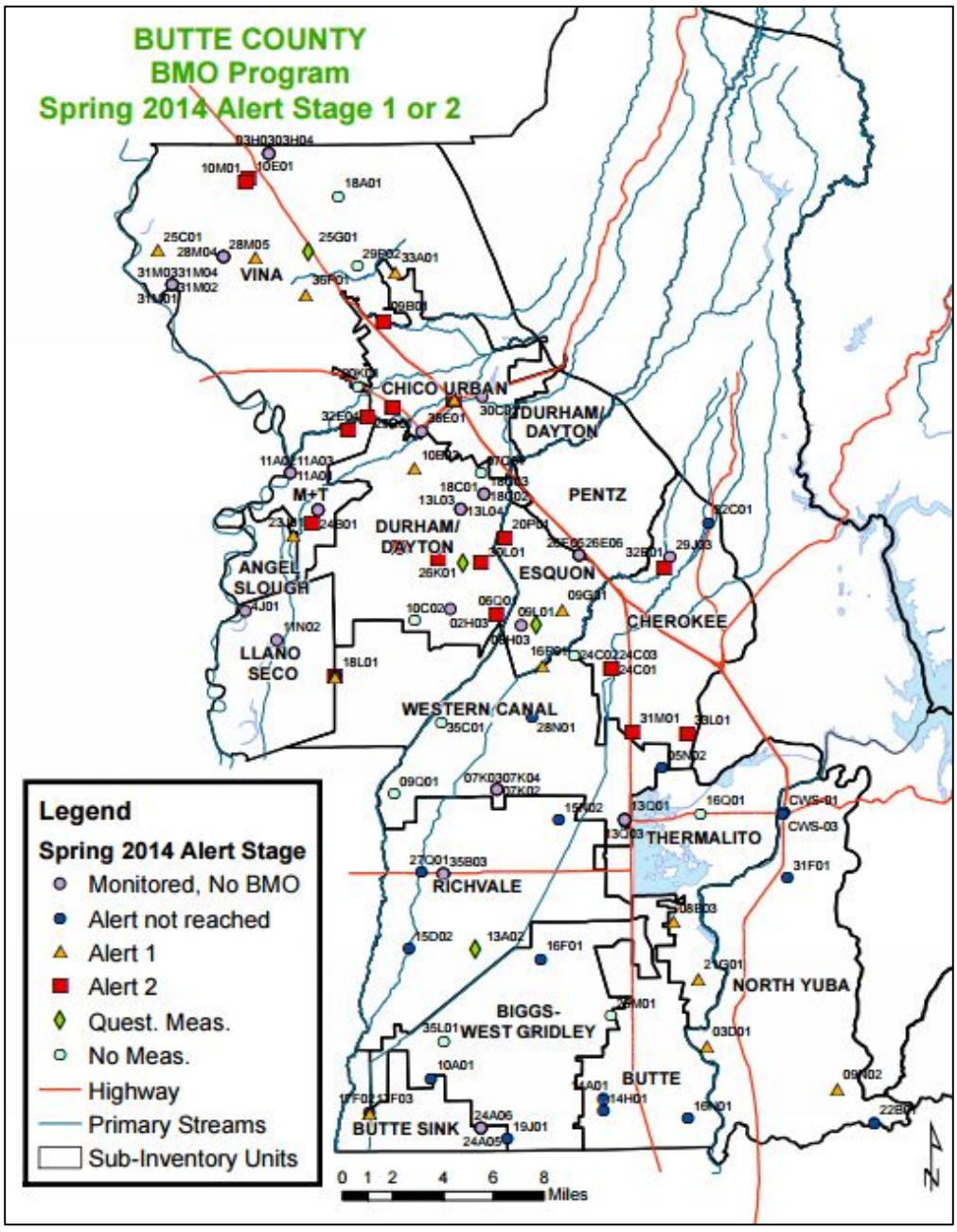


There were 26 wells at Alert Stage 1 in the fall of 2012 and 21 wells at Alert Stage 1 in the fall of 2014. In the fall of 2012 and 2014 there were six and 19 wells, respectively, at Alert Stage 2. In the spring of 2012 there were 25 wells at Alert Stage 1. In the spring of 2014 there were 24 wells at Alert Stage1. In the spring of

[54] https://www.buttecounty.net/wrcdocs/Reports/GWStatusReports/2014/Appendix%20C.pdf, retrieved May 21, 2015.

2012 and the spring of 2014, there were four and 24 wells, respectively, at Alert Stage 2 (DWRC, GWS Report, 2015).[55] (See Figure 4)

Figure 4



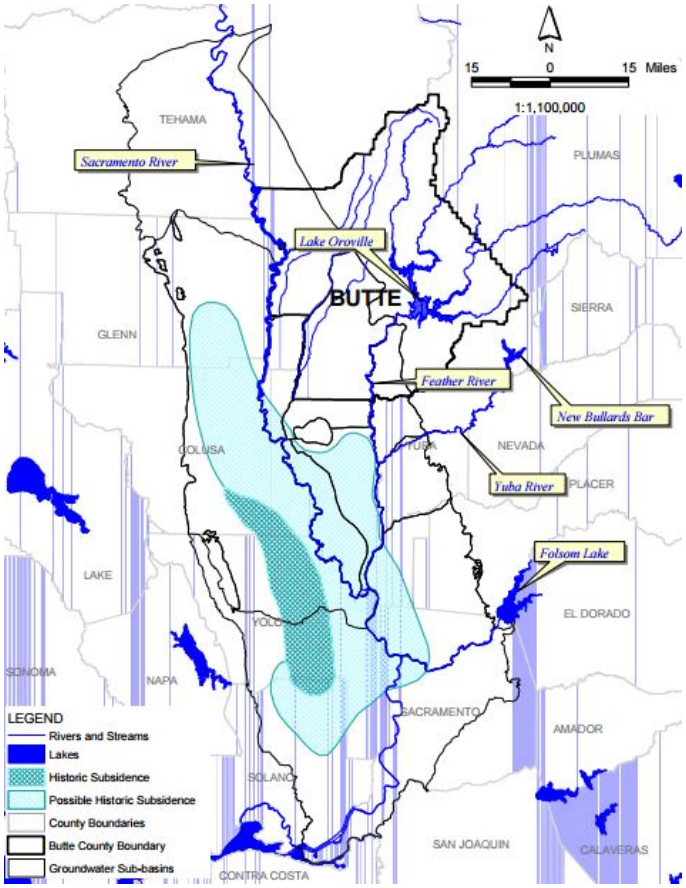
As water levels decrease and wells become less productive, permit requests to the Department of Environmental Health to site new wells increase. For example, well permit applications for small diameter wells (i.e., casing diameter eight inches or

[55] https://www.buttecounty net/wrcdocs/Reports/GWStatusReports/2014/Appendix%20C.pdf, retrieved May 21, 2015.

less) rose from 102 in 2012 to 259 in 2014 while permit applications for large diameter wells (i.e., well casing greater than eight inches) increased from 21 in 2012 to 71 in 2014 (DWRC GWS Report, 2015).

As groundwater levels continue to decrease, the potential for subsidence increases. Similar to a tire going flat when the air is let out, subsidence is the settling of the earth's surface caused by taking water or oil out of the ground. This phenomenon can cause structural changes in waterways, delivery systems (e.g., the SWP, the CVP) and existing wells. Subsidence is monitored by three extensometers located toward the west side of the county. Subsidence is not of major concern in Butte County (See Figures 5 and 6).

Figure 5[56]

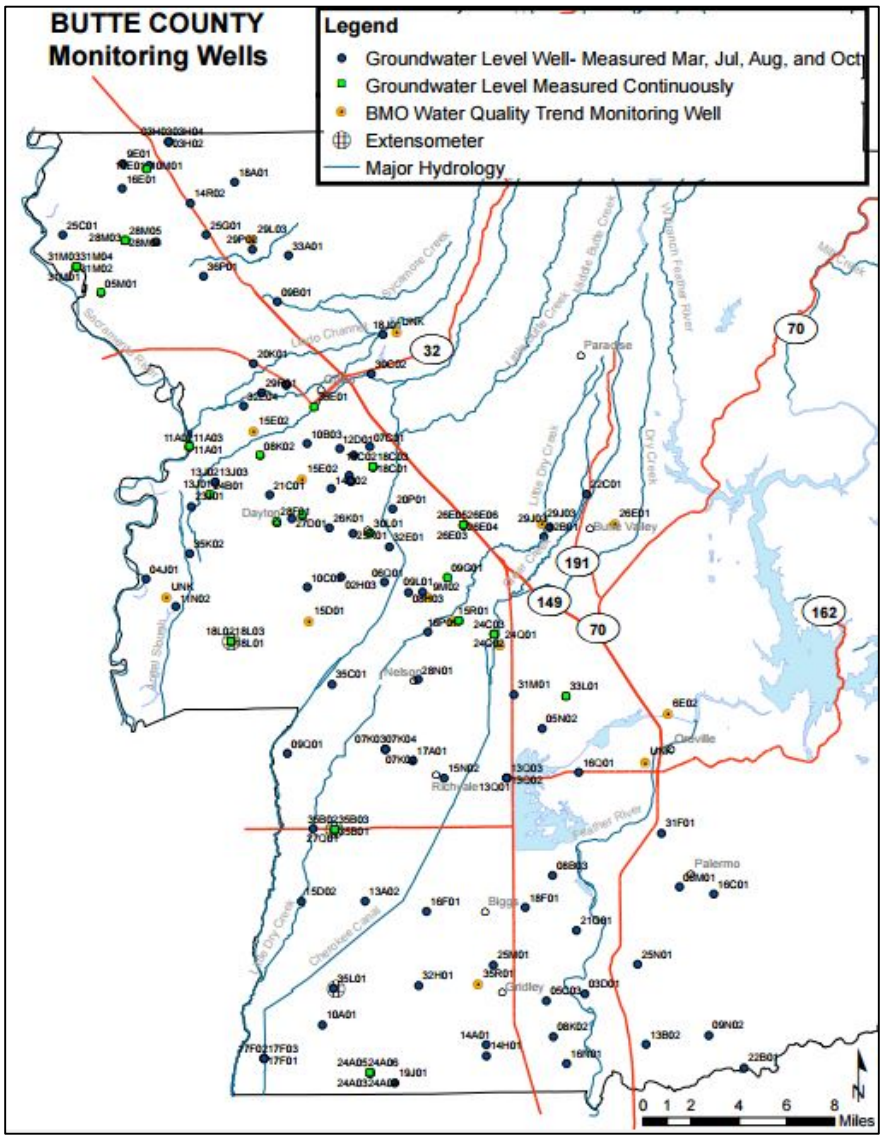


[56] http://www.water.ca.gov/lgagrant/docs/applications/Butte%20County%20Department%20of%20Water%20and%20Resource%20Conservation%20(201209870013)/Att03_LGA12_BCDWRC_GWMP_2of5.pdf, retrieved May 21, 2015.

Groundwater Quality

- Temperature, ph, EC, - The DWRC has been monitoring groundwater quality for 13 seasons. The monitoring network includes 13 wells (See Figure 6). [57] The parameters measured are for pH, EC (salts), and temperature. All samples obtained have been within acceptable limits.

Figure 6



- Nitrates - High levels of nitrates in some Chico wells have been of concern since 1979. Elevated levels of nitrates in drinking water can cause a

[57] http://www.buttecounty.net/Portals/26/Reports/2012/2012_Groundwater_Status_Report.pdf, retrieved May 21, 2015.

condition in infants known as “blue baby syndrome,” which results in reduced oxygen supply to the brain. In adults, nitrates form nitrosamines which have been linked to cancer in animals. Thirty-four monitoring wells have been placed throughout Chico to obtain data in an effort to bring affected areas into nitrate compliance.

The Chico Area Nitrate Compliance Program was developed in response to an order from the Central Valley Regional Quality Control Board issued in 1990 to eliminate septic systems within the Chico urban area. The order affects almost 12,000 dwelling units. Butte County, the City of Chico and the former Chico Redevelopment Agency have worked together to develop a plan to provide public sewer systems to which citizens could connect.

The system construction will be funded by a $38 million loan from the State Water Resources Control Board, which will be repaid by tax revenue. The loan has been approved through the Clean Water State Revolving Fund. (Nitrate information from Butte County DEH)

- Nitrogen Fertilizer and Pesticide Use in Agriculture - Agriculture is the engine that drives the Butte County economy. In 2013, the crop value of Butte County production was approximately $870 million (Butte County Agriculture Crop Report, 2013). Given a multiplier effect of three, agriculture’s total contribution to the Butte County economy is about $3 billion (Butte County Ag Crop Report, 2013).

  To sustain production, growers use nitrogen fertilizer and pesticides. According to the California Department of Pesticide Regulation (DPR) approximately three million pounds of pesticides were applied to Butte County agriculture in 2013. In addition, at maximum application rates, about 15,000 tons of nitrogen is estimated to have been applied to the major Butte County crops of almonds, walnuts and rice (Fertilizer Rate Guidelines; ANR Catalogue UC, Davis).

  To protect against pollution of surface and groundwater by fertilizers and pesticides, the Regional Water Quality Control Board approved regulations to establish the Irrigated Lands Regulatory Program (ILRP). This program requires that growers monitor irrigation and/or storm water runoff for pollutants. The most economical way to do so is to join a coalition. In Butte County, the Butte-Yuba-Sutter Water Quality Coalition (BYSWQC) is the organization most growers join to fulfill their obligation under the ILRP. Not

only does the coalition work to protect water quality, it also encourages cooperation between agricultural interests from different counties which is important for combatting environmental problems on a regional basis.

- Hydraulic Fracturing ("Fracking") –"Fracking is the high pressure injection of a mix of fluids and substances called "proppants" into an oil or gas reservoir. The mix, injected under pressure, fractures the reservoir rock. When the fluids are removed, the proppants keep open the cracks left by the fracturing, allowing oil and natural gas to flow back into the well." (Dept. of Conservation)

  Although fracking has been going on for over 30 years in California, mainly in the southern part of the state (Dept. of Conservation), it's unlikely that there are any current fracking operations in Butte County.

  There are currently interim well stimulation state regulations (final regulations go into effect July 1, 2015) that require (1) neighbor notification (2) pre-well stimulation pressure testing of well and surface equipment (3) water quality monitoring plans (4) disclosure of hydraulic fluid content 60 days after well stimulation treatment and (5) public disclosure. (SB 4, Pavley[58]) The Butte County Board of Supervisors just recently banned fracking waste disposal in the county by a 4-1 vote.

- Water Transfers - The drought in Butte County is not as serious as it is in other parts of the state. For example, even though orchards on the west side of Kern County have engaged in efficient irrigation techniques (e.g., regulated deficit, drip or micro, and time of use), in some cases they don't have enough water to maintain their trees so some orchards are being removed.

  South state agricultural interests and others like the Metropolitan Water District of Southern California, a consortium of 26 cities and water districts, and the State Water Contractors, a non-profit association of 27 public agencies from throughout California, need water and come to the north state to buy it. Water rights holders in Butte County sell water and transfer it south by way of the California State Water Project (SWP). Water transfers are governed by Chapter 33 of the Butte County Code and are facilitated by the California Department of Water Resources (DWR). Transfers are tracked by a number of government agencies including the California State Water

[58] http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB4 retrieved May 18, 2015.

Resources Control Board (SWRCB), the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS)

Chapter 33 of the Butte County Water Code addresses two types of water transfers that are of most concern to Butte County: (1) groundwater substitution and (2) crop idling/fallowing transfers. According to DWR, groundwater substitution transfers make surface water available for transfer by reducing surface water diversions and replacing that water with groundwater pumping. Crop idling, according to the department, includes the idling of land that would have been planted during the transfer period in the absence of the transfer.

Groundwater substitution transfers require a permit and have not taken place in Butte County since 1994. As a matter of fact, over the past couple of years the Butte County Board of Supervisors' stance against groundwater substitution seems to have taken a hard line.

For example, in a 2011 letter from the Board, regarding a long term transfer project, the Board wrote, "The proposed project must approach northern Sacramento Valley with a high degree of caution especially in regards to groundwater substitution programs."(Letter from the Butte County Board of Supervisors to the USBR and the San Luis Delta-Mendota Water Authority, dated February 22, 2011). In 2013, regarding a proposed water transfer program, the Board wrote, "For the record, Butte County is opposed to out-of-basin groundwater substitution transfer program."(Letter from the Butte County Board of Supervisors to the Butte Water District, dated May 7, 2013).

Water is transferred from Butte County under the crop idling or crop fallowing program. Under this program, no more than 20 percent of the target crop (e.g., rice) grown in a water district may be fallowed. Water that would have been used on that acreage can then be sold. Essentially the grower has decided to sell water rather than grow a crop. A crop fallowing transfer requires no permit but is monitored closely by the DWR and the county and tracked by the agencies mentioned above. However, the county has little control over water transfers. DWR, based on inflows of water to Lake Oroville, allocates water to water districts. If inflows fall short, allocations will be cut back (as was the case this year) and water for transfer is unavailable. If CEQA is violated, the SWRCB will likely step in and stop the transfer.

There are some negatives associated with fallowing transfers. For example, jobs and expenditures on inputs are lost to the economy, recharge from irrigation is lost, and since more irrigation water is required to grow the same crop (e.g., almonds) in the south state, not to mention transport costs, it's costly and inefficient to transfer water south to grow crops that can be grown in Butte County. However, it should be noted, almond production per acre is usually greater in the south.

On the positive side, water sellers (e.g., rice growers) will make more money selling water than growing rice and some of that increase in capital is returned to the local economy. Also, and possibly most importantly, some of the little farming towns in the Central Valley are "Company Towns" meaning the people in these towns depend on agriculture not only for their livelihood but, in some cases, for the survival of their town. Some of the water shipped south could literally help keep some of these little towns afloat.

In the early 1990's, a number of counties passed local groundwater ordinances mainly to stop the transfer of groundwater outside their counties. This practice became popular during the drought of 1987-1992. Butte County adopted its groundwater ordinance in December of 1996. Local government has the constitutional right, through its police power, to protect the health and promote the welfare of its citizens which gives it the right to regulate the use of groundwater. According to the DWR, 30 of the state's 58 counties have groundwater ordinances in place (Water Education Foundation, SGWMA Handbook, 2014)[59].

- Sustainable Groundwater Management Act (SGMA)

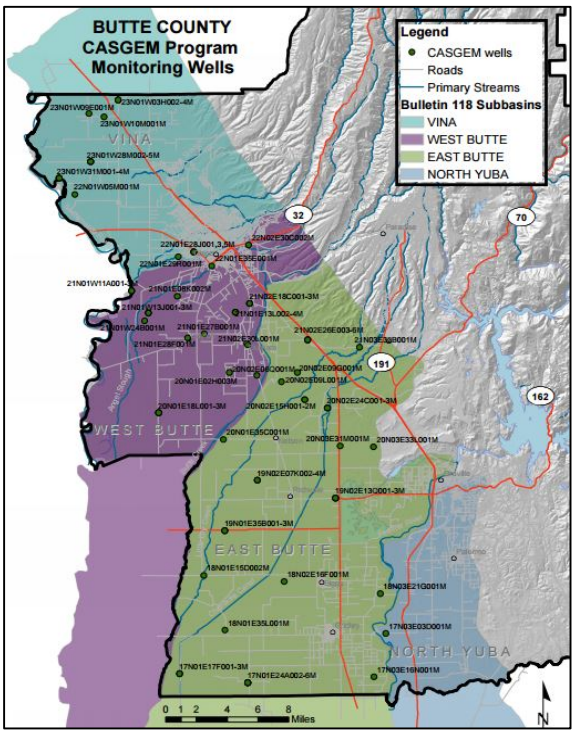
  On September 16, 2014, the Governor signed into law the Sustainable Groundwater Management Act (SGMA).[60] The Act requires local government to establish a groundwater sustainability agency (GSA) by June 30, 2015. The GSA, in turn, must develop a groundwater sustainability plan (GSP) by 2022.

  The GSA may be comprised of local public agencies like cities, counties water districts and other public water agencies. Butte County and the surrounding counties' (Yuba, Sutter, Colusa, Glenn and Tehama)

[59] http://www.watereducation.org/publication/2014-sustainable-groundwater-management-act retrieved May 18, 2015.
[60] http://opr.ca.gov/docs/2014_Sustainable_Groundwater_Management_Legislation_092914.pdf retrieved May 18, 2015.

groundwater basin is divided into four overlying sub-basins: North Yuba, East Butte, West Butte and Vina (See Figure 7). [61]

Figure 7



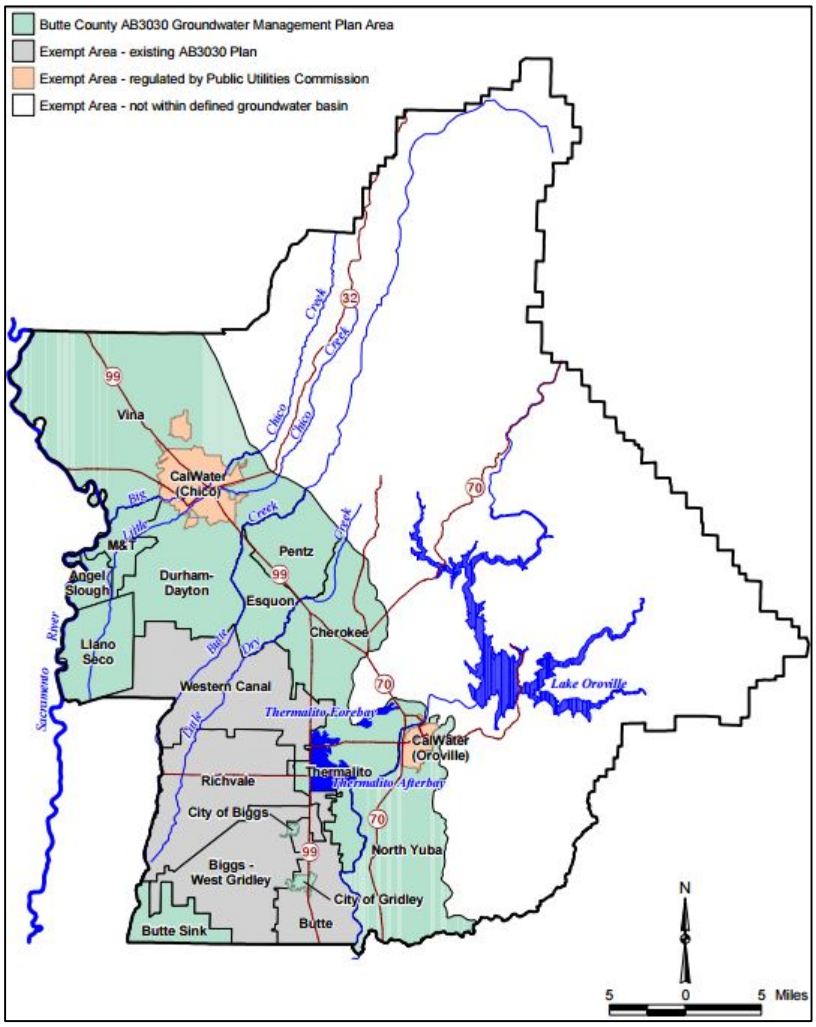
The DWR has oversight of the SGMA projects and in 2016 will propose regulations regarding sub-basin boundary line adjustments and required content for the GSPs.

The GSP(s) for the Butte County sub-basins will build on the county's Groundwater Management Plan (GWMP) (See Figure 8).[62] Much of the data and information likely to be required by the GSP will be available in the Butte County GWMP.

[61] https://www.buttecounty.net/wrcdocs/Reports/GWStatusReports/2014/Appendix%20B.pdf, retrieved May 21, 2015.

[62] http://www.water.ca.gov/lgagrant/docs/applications/Butte%20County%20Department%20of%20Water%20and%20Resource%20Conservation%20(201209870013)/Att03_LGA12_BCDWRC_GWMP_2of5.pdf, retrieved May 21, 2015.

Figure 8



- Under SGMA, a progress report will be submitted to the state every five years beginning in 2027. GSPs are exempt from CEQA.
  Once the sub-basin boundary lines are determined and a GSP is established, the county has a number of options to pursue in order to comply with SGMA:
  - One-Plan, One GSA
  - One Plan, multiple GSAs
  - JPA(Joint Power Authority)
  - MOU(Memorandum of Understanding) and one GSP

Although the magnitude of the approach to monitoring groundwater is expanding regionally, Butte County, as it's been doing for years, will continue to manage groundwater, during normal and drought years, in an effective and efficient manner to benefit the citizens, the economy, and the environment.
On March 24, 2015, the Butte County Board of Supervisors unanimously passed a resolution to (1) become a GSA for the four sub-basins (2) determine if sub-basin lines need to be adjusted, and (3) determine, with other local public agencies, an implementation strategy to comply with SGMA.

Findings

F1 Drought conditions encourage establishing and implementing new government water sustainability programs.

F2 The DWRC is the lead department in managing Butte County groundwater and its responsibilities will expand greatly under SGMA.

F3 Water transfers can have economic, social and political consequences.

F4 Cropping patterns effect groundwater levels.

F5 Adoption of water law in Butte County is voter driven.

F6 Water quality protection falls mainly within the province of the Agriculture Department and the Department of Environmental Health.

F7 Butte County, when compared to DWR, has little authority over whether or not out-of-county groundwater transfers take place.

F8 New regional water policy under SGMA will compel Butte County officials to collaborate on groundwater issues with officials from other counties for the benefit of the region.

Recommendations

R1 The Butte County Board of Supervisors should increase the DWRC budget, given the increase responsibilities under SGMA and the importance of groundwater to the Butte County Economy.

R2 The members of the DWRC, the Butte County Agriculture Department and the Butte County Environmental Health Department should meet with their

counterparts in the other sub-basin counties to discuss regional groundwater plans under SGMA.

R3 The Board of Supervisors should integrate General Plan considerations with the sustainable groundwater plans under SGMA.

Responses

Pursuant to Penal Code §933 and §933.05, the following responses are ***required***:

- Butte County Board of Supervisors: A response to Findings F1 through F8 and Recommendations R1 through R3.

The Grand Jury ***invites*** the following individuals to respond:

- Director of the Department of Water and Resource Conservation: Findings F1 through F8 and Recommendations R1 through R3.

- Director of Environmental Health: Findings F1 through F8 and Recommendations R1 through R3.

- Butte County Agricultural Commissioner: Findings F1, F3, F4, F6 and Recommendation R2.

The governing body indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

Reports issued by the civil Grand Jury do not identify individuals interviewed. Penal Code §929 requires that the reports of the Grand Jury do not contain the name of any person or facts leading to the identity of any person who provides information to the civil Grand Jury.

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