City of Winters

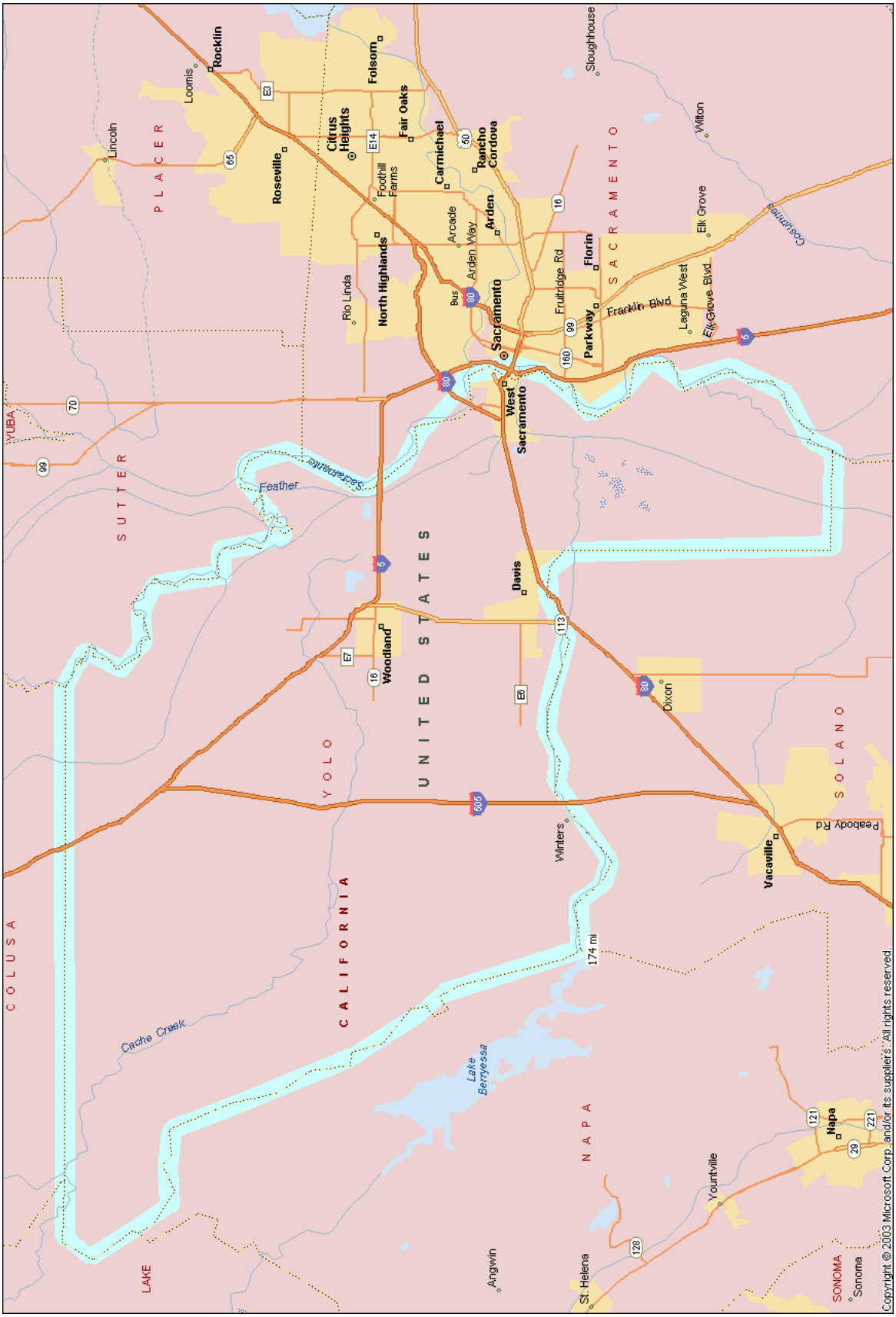
Yolo Operational Area Multi-Hazard Mitigation Plan

Hazard Mitigation Mission Statement

To make the Yolo Operational Area citizens, communities and businesses less vulnerable to the effects of natural and man-made hazards through the effective administration of hazard mitigation grant programs, hazard risk assessments, floodplain management, and a coordinated approach to mitigation policy through regional and local planning activities.

Hazard Mitigation Vision Statement

Institutionalize a County-wide hazard mitigation commitment through leadership, professionalism, and excellence, leading the way to a safe, sustainable Yolo Operational Area..



Yolo County, California

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Yolo Operational Area Multi-Hazard Mitigation Plan

Executive Summary

To summarize, this document contains for **Yolo County**, the Cities of **Woodland, Davis, Winters** and **West Sacramento:**

- The Yolo Operational Area Hazard Vulnerability Study results;
- Prioritization of Yolo Operational Area Hazards;
- Hazard Mitigation Strategy Goals and Objectives;
- Proposed strategies and actions as recommended by the Hazard Mitigation Steering and Planning Committees to reduce short- and long-term vulnerability to the identified hazards;
- Coordination with local interest groups and citizens;
- Methods of implementing, monitoring, evaluating, and updating the mitigation Plan;
- The establishment of a Hazard Mitigation Steering Committee to assist in the further development, prioritization and implementation of the recommended Hazard Mitigation strategies.

This document also provides a framework for identification of coordination of hazard mitigation strategies developed in Yolo Operational Area and with other plans; especially those developed by State and other local agencies and those plans developed in order to file for Federal disaster assistance, as required by P.L. 106-390 (as amended) of the Disaster Mitigation Act of 2000.

SECTION ONE: Introduction

Definition of Hazard Mitigation

Hazard Mitigation is any sustained action taken to eliminate or reduce long term risk to human life, property and the environment posed by a hazard.

Hazard Mitigation Planning is the process of making any sustained plan or course of action taken to reduce or eliminate long-term risk to people and property from both natural and technological hazards and their effects. The planning process includes establishing goals and recommendations for mitigation strategies.

Hazard Mitigation may occur during any phase of a threat, emergency or disaster. Mitigation can and should take place during the preparedness (before), response (during), and recovery (after) phases.

The process of hazard mitigation involves evaluating the hazard's impact and identification and implementation of actions to minimize the impact.

Purpose of Plan

The purpose of this plan is to integrate hazard mitigation strategies into the activities and programs of the local jurisdictions and special districts and to the extent practical, into the activities of private sector organizations.

The plan identifies and evaluates specific Local Hazard Mitigation strategies to be considered by Yolo Operational Area and its planning support for those strategies developed by its political subdivisions, agencies, special districts and organizations.

The strategies presented are deemed appropriate and effective by recommendation of the Yolo Operational Area Hazard Mitigation Steering Committee and the Yolo Operational Area Office of Emergency Services Director, the City Managers, and individual local agencies and private groups.

Upon acceptance by the Yolo Operational Area, the selected strategies will be further developed for funding and implementation by the lead agencies. The plan describes the potential sources of Hazard Mitigation Strategy funding, and general procedures to obtain that funding.

The plan is based upon the Yolo Operational Area Hazard Vulnerability Analysis (HVA) that considers the natural, technological, and human-caused risks to which Yolo Operational Area are vulnerable. The plan describes strategies that the government and private sector organizations may utilize as their capabilities to mitigate those hazards.

It is understood that the mitigation strategies adopted in this plan are recommendations only, and they must be approved and funded in order to be implemented as official Hazard Mitigation Strategies. They must be implemented by the City and County Officials of the Yolo Operational Area.

Planning Process

Participation

Lead Agency

Yolo County Office of Emergency Services

Participating Jurisdictions:

County of Yolo

City of Davis

City of West Sacramento

City of Winters

City of Woodland

History of Hazard Mitigation Projects in the Yolo Operational Area

Lower Cache Creek Potential Flood Damage Project – U.S. Army Corps of Engineers 2003

Mitigation Planning Goals and Objectives

Goals

These goals form the basis for the objectives detailed below and are shown from the highest priority, at the top of the list, to those of lesser importance.

1. Protection of life during and after the occurrence of disasters from identified hazards;
2. Preventing loss of life and reducing the impact of damage where problems cannot be eliminated;
3. Protection of emergency response capability including:
    - Communication and Warning Systems
    - Emergency Medical Services and Medical Facilities;
    - Mobile Resources;
    - Critical Facilities, and;
    - Government Continuity

4. Protection of developed property, homes and businesses, industry, educational opportunities and the cultural fabric by combining hazard loss reduction with the community's environmental, social and economic needs;

5. Promoting public awareness of community hazards and mitigation measures and encouraging public participation in the planning objectives;

6. Preserving or restoring natural mitigation values such as flood plains;

7. Protection of natural resources and the environment.

Objectives

The following objectives are meant to serve as a "measuring stick" upon which the Yolo Operational Area Hazard Mitigation Plan can be evaluated. Meeting these objectives assures the Hazard Mitigation Plan is a functional document that identifies short-and long-term strategies and describes each measure including:

1. Identification of person, agency or organization responsible for implementation.

2. Projecting a time frame for implementation

3. Explanation of how the project will be financed including the conditions for financing and implementation as information is available.

4. Identifying alternative measures, should financing not be available.

5. Be consistent with, support, and help implement the goals and objectives of hazard mitigation plans already in place for the geographic area in question.

6. Be based on the Yolo Operational Area Hazard Vulnerability Analysis.

7. Have significant potential to reduce damages to public and/or private property or reduce the cost of local, state and federal recovery from future disasters.

8. Be the most practical, cost-effective and environmentally sound alternative after consideration of the options.

9. Address a repetitive problem, or one that has the potential to have a major impact on an area, reducing the potential for loss of life, loss of essential services and personal property, damage to critical facilities, economic loss, hardship or human suffering.

10. Meet applicable permit requirements.

11. Develop mitigation standards for development in hazardous areas.

12. Contribute to both the short-and long-term solution to the hazard vulnerability risk problem.

13. Assuring the benefits of a mitigation measure is equal to or exceeds the cost of implementation.

14. Have manageable maintenance and modification costs.

15. When feasible, be designed to accomplish multiple objectives including improvement of life-safety risk, damage reduction, restoration of essential services, protection of critical facilities, security of economic development, recovery, and environmental enhancement.

16. Whenever feasible, use existing resources, agencies and programs to implement the project.

17. Include regional hazard mitigation concerns and strategies.

Hazard Mitigation / Recovery Steering Committee Tasks

1. Coordinate tasks and activities with the Office of Emergency Services to develop an all-hazards disaster mitigation plan and oversee the planning process.

2. Prioritize hazards vs. resources.

3. Select highest and best mitigation recommendations and develop those recommendations for further action by the Yolo Operational Area.

4. Review planning drafts, recommendations and updates.

5. Develop and implement long and short term goals.

6. Integrate the plan with all phases of Comprehensive Emergency Management Planning.

7. Provide for the implementation of committee decisions.

8. Encourage, coordinate and provide a methodology for the implementation of public input.

9. Provide for the implementation of committee decisions.

10. Establish Hazard Mitigation Steering Committee Tasks to Include but not be limited to the following:

    - Determine implementation ability and constraints for proposed Hazard Mitigation planning steps and development of strategies

    - Bring forward community concerns through private and public input

    - Identify implementation resources

    - Provide for the update of Comprehensive Emergency Management Plans on a scheduled basis

    - Evaluate and carry out mitigation activities

    - Assist in implementation of funding identification and procurement

11. Ensure that adjacent jurisdictions, pertinent private entities and citizens are informed of the Yolo Operational Area Hazard Mitigation Planning Process and offer each the opportunity for input into the plan.

Hazard Mitigation Steering Committee

Steering Committee Representatives:

Dan McCanta (Chairman)	Director, Yolo County OES
Kyle Noderer	Yolo County OES
Sarjit Dhaliwal	Yolo County Planning
Karl Diekman	City of Woodland Fire Chief
Phil Marler	City of Woodland Asst. City Manager.
Gary Wegner	City of Woodland Public Works Director
Rose Conroy	City of Davis Fire Chief
Kathy Willhoff	City of Davis Fire Department
Sue Gedestad	City of Davis Public Works
Mike Webb	City of Davis Planning
Colleen Turay	City of Davis Police
Laurie Thornton	City of Davis Planning
Scott Dozier	City of Winters Fire Chief
Karen Honer	City of Winters Public Works Director
Larry von Kaenel	West Sacramento City Mgrs. Office
Bill Summers	West Sacramento Fire Department
Barry Burns	Esparto Fire Department

Adjunct Steering Committee Representatives

Mike Martinez	Yolo County IT (GIS)
Rich Buse	Woodland Joint Unified School District
Mark Christison	Laugenour & Meikle
Donita Hendrix	Dunnigan Water
Mike Horgan	Yolo County Flood Control
Brenna Howell	State Office of Emergency Services, Inland
Cherie Rita	State OES Fire Region IV OAC
Ev Orifita	University of California, Davis
Kim Severns	American Red Cross - Yolo
Steve Williams	Consultant, Dimensions Unlimited
Janice Rogala	Consultant, Dimensions Unlimited
Terry Garrison	Consultant, Dimensions Unlimited
David Garrison	Consultant, Dimensions Unlimited

Steering Committee Hazard Mitigation Strategy Identification Activities

1. Beginning February 27, 2004 members of the Steering Committee agreed to and did meet every three weeks to identify hazard priorities and review local hazard mitigation strategy recommendations.

2. The Local Hazard Mitigation Steering Committee agreed to make and pass policy recommendations by a vote of a simple majority of those members present.

3. Following a public meeting the Steering Committee will again examine and prioritize the Hazard Mitigation Strategies. These strategies will also be incorporating the result from Planning Team meetings and policy guidance. The Steering Committee will further estimate time frame and implementation costs to those strategies where possible for priority Strategies.

Yolo Operational Area Hazard Mitigation Plan Steering Committee Future Tasks

1. Define the mitigation constraints that the Yolo Operational Area is required to follow in implementing recommendations from the Hazard Mitigation Steering Committee.

    - Protection of sensitive information

    - Apply budget constraints to recommended hazard mitigation strategies

    - Apply State policy and legal constraints to mitigation strategies brought forward by the Steering Committee.

2. Meet on an annual basis to review the work of and contribute to the Yolo Operational Area Hazard Mitigation Plan Steering Committee activities.

3. Bring forth the concerns and views of the Community to the Steering Committee for inclusion in the Hazard Mitigation planning process.

4. Assist in informing the public and community of the Hazard Mitigation strategies recommended by both the Steering Committee and Planning Team.

5. Define the constraints for implementation of Mitigation Strategies within the authorities of the Yolo Operational Area Laws and Regulations.

6. Carry out the goals and objectives of the Yolo Operational Area Hazard Mitigation Plan.

7. Support and review the input from meetings of the adjunct members with individuals, agencies and jurisdictions

8. Assure that the public is kept informed of changing strategies and implementation actions periodically.

Legal Authority

Federal Laws

"The Federal Civil Defense Act of 1950"

Public Law 96-342 "The Improved Civil Defense Act of 1980"

Public Law 91-606 "Disaster Relief Act"

Public Law 93-288 "The Robert T. Stafford Disaster Relief Act of 1974"

Section 322, Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act

Public Law 106-390 enacted by Section 104 of the Disaster Mitigation Act of 2000 (DMA)

Interim Final Rule for DMA 2002 as published in the February 26,2002, at 44 CFR Part 201

State Laws

California Government Code, Section 3100, Title 1, Division 4, Chapter 4.

States those public employees are disaster service workers, subject to such disaster service activities as may be assigned to them by their superiors or by law. The term "public employees" includes all persons employed by the state or any county, city, city and county, state agency or public district, excluding aliens legally employed. The law applies when:

- A local emergency has been proclaimed.
- A state of emergency has been proclaimed.
- A federal disaster declaration has been made.

Provides the basic authorities for conducting emergency operations following a proclamation of Local Emergency, State of Emergency, or State of War Emergency by the Governor and/or appropriate local authorities, consistent with the provisions of this Act.

The California Emergency Plan

Promulgated by the Governor, and published in accordance with the Act and provides overall statewide authorities and responsibilities, and describes the functions and operations of government at all levels during extraordinary emergencies, including wartime. Section 8568 of the Act states, in part, that "...the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." Local emergency plans are, therefore, considered to be extensions of the California Emergency Plan.

California Civil Code, Chapter 9, Section 1799.102

Provides for "Good Samaritan Liability" for those providing emergency care at the scene of an emergency: "No person, who, in good faith and not for compensation, renders emergency care at the scene of an emergency, shall be liable for any civil damages resulting from any act or omission. The scene of an emergency shall not include emergency departments and other places where medical care is usually offered."

State of California Multi-Hazard Mitigation Plan, July 1, 2004

Local Codes and Ordinances

Yolo County Emergency Plans

See Yolo County Website: www.yolo.com/oes/plansdocs.htm.

Public Input

Citizen Questionnaires

All jurisdictions conducted an aggressive drive to receive public input on the Hazard Mitigation Planning Process. Yolo County, Cities of Davis and West Sacramento placed a letter to interested citizens introducing the attached questionnaire on their official web sites with an invitation to fill it out and return it. Davis had 32 responses, West Sacramento had 15 responses. The City of Woodland mailed a copy of the questionnaire with their utility bills and received 889 responses. The City of Winters received 102 responses to the same survey.

Survey Synopses

Yolo County

Yolo County received 3 responses to the citizen questionnaire.

1. The majority of respondents does not have internet access and owns their residences.

2. The respondents' concern about disasters affecting their community were:

    - Flood – somewhat concerned
    - Levee Failure – somewhat concerned
    - High Winds – somewhat concerned
    - Dam failure – not concerned
    - Health Emergency – not concerned
    - Landslides – not concerned
    - Earthquake – somewhat concerned
    - Biological – not concerned
    - Transportation Loss – not concerned
    - Fire – somewhat concerned
    - Telecommunications Failure – somewhat concerned
    - Radiological Incident – not concerned
    - Special Events – not concerned
    - Terrorism – not concerned
    - Utilities Interruption – somewhat concerned

3. The majority of respondents receive information from radio and television news.

4. The majority of respondents responded to participating in disaster preparedness as follows:

    - Attend meetings & receive information – have done
    - Talked with family members – have done
    - Develop a household emergency plan – plan to do
    - Prepare a disaster supply kit – have done
    - Been trained in emergency care – have not done

5. The majority of respondents are willing to spend 2-3 hours per year in disaster preparedness.

6. The majority of respondents did not consider the occurrence of a natural hazard when the moved into their home.

7. The majority of respondents would be willing to spend more money on a safe home.

8. The majority of respondents do not carry flood insurance.

9. The majority of respondents would be willing to make their home more disaster resistant.

10. The majority of respondents has made non-structural modifications and has made structural modifications to their homes to make them more disaster resistant.

11. The majority of respondents prioritize disaster preparedness in the following manner:

    - Protecting Property – very important
    - Protecting Critical Facilities – very important
    - Preventing Development in Hazard Areas – somewhat important
    - Protecting Environment – somewhat important
    - Protecting Landmarks – somewhat important
    - Promoting Cooperation – very Important
    - Protecting Utilities – very Important
    - Strengthening Emergency Services – very Important

12. The majority of respondents offered the following opinions on strategies to reduce risk:

    - Support regulatory approach – Disagree
    - Support non-regulatory approach – Neutral (not sure)
    - Support development prohibition policies – Agree
    - Support use of tax dollars – Neutral (not sure)
    - Support protecting historical structures - Agree
    - Willing to make their home more resistant – Agree
    - Support steps to safeguard economy – Agree
    - Support improving disaster preparedness in schools – Agree

City of West Sacramento

The City of West Sacramento received 15 responses to the citizen questionnaire.

1. The majority of respondents has internet access and owns their residence.

2. The respondents' concern about disasters affecting their community were:

    - Flood – moderately concerned
    - Levee Failure – moderately concerned
    - High Winds – somewhat concerned
    - Dam failure – moderately concerned
    - Health Emergency – somewhat concerned
    - Landslides – not concerned
    - Earthquake – somewhat concerned
    - Biological – somewhat concerned
    - Transportation Loss – somewhat concerned
    - Fire – moderately concerned
    - Telecommunications Failure – somewhat concerned

- Radiological Incident – moderately concerned
- Special Events – somewhat concerned
- Terrorism – somewhat concerned
- Utilities Interruption – moderately concerned

3. The majority of respondents receive information from television news.

4. The majority of respondents responded to participating in disaster preparedness as follows:

   - Attend meetings & receive information – have done
   - Talked with family members – have done
   - Develop a household emergency plan – have done
   - Prepare a disaster supply kit – have done (7)/have not done (7)
   - Been trained in emergency care – have not done

5. The majority of respondents are willing to spend 4-7 hours per year in disaster preparedness.

6. The majority of respondents did consider the occurrence of a natural hazard when the moved into their home.

7. The majority of respondents would be willing to spend more money on a safe home.

8. The majority of respondents do carry flood insurance.

9. The majority of respondents would be willing to make their home more disaster resistant.

10. The majority of respondents has made non-structural modifications and have not made structural modifications to their homes to make them more disaster resistant.

11. The majority of respondents prioritize disaster preparedness in the following manner:

    - Protecting Property – very important
    - Protecting Critical Facilities – very important
    - Preventing Development in Hazard Areas – very important
    - Protecting Environment – very important
    - Protecting Landmarks – very important
    - Promoting Cooperation – very Important
    - Protecting Utilities – very Important
    - Strengthening Emergency Services – very Important

12. The majority of respondents offered the following opinions on strategies to reduce risk:

    - Support regulatory approach – Agree
    - Support non-regulatory approach – Agree
    - Support development prohibition policies – Agree
    - Support use of tax dollars – Agree
    - Support protecting historical structures - Agree
    - Willing to make their home more resistant – Agree
    - Support steps to safeguard economy – Agree
    - Support improving disaster preparedness in schools – Agree

City of Winters

The City of Winters received 102 responses to the citizen questionnaire.

1. The majority of respondents has internet access and owns their residence.

2. The respondents' concern about disasters affecting their community were:

    - Flood – somewhat concerned
    - Levee Failure – not concerned
    - High Winds – not concerned
    - Dam failure – moderately concerned
    - Health Emergency – not concerned
    - Landslides – not concerned
    - Earthquake – somewhat concerned
    - Biological – not concerned
    - Transportation Loss – not concerned
    - Fire – moderately concerned
    - Telecommunications Failure – not concerned
    - Radiological Incident – not concerned
    - Special Events – not concerned
    - Terrorism – somewhat concerned
    - Utilities Interruption – somewhat concerned

3. The majority of respondents receive information from television news. (utility bills second)

4. The majority of respondents responded to participating in disaster preparedness as follows:

    - Attend meetings & receive information – have not done
    - Talked with family members – have done
    - Develop a household emergency plan – plans to do
    - Prepare a disaster supply kit –have not done
    - Been trained in emergency care – have not done

5. The majority of respondents are willing to spend 2-3 hours per year in disaster preparedness.

6. The majority of respondents did consider the occurrence of a natural hazard when the moved into their home.

7. The majority of respondents would be willing to spend more money on a safe home.

8. The majority of respondents do not carry flood insurance.

9. The majority of respondents would be willing to make their home more disaster resistant.

10. The majority of respondents has made non-structural modifications and has made structural modifications to their homes to make them more disaster resistant.

11. The majority of respondents prioritize disaster preparedness in the following manner:

    - Protecting Property – very important
    - Protecting Critical Facilities – very important
    - Preventing Development in Hazard Areas – very important
    - Protecting Environment – very important

- Protecting Landmarks – very important
- Promoting Cooperation – very Important
- Protecting Utilities – very Important
- Strengthening Emergency Services – very Important

12. The majority of respondents offered the following opinions on strategies to reduce risk:

    - Support regulatory approach – Agree
    - Support non-regulatory approach – Agree
    - Support development prohibition policies – Agree
    - Support use of tax dollars – Agree
    - Support protecting historical structures - Agree
    - Willing to make their home more resistant – Agree
    - Support steps to safeguard economy – Agree
    - Support improving disaster preparedness in schools – Agree

City of Woodland

The City of Woodland received 889 responses to the citizen questionnaire.

1. The majority of respondents has internet access and owns their residence.

2. The respondents' concern about disasters affecting their community were:

    - Flood – somewhat concerned
    - Levee Failure – somewhat concerned
    - High Winds – somewhat concerned
    - Dam failure – somewhat concerned
    - Health Emergency – somewhat concerned
    - Landslides – not concerned
    - Earthquake – somewhat concerned
    - Biological – somewhat concerned
    - Transportation Loss – somewhat concerned
    - Fire – moderately concerned
    - Telecommunications Failure – somewhat concerned
    - Radiological Incident – somewhat concerned
    - Special Events – somewhat concerned
    - Terrorism – somewhat concerned
    - Utilities Interruption – moderately concerned

3. The majority of respondents receive information from television news. (newspaper stories second)

4. The majority of respondents responded to participating in disaster preparedness as follows:

    - Attend meetings & receive information – have not done
    - Talked with family members – have done
    - Develop a household emergency plan – have not done
    - Prepare a disaster supply kit –have not done
    - Been trained in emergency care – have not done

5. The majority of respondents are willing to spend 2-3 hours per year in disaster preparedness.

6. The majority of respondents did not consider the occurrence of a natural hazard when the moved into their home.

7. The majority of respondents would be willing to spend more money on a safe home.

8. The majority of respondents do not carry flood insurance. (for those that did, the average cost was approximately $555 per year)

9. The majority of respondents would be willing to make their home more disaster resistant.

10. The majority of respondents has made non-structural modifications and has not made structural modifications to their homes to make them more disaster resistant.

11. The majority of respondents prioritize disaster preparedness in the following manner:

    - Protecting Property – very important
    - Protecting Critical Facilities – very important
    - Preventing Development in Hazard Areas – very important
    - Protecting Environment – very important
    - Protecting Landmarks – somewhat important
    - Promoting Cooperation – very Important
    - Protecting Utilities – very Important
    - Strengthening Emergency Services – very Important

12. The majority of respondents offered the following opinions on strategies to reduce risk:

    - Support regulatory approach – Agree
    - Support non-regulatory approach – Neutral
    - Support development prohibition policies – Agree
    - Support use of tax dollars – Agree
    - Support protecting historical structures - Agree
    - Willing to make their home more resistant – Agree
    - Support steps to safeguard economy – Agree
    - Support improving disaster preparedness in schools – Agree

City of Davis

The City of Davis received 32 responses to the citizen questionnaire.

1. The majority of respondents has internet access and owns their residence.

2. The respondents' concern about disasters affecting their community were:

    - Flood – somewhat concerned
    - Levee Failure – somewhat concerned
    - High Winds – somewhat concerned
    - Dam failure – somewhat concerned/not concerned (tie)
    - Health Emergency – moderately concerned/somewhat concerned (tie)
    - Landslides – not concerned
    - Earthquake – somewhat concerned
    - Biological – somewhat concerned/not concerned (tie)
    - Transportation Loss – somewhat concerned/not concerned (tie)
    - Fire – moderately concerned

- Telecommunications Failure – somewhat concerned
- Radiological Incident – not concerned/somewhat concerned (tie)
- Special Events – not concerned
- Terrorism – somewhat concerned
- Utilities Interruption – somewhat concerned

3. The majority of respondents receive information from newspaper stories. (television news second)

4. The majority of respondents responded to participating in disaster preparedness as follows:

    - Attend meetings & receive information – have done
    - Talked with family members – have done
    - Develop a household emergency plan – have not done
    - Prepare a disaster supply kit – have done
    - Been trained in emergency care – have not done

5. The majority of respondents are willing to spend 2-3 hours per year in disaster preparedness.

6. The respondents tied in their response half did consider and half did not consider the occurrence of a natural hazard when the moved into their home.

7. The majority of respondents would be willing to spend more money on a safe home.

8. The majority of respondents do not carry flood insurance.

9. The majority of respondents would be willing to make their home more disaster resistant.

10. The majority of respondents has made non-structural modifications and have not made structural modifications to their homes to make them more disaster resistant.

11. The majority of respondents prioritize disaster preparedness in the following manner:

    - Protecting Property – very important
    - Protecting Critical Facilities – very important
    - Preventing Development in Hazard Areas – very important
    - Protecting Environment – very important
    - Protecting Landmarks – somewhat important
    - Promoting Cooperation – very Important
    - Protecting Utilities – very Important
    - Strengthening Emergency Services – very Important

12. The majority of respondents offered the following opinions on strategies to reduce risk:

    - Support regulatory approach – Agree
    - Support non-regulatory approach – Agree
    - Support development prohibition policies – Agree
    - Support use of tax dollars – Agree
    - Support protecting historical structures - Agree
    - Willing to make their home more resistant – Agree
    - Support steps to safeguard economy – Agree
    - Support improving disaster preparedness in schools – Agree

Public Meetings

A public meeting was held for the City of Woodland and Yolo County combined on September 29, 2004, 6 PM, at the Department of Employment Social Services. The following article appeared in the Daily Democrat newspaper in the September 23rd:

Informational meeting set for Sept. 29

Yolo County and the City of Woodland, along with reclamation, fire and service special districts, will hold an informational meeting 6 p.m. Wednesday, Sept. 29.

The meeting is to inform the public of the mitigation planning process and allow for comments.

In order to be eligible to receive future hazard mitigation funds, the county and cities need to submit updated mitigation plans to FEMA.

An electronic version of this draft plan is available on the Yolo County website, www.yolocounty.org, and a reference copy will be available for viewing at the Department of Planning and Public Works, 292 West Beamer St., Woodland, as well as at the public libraries.

For Woodland residents, a draft plan is available at the Woodland City Library, 250 First St., or the Woodland Fire Department administrative offices, 532 Court St.

The community meeting will be held in the Community Room of the Employment and Social Services Building, 25 N. Cottonwood St., Woodland.

For additional information call 661-5860 or 666-8775.

Jurisdiction representatives attended and were prepared to answer questions and record comments and input. No members of the public attended.

The City of Davis held a public meeting on September 30, 2004, 6 PM, at Davis Community Chambers. The following announcement was published:

Davis
California

NOTICE OF PUBLIC MEETING

The City of Davis will hold a public meeting on Thursday, September 30, 2004. The meeting will start at 6:00pm at the Davis Community Chambers, 23 Russell Blvd. This meeting is to review the Yolo Operational Area Standard Multi-Hazard Mitigation Plan that is being prepared for not only the City of Davis, but also Yolo County and all the municipalities in the county by Dimensions Unlimited Inc. of Rio Vista. The meeting will also serve to inform the public of the mitigation planning process and allow for the public's comments on the mitigation plan.

The need for a Multi-Hazard Mitigation Plan is a result of the Disaster Mitigation Act of 2000 (DMA 2000) Section 322. DMA 2000 reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur. The legislation establishes a pre-disaster hazard mitigation program and new requirements for post-disaster Hazard Mitigation Grant Program funding (HMGP). The County, municipalities and special districts must have an approved mitigation plan in place by November 2004 in order to be eligible to receive future HMGP funds. The Cities and the County of Yolo have hired a consultant to complete a risk assessment and develop hazard mitigation plans for each jurisdiction. The Cities/County mitigation plan must demonstrate that the proposed mitigation actions are based on a sound planning process that accounts for the risk to and the capabilities of the cities and the county. The proposed mitigation actions will also be reviewed at this meeting.

The City of Davis is interested in obtaining citizen's input on the plan and the proposed mitigation actions. Local participation will reflect the true desires of the community as a whole, as well as the comments relating to the proposed mitigation actions. Additionally, on the City of Davis website is a questionnaire you may fill out in the "What's New" section. Highlight "Public Input to Disaster Planning". So we hope to see you September 30, 2004 at 6:00pm at the Community Chambers 23 Russell Boulevard or hear from you through the website.

Draft copies of the plan will be available on the City's main-page website: www.cityofdavis.org. A copy of the plan may be reviewed in the City of Davis Fire Department office at 530 Fifth Street. If you need additional information, please call 530-757-5684.

Jurisdiction representatives attended and were prepared to answer questions and record comments and input. No members of the public attended.

Future Public Input

The Yolo Operational Area Hazard Mitigation Steering Committee has made the commitment to periodically bring this plan before the public through public meetings and community posting so that citizens may make input as strategies and implementation actions change. Each jurisdiction is responsible for assuring that their citizenry are informed when deemed appropriate by the standing Steering Committee.

Yolo County Questionnaire

County of Yolo
PLANNING AND PUBLIC WORKS DEPARTMENT
292 WEST BEAMER STREET WOODLAND CA 95695-2598 530-666-8775 FAX 530-666-8156
www.yolocounty.org

JOHN BENCOMO
DIRECTOR

July 23, 2004

Dear Yolo County Community Member,

I am writing this letter to request your assistance and cooperation in better preparing our community and our region to deal with disasters and hazards. The Federal Emergency Management Agency (FEMA) requires each community to develop a multi-hazard response plan. Under the Disaster Mitigation Act of 2000 (DMA), local jurisdictions are required to have plans in place to mitigate all reasonably known hazards, both natural and human-caused, including terrorism. Because our response to such events would be on a regional basis, the Yolo County has joined other local government agencies throughout the County to prepare this federally mandated county-wide Hazard Mitigation Plan required by the DMA.

In order to help the County better assess the potential hazards for the preparation of the Hazard Mitigation Plan, your cooperation is needed. Please fill in the enclosed form and return the form to the following address:

Hazard Mitigation Plan
Attn: Sarjit S. Dhaliwal
Yolo County Planning and Public Works Department
292 W. Beamer Street
Woodland, CA 95695-2598

Please answer questions on the form to the best of your knowledge. If you don't know or are uncertain about an answer, leave the response blank. Should you have any questions or concerns, please do not hesitate to contact me at (530) 666-8036.

Thank you for your cooperation and assistance.

Sincerely,

Sarjit S. Dhaliwal
Associate Planner

County of Yolo Hazards Mitigation and Preparedness Questionnaire

This questionnaire is designed to help the Local Hazard Mitigation Plan Task Force identify the community's concerns about natural and human-caused hazards, to better understand community needs in reducing risk and loss from such hazards. The questionnaire should be completed by an adult, preferably the homeowner or the head of the household. Please, take a few minutes to complete this questionnaire. All individual responses are strictly confidential, and are for research purposes only.

1. Zip code:_____ Community Name or location: _____ Internet Access ? Y/N _____ Own/Rent _____

2. How concerned are you about the following disasters affecting your community? Please give each hazard a priority rating as follows: ***0 = Not concerned; 1 = Somewhat concerned; 2 = Moderately concerned; 3 = Very concerned***

Natural:

____ Floods
____ Levee Failure
____ High Winds
____ Dam Failure
____ Health Alert/Mass Disease
____ Landslide/Mudslides
____ Earthquake
____ Biological (plant or animal)

Human caused:

____ Transportation Loss
____ Fire
____ Telecommunications Failure
____ Radiological Incident
____ Special Events
____ Terrorism
____ Utilities Interruption

3 What is the most effective way for you to receive information about how to make your household and home safer from natural disasters? (***Please check all that apply.***)

Media:

- ☐ Newspaper stories
- ☐ Newspaper ads
- ☐ Television news
- ☐ Television ads
- ☐ Radio news
- ☐ Radio ads

Other methods:

- ☐ Schools
- ☐ Outdoor advertising (billboards, etc)
- ☐ Books
- ☐ Mail
- ☐ Fire Department
- ☐ Internet
- ☐ Fact sheet/brochure
- ☐ Church/religious organization
- ☐ Employer
- ☐ Public meetings
- ☐ University or research institution
- ☐ Utility Bills

4 In the following list, please check those activities that you, or someone in your household, ***have done***, ***plan to do*** in the near future, ***have not done***, or are ***unable to do***. (***Please check one answer for each preparedness activity***)

Have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meetings or received written information on natural disasters or emergency preparedness?	☐	☐	☐	☐
Talked with family members about what to do in case of a disaster or emergency?	☐	☐	☐	☐
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	☐	☐	☐	☐
Prepared a "Disaster Supply Kit" (extra food, water, medications, batteries, first aid items and other emergency supplies)?	☐	☐	☐	☐
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	☐	☐	☐	☐

5 Building a disaster supply kit, receiving First Aid training and developing a household/family emergency plan are all inexpensive activities that require a personal time commitment. How much time (per year) are you willing to spend on disaster/emergency preparedness? (***Check only one***)

☐ 0-1 hour ☐ 2-3 hours ☐ 4-7 hours ☐8-15 hours ☐16+ hours ☐ Other, please specify

6 Did you consider the possible occurrence of a natural hazard when you bought/moved into your current home?

☐ Yes ☐ No

7. Would you be willing to spend more money on a home that has features that make it more disaster resistant?

☐Yes ☐ No ☐ Don't know

8. Do you carry flood insurance? If so what is the annual cost?

☐Yes ☐ No _____

9 Would you be willing to make your home more resistant to natural disasters?

☐ Yes ☐ No

10. What nonstructural or structural modifications for earthquakes and floods have you made to your home? (***Please check all that apply***)

10a. Nonstructural

☐ Anchor bookcases, cabinets to wall
☐ Secure water heater to wall
☐ Install latches on drawers/cabinets
☐ Fit gas appliances with flexible connections and
☐ Others (please explain)
☐ Others (please explain)
☐ None

10b. Structural

☐ Secure home to foundation
☐ Brace inside of cripple wall with sheathing
☐ Brace unreinforced chimney
☐ Brace unreinforced masonry and concrete walls foundations
☐ None

11. Natural and human-caused disasters can have a significant impact on a community but planning for these events can help lessen the impact. The following statement will help us determine community priorities for planning for those hazards. Please tell us how important each one is to you.

Statement	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	☐	☐	☐	☐	☐
Protecting critical facilities (hospitals, transportation networks, fire stations)	☐	☐	☐	☐	☐
Preventing development in hazard areas	☐	☐	☐	☐	☐
Protecting natural environment	☐	☐	☐	☐	☐
Protecting historical and cultural landmarks	☐	☐	☐	☐	☐
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	☐	☐	☐	☐	☐
Protecting and reducing damage to utilities	☐	☐	☐	☐	☐
Strengthening emergency services (police, fire, ambulance)	☐	☐	☐	☐	☐

12. Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters.

Community-wide Strategies	Agree	Neutral	Disagree	Not Sure
I support a regulatory approach to reducing risk.	☐	☐	☐	☐
I support a non-regulatory approach to reducing risk.	☐	☐	☐	☐
I support policies to prohibit development in areas subject to natural hazards.	☐	☐	☐	☐
I support the use of local tax dollars to reduce risks and losses from natural disasters.	☐	☐	☐	☐
I support protecting historical and cultural structures.	☐	☐	☐	☐
I would be willing to make my home more disaster-resistant.	☐	☐	☐	☐
I support steps to safeguard the local economy following a disaster event	☐	☐	☐	☐
I support improving the disaster preparedness of schools.	☐	☐	☐	☐

THANK YOU VERY MUCH FOR PROVIDING THIS INFORMATION

City of Davis Questionnaire

City of Davis Hazards Mitigation and Preparedness Questionnaire

May 11, 2004

Dear Davis Community Member,

I am writing this letter to request your assistance and cooperation in better preparing our community and our region to deal with disasters and hazards. The Federal Emergency Management Agency (FEMA) requires each community to develop a multi-hazard response plan. Entitled the Disaster Mitigation Act of 2000 (DMA), local jurisdictions are required to have plans in place to mitigate all reasonably known hazards, both natural and human-caused, including terrorism. Because our response to such events would be on a regional basis, the City of Davis has joined other local government agencies throughout Yolo County to prepare this federally mandated county-wide Hazard Mitigation Plan required by the DMA.

To meet the required FEMA timeline, government entities in Yolo County have jointly contracted with Dimensions Unlimited, Inc., represented primarily by Jan Rogala and Steve Williams, to help steward the plans completion. They may be contacting you for a variety of information necessary to develop a comprehensive and appropriate disaster mitigation plan for our communities here in Yolo County. I am requesting that if you are contacted by Ms. Rogala or Mr. Williams that you assist in their efforts to the fullest extent possible.

Additionally, we have a questionnaire on the city website to help us understand the community's concerns and needs about natural and human-caused hazards. It would be helpful if community members would fill out the questionnaire on the website. If you would like to participate and you do not have computer access, please contact the Davis Fire Department at 530-757-5684 or at 530 5th Street, Davis, CA 95616, and a copy will be provided to you.

Should you have any questions or concerns, please do not hesitate to contact Fire Chief Rose Conroy or Fire Business Manager Kathy Willhoff at the Fire Department.

Thank you for your cooperation and assistance.

Sincerely,

James Antonen
City Manager

This questionnaire is designed to help the Local Hazard Mitigation Plan Task Force identify the community's concerns about natural and human-caused hazards and to better understand community needs in reducing risk and loss from such hazards. The questionnaire should be completed by an adult, preferably the homeowner or the head of the household. Please take a few minutes to complete this questionnaire. All individual responses are strictly confidential and are for research purposes only.

1

Zip Code: Community Name or location: Internet Access?:

Own/Rent:

2

How concerned are you about the following disasters affecting your community? Please give each hazard a priority rating as follows:
0 = Not concerned; 1 = Somewhat concerned; 2 = Moderately concerned; 3 = Very concerned

Natural:

Floods

Levee Failure

High Winds

Dam Failure

Health Alert/Mass Disease

Landslide/Mudslides

Earthquake

Biological (plant or animal)

Human caused:

Transportation Loss

Fire

Telecommunications Failure

Radiological Incident

Special Events

Terrorism

Utilities Interruption

What is the most effective way for you to receive information about how to make your household and home safer from natural disasters? (Please check all that apply.)
Media:

- ☐ Newspaper stories
- ☐ Newspaper ads
- ☐ Television news
- ☐ Television ads
- ☐ Radio news
- ☐ Radio ads

Other methods:

- ☐ Schools
- ☐ Outdoor advertising (billboards etc)
- ☐ Books
- ☐ Mail
- ☐ Fire Department
- ☐ Internet
- ☐ Fact sheet/brochure
- ☐ Church/religious organization
- ☐ Employer
- ☐ Public meetings
- ☐ University or research institution
- ☐ Utility Bills

4

In the following list, please check those activities that you, or someone in your household, have done, plan to do in the near future, have not done, or are unable to do. (Please check one answer for each preparedness activity)

[ ] Attended meetings or received written information on natural disasters or emergency preparedness?

[ ] Talked with family members about what to do in case of a disaster or emergency?

[ ] Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?

Prepared a "Disaster Supply Kit" (extra food, water, medications, batteries, first aid items and other emergency supplies)?

In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?

5

Building a disaster supply kit, receiving First Aid training and developing a household/family emergency plan are all inexpensive activities that require a personal time commitment. How much time (per year) are you willing to spend on disaster/emergency preparedness?

OR Other:

6

Did you consider the possible occurrence of a natural hazard when you bought/moved into your current home?

7

Would you be willing to spend more money on a home that has features that make it more disaster resistant?

8

Do you carry flood insurance? If so what is the annual cost?

OR Cost is yes:

9

Would you be willing to make your home more resistant to natural disasters?

10

What nonstructural or structural modifications for earthquakes and floods have you made to your home? (Please check all that apply)

10a. Nonstructural

- ☐ Anchor bookcases- cabinets to wall
- ☐ Secure water heater to wall
- ☐ Install latches on drawers/cabinets
- ☐ Fit gas appliances with flexible connections

Others:

- ☐ None

10b. Structural

- ☐ Secure home to foundation
- ☐ Brace inside of cripple wall with sheathing

- ☐ Brace unreinforced chimney
- ☐ Brace unreinforced masonry and concrete walls and foundations
- ☐ None

11

Natural and human-caused disasters can have a significant impact on a community but planning for these events can help lessen the impact. The following statement will help us determine community priorities for planning for those hazards. Please tell us how important each one is to you.

[ ] Protecting private property

[ ] Protecting critical facilities (hospitals, transportation networks, fire stations)

[ ] Preventing development in hazard areas

[ ] Protecting natural environment

[ ] Protecting historical and cultural landmarks

[ ] Promoting cooperation among public agencies, citizens, non-profit organizations and businesses

[ ] Protecting and reducing damage to utilities

[ ] Strengthening emergency services response

12

Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters.

[ ] I support a regulatory approach to reducing risk.

[ ] I support a non-regulatory approach to reducing risk.

[ ] I support policies to prohibit development in areas subject to natural hazards.

[ ] I support the use of local tax dollars to reduce risks and losses from natural disasters.

[ ] I support protecting historical and cultural structures.

[ ] I would be willing to make my home more disaster-resistant.

[ ] I support steps to safeguard the local economy following a disaster event

[ ] I support improving the disaster preparedness of schools.

Comments:

Complete Survey

Submit Survey

City of West Sacramento Questionnaire

The City of West Sacramento

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- Get your Utility Billing Questions Answered
- Special Event Permits

Hazardous Mitigation Questionnaire

The Disaster Mitigation Act of 2000 (DMA) requires that we have plans in place to mitigate all reasonably known hazards, both natural and human-caused, including terrorism. If a Federal Emergency Management Agency (FEMA) approved mitigation plan is not in place by November 1, 2004, only "emergency" disaster assistance will be provided. No restorative assistance will be provided.

Because it is likely that our response to such events would be on a regional basis, the City of West Sacramento has joined other local government agencies throughout Yolo County to prepare a countywide Hazard Mitigation Plan to comply with this federal requirement. The Cities of West Sacramento, Woodland, Davis, and Winters along with the County of Yolo, YCCESA and Yolo County fire districts and other governmental agencies are working together to complete this important undertaking.

To meet the required timeline of November 1, 2004, these entities have jointly contracted with Dimensions Unlimited, Inc. to develop a Hazard Mitigation Plan. One of the required elements of plan preparation is public involvement. To facilitate that, a questionnaire has been developed by Dimensions Unlimited, Inc. and the steering committee to solicit input from the community. These questionnaires are being made available at Neighborhood Group meetings, at the reception areas on the first and third floors of City Hall and electronically on the City website.

Please access a questionnaire at one of the referenced sites, complete it and return it by August 1, 2004 to the City Manager's Office, 1110 West Capitol Avenue, third floor.

Should you have any questions or concerns, our representatives on the DMA 2000 Steering Committee are Larry von Kaenel (617-4500), Assistant to the City Manager, and Bill Summers (617-4600), Hazardous Materials Manager.

Thanks for your participation.

DMA Survey

http://www.ci.west-sacramento.ca.us/dma_survey.cfm 5/13/2004

City of West Sacramento Hazards Mitigation and Preparedness Questionnaire

This questionnaire is designed to help the Local Hazard Mitigation Plan Task Force identify the community's concerns about natural and human-caused hazards, to better understand community needs in reducing risk and loss from such hazards. The questionnaire should be completed by an adult, preferably the homeowner or the head of the household. Please, take a few minutes to complete this questionnaire. All individual responses are strictly confidential, and are for research purposes only.

1. Zip code:_____ Community Name or location: _____ Internet Access ? Y/N _____ Own/Rent _____

2. How concerned are you about the following disasters affecting your community? Please give each hazard a priority rating as follows:
0 = Not concerned; 1 = Somewhat concerned; 2 = Moderately concerned; 3 = Very concerned

Natural:
____ Floods
____ Levee Failure
____ High Winds
____ Dam Failure
____ Health Alert/Mass Disease
____ Landslide/Mudslides
____ Earthquake
____ Biological (plant or animal)

Human caused:
____ Transportation Loss
____ Fire
____ Telecommunications Failure
____ Radiological Incident
____ Special Events
____ Terrorism
____ Utilities Interruption

3 What is the most effective way for you to receive information about how to make your household and home safer from natural disasters? (***Please check all that apply.***)

Media:
- ☐ Newspaper stories
- ☐ Newspaper ads
- ☐ Television news
- ☐ Television ads
- ☐ Radio news
- ☐ Radio ads
- ☐ Books
- ☐ Mail
- ☐ Fire Department
- ☐ Internet
- ☐ Fact sheet/brochure
- ☐ Church/religious organization
- ☐ Employer
- ☐ Public meetings
- ☐ University or research institution
- ☐ Utility Bills

Other methods:
- ☐ Schools
- ☐ Outdoor advertising (billboards, etc)

4 In the following list, please check those activities that you, or someone in your household, ***have done***, ***plan to do*** in the near future, ***have not done***, or are ***unable to do***. (***Please check one answer for each preparedness activity***)

Have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meetings or received written information on natural disasters or emergency preparedness?	☐	☐	☐	☐
Talked with family members about what to do in case of a disaster or emergency?	☐	☐	☐	☐
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	☐	☐	☐	☐
Prepared a "Disaster Supply Kit" (extra food, water, medications, batteries, first aid items and other emergency supplies)?	☐	☐	☐	☐
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	☐	☐	☐	☐

5 Building a disaster supply kit, receiving First Aid training and developing a household/family emergency plan are all inexpensive activities that require a personal time commitment. How much time (per year) are you willing to spend on disaster/emergency preparedness? (***Check only one***)
☐ 0-1 hour ☐ 2-3 hours ☐ 4-7 hours ☐8-15 hours ☐16+ hours ☐ Other, please specify

6 Did you consider the possible occurrence of a natural hazard when you bought/moved into your current home?
☐ Yes ☐ No

7.Would you be willing to spend more money on a home that has features that make it more disaster resistant?
☐Yes ☐ No ☐ Don't know

8.Do you carry flood insurance? If so what is the annual cost?
☐Yes ☐ No _____

9 Would you be willing to make your home more resistant to natural disasters?
☐ Yes ☐ No

10. What nonstructural or structural modifications for earthquakes and floods have you made to your home? (***Please check all that apply***)

10a. Nonstructural
- ☐ Anchor bookcases, cabinets to wall
- ☐ Secure water heater to wall
- ☐ Install latches on drawers/cabinets
- ☐ Fit gas appliances with flexible connections
- ☐ Others (please explain)
- ☐ Others (please explain)
- ☐ None

10b. Structural
- ☐ Secure home to foundation
- ☐ Brace inside of cripple wall with sheathing
- ☐ Brace unreinforced chimney
- ☐ Brace unreinforced masonry and concrete walls and foundations
- ☐ None

11. Natural and human-caused disasters can have a significant impact on a community but planning for these events can help lessen the impact. The following statement will help us determine community priorities for planning for those hazards. Please tell us how important each one is to you.

Statement	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	☐	☐	☐	☐	☐
Protecting critical facilities (hospitals, transportation networks, fire stations)	☐	☐	☐	☐	☐
Preventing development in hazard areas	☐	☐	☐	☐	☐
Protecting natural environment	☐	☐	☐	☐	☐
Protecting historical and cultural landmarks	☐	☐	☐	☐	☐
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	☐	☐	☐	☐	☐
Protecting and reducing damage to utilities	☐	☐	☐	☐	☐
Strengthening emergency services (police, fire, ambulance)	☐	☐	☐	☐	☐

12. Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters.

Community-wide Strategies	Agree	Neutral	Disagree	Not Sure
I support a regulatory approach to reducing risk.	☐	☐	☐	☐
I support a non-regulatory approach to reducing risk.	☐	☐	☐	☐
I support policies to prohibit development in areas subject to natural hazards.	☐	☐	☐	☐
I support the use of local tax dollars to reduce risks and losses from natural disasters.	☐	☐	☐	☐
I support protecting historical and cultural structures.	☐	☐	☐	☐
I would be willing to make my home more disaster-resistant.	☐	☐	☐	☐
I support steps to safeguard the local economy following a disaster event	☐	☐	☐	☐
I support improving the disaster preparedness of schools.	☐	☐	☐	☐

Please return completed survey by August 1, 2004 to: City Manager's Office, 1110 West Capitol Ave, West Sacramento, CA 95691

THANK YOU VERY MUCH FOR PROVIDING THIS INFORMATION

City of Winters Questionnaire

City of Winters Hazards Mitigation and Preparedness Questionnaire

This questionnaire is designed to help the Local Hazard Mitigation Plan Task Force identify the community's concerns about natural and human-caused hazards, to better understand community needs in reducing risk and loss from such hazards. The questionnaire should be completed by an adult, preferably the homeowner or the head of the household. Please, take a few minutes to complete this questionnaire. All individual responses are strictly confidential, and are for research purposes only.

1. Zip code:_____ Community Name or location: _____ Internet Access ? Y/N _____ Own/Rent _____

2. How concerned are you about the following disasters affecting your community? Please give each hazard a priority rating as follows: ***0 = Not concerned; 1 = Somewhat concerned; 2 = Moderately concerned; 3 = Very concerned***

Natural:

____ Floods
____ Levee Failure
____ High Winds
____ Dam Failure
____ Health Alert/Mass Disease
____ Landslide/Mudslides
____ Earthquake
____ Biological (plant or animal)

Human caused:

____ Transportation Loss
____ Fire
____ Telecommunications Failure
____ Radiological Incident
____ Special Events
____ Terrorism
____ Utilities Interruption

3 What is the most effective way for you to receive information about how to make your household and home safer from natural disasters? (***Please check all that apply.***)

Media:

- ☐ Newspaper stories
- ☐ Newspaper ads
- ☐ Television news
- ☐ Television ads
- ☐ Radio news
- ☐ Radio ads

Other methods:

- ☐ Schools
- ☐ Outdoor advertising (billboards, etc)
- ☐ Books
- ☐ Mail
- ☐ Fire Department
- ☐ Internet
- ☐ Fact sheet/brochure
- ☐ Church/religious organization
- ☐ Employer
- ☐ Public meetings
- ☐ University or research institution
- ☐ Utility Bills

4 In the following list, please check those activities that you, or someone in your household, ***have done***, ***plan to do*** in the near future, ***have not done***, or are ***unable to do***. (***Please check one answer for each preparedness activity***)

Have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meetings or received written information on natural disasters or emergency preparedness?	☐	☐	☐	☐
Talked with family members about what to do in case of a disaster or emergency?	☐	☐	☐	☐
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	☐	☐	☐	☐
Prepared a "Disaster Supply Kit" (extra food, water, medications, batteries, first aid items and other emergency supplies)?	☐	☐	☐	☐
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	☐	☐	☐	☐

5 Building a disaster supply kit, receiving First Aid training and developing a household/family emergency plan are all inexpensive activities that require a personal time commitment. How much time (per year) are you willing to spend on disaster/emergency preparedness? (***Check only one***)

☐ 0-1 hour ☐ 2-3 hours ☐ 4-7 hours ☐8-15 hours ☐16+ hours ☐ Other, please specify

6 Did you consider the possible occurrence of a natural hazard when you bought/moved into your current home?

☐ Yes ☐ No

7. Would you be willing to spend more money on a home that has features that make it more disaster resistant?

☐Yes ☐ No ☐ Don't know

8. Do you carry flood insurance? If so what is the annual cost?

☐Yes ☐ No _____

9 Would you be willing to make your home more resistant to natural disasters?

☐ Yes ☐ No

10. What nonstructural or structural modifications for earthquakes and floods have you made to your home? (*Please check all that apply*)

10a. Nonstructural		*10b. Structural*	
☐	Anchor bookcases, cabinets to wall	☐	Secure home to foundation
☐	Secure water heater to wall	☐	Brace inside of cripple wall with sheathing
☐	Install latches on drawers/cabinets	☐	Brace unreinforced chimney
☐	Fit gas appliances with flexible connections and	☐	Brace unreinforced masonry and concrete walls foundations
☐	Others (please explain)	☐	None
☐	Others (please explain)		
☐	None		

11. Natural and human-caused disasters can have a significant impact on a community but planning for these events can help lessen the impact. The following statement will help us determine community priorities for planning for those hazards. Please tell us how important each one is to you.

Statement	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	☐	☐	☐	☐	☐
Protecting critical facilities (hospitals, transportation networks, fire stations)	☐	☐	☐	☐	☐
Preventing development in hazard areas	☐	☐	☐	☐	☐
Protecting natural environment	☐	☐	☐	☐	☐
Protecting historical and cultural landmarks	☐	☐	☐	☐	☐
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	☐	☐	☐	☐	☐
Protecting and reducing damage to utilities	☐	☐	☐	☐	☐
Strengthening emergency services (police, fire, ambulance)	☐	☐	☐	☐	☐

12. Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters.

Community-wide Strategies	Agree	Neutral	Disagree	Not Sure
I support a regulatory approach to reducing risk.	☐	☐	☐	☐
I support a non-regulatory approach to reducing risk.	☐	☐	☐	☐
I support policies to prohibit development in areas subject to natural hazards.	☐	☐	☐	☐
I support the use of local tax dollars to reduce risks and losses from natural disasters.	☐	☐	☐	☐
I support protecting historical and cultural structures.	☐	☐	☐	☐
I would be willing to make my home more disaster-resistant.	☐	☐	☐	☐
I support steps to safeguard the local economy following a disaster event	☐	☐	☐	☐
I support improving the disaster preparedness of schools.	☐	☐	☐	☐

THANK YOU VERY MUCH FOR PROVIDING THIS INFORMATION

City of Woodland Questionnaire

City of Woodland Hazards Mitigation and Preparedness Questionnaire

This questionnaire is designed to help the Local Hazard Mitigation Plan Task Force identify the community's concerns about natural and human-caused hazards, to better understand community needs in reducing risk and loss from such hazards. The questionnaire should be completed by an adult, preferably the homeowner or the head of the household. Please, take a few minutes to complete this questionnaire. All individual responses are strictly confidential, and are for research purposes only.

1. Zip code:_____ Community Name or location: _____ Internet Access ? Y/N _____ Own/Rent _____

2. How concerned are you about the following disasters affecting your community? Please give each hazard a priority rating as follows: ***0 = Not concerned; 1 = Somewhat concerned; 2 = Moderately concerned; 3 = Very concerned***

Natural:

____ Floods
____ Levee Failure
____ High Winds
____ Dam Failure
____ Health Alert/Mass Disease
____ Landslide/Mudslides
____ Earthquake
____ Biological (plant or animal)

Human caused:

____ Transportation Loss
____ Fire
____ Telecommunications Failure
____ Radiological Incident
____ Special Events
____ Terrorism
____ Utilities Interruption

3 What is the most effective way for you to receive information about how to make your household and home safer from natural disasters? (***Please check all that apply.***)

Media:

- ☐ Newspaper stories
- ☐ Newspaper ads
- ☐ Television news
- ☐ Television ads
- ☐ Radio news
- ☐ Radio ads

Other methods:

- ☐ Schools
- ☐ Outdoor advertising (billboards, etc)
- ☐ Books
- ☐ Mail
- ☐ Fire Department
- ☐ Internet
- ☐ Fact sheet/brochure
- ☐ Church/religious organization
- ☐ Employer
- ☐ Public meetings
- ☐ University or research institution
- ☐ Utility Bills

4 In the following list, please check those activities that you, or someone in your household, ***have done***, ***plan to do*** in the near future, ***have not done***, or are ***unable to do***. (***Please check one answer for each preparedness activity***)

Have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meetings or received written information on natural disasters or emergency preparedness?	☐	☐	☐	☐
Talked with family members about what to do in case of a disaster or emergency?	☐	☐	☐	☐
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	☐	☐	☐	☐
Prepared a "Disaster Supply Kit" (extra food, water, medications, batteries, first aid items and other emergency supplies)?	☐	☐	☐	☐
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	☐	☐	☐	☐

5 Building a disaster supply kit, receiving First Aid training and developing a household/family emergency plan are all inexpensive activities that require a personal time commitment. How much time (per year) are you willing to spend on disaster/emergency preparedness? (***Check only one***)

☐ 0-1 hour ☐ 2-3 hours ☐ 4-7 hours ☐8-15 hours ☐16+ hours ☐ Other, please specify

6 Did you consider the possible occurrence of a natural hazard when you bought/moved into your current home?

☐ Yes ☐ No

7. Would you be willing to spend more money on a home that has features that make it more disaster resistant?

☐Yes ☐ No ☐ Don't know

8. Do you carry flood insurance? If so what is the annual cost?

☐Yes ☐ No _____

9 Would you be willing to make your home more resistant to natural disasters?

☐ Yes ☐ No

10. What nonstructural or structural modifications for earthquakes and floods have you made to your home? (***Please check all that apply***)

10a. Nonstructural

☐ Anchor bookcases, cabinets to wall
☐ Secure water heater to wall
☐ Install latches on drawers/cabinets
☐ Fit gas appliances with flexible connections and
☐ Others (please explain)
☐ Others (please explain)
☐ None

10b. Structural

☐ Secure home to foundation
☐ Brace inside of cripple wall with sheathing
☐ Brace unreinforced chimney
☐ Brace unreinforced masonry and concrete walls foundations
☐ None

11. Natural and human-caused disasters can have a significant impact on a community but planning for these events can help lessen the impact. The following statement will help us determine community priorities for planning for those hazards. Please tell us how important each one is to you.

Statement	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	☐	☐	☐	☐	☐
Protecting critical facilities (hospitals, transportation networks, fire stations)	☐	☐	☐	☐	☐
Preventing development in hazard areas	☐	☐	☐	☐	☐
Protecting natural environment	☐	☐	☐	☐	☐
Protecting historical and cultural landmarks	☐	☐	☐	☐	☐
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	☐	☐	☐	☐	☐
Protecting and reducing damage to utilities	☐	☐	☐	☐	☐
Strengthening emergency services (police, fire, ambulance)	☐	☐	☐	☐	☐

12. Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters.

Community-wide Strategies	Agree	Neutral	Disagree	Not Sure
I support a regulatory approach to reducing risk.	☐	☐	☐	☐
I support a non-regulatory approach to reducing risk.	☐	☐	☐	☐
I support policies to prohibit development in areas subject to natural hazards.	☐	☐	☐	☐
I support the use of local tax dollars to reduce risks and losses from natural disasters.	☐	☐	☐	☐
I support protecting historical and cultural structures.	☐	☐	☐	☐
I would be willing to make my home more disaster-resistant.	☐	☐	☐	☐
I support steps to safeguard the local economy following a disaster event	☐	☐	☐	☐
I support improving the disaster preparedness of schools.	☐	☐	☐	☐

THANK YOU VERY MUCH FOR PROVIDING THIS INFORMATION

SECTION TWO: Process

Hazard Vulnerability Analysis

Hazard Mitigation Steering Committee Hazard Rating

These Ratings, when applied to a risk by the committee, do not indicate that hazard events will or will not occur in the Yolo Operational Area; however, should the hazard event occur, that event will have the potential magnitude to go beyond Yolo Operational Area available resources and ability to respond.

- High Risk Hazard: Has most likely occurred in the past and is likely to occur in the future. Of substantial magnitude, loss and financial impact to the Yolo Operational Area to be considered beyond the Operational Area's available resources ability to respond and declared a disaster event.

- Moderate Risk Hazard: Has most likely occurred in the past and/or is likely to occur in the future. Of a moderate magnitude, which may or may not be considered beyond the Yolo Operational Area's available resources and ability to respond and declared a disaster event.

- Low Risk Hazard: Very low occurrence rating and/or not likely to cause major damage to lives or property. Will not be likely to exceed the Yolo Operational Area's available resources or ability to respond.

- No Substantial Risk Hazard: Event would be considered a local emergency incident within the jurisdiction's response capability and needing no additional resources to respond.

The hazard analysis rating to each of the identified hazards has been determined by application of the following criteria:

These hazard effects were considered to be of significant consideration by the Hazard Mitigation Steering Committee when prioritizing the identified risks and potential hazards for Yolo Operational Area.

Magnitude

Magnitude refers to the physical and economic greatness of the event

Factors to consider

1. Size of event

2. Threat to life

3. Threat to economic viability

4. Threat to property

    - Individual

- Public Sector
- Private Sector
- Business and Manufacturing
- Tourism

Duration

Duration refers to the length of time the disaster and the effects of the disaster act upon the Yolo Operational Area and its citizens. Some disaster incidents have far reaching impact beyond the actual event occurrence such as the September 11, 2001 event.

Factors to consider:

1. Length physical duration during emergency phase
2. Length of threat to life and property
3. Length of physical duration during recovery phase
4. Length of time effecting individual citizens and community recovery
5. Length of time effecting economic recovery, tax base, business and manufacturing recovery, tourism, threat to tax base and threat to employment

Distribution

Distribution of the event refers to the depth of the effects among all sectors of the community and State, including the geographic area as well as distribution of damage and recovery of the economy, health and welfare as well as the State/community infrastructure.

Factors to consider:

1. How wide spread across the county and state are the effects of the disaster?
2. Are all sectors of the community affected equally or disproportionately?
3. How will the distribution of the effects prolong recovery from the disaster event?

Area Affected

Area affected refers to how much area is physically threatened and potentially impaired by a disaster risk.

Factors to Consider:

1. Geographic area affected by primary event
2. Geographic, physical, and economic areas affected by primary risk and the potential secondary effects

Frequency

The frequency of the risk refers to the historic and predicted rate of recurrence of a risk caused event (generally expressed in years, such as the 100 year flood).

History of disasters in Yolo County are listed in the table at the end of this section.

Degree of Vulnerability

The degree of vulnerability refers to how susceptible the population, community infrastructure and state resources are to the effects of the risk.

Factors to Consider:

1. History of the impact of similar events
2. Mitigation steps taken to lessen impact
3. Community and State preparedness to respond to and recover from the event

County and Community Priorities

A county and community priority refers to the importance placed on a particular risk by the citizens and their elected officials.

Factors to consider:

1. Long term economic impact on portions of the State or community
2. Willingness to prepare for and respond to a particular risk
3. More widespread concerns over a particular risk than other risks
4. Cultural significance of the threat associated to a risk
5. Potential for long term community or cultural disruption presented by the hazard

Instructions for Hazard Mitigation Rating Form

Give each hazard priority risk category listed as a rating from 0 to 3; 0 = no risk, 3 meaning a high risk.

0 = No hazard risk in accordance with the definitions for hazard prioritization on page 4 through 6 of this form.

1 = Low Risk in accordance with the hazard prioritization definitions on pages 4 through 6 of this form.

2 = Moderate Risk in accordance with the hazard definitions on pages 4 through 6 of this form.

3 = High Risk in accordance with the hazard risk definitions on pages 4 though 6 of this form.

Total the numbers horizontally for each hazard category. The highest possible score for a hazard is 24 the lowest potential score is 0.

After the completion of the matrix, the committee will assign the numerical values for the 4 categories of risk; 1-highest priority risks, 2-moderate priority risks, 3-low risk priority risks and 0-no risk rating values for prioritization.

Examples: a score of 18 to 24 could be considered high priority risk

10 to 17 could be considered moderate priority risk

1 to 9 could be considered low priority risk

The table on the next page was a tool used by the committee members to rate the hazards that affect their jurisdiction. The Steering Committee then met and came to a consensus of what the hazard rates should be for the Yolo County Operation Area.

Hazard Rating Form

	Magnitude	Duration	Distribution	Area Affected	Frequency	Probability	Degree of Vulnerability	Community Priority	Value
Aviation Disasters									
Avalanches									
Civil Disorders									
Drought									
Earthquake									
Fires/Wildland and Urban Interface									
Fissures and Sinkholes									
Floods									
Hazardous Materials									
Landslides									
Large Venue Fires									
Severe Storms/Wind, Tornado, Ice, Snow, Dust and Hail									
Subsidence									
Swelling and Collapsing Soils									
Volcanic Eruptions									
Biological/Health, i.e. Small Pox, Hoof & Mouth Disease									
Dam Failure									
Data/Telecommunications									
Economic Disruption									
Mine Safety Issue									
Radiological Incidences a) High Level b) Low Level c) Transuranic Nuclear waste									
Transportation Accident Incidents, Pipelines									
Utility Loss									
Water, Wastewater Disruption									
WMD/Terrorism									

Yolo County Disasters Since 1950 (State of California Hazard Mitigation Plan, 7/2004)

Hazard Type	Disaster Name	Disaster #	Year	Counties and Cities Declared	State Declaration	Federal Declaration	# of Deaths	# of Injuries	Cost of Damage
Flood	Floods	OCD 50-01	1950	Statewide	11/21/50	Not declared	9		$32,183,000
Flood	Floods	DR-47	1955	Statewide	12/22/55	12/23/55	74		$200,000,000
Severe Storm, Economic	Unseasonal and Heavy Rainfall	N/A	1957	Cherry producing areas of Northern California	5/20/57	Not declared		2	$6,000,000
Flood	Storm & Flood Damage	CDO 58-03	1958	Northern California (Southern boundaries of Santa Cruz, Santa Clara, Stanislaus, Tuolumne, Alpine counties to the Oregon border)	2/26/58	Not declared			Not available
Flood	Storm & Flood Damage	N/A	1958	Statewide	4/2/58	82	13		$24,000,000
Flood	Flood and Rainstorm	Unknown	1963	Alpine, Nevada, Placer, Plumas, Sierra, Amador, Colusa, El Dorado, Glenn, Lake, Lassen, Tehama, Santa Clara, Santa Cruz, Siskiyou, Yolo, Tulare, Mono, Trinity, Yuba	2/7/63, 2/26/63, 2/29/63, & 4/22/63	145 (2/25/63)			Not available
Flood	1964 Late Winter Storms	Unknown	1964	Del Norte, Humboldt, Shasta, Mendocino, Colusa, Glenn, Lassen, Plumas, Sierra, Siskiyou, Sonoma, Sutter, Tehama, Trinity, Amador, Butte, El Dorado, Modoc, Nevada, Placer, Yuba, Alpine, Lake, Sacramento, Yolo, Marin	12/22/64, 12/23/64, 12/28/64, 1/5/65, & 1/1/65	12/29/64			$213,149,000

Hazard Type	Disaster Name	Disaster #	Year	Counties and Cities Declared	State Declaration	Federal Declaration	# of Deaths	# of Injuries	Cost of Damage
Flood	1969 Storms	Unknown	1969	Los Angeles, San Luis Obispo, Fresno, Inyo, Riverside, San Bernardino, Santa Barbara, Tulare, Ventura, Amador, El Dorado, Kern, Kings, Madera, Modoc, Mono, Monterey, Orange, Placer, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Tuolumne, Mariposa, Merced, Calaveras, San Benito, Sierra, Contra Costa, Humboldt, Mendocino, Sonoma, Plumas, Tehama, Yuba, Butte, Marin, Yolo	1/23/69, 1/25,69, 1/28/69, 1/29/69, 2/8/69, 2/10/69, 2/16/69, 3/12/69	1/26/69	47	161	$300,000,000
Drought	Drought	N/A	1976	Alpine, Calaveras, Colusa, Fresno, Glenn, Madera, Merced, San Diego, San Joaquin, Solano, Stanislaus, Sutter, Tuolumne, Alameda, Butte, Contra Costa, Kings, Los Angeles, Riverside, San Luis Obispo, Tulare, Yolo, Amador, Monterey, Napa, Nevada, San Benito, San Bernadino	2/9/76, 2/13,76, 2/24/76, 3/26/76, 7/6/76	Not declared			$2,664,000,000
Flood, Severe Storm	1982-83 Winter Storms	DR-677	1982	Contra Costa, San Joaquin, Sacramento, Marin, San Mateo, Los Angeles, San Diego, Alameda, Orange, San Benito, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Sonoma, Ventura, Trinity, Colusa, Lake, Mendocino, Monterey, San Luis Obispo, Solano, Yolo, Butte, Glenn, Kern, Kings, San Bernardino, Sutter, Tehama, Merced, Del Norte, Fresno, madera, Napa, Placer, Riverside, Stanislaus, Tulare, Humboldt, Mariposa, Nevada, Yuba	1982, 1983	2/9/83	0	0	$523,617,032

Hazard Type	Disaster Name	Disaster #	Year	Counties and Cities Declared	State Declaration	Federal Declaration	# of Deaths	# of Injuries	Cost of Damage
Agricultural	Rains Causing Agricultural Losses	N/A	1982	Fresno, Madera, Merced, Monterey, Kern Tulare, Sacramento, San Joaquin, Solano, Stanislaus, Yolo	10/26/82	Not declared			$345,195,974
Flood	Winter Storms	Unknown	1982	Contra Costa, San Joaquin, Sacramento, Marin, San Mateo, Los Angeles, San Diego, Alameda, orange, San Benito, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Sonoma, Ventura, Trinity, Colusa, Lake Mendocino, Monterey, San Luis Obispo, Solano, Yolo, Butte, Glenn, Kern, Kings, San Bernardino, Sutter, Tehama, Merced, Del Norte, Fresno, Madera, Napa, Placer, Riverside, Stanislaus, Tulare, Humboldt, Mariposa, Nevada, Yuba	12/8/82-3/21/83	2/9/83			$523,617,032
Severe Storm	Storms	DR-758	1986	Humboldt, Napa, Sonoma, Glenn, Lake, Marin, Modoc, Sacramento, Santa Clara, Santa Cruz, Solano, Yuba, Alpine, Amador, Butte, Calaveras, Colusa, El Dorado, Lassen, Mendocino, Nevada, Placer, Plumas, San Joaquin, Sierra, Sutter, Tehama, Tuolumne, Yolo, Fresno, Madera, San Mateo, Alameda, Contra Costa, Del Norte, Trinity, Mono, San Benito, Shasta	2/18-86 - 3/12/86	2/18/86	13		$407,538,904

Hazard Type	Disaster Name	Disaster #	Year	Counties and Cities Declared	State Declaration	Federal Declaration	# of Deaths	# of Injuries	Cost of Damage
Freeze	Freeze	DR-894	1990	Santa Cruz, Fresno, Glenn, imperial, Kern, Mendocino, Monterey, Riverside, San Benito, San Bernardino, San Diego, San Mateo, Santa Barbara, Santa Clara, Solano, Sonoma, Tulare, Ventura, Alameda, Butte, Colusa, Los Angeles, Madera, Marin, Merced, Napa, San Joaquin, San Luis Obispo, Sutter, Yolo, Yuba, Stanislaus, Tehama	12/19/90-1/18/91	2/11/91			$856,329,675
Severe Storm	Severe Winter Storms	DR-1044	1995	Los Angeles, Orange, Humboldt, Lake , Sonoma, Butte, Colusa, Contra Costa, Del Norte, Glenn, Kern, Lassen, Mendocino, Modoc, Monterey, Napa, placer, Plumas, San Luis Obispo, Santa Barbara, Santa Clara, Santa Cruz, Tehama, Ventura, Yolo, Yuba, Alpine, Amador, Nevada, Riverside, Sacramento, San Bernardino, San Mateo, Shasta, Sutter, Trinity, San Diego, Alameda, Marin, Fresno, Kings, El Dorado, Madera, Solano, Siskiyou	1/6/95 - 3/14/95	1/13/95	11		$741,400,000
Severe Storm, Flood	Late Winter Storms	DR-1046	1995	All counties except Del Norte		1/10/95	17		$1,100,000,000

Hazard Type	Disaster Name	Disaster #	Year	Counties and Cities Declared	State Declaration	Federal Declaration	# of Deaths	# of Injuries	Cost of Damage
Flood	El Nino		1998	Alameda, Amador, Butte, Calaveras, Colusa, Contra Costa, Fresno, Glenn Humboldt, Kern, Kings, Lake, Los Angeles, Marin, Mendocino, Merced, Monterey, Napa, Orange, Riverside, Sacramento, San Benito, San Bernardino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Ventura, Yolo, Yuba			17		$550,000,000

Matrix Prioritization of Hazards Results

The results of the matrix are shown below. The risks falling into each of the priority ratings are considered to be of equal significance. Some of the risks were more specifically defined (as opposed to the rating form) to meet the needs of the Operational Area.

High Risk Priority

- Floods
- Levee Failure
- Dam Failure
- WMD & Terrorism
- Fires
- Utility Loss
- Data & Telecommunications Loss
- Transportation & Pipeline Accident
- Biological (Plant/Animal) Emergencies
- Earthquake

Moderate Risk Priority

- Severe Weather
- Water & Waste Water Disruption
- Biological & Health Emergencies
- Economic Disruption
- Special Events
- Transportation Loss

Low Risk Priority

- Radiological Emergencies
- Explosions
- Mining Accidents
- Sink Holes
- Volcanic Activity

Natural Hazards

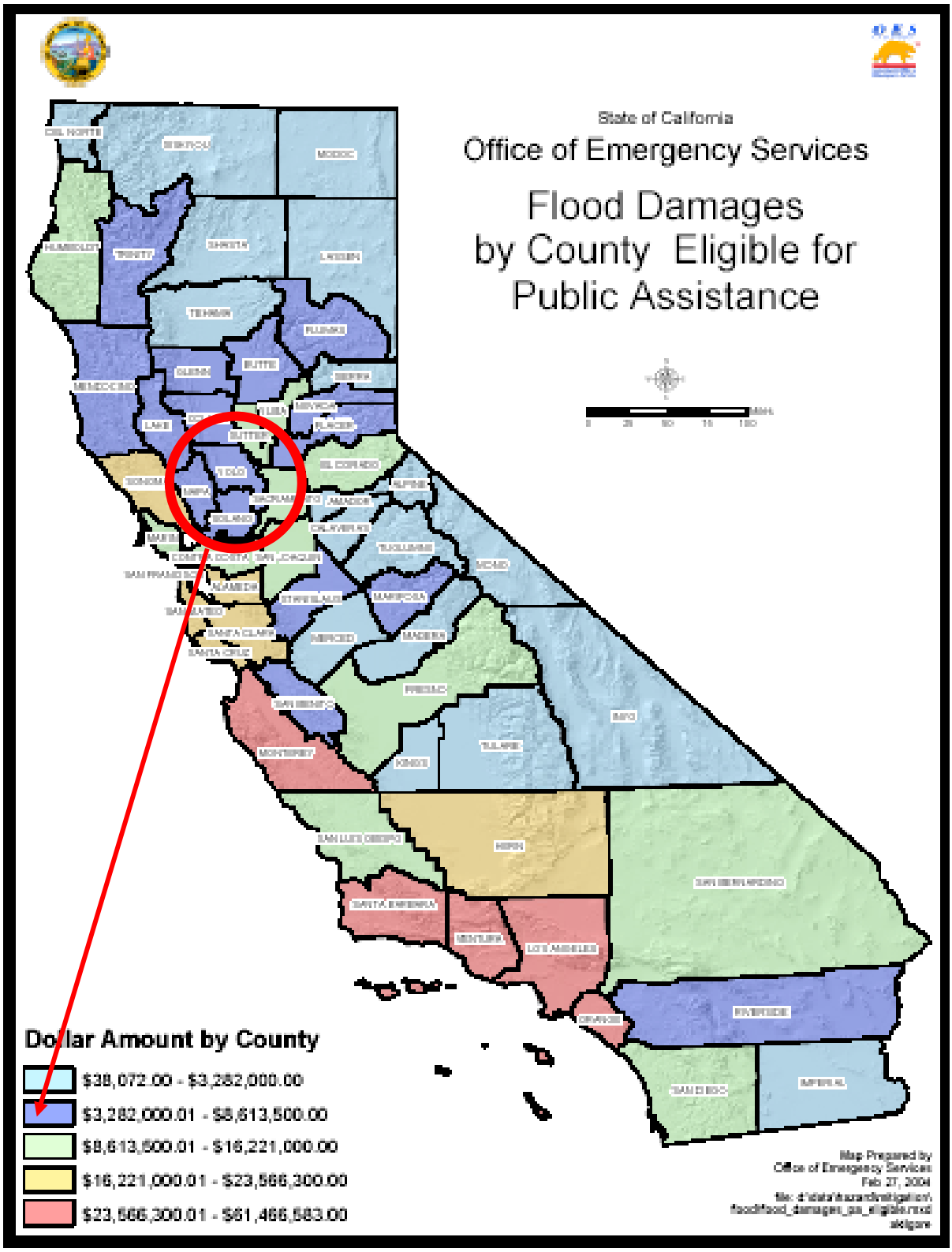
Flood

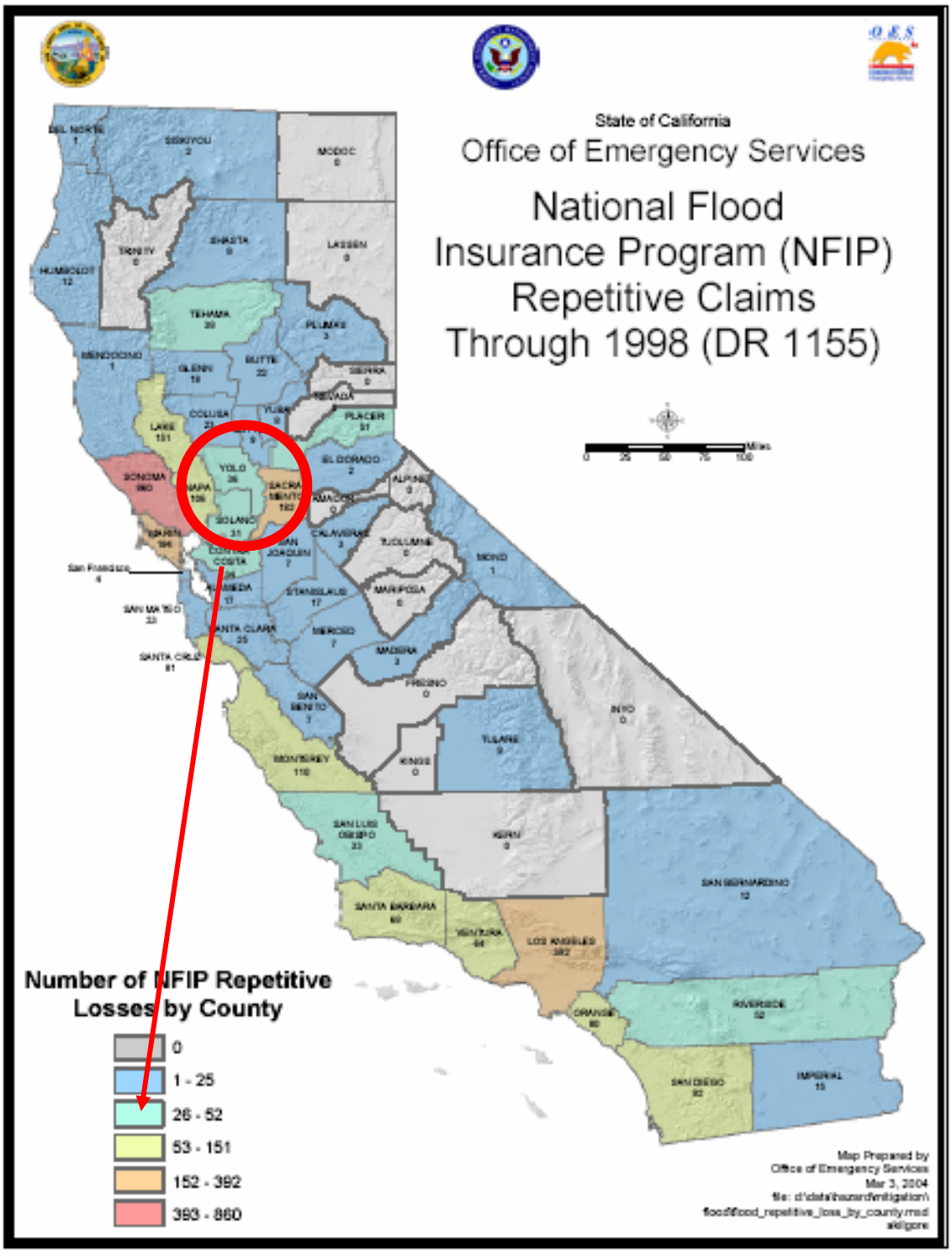
Flood was rated as a HIGH RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

Floods can be defined as being a temporary inundation of land from excessive rainfall and/or rapid snow melt. Unusually heavy rainfall in the State of California can be influenced by both frontal systems out of the Northern Pacific Ocean and tropical storms coming from the South.

Flooding is the most common hazard occurring in the State of California. Heavy rains and rains associated with severe thunderstorms cause local flooding. The flooding that occurs in the State of California may be divided into three specifically named types:

1. Channel Flooding.
    - Lateral channel migration during major flows, which results in abrupt changes in the horizontal alignment or location of the channel;
    - Localized channel bed and bank-scour; and
    - Over-bank flow inundation.
2. Sheet Flooding:
    - Characteristics include channels that have minimal capacity, water flowing across broad areas at relatively shallow depths, and gently sloping terrain. Damage is caused by flooding, localized scour, and deposition of extensive amounts of sediments and debris typically associated with sheet flow. If the depth of the water is high enough, water may flow through residential areas and structures.
    - One of the most dangerous aspects of sheet flooding is that the opportunity for evacuation through roadway access is lost.
3. Alluvial Fan and Distributary Flooding:
    - Characterized by dynamic flow across steep or moderately-sloped terrain with ill-defined channels, such that flow paths are unpredictable and flow splits and breakouts, as well as convergent flow paths, are typical.
    - Like sheet flow, flow depths are relatively shallow. Large quantities of sediment and debris are carried by floodwaters.
    - Damage is due to inundation, changing flow paths, localized scour and sediment, and debris deposition.


State of California
Office of Emergency Services
Flood Damages by County Eligible for Public Assistance
Dollar Amount by County
$38,072.00 - $3,282,000.00
$3,282,000.01 - $8,613,500.00
$8,613,500.01 - $16,221,000.00
$16,221,000.01 - $23,566,300.00
$23,566,300.01 - $61,466,583.00
Map Prepared by
Office of Emergency Services
Feb 27, 2004


State of California
Office of Emergency Services
National Flood Insurance Program (NFIP) Repetitive Claims Through 1998 (DR 1155)
Number of NFIP Repetitive Losses by County
0
1 - 25
26 - 52
53 - 151
152 - 392
393 - 860
Map Prepared by
Office of Emergency Services
Mar 3, 2004

Flood Loss in Yolo County

Repetitive Loss

Yolo County ranks 18th out of 36 Repetitive Loss Communities by Number of Claims according to FEMA records as of 6/30/2002. The following statistics are on record:

Total Losses - 73

Properties – 32

Building Payments - $844,916.23

Contents Payments - $171,854.21

Total Payments - $1,016,770.44

Public Assistance

Rank out of 59 Counties - 33

Number of Public Assistance Applicants – 343

Public Assistance Amount Eligible - $5,101,895

Percent of Total Public Assistance Eligible - .86%

Individual Assistance

Rank out of 59 Counties – 49

Number of Individual Assistance Damage Locations – 253

Percent of Total Statewide Individual Assistance Locations - .10%

Cache Creek Flooding

Flood flows are most likely to occur between November and April; no known floods have occurred between June and August. Large floods result from rainstorms. Due to the nature of the storms, floods often have multiple peak flows over a 4- to 5-day period. Large peaks result from cloudbursts within a regular storm.

Lower Cache Creek has a history of flooding. Twenty severe floods have occurred since 1900 in the Cache Creek basin. The most severe floods of recent years downstream from Clear Lake occurred in 1955,1956, 1958, 1964,1965, 1970, 1983, 1995, and 1997. In 1983, a levee failure near County Road (CR) 102 caused flooding in the area which is now Woodland's industrial area. The flood hazard evaluation conducted for this study also determined that a significant portion of the project area is subject to floods having a 1 in 100 chance of occurring in any given year. The primary purpose of this study is to identify economically feasible and environmentally sensitive methods to reduce flood-related damages to Woodland and adjacent areas. Without a flood damage reduction project, average annual flood damages to real property from overflows from Cache Creek are expected to be about $12.4 million, most of which would be in Woodland. Other adverse effects and losses would include the

potential for flood-related loss of life, contamination from sanitary sewage and hazardous materials, and the extended closure of the section of Interstate 5 (I-5) east and north of Woodland.

Significant Issues

The current flood protection system along the lower Cache Creek was designed to convey flood flows having a 1 in 10 chance of occurring in any given year with 3 feet of freeboard. Historically, the existing levee system has conveyed flood flows having an annual chance of occurrence of 1 in 20 by encroaching into the freeboard. Due to the limited conveyance capacity of the lower reach of Cache Creek, the Federal Emergency Management Agency (FEMA) has issued new flood insurance rate maps that show significant areas of Yolo County and Woodland are subject to floods having a 1 in 100 chance of occurring in any given year.

Factors other than limited channel capacity also affect flooding in the area. These include the I-5 embankment and the west levee of the Cache Creek Settling Basin. These features tend to divert portions of the easterly overflow from Cache Creek toward Woodland. Solving the flooding problems is not a simple matter of increasing the capacity of the existing system. Increasing the design flow of the channel and levee system without a corresponding increase in the flow area results in increased flow velocities. At some point, increased channel velocities require substantial rock slope protection measures (riprap) to protect banks and bridges against excessive scour. The rock slope protection measures are generally associated with significant environmental impacts. Construction of new levees, raising existing levees, and rock slope protection require environmental mitigation. The shaded riverine aquatic habitat along the creek and the abundant number of elderberry bushes along the creek bank (the habitat of the endangered valley elderberry longhorn beetle) make the creek area an environmentally sensitive area. Other significant environmental considerations include the presence of habitat of the following special-status species: giant garter snake, Swainson's hawk, bank swallow, northwestern pond turtle, central valley steelhead, and Chinook salmon.

Cache Creek Flood Impact on the City of Woodlland

Cache Creek and the Yolo Bypass will continue to be the primary flood hazards to the City of Woodland. The primary flood hazard within the project area would be from Cache Creek. The Corps enlarged and extended the existing constructed levees along both banks of Cache Creek in the 1950's. The design flow for the levees is 30,000 cfs, which has approximately a 1 in 10 chance of occurring in any given year. Historically, the levee system has passed flows up to 34,000 cfs, a 1 in 20 chance flow, without failures. Without a new project, larger flows would continue to flood agricultural lands and would likely flood the City of Woodland.

From the west of the City, the runoff area is small and does not pose a flood threat. From the south, Willow Slough floods towards the south; from the east, the Yolo Bypass would flood to a maximum elevation of 32 feet, which affects only a small portion of Woodland. Interior drainage and localized flooding is not expected to generate major flood damages.

Maintenance of the existing Cache Creek levee system is the responsibility of the Department of Water Resources (DWR) with the exception of the south levee west of Interstate 5, which is maintained by the County. By State law, operation and maintenance will continue to be the responsibility of DWR. Because the existing system was designed to reliably pass 1 in 10 chance flood flows, flood fighting and repair are expected to be done relatively frequently. Due to existing bank erosion and bank instability problems of the existing levee system, rehabilitation on the existing levee system would be necessary to maintain the current function of the system. Without the rehabilitation, flooding risk to agricultural land and the City of Woodland would likely increase.

Risk of flooding may affect the City's development plans. The City's General Plan policies outlined in the February 1996 General Plan seek to protect development from flood damage.

The applicable policies include the following:

8.B.1 "The City shall continue to implement flood plain zoning and undertake other actions required to comply with State flood plain requirements, and to maintain the City's eligibility under the Federal Flood Insurance Program."

8.B.2 "The City shall require evaluation of potential flood hazards prior to approval of development projects. The City shall require proponents of new development to submit accurate topographic and flow characteristics information. This will include depiction of the 100-year flood plain boundaries under fully-developed, pre- and post-project runoff conditions."

8.B.3 "The City shall not allow development in areas subject to deep flooding (i.e., over four feet deep) unless adequate mitigation is provided, to include project levees designed for a standard project flood or a minimum of 400-year protection, whichever is less."

8.B.4 "The City shall require flood-proofing of structures and outdoor storage areas for hazardous materials in areas subject to flooding. Hazardous materials and wastes shall be contained within flood-proofed structures or storage areas."

8.B.5 "The City shall prohibit the construction of facilities essential for emergencies and large public assembly in the 100-year flood plain, unless the structure and road access are free from flood inundation."

8.B.6. "The City shall continue to work closely with the U.S. Army Corps of Engineers, the Yolo County Resource Conservation District, the Federal Emergency Management Agency, the State Department of Water Resources, and the Yolo County Flood Control and Water Conservation District in defining existing and potential flood problem areas and solutions."

8.B.7. "The City shall recognize flood plains as a potential public resource to be managed and maintained for the public's benefit and, where possible, shall view flood waters as a resource to be used for waterfowl habitat, aquifer recharge, fishery enhancement, agricultural water supply, and other suitable uses."

The Corps' will continue to provide the area with varying levels of flood damage reduction from the Yolo Bypass. In addition, the Indian Valley Dam and Reservoir, located on the North Fork of Cache Creek, will continue providing some flood damage reduction to lands along Cache Creek using the 40,000 acre-feet allocated for flood damage reduction. The Indian Valley Dam and Reservoir provide a limited amount of flood damage reduction to the lower reaches of Cache Creek and regulates about 20 percent of the Cache Creek watershed area.

The lands to the east of Woodland could potentially be subject to deep flooding from overflows from the Willow Slough Bypass or the Yolo Bypass, depending on the particular flood event or levee failure and the associated volume of overflow. The deep flooding could occur as a result of water ponding against levees of the Yolo Bypass and the Willow Slough Bypass. The proposed document that outlines the

method of assessment for operation and maintenance of Reclamation District 2035 states those lands to the east of Woodland would be subject to 6.5 to 16 feet of inundation should the bypass levee fail.

Storm Drain Limitations in Woodland

System Configuration The City Storm Drain system collects water through gutters, ditches, and catch basins, and conveys that water generally from west to east, by gravity, through canals and 12 inch to 60 inch storm mains to the pump stations on East Main Street. From there it is pumped into a canal along the south side of the Cache Creek Settling Basin. From there it flows into the Yolo Bypass, Tule Canal, and the Sacramento River. There are several detention basins in various locations around the City, that assist in dealing with peak storm flows.

System Design: The storm drain system is not adequately sized for the flows that it must handle. In the older sections of town, particularly west of East Street, the capacity is generally less than required for a "two year" storm (meaning a storm that has one chance in two of occurring each year-or a 50% probability of occurring each year). When the capacity of the system is exceeded, localized street flooding occurs until 3-4 hours after the rainfall subsides and the streets are again able to drain. While it may appear that the catch basin grates are blocked, the system is just overloaded and the excess water is "stored" in the gutters and on the street. A citizens Blue Ribbon Committee, appointed by the City Council, studied the situation in 1988 and reported that the benefits of upgrading the system (at a cost in excess of $10 million) was not justified.

Putah Creek (Winters Area)

Substantial areas within Yolo County are subject to flooding. According to FEMA records, the majority of the County's creeks and shoreline areas lay within the 100-year flood plain (an area subject to flooding in a storm that is likely to occur according to averages based upon recorded measurements once every 100 years). The FEMA records are maintained as a means of determining flood insurance rates through the National Flood Insurance Program.

Generally, flooding within the Winters Area is a result of runoff due to periods of heavy rain. Runoff is water that can no longer be absorbed into saturated ground and follows a "downhill" route to gutters, ditches, streams, creeks, and rivers. During periods of heavy runoff, debris caught in the rush of water can interfere with outlets and culverts causing water to back-up at constricted areas. Hydraulic pressure can cause catastrophic damage to drain systems and the surrounding areas when their outlets become blocked. In level areas, once subterranean saturation occurs, water will accumulate and stand on the surface until evaporated or until an outlet is opened.

History

The Dry Creek / Putah Creek confluence area lies at the southern edge of the City of Winters about 2.4 miles below the Solano Diversion Dam. Urbanization has encroached on both channels, but much of the surrounding area is still under agricultural production, primarily orchards.

The Putah Creek watershed encompasses an area over 800 square miles, draining the mountainous region to the west of the City of Winters. The stream runs on through Davis and eventually into the Yolo Wildlife Area. Much of the channel from Winters to Davis has been mechanically channelized in the past century.

Historically, Putah Creek enjoyed a wide riparian area with frequent flooding, producing the rich valley soils now under agricultural production. In the mid 1800's, Winters was settled and the riparian overstory was cleared to allow for crops. A few years later, the town of Davisville (now Davis) was

founded along the railroad line. These settlements grew steadily and relied on diverted water from Putah Creek for domestic and agricultural uses.

Near the town of Davisville, Putah Creek channel was redirected in the 1870's into an irrigation ditch to the south of the former channel to protect the new settlements from flood damages. Over the past century, channelization has been accomplished in other reaches of Putah Creek as well.

Current Conditions

The result of efforts to remove the lush riparian vegetation, construct levees for flood control, channelize the stream into irrigation ditches, and construct bridges that cut off floodplain access has been a vertical adjustment of the stream channel. Putah Creek has incised into the soft alluvial deposits as result of the increased velocities and stress caused by human efforts to control the extent of flood flows. In places, this vertical incision is over 20 feet below historic elevations.

As a result of the change in streambed elevation, the tributaries are now in the process of adjusting to the new base elevation by headcutting upstream, due to the increased water surface slope as they reach the confluence with Putah Creek. This is precisely the scenario in evidence at the Dry Creek / Putah Creek confluence site. To a certain extent, the vertical incision has slowed in both Putah and Dry Creek, and the energy of flood forces is now more apparent in lateral erosion, as the channel works to establish a functional floodplain across the bottom of the deeply incised gully. On both streams, numerous efforts have been made to slow this lateral erosion to protect agricultural and domestic property.

The construction of the Solano Project that put the Monticello Dam and Solano Diversion in place in the late 1950's has altered the hydrologic regime of the channel and buffered the effect of many flood flows, perhaps preventing some of the more catastrophic effects of lateral erosion. However, during peak runoff events such as Jan.1, 1997, when capacity of Lake Berryessa was exceeded, full runoff release was made to the downstream channel of Putah Creek. This event would likely closely approximate the natural peak discharge prior to the dam construction. Releases of over 14,000 cfs have been recorded in March of 1983 (Solano County Water Agency Records).

Even though such peak discharge events may approximate historic levels, lesser events that actually define channel morphology and riparian condition do not approximate historic conditions. While the large storm events are dramatic and powerful, they occur so seldom that they do not define many of the channel attributes. The stream width, depth, sinuosity, and slope are controlled by far more frequent events that occur during most runoff seasons. The duration of such flows results in most of the work (movement of sediment) being performed at this level. Channel dimensions are thus controlled by the flow level at which most of the work is performed most of the time.

By controlling most peak runoff events at the Monticello Dam, the flow regime that defines channel dimensions, pattern, and slope has been altered and the channel responds accordingly to the new

circumstances. By careful survey measurements of current channel attributes and review of peak flow records, an approximation of the current channel forming volume can be made.

Rip Rap failure and subsequent road wash out (Putah Creek)

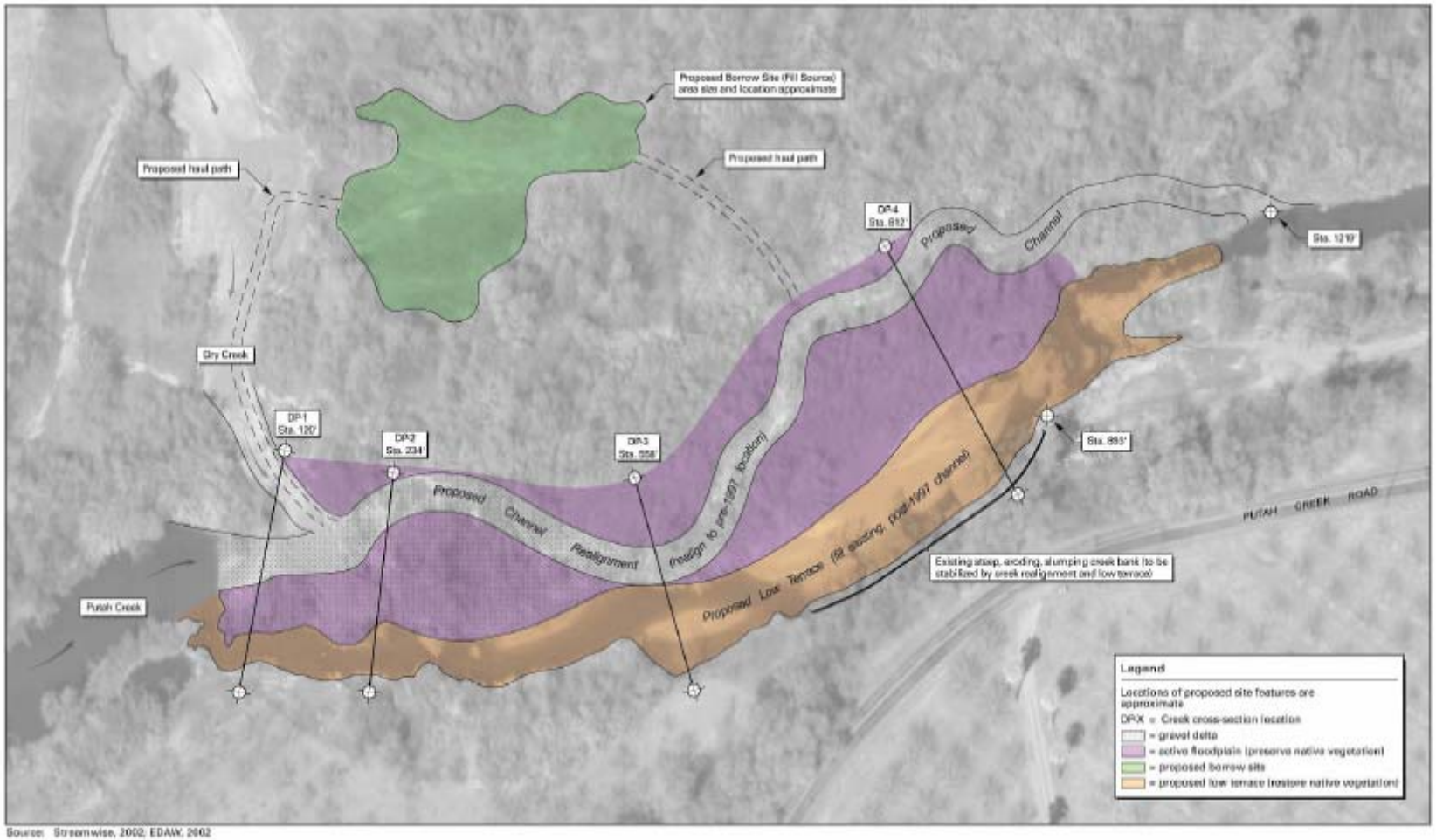
When a stream undergoes a change in climatic conditions or geologic change that alters drainage patterns, the channel responds to the new set of conditions by adjusting its dimensions, pattern and slope. Following major climatic changes these changes can erode entire valley floors and rebuild them at another elevation more in equilibrium with the new runoff regime. This natural process is greatly accelerated when man-made alterations are imposed on a stream channel such as Putah Creek.

While lateral migration of river meanders is a natural process by which alluvial valleys are formed, the lateral instability and erosion we witness in the bottom of the Dry and Putah Creek gullies is a response to an imposed set of conditions created by the lack of foresight on the part of our forefathers who worked feverishly to contain and control the forces of flood flows across the landscape. To be fair, those that channelized Putah Creek in the late 1800's could not have foreseen the degree of incision and habitat degradation that resulted from efforts to protect their property from flooding.

Today, we are aware of these consequences. Much of the land that has been protected from flood forces by the levees, dams, and irrigation canals is now being lost to lateral migration of the deeply incised channel (thereby increasing the chances of periodic flood events that affect residences and facilities in the flood path). Instead of occasional inundation and inconvenience of flood waters, much of the land adjacent to the channel is being transported downstream incrementally each season. Monticello and Solano Dams prevent passage of large-grained sediment to downstream reaches, so streambed scour from occasional floods is not replaced.

As mentioned in the section above, efforts to stabilize the steep banks have met with limited success. At best, such rip-rap or hardening measures tend to transfer the flow energy to downstream neighbors. More often, the hardened structure cause localized scour and subsequent failure.

"Dry Creek / Putah Creek Confluence Restoration Proposal", Prepared for: Lower Putah Creek Coordinating Committee, Solano County, California; January 3, 2003

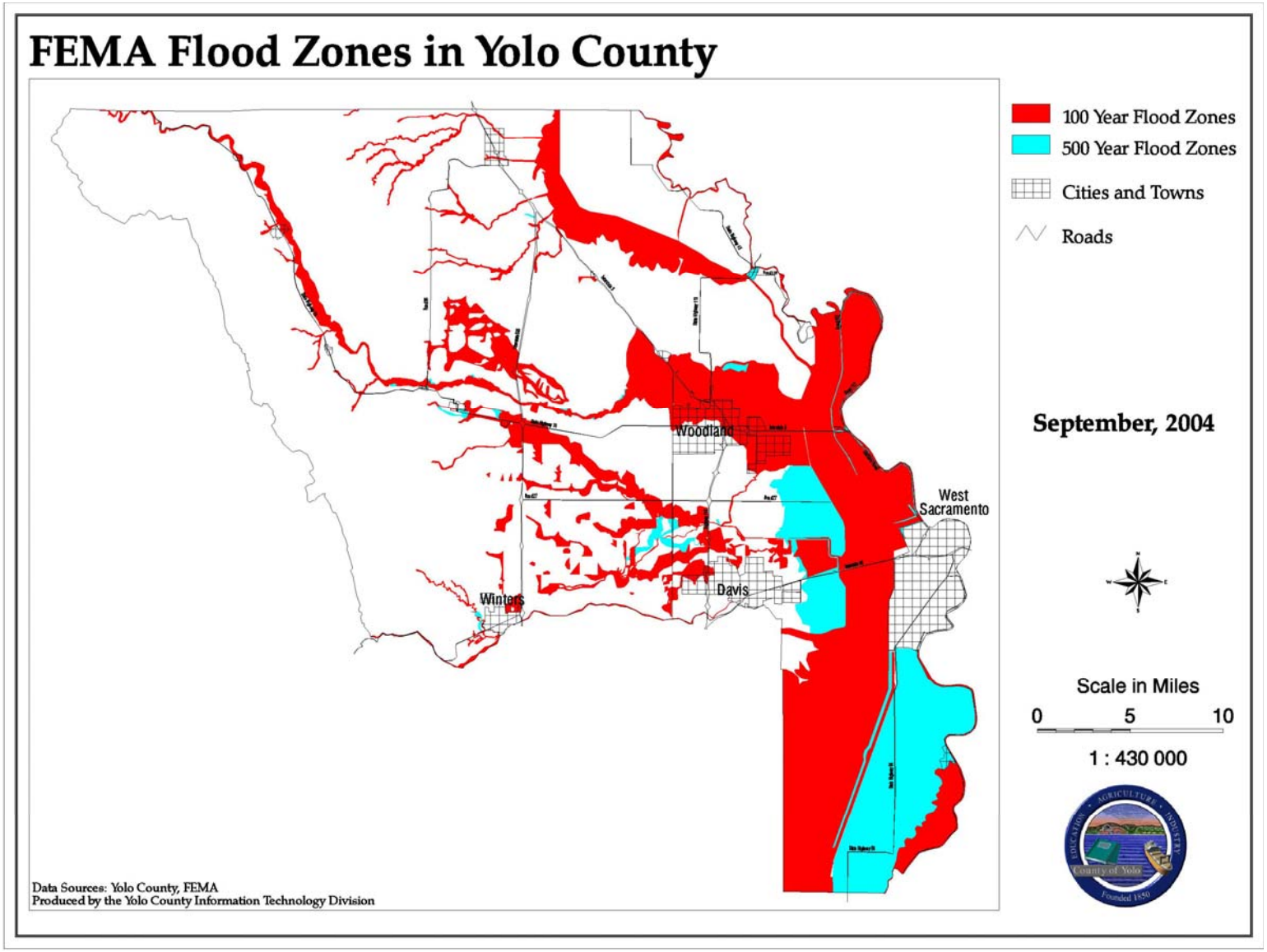


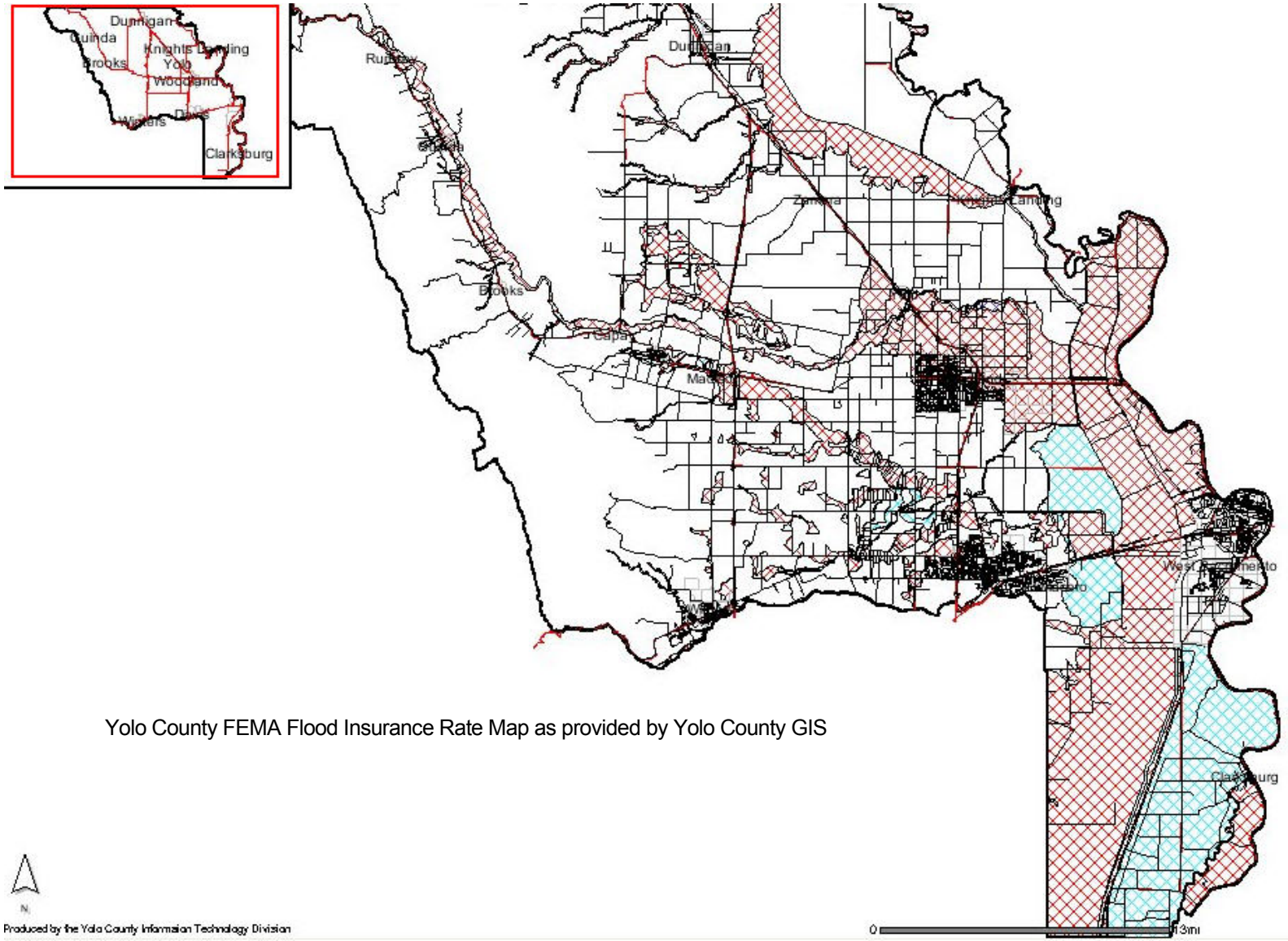
Source: Streamwise, 2002; EDAW, 2002

Dry Creek/Putah Creek Confluence Restoration and Bank Stabilization Concept

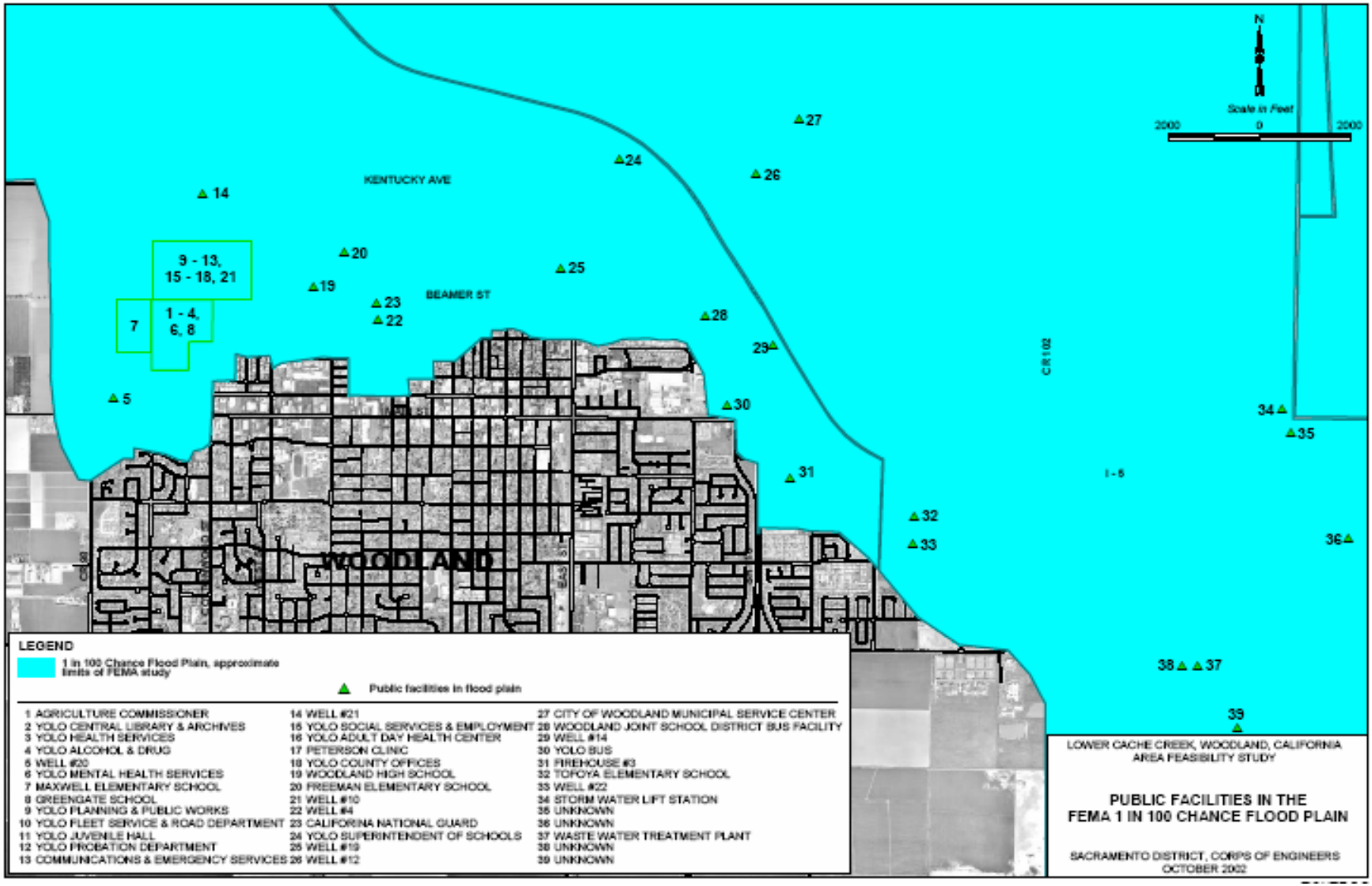
EXHIBIT 1

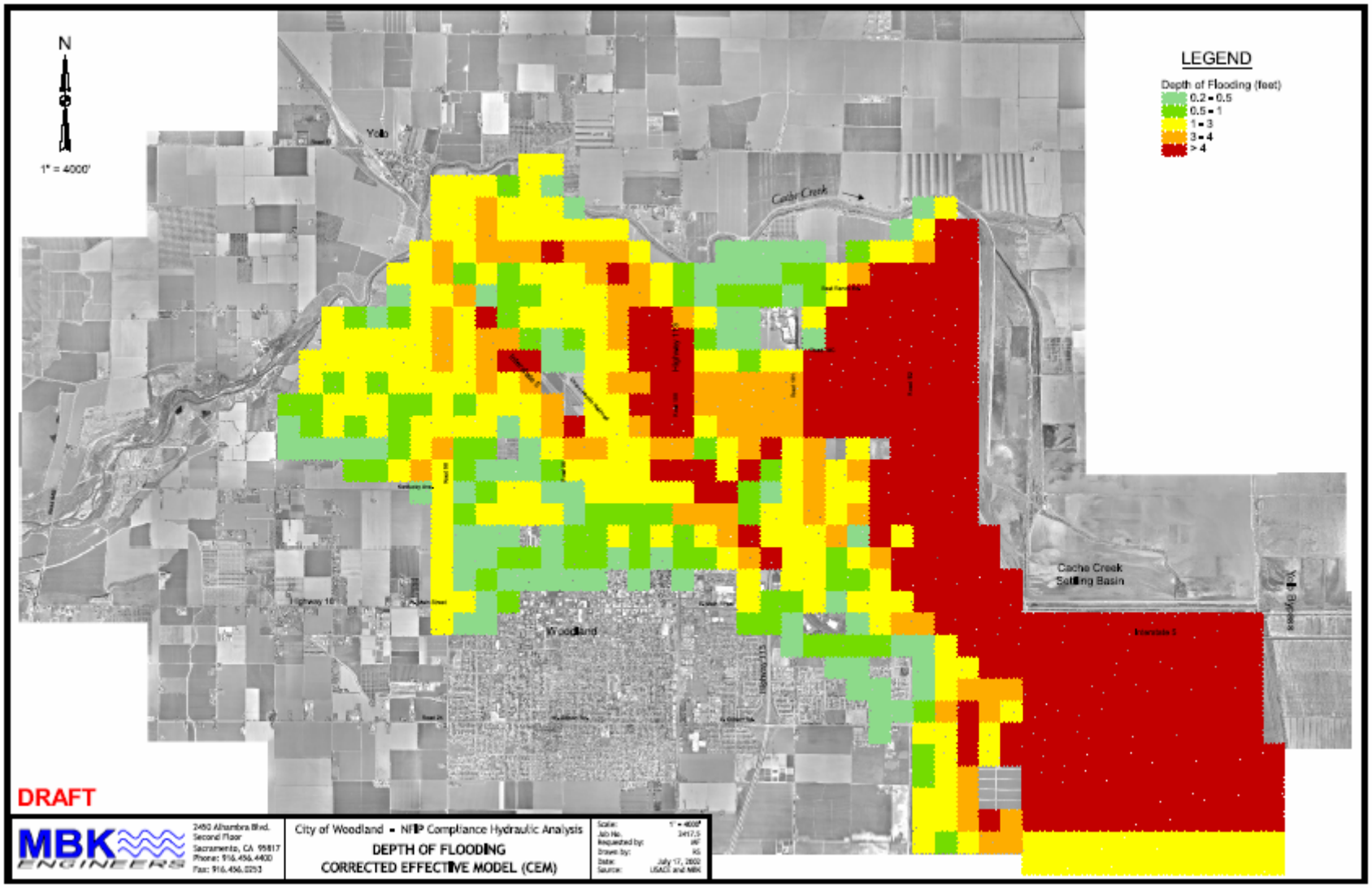
"Dry Creek / Putah Creek Confluence Restoration Proposal", Prepared for: Lower Putah Creek Coordinating Committee, Solano County, California; January 3, 2003


FEMA Flood Zones in Yolo County
100 Year Flood Zones
500 Year Flood Zones
Cities and Towns
Roads
September, 2004
Woodland
West Sacramento
Davis
Winters
Scale in Miles
0
5
10
1 : 430 000
Data Sources: Yolo County, FEMA
Produced by the Yolo County Information Technology Division



Yolo County FEMA Flood Insurance Rate Map as provided by Yolo County GIS


N
Scale in Feet
2000
0
2000
KENTUCKY AVE
BEAMER ST
WOODLAND
CR 102
I - 5
9 - 13, 15 - 18, 21
7
1 - 4, 6, 8
LEGEND
1 in 100 Chance Flood Plain, approximate limits of FEMA study
Public facilities in flood plain
1 AGRICULTURE COMMISSIONER
2 YOLO CENTRAL LIBRARY & ARCHIVES
3 YOLO HEALTH SERVICES
4 YOLO ALCOHOL & DRUG
5 WELL #20
6 YOLO MENTAL HEALTH SERVICES
7 MAXWELL ELEMENTARY SCHOOL
8 GREENGATE SCHOOL
9 YOLO PLANNING & PUBLIC WORKS
10 YOLO FLEET SERVICE & ROAD DEPARTMENT
11 YOLO JUVENILE HALL
12 YOLO PROBATION DEPARTMENT
13 COMMUNICATIONS & EMERGENCY SERVICES
14 WELL #21
15 YOLO SOCIAL SERVICES & EMPLOYMENT
16 YOLO ADULT DAY HEALTH CENTER
17 PETERSON CLINIC
18 YOLO COUNTY OFFICES
19 WOODLAND HIGH SCHOOL
20 FREEMAN ELEMENTARY SCHOOL
21 WELL #10
22 WELL #4
23 CALIFORNIA NATIONAL GUARD
24 YOLO SUPERINTENDENT OF SCHOOLS
25 WELL #19
26 WELL #12
27 CITY OF WOODLAND MUNICIPAL SERVICE CENTER
28 WOODLAND JOINT SCHOOL DISTRICT BUS FACILITY
29 WELL #14
30 YOLO BUS
31 FIREHOUSE #3
32 TOFOYA ELEMENTARY SCHOOL
33 WELL #22
34 STORM WATER LIFT STATION
35 UNKNOWN
36 UNKNOWN
37 WASTE WATER TREATMENT PLANT
38 UNKNOWN
39 UNKNOWN
LOWER CACHE CREEK, WOODLAND, CALIFORNIA
AREA FEASIBILITY STUDY
PUBLIC FACILITIES IN THE
FEMA 1 IN 100 CHANCE FLOOD PLAIN
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
OCTOBER 2002


N
1" = 4000'
LEGEND
Depth of Flooding (feet)
0.2 - 0.5
0.5 - 1
1 - 3
3 - 4
> 4
Yolo
Cedar Creek
Highway 113
Highway 16
Woodland
Cache Creek
Settling Basin
Yolo Bypass
DRAFT
MBK ENGINEERS
2450 Alhambra Blvd.
Second Floor
Sacramento, CA 95817
Phone: 916.456.4400
Fax: 916.456.0253
City of Woodland - NFIP Compliance Hydraulic Analysis
DEPTH OF FLOODING
CORRECTED EFFECTIVE MODEL (CEM)
Scale: 1" = 4000'
Job No. 3417.5
Requested by: JAF
Drawn by: KS
Date: July 17, 2002
Source: USACE and MBK

Cache Creek Levee Failure, January 27, 1983, looking south toward Woodland

Fires

Fires were rated as a HIGH RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

During the fire season, generally July through September, Yolo County and its municipalities are called upon to fight a large number of vegetation fires, especially along the major highways and railways that are interspersed throughout the county. Generally, most of the fires do not damage structures, however, fires that are fanned by hot north winds, during extremely low humidity and fed by brittle, dry grass and vegetation can quickly get out-of-hand and threaten nearby structures and facilities.

The interface of residential and business development near highways that have dry, un-mowed vegetation along medians and shoulders are especially vulnerable.

Levels of Wildland Fire Protection Services

Fire suppression in Yolo County is provided by 17 fire districts (many of which are staffed by volunteers) as well as the cities that provide fire protection services. The California Department of Forestry & Fire Protection occasionally is called upon through the mutual aid system to assist in suppression of large or serious fires.

The history of California wildfires indicates that the following trends will continue. Risk from wildfire to life, property, natural resources, and firefighter safety is increasing.

- Population will grow and more people will live and use wildland areas, especially in the Central Sierra and in the Southern California counties of Riverside, San Bernardino and San Diego.
- Topography and climate support ecosystems where large wildfires can be expected.
- Drought and fuel moisture conditions will be unpredictable but almost always dangerous in fire season.
- More structures will be constructed in areas that are very susceptible to wildfire.
- Historical legacy of narrow roads, difficult entrance, insufficient water supplies, flammable building construction and location that make many communities and homes wildfire-prone still exits.
- Public demand for wildland fire protection and other services will increase.

Deteriorating forest health, increasing fuel loads and other factors have led to more intense, destructive wildfires; unabated, this pattern will continue.

Assets at risk will increase, especially watershed assets, because of the rapid rise in the demand for water to supply more people. Based on population projections, the potential for accelerating loss of protected assets, especially life and property, will be greater from disastrous wildfires.

Large wildfires do not respect political or property boundaries. Historically, a strength of California's firefighting agencies is found within a concept of mutual cooperation at the federal, state, and local levels of government. Day-to-day mutual aid for initial attack, as well as a statewide mutual-aid system for fire disasters, is the basis of this cooperation and coordination. The ability to rapidly mobilize,

effectively deploy and support large numbers of specialized firefighting resources is essential to cope with large multiple fires. Hence, the California Department of Forestry (CDF), in cooperation with other fire agencies, must maintain infrastructure, including communications and capital improvements necessary to facilitate such a response.

Fire protection forces in California must have sufficient depth to respond to large, multiple wildfires and still prevent other small fires from becoming large damaging fires. CDF plays a key role in supplying and coordinating such forces; it should maintain and enhance this ability. The 1985 Fire Plan includes a model to provide adequate depth of resources that show CDF needing 96 additional engines and 825 personnel for managing large fires using the Incident Command System. There is a greater need today as reflected in the California Fire Plan.

California Fire Plan 2003

Wildland Fire Protection Fiscal Issues

Multi-year fiscal problems are occurring at all governmental levels, constraining the availability of funding to address the increasing workload, costs and losses of the California wildland fire protection system.

The increasing number of structures and people in California wildlands and the growing importance of the state's natural resources create a growing demand to fund additional wildland fire protection services for both the structures and the wildland resource assets.

The primary fiscal responsibilities for the initial attack responsibilities: (1) for federal wildland fire protection are the federal taxpayers, (2) for privately owned wildland fire protection are the state taxpayers, and (3) for structure fire protection in wildland areas are the local taxpayers. However, during the annual fire season, the state and federal taxpayers provide a minimum level of structural fire protection that is incidental to their primary missions of wildland fire protection. Similarly, in most wildland areas, local taxpayers provide year-round wildland fire protection on both state and federal responsibility areas that is incidental to the local government primary mission of structural fire protection.

Over the last decade, part of the increased costs for additional initial attack wildland resource protection and structural protection have been funded by local taxpayers through property taxes, fire district fees and volunteer firefighters. However, when a wildland fire overwhelms local resources and reaches a major fire status, both the state and the federal taxpayers pay for the costs of wildfires, structure protection, and the resulting disaster relief.

For the local taxpayers, the following continue to increase: (1) the structural values and number of people being protected on wild lands, (2) the costs of wildland and structure initial attack fire suppression funded at the local levels, and (3) the losses from the extended attack and larger fires.

For state and federal taxpayers, the following will continue to increase: (1) extended and large fire emergency fund expenditures for wildland fires, (2) protecting structures during initial attack and extended attack fires, and (3) state and federal agency disaster expenditures for damages to wildland resources and structures.

Health and Safety Code Section 13009 allows for recovery of fire suppression costs which, when obtained, be placed back into the state's general fund rather than invested in a pre-fire management program.

There is a direct relationship between reduced expenditures for pre-fire management and suppression and increased emergency fund expenditures, disaster funding, and private taxpayers expenditures and losses. Reduction of pre-fire management or suppression resources allows more fires to become major disastrous fires. Major fires create additional suppression and disaster relief costs at all levels of government and increase citizen and business losses.

According to representatives of the insurance industry that insures structures in California wildland areas, (1) the insurer average costs and losses are about $1.09 for each $1.00 received in premiums, and (2) the urban dwellers are subsidizing the wildland homeowner through service-wide rating schedules.

Fire-Safe and Land Use Planning

Population increases in wildland areas have raised strategic concerns about wildfire protection. Clearance laws, zoning, and related fire safety requirements implemented by state and local authorities need to address these factors:

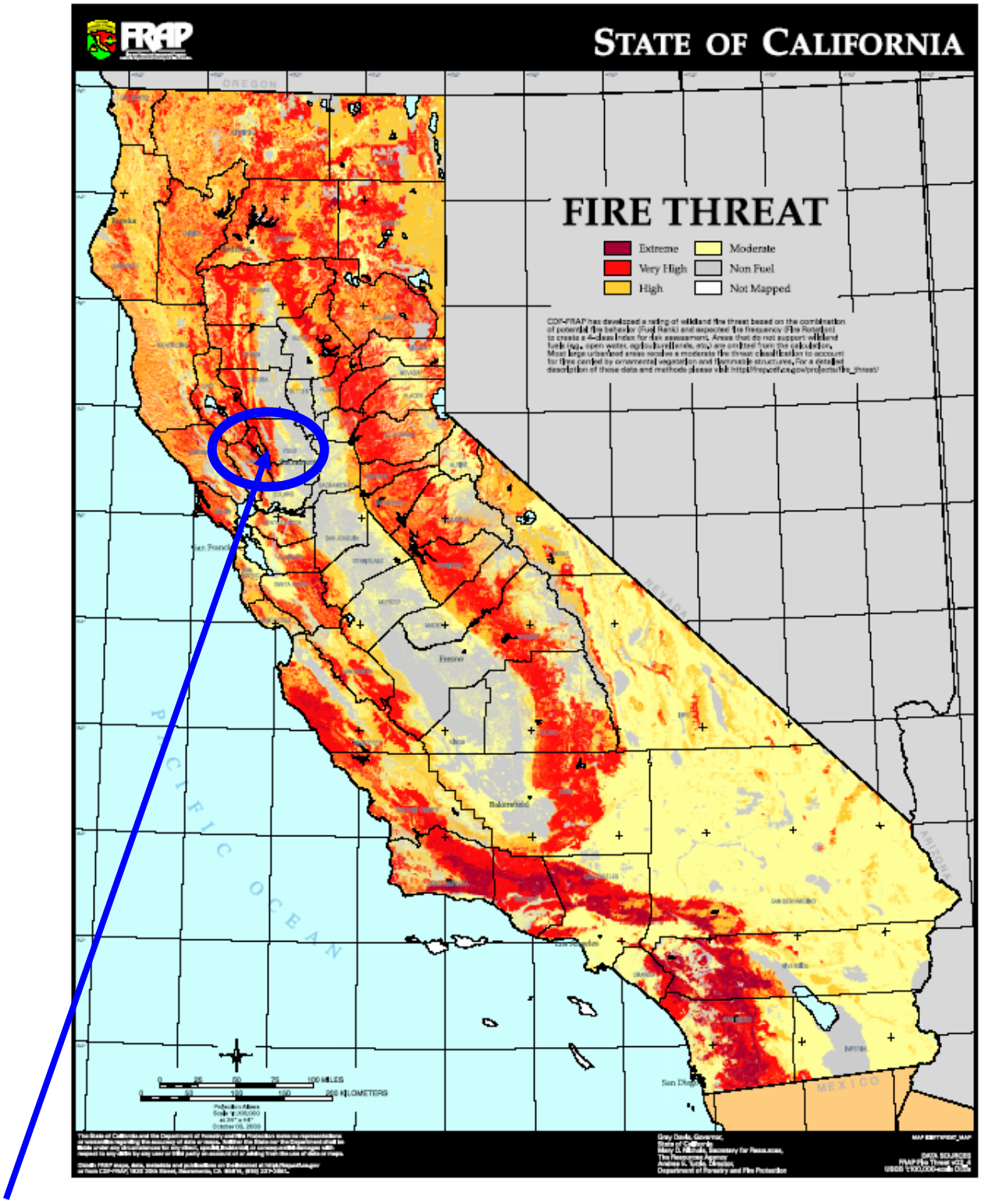
Fire-resistant construction standards: We can no longer view a wildland fire as affecting only watershed, wildlife and vegetation resources; we must now consider their effect on people and their structures. Further, this increase in people and structures have provided increasing ignition sources for fire which, due to their proximity, can spread into the wildland. Building construction standards that encompass such items as roof covering, opening protection and fire resistance are designed to both protect the structure from external fires and to contain internal fires for longer periods.

Hazard reduction near structures (defensible space): The public image of defensible space as part of pre-fire management should be expanded to include such immediate benefits as improved aesthetics, increased health of large remaining trees and other valued plants, and enhanced wildlife habitat. The use of defensible space that provides landscape naturalness, along with its compatibility with wildlife, water conservation and forest health, should be emphasized.

Infrastructure: Effective fire protection in the inter-mix cannot be accomplished solely through the acquisition of equipment, personnel and training. The area's infrastructure also must be considered during the formulation of development plans. Specific fire hazard areas should be evaluated and reasonable safety standards adopted, covering such elements as adequacy of nearby water supplies, routes or throughways for fire equipment, addresses and street signs, and maintenance. The ultimate objectives for fire-safe planning and construction are (1) improve the ability of communities and other high value assets that will survive a large, high intensity wildfire with minimal fire suppression effort and (2) provide for improved citizen and firefighter safety.

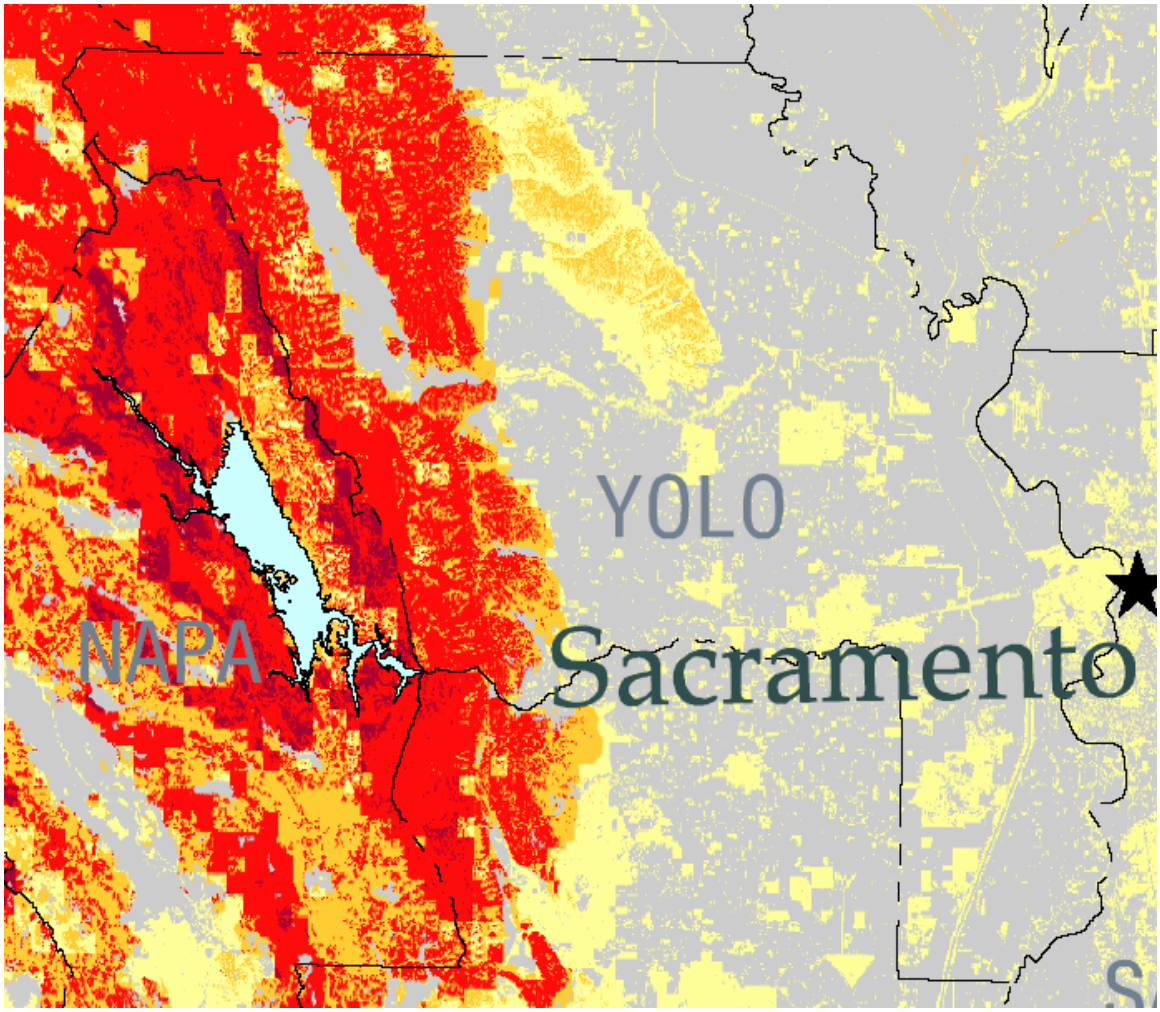
quoted from the California Fire Plan 2003

California Fire Threat Map

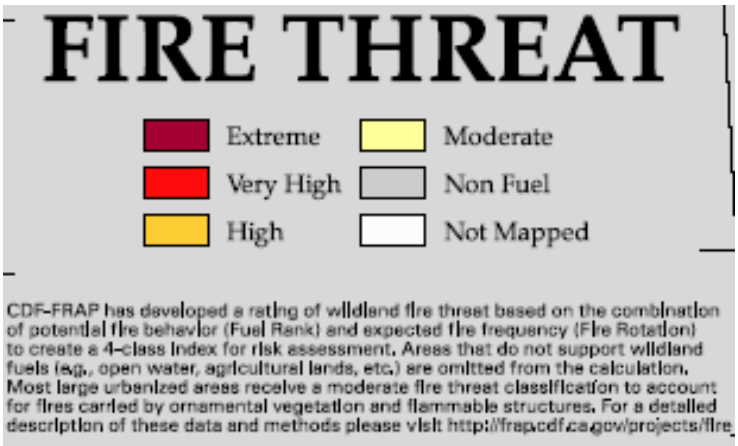


(See map on next page for inset – Yolo County)

Enlarged from the Preceding Map (Yolo County)

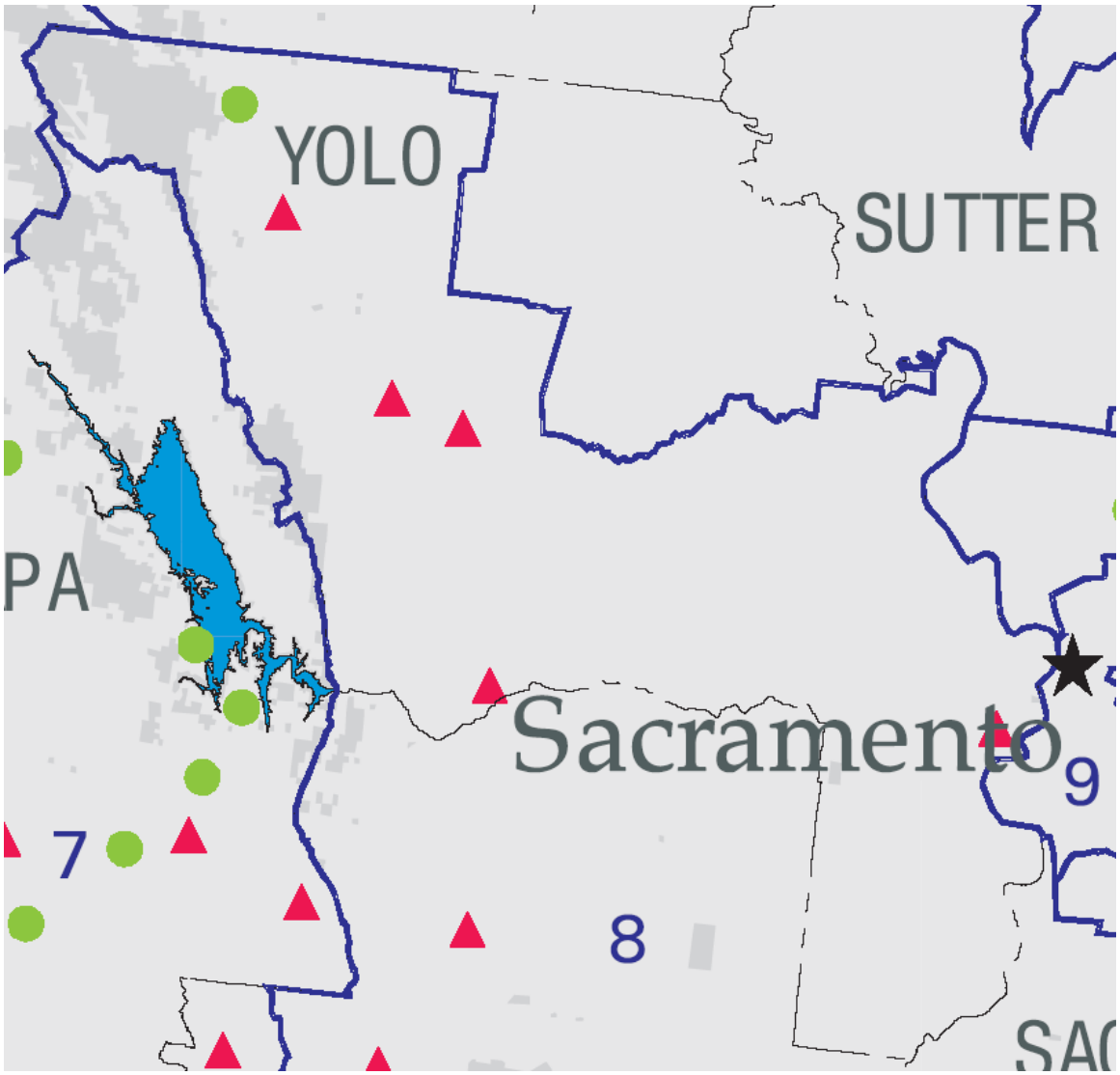


According to this map by the California Department of Forestry, the western quarter of Yolo County poses the greatest risk of danger from Wild Fire. Generally the topography in this area is foot hills from the mountains containing Lake Barryessa.



Communities at Risk from Wild Land Fire

Enlarged from Preceding Map (Yolo County)



- Communities at Risk from Wildfire on Federal Lands
- Communities at Risk from Wildfire on non-Federal Lands
- Federal Ownership
- Private, State, or Local Govt. Ownership
- Assembly District Boundaries

CDF-FRAP identified populated communities using 1990 US Census and USGS Geographic Names Information System (1998) data. Communities at Risk from Wildfire are those places within 1.5 miles of areas of High or Very High wildfire threat as determined from CDF-FRAP fuels and hazard data. This map reflects analysis using the best available data as of April 9, 2001.

A list of community names is available at http://www.nifc.gov/firepian/fedreg.html. For more details, see the California Department of Forestry and Fire Protection (CDF-FRAP) publication, 'Characterizing the Fire Threat to Wildland-Urban Interface Areas in California'.

CDF 1999 Fire Season Summary

California Department of Forestry and Fire Protection (CDF)

	Fires (CDF jurisdiction)	Acres (CDF jurisdiction)
1999	7,562	285,272
1998	5,227	92,456
5 Yr. Avg. (1994-98)	6,621	128,972

CDF Fire Suppression Cost: (Summer 99 and Spring 2000)
$178.5 million

Dollar Damage Cost (CDF jurisdiction):
$134,258,534

Structures Destroyed (CDF jurisdiction):
1,385

Top Five Fires In Acreage Burned (CDF jurisdiction)

Fire	Start	Contained	County	Acres	Structures Destroyed	Cause
Gunn II	9/28	10/6	Tehama	60,390	0	Undetermined
Sixteen	10/16	10/20	Yolo	40,000	2	Arson
Jones	10/16	10/19	Shasta	26,202	954	Undetermined
DeHaven	8/22	8/28	Tehama	17,000	0	Lightning
Willow	8/28	8/29	San Bernardino	21,900	60	Undetermined

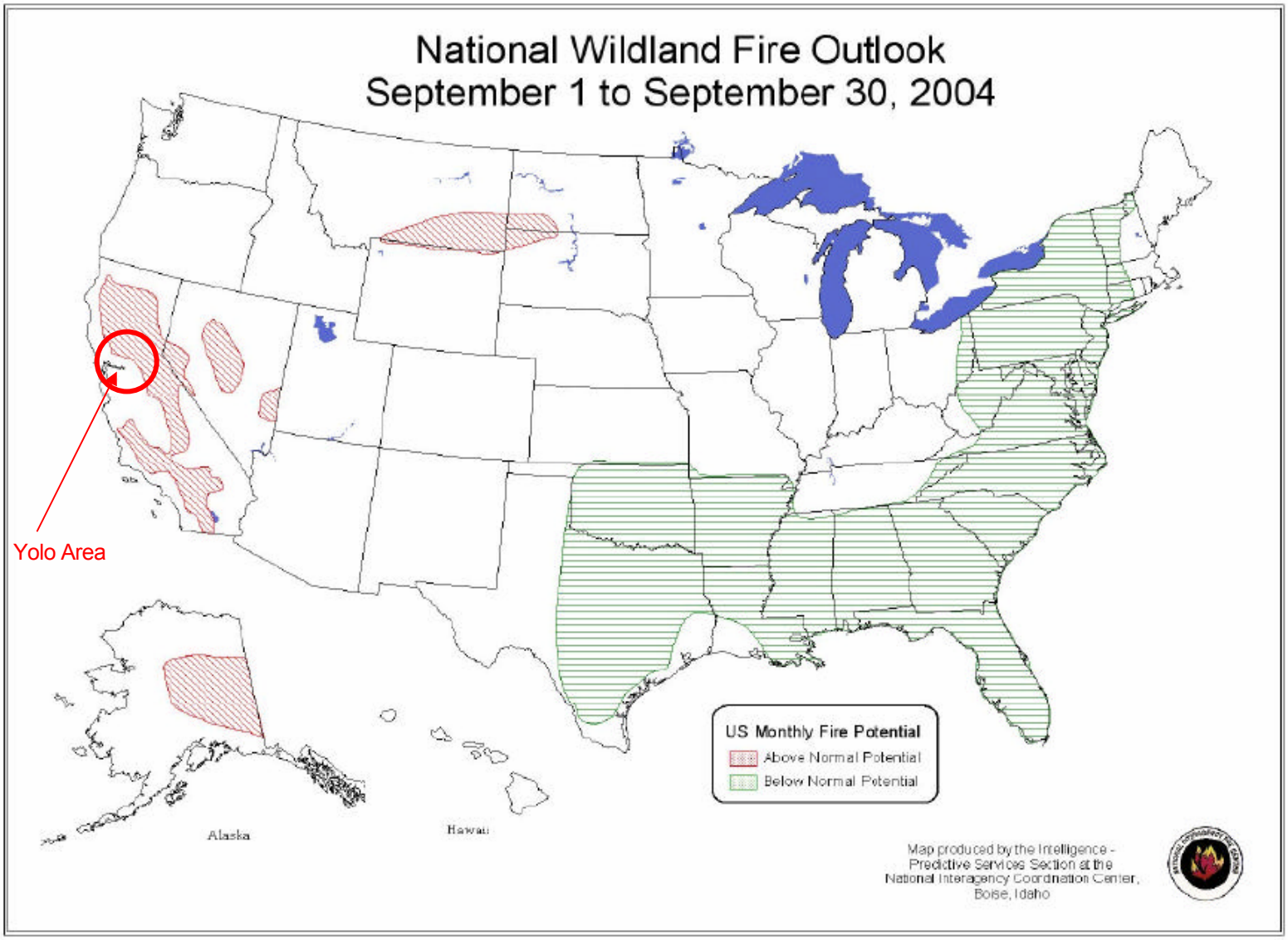
Top Five Fires In Structures Lost (CDF jurisdiction)

Fire	Start	Contained	County	Acres	Structures Destroyed	Cause
Jones	10/16	10/19	Shasta	26,202	954	Undetermined
Canyon #4	9/26	9/27	Shasta	2,580	230	Vehicle
Pendola	10/16	10/20	Yuba	7,020	76	Lightning
Willow	8/28	8/29	San Bernardino	21,900	60	Undetermined
Lowden	7/2	7/5	Shasta	2,000	23	VMP burn

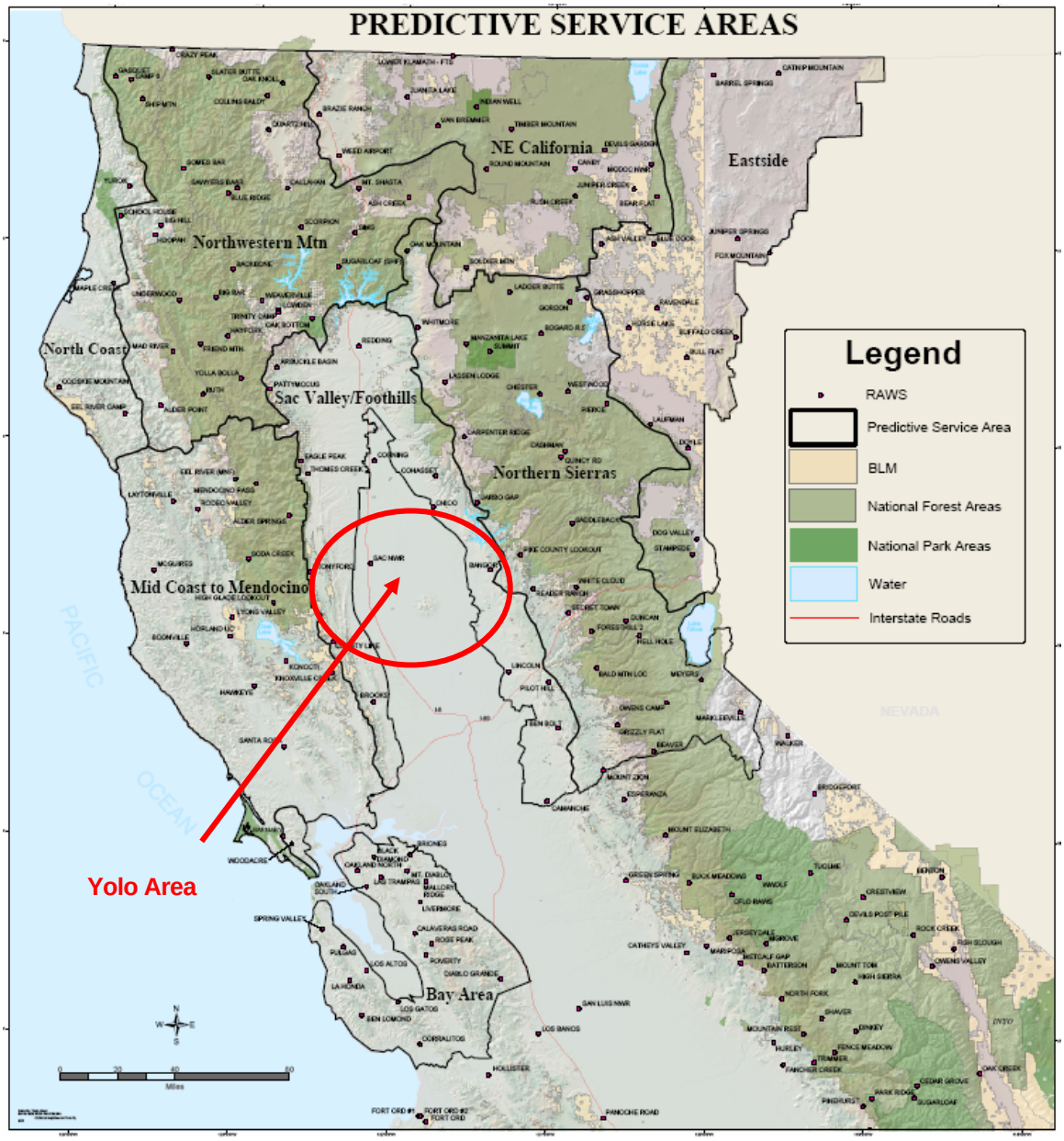
All CDF Ranger Units were on fire season by June 1, 1999 and all were off fire season by January 18, 2000.

Fire Safe, California!

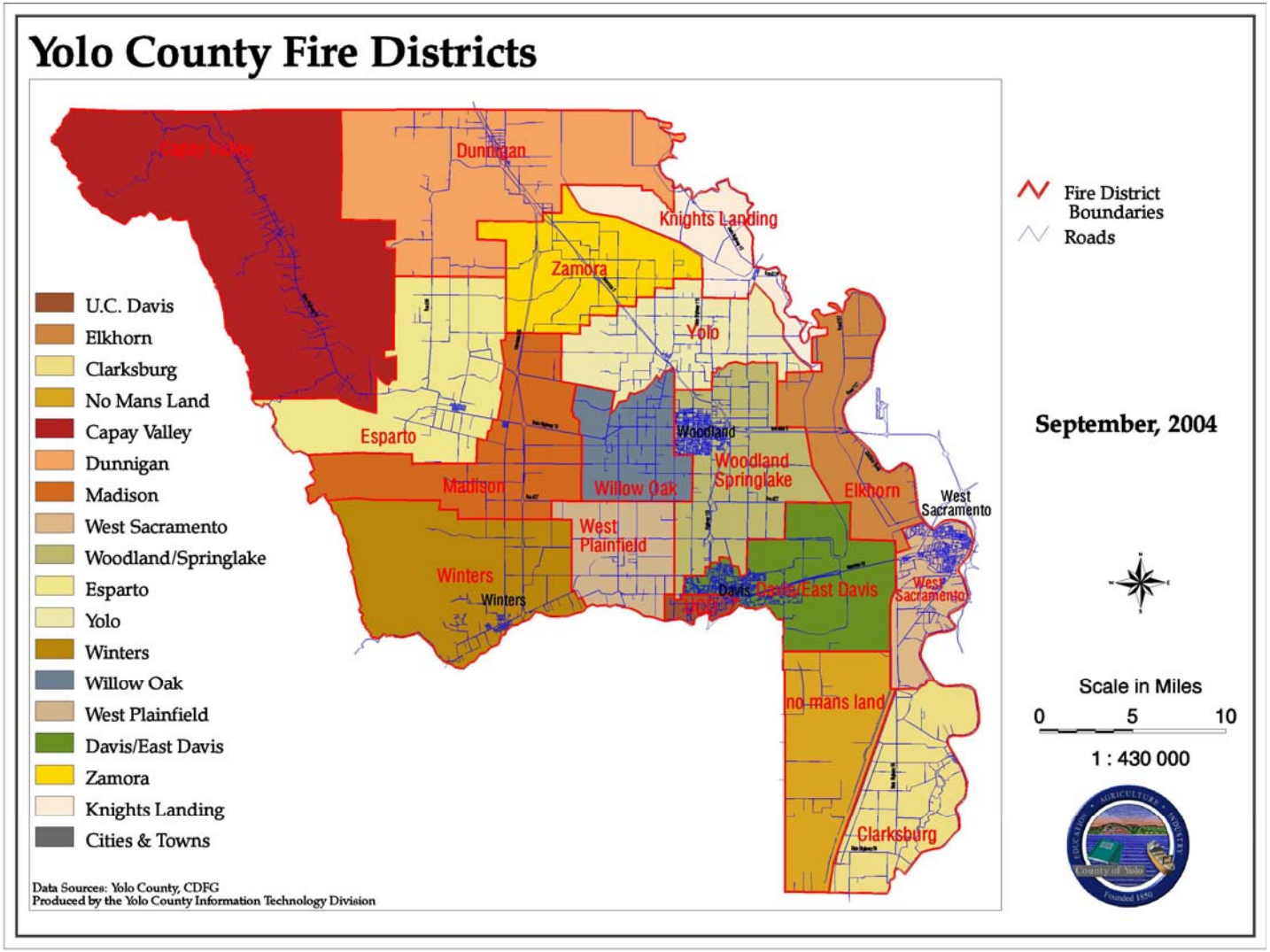
October 2000
www.fire.ca.gov


National Wildland Fire Outlook
September 1 to September 30, 2004
Yolo Area
US Monthly Fire Potential
Above Normal Potential
Below Normal Potential
Alaska
Hawaii
Map produced by the Intelligence - Predictive Services Section at the National Interagency Coordination Center, Boise, Idaho

USFS Fire Prediction Areas (Northern California)



Fire Districts in Yolo County



City of Woodland

Structural and wildland fire hazards can threaten life and property in Woodland. Wildland fires resulting from either natural or manmade causes occur in forest, brush, or grasslands, so the threat is minimal in Woodland, although vacant lots and fallow agricultural areas with weeds can be fire hazards. Structural fires usually result from manmade causes and can spread easily. Structural fire hazards are greatest in those structures built before building and fire codes were established. Chapter 8.C of the City of Woodland General Plan (Dec 17, 2002) describes the Goal and Policies to minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires.

City of Davis

The Fire Department provides emergency and non-emergency services. The non-emergency services are provided to attempt to prevent an emergency response. Non-emergency services include plan checking, construction inspection services, fire and life safety inspections, fire code investigations, public education and weed abatement. Emergency services include fire response, emergency medical response, hazardous materials response and public assistance.

The City of Davis General Plan (May 2001), Chapter 18, outlines goals, policies and actions for Fire Protection Services throughout the City.

City of West Sacramento

WILDLAND FIRE HAZARDS

All areas

- All along river and levee banks

Station 1

- North side of State Route 275 from El Rancho Court to Jefferson Blvd.
- Reclamation ditch from Jefferson Boulevard west to Westacre Road (south side of Evergreen School property)
- Sycamore ditch from I-80 to railroad tracks
- **Union Pacific** Railroad's right-of-way and reclamation ditch, 800 block of West Capitol Avenue west to Washington Street

Station 2

- Arcade station area (agricultural hazard)
- Lakes/marsh area adjacent to Sacramento Yacht Club
- Area between Burrow's and Babel Slough Roads
- Fields west of Arlington Road

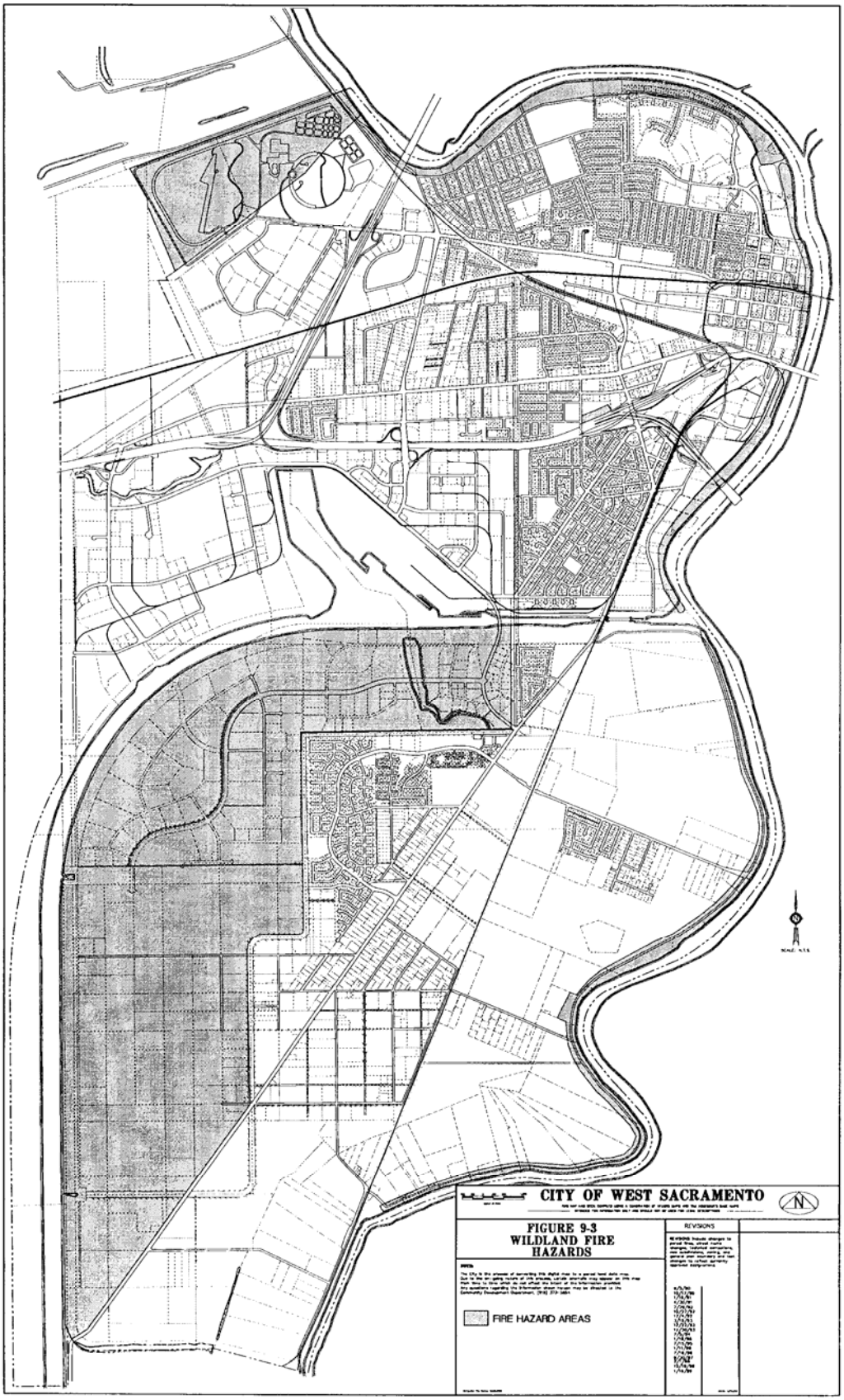
Station 3

- Lisbon Slough, north of West Capitol Avenue and south of Yolo Causeway
- Channel levee by Unocal
- Lake Washington next to Montgomery Ward Warehouse
- Southern Pacific Railroad tracks from Harbor Boulevard to West Capitol Avenue

Station 4 area

- **Areas outside of the levees** bordering the Sacramento River **south** to the Tower Bridge
- North side of **Union** Railroad embankment from where it crosses West Capitol Avenue to the end of Reed Avenue
- Behind CHP Academy and Tule Jake Road
- Northwest corner of Kegle Drive and Sacramento Avenue

Source: City of West Sacramento Fire Department, February 1988


CITY OF WEST SACRAMENTO
FIGURE 9-3
WILDLAND FIRE
HAZARDS
REVISIONS
FIRE HAZARD AREAS

Smoke Hazards as a Result of Wildland Fires

Smoke is composed primarily of carbon dioxide, water vapor, carbon monoxide, particulate matter, hydrocarbons and other organic chemicals, nitrogen oxides, trace minerals and several thousand other compounds. The actual composition of smoke depends on the fuel type, the temperature of the fire, and the wind conditions. Different types of wood and vegetation are composed of varying amounts of cellulose, lignin, tannins and other polyphenolics, oils, fats, resins, waxes and starches, which produce different compounds when burned.

Particulate matter is the principal pollutant of concern from wildfire smoke for the relatively short-term exposures (hours to weeks) typically experienced by the public. Particulate matter is a generic term for particles suspended in the air, typically as a mixture of both solid particles and liquid droplets. Particles from smoke tend to be very small - less than one micrometer in diameter. For purposes of comparison, a human hair is about 60 micrometers in diameter. Particulate matter in wood smoke has a size range near the wavelength of visible light (0.4 – 0.7 micrometers). Thus, smoke particles efficiently scatter light and reduce visibility. Moreover, such small particles can be inhaled into the deepest recesses of the lung and are thought to represent a greater health concern than larger particles.

Another pollutant of concern during smoke events is carbon monoxide. Carbon monoxide is a colorless, odorless gas, produced by incomplete combustion of wood or other organic materials. Carbon monoxide levels are highest during the smoldering stages of a fire. Other air pollutants, such as acrolein, benzene, and formaldehyde, are present in smoke, but in much lower concentrations than particulate matter and carbon monoxide.

The effects of smoke range from eye and respiratory tract irritation to more serious disorders, including reduced lung function, bronchitis, exacerbation of asthma, and premature death. Studies have found that fine particles are linked (alone or with other pollutants) with increased mortality and aggravation of pre-existing respiratory and cardiovascular disease. In addition, particles are respiratory irritants, and exposures to high concentrations of particulate matter can cause persistent cough, phlegm, wheezing and difficulty breathing. Particles can also affect healthy people, causing respiratory symptoms, transient reductions in lung function, and pulmonary inflammation. Particulate matter can also affect the body's immune system and make it more difficult to remove inhaled foreign materials from the lung, such as pollen and bacteria. The principal public health threat from short-term exposures to smoke is considered to come from exposure to particulate matter.

Wildfire smoke also contains significant quantities of respiratory irritants. Formaldehyde and acrolein are two of the principal irritant chemicals that add to the cumulative irritant properties of smoke, even though the concentrations of these chemicals individually may be below levels of public health concern.

Sensitive Populations

Most healthy adults and children will recover quickly from smoke exposures and will not suffer long-term consequences. However, certain sensitive populations may experience more severe short-term and chronic symptoms from smoke exposure. Much of the information about how particulate matter affects these groups has come from studies involving airborne particles in cities, though a few studies examining the effects of exposure to smoke suggest that the health effects of wildfire smoke are likely to be similar. More research is needed to determine whether particles from wildfires affect susceptible subpopulations differently.

Individuals with asthma and other respiratory diseases: Levels of pollutants that may not affect healthy people may cause breathing difficulties for people with asthma or other chronic lung diseases. Asthma, derived from the Greek word for panting, is a condition characterized by chronic inflammation of the airways, with intermittent bronchial-constriction and airflow obstruction, causing shortness of

breath, wheezing, chest tightness, coughing, sometimes accompanied by excess phlegm production. During an asthma attack, the muscles tighten around the airways and the lining of the airways becomes inflamed and swollen, constricting the free flow of air. Because children's airways are narrower than those of adults, irritation that would create minor problems for an adult may result in significant obstruction in the airways of a young child. However, the highest mortality rates from asthma occur among older adults. Individuals with chronic obstructive pulmonary disease (COPD), which is generally considered to encompass emphysema and chronic bronchitis, may also experience a worsening of their conditions because of exposure to wildfire smoke. Patients with COPD often have an asthmatic component to their condition, which may result in their experiencing asthma-like symptoms. However, because their pulmonary reserve has typically been seriously compromised, additional bronchial-constriction in individuals with COPD may result in symptoms requiring medical attention. Epidemiological studies have indicated that individuals with COPD run an increased risk of requiring emergency medical care after exposure to particulate matter or forest fire smoke. Exposure to smoke may also depress the lung's ability to fight infection. People with COPD may develop lower respiratory infections after exposure to wildfire smoke, which may require urgent medical care as well. In addition, because COPD is usually the result of many years of smoking, individuals with this condition may also have heart disease, and are potentially at risk from both conditions.

Individuals with airway hyper-responsiveness: A significant fraction of the population may have airway hyper-responsiveness, an exaggerated tendency of the bronchi and bronchioles to constrict in response to respiratory irritants and other stimuli. While airway hyper-responsiveness is considered a hallmark of asthma, this tendency may also be found in many non-asthmatics, as well; for example, during and following a lower respiratory tract infection. In such individuals, smoke exposure may cause bronchial-spasm and asthma-like symptoms.

Individuals with cardiovascular disease: Diseases of the circulatory system include, among others, high blood pressure, cardiovascular diseases, such as coronary artery disease and congestive heart failure, and cerebro-vascular conditions, such as atherosclerosis of the arteries bringing blood to the brain. These chronic conditions can render individuals susceptible to attacks of angina pectoris, heart attacks, sudden death due to a cardiac arrhythmia, acute congestive heart failure, or stroke. Cardiovascular diseases represent the leading cause of death in the United States, responsible for about 30 to 40 percent of all deaths each year. The vast majority of these deaths are in people over the age of 65. Studies have linked urban particulate matter to increased risks of heart attacks, cardiac arrhythmias, and other adverse effects in those with cardiovascular disease. People with chronic lung or heart disease may experience one or more of the following symptoms: shortness of breath, chest tightness, pain in the chest, neck, shoulder or arm, palpitations, or unusual fatigue or lightheadedness. Chemical messengers released into the blood because of particle-related lung inflammation may increase the risk of blood clot formation, angina episodes, heart attacks and strokes.

The elderly. In several studies researchers have estimated that tens of thousands of elderly people die prematurely each year from exposure to particulate air pollution, probably because the elderly are more likely to have pre-existing lung and heart diseases, and therefore are more susceptible to particle-associated effects. The elderly may also be more affected than younger people because important respiratory defense mechanisms may decline with age. Particulate air pollution can compromise the function of alveolar macrophages, cells involved in immune defenses in the lungs, potentially increasing susceptibility to bacterial or viral respiratory infections.

Children. Children, even those without any pre-existing illness or chronic conditions, are considered a sensitive population because their lungs are still developing, making them more susceptible to air pollution than healthy adults. Several factors lead to increased exposure in children compared with adults: they tend to spend more time outside; they engage in more vigorous activity, and they inhale more air (and therefore more particles) per pound of body weight. Studies have shown that particulate pollution is associated with increased respiratory symptoms and decreased lung function in children,

including symptoms such as episodes of coughing and difficulty breathing. These can result in school absences and limitations of normal childhood activities.

Pregnant women. While there have not been studies of the effects of exposure to wildfire smoke on pregnancy outcomes, there is substantial evidence of adverse effects of repeated exposures to cigarette smoke, including both active and passive smoking. Wildfire smoke contains many of the same compounds as cigarette smoke. In addition, recent data suggest that exposures to ambient air pollution in cities may result in low birth weight and possibly other, more serious adverse reproductive effects. Therefore, it would be prudent to consider pregnant women as a potentially susceptible population as well.

Smokers. People who smoke, especially those who have smoked for many years, have already compromised their lung function. However, due to adaptation of their lungs to ongoing irritation, smokers are less likely to report symptoms from exposure to irritant chemicals than are nonsmokers. However, they may still be injured by wildfire smoke. Therefore, some smokers may unwittingly put themselves at greater risk of potentially harmful wildfire smoke exposures, believing that they are not being affected.

Hazards Associated Cleanup of Wildland Fires

Heat sources may remain as a result of smoldering wood or other debris that could reignite if contact is made with a combustible material or if oxygen becomes available. Workers and employers must therefore take extra precautions.

Cleanup activities may involve walking on unstable surfaces such as construction debris, trees and other vegetation. Piles of debris and other unstable work surfaces create a risk for traumatic injury from slips, falls, puncture wounds from nails and sharp objects, and collapsing materials. Extreme caution is necessary when working on these surfaces. Protective equipment, such as hard hats, safety glasses, leather gloves, and steel toe boots should be considered to minimize the risk of injury.

Cleanup workers are at risk for developing serious musculoskeletal injuries to the hands, back, knees, and shoulders. Special attention is needed to avoid back injuries associated with manual lifting and handling of debris and building materials.

Cleanup workers are at serious risk for developing heat stress. Excessive exposure to hot environments can cause a variety of heat-related problems, including heat stroke, heat exhaustion, heat cramps, and fainting

Fires can rearrange and damage natural walkways, as well as sidewalks, parking lots, roads, and buildings. Never assume that fire-damaged structures or ground are stable. Buildings that have been burned may have suffered structural damage and could be dangerous.

Fires to commercial and residential buildings and water used to fight the fire can dislodge tanks, drums, pipes, and equipment, which may contain hazardous materials such as pesticides or propane. Containers may be damaged by fire and heat

All of these concerns (suppression efforts, damage and destruction of structures and facilities, smoke injuries to citizens, and the cost of clean-up and associated hazards to firefighters and workers) along with the threat of flooding and erosion to areas swept by fire add to the cost of fire protection and suppression for Yolo County and its municipalities.

Biological (Plant & Animal) Emergencies

Biological (Plant & Animal) Emergencies were rated as a HIGH RISK PRIOTY for each jurisdiction by the Hazard Mitigation Steering Committee.

Yolo County is mainly an agricultural community, thus its residents' susceptibility to hazards associated with plants and animal diseases and infections shows in the forefront.

West Nile Virus

West Nile virus (WNV), a disease transmitted to humans, birds, horses, and other animals, by infected mosquitoes, has arrived in the Sacramento Valley. Mosquitoes get the disease from infected birds while taking blood, and can later transmit it when they bite others.

WNV can cause encephalitis (inflammation of the brain) in humans. Most infections are mild, with flu-like symptoms. Severe infections may include neck stiffness, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and rarely, death.

The Sacramento/Yolo Mosquito & Vector Control District is working diligently to reduce mosquito populations, using safe integrated pest management techniques. As WNV has been detected in our area, spraying may be necessary in order to minimize loss of life, or danger to humans and other animals.

Sacramento and Yolo County residents are in a West Nile virus high risk area, and are being urged to take precautions against mosquito bites.

West Nile virus activity has been detected in 56 of 58 counties in California!

Humans

As of August 31, 2004, a total of 370 West Nile virus infections have been reported from 14 counties.

Twenty-nine of these cases were first detected in asymptomatic individuals through screening done at blood banks - four later became symptomatic.

Of the 345 WNV cases with symptoms, 131 are classified as West Nile fever cases, 126 are classified as West Nile neuroinvasive disease, and 88 are of unknown status.

There have been ten West Nile virus-related fatalities to date in California, in Los Angles, Orange, San Bernardino and Riverside counties.

Equines

The California Department of Food and Agriculture confirmed the first WNV equine cases from Inyo, Placer, Sutter, and Tulare counties last week.

In 2004, a total of 82 horses have been euthanized or died after infection with West Nile virus.

Dead Birds

Six new counties detected WNV in dead birds at the end of August 2004 in the counties of Alpine, Amador, Colusa, Modoc, Monterey, and Tuolumne.

A total of 1,922 WNV positive dead birds have been detected in 52 of 58 California counties in 2004.

Mosquito Pools and Sentinel Chickens

As of August 2004, the number of mosquito pools testing positive for WNV increased from 616 to 684 in 14 counties, in 2004.

County	Summary of West Nile Virus Activity in California, 2004				
	Humans	Equines	Dead Birds	Mosquito Pools	Sentinel Chickens
…Sutter	-	2	6	5	-
Tehama	-	14	69	-	-
Trinity	-	-	2	-	-
Tulare	1	1	9	-	-
Tuolumne	-	-	4	-	-
Ventura	1	1	9	-	-
Yolo	1	-	13	-	-
Yuba	-	-	4	-	-
State Totals	**370**	**158**	**1,922**	**684**	**313**

Local West Nile Information

Recently dead American Crows, Western Scrub Jays, Yellow-billed Magpies, and Ravens are now being collected by the District staff to determine if West Nile virus (WNV) occurs in either Sacramento or Yolo counties. In other regions of the U.S. dead birds have been a good indicator of WNV activity. Collecting dead birds will allow the District to determine when WNV arrives in the District.

Dead birds are reported to the California Department of Health Services (DHS) Dead Bird Hotline. If the bird meets collection criteria, DHS notifies the District and staff collects the bird.

Mosquito Control Field Technicians check to determine if the bird is “freshly dead” (within **24 hours**). If maggots are present, the body stiff, or there are other indications that the bird is old the carcass is **unacceptable for testing**. Viable samples are transported to the California Animal Health and Food Safety Laboratory located on the University of California at Davis (UCD) campus for processing. These

samples are tested at the Arbovirus Research Unit also located at UCD. Currently, the test requires 3 weeks to complete.

Vectors

Common California Mosquito Species

Encephalitis mosquito (*Culex tarsalis*)

This mosquito can transmit the encephalitis (sleeping sickness) virus to humans. It is distributed throughout California. Immature stages develop in wetlands, duck clubs, rice fields, and irrigated crops. It prefers to feed on birds in the spring and may feed on mammals in the summer.

Western malaria mosquito (*Anopheles freeborni*)

This mosquito can transmit the malaria parasite to humans. It is common in rice growing regions of California. Immature stages develop in rice fields, wetlands, duck clubs, and rain pools. It prefers to feed on mammals. This species is a pest in the Sacramento Valley beginning in late winter until early fall.

Western treehole mosquito (*Ochlerotatus sierrensis*)

This mosquito can transmit the dog heartworm parasite *Dirofilaria immitis*, and is a severe outdoor pest. It is common in oak woodlands. Immature stages develop in tree rot holes. It feeds primary on mammals.

Wetlands mosquito *(Ochlerotatus melanimon)*

This mosquito is involved in the encephalitis virus (sleeping sickness) cycle and is a severe outdoor pest. It is common in the interior valleys of California. It develops in wetlands, duck clubs, and pastures. It prefers to feed on mammals.

House mosquito (*Culex pipiens*)

This mosquito creates a nuisance by disturbing sleep when it buzzes near a victim's ear. It is common throughout California. Immatures develop in foul water sources such as dairy drains and artificial containers. It prefers to feed on birds but will readily feed on humans.

Seasonal Activity

In California mosquitoes are active during every month of the year. Each species has a season when it is most active. Depending on the California region some species may be active during most or all of the year.

Genera	spring	summer	fall	winter
Aedes	X	X		
Anopheles	X	X	X	
Culex	X	X	X	
Culiseta	X		X	X
Coquillettidia	X	X		
Ochlerotatus	X	X	X	
Orthopodomyia	X			
Psorophora	X	X		
Uranotaenia	X	X		

Blood Meals

Each mosquito species in California has a range of preferred hosts. Most mosquito species feed on more than one type of host. California mosquitoes have blood meal hosts that range from reptiles, amphibians, mammals, birds, to humans. Protein from a host's blood is used by the female mosquito to produce eggs.

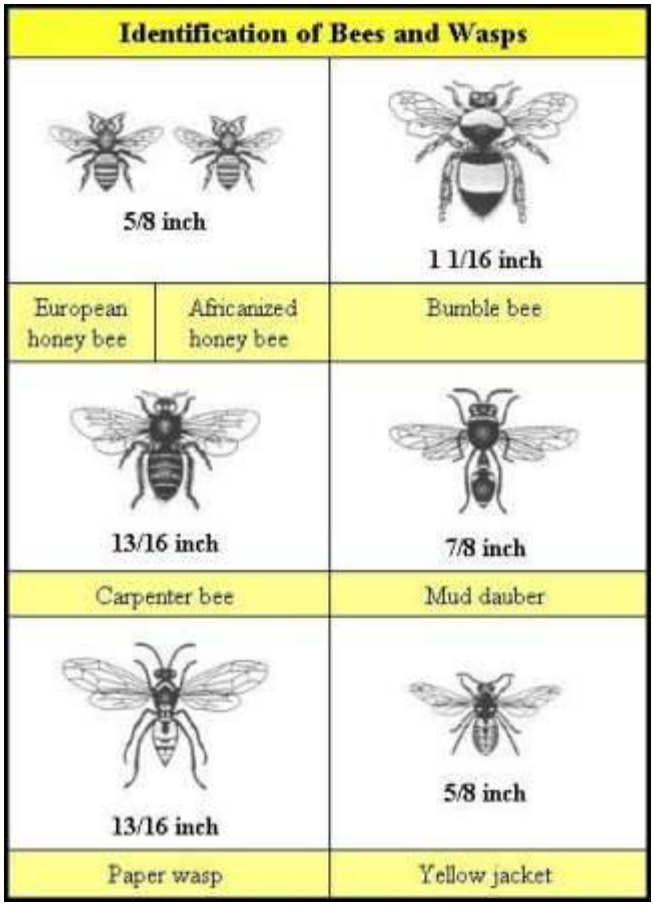
Genera	bird	mammal	human	amphibian
Aedes	X	X		
Anopheles		X	X	
Culex	X	X	X	X
Culiseta		X	X	
Coquillettidia		X	X	
Ochlerotatus		X	X	
Orthopodomyia	X			
Psorophora		X	X	
Uranotaenia				X

Africanized Honey Bees (AHBs) *Apis mellifera scutellata*

The Africanized honeybee (AHB) can be more aggressive in defense of the colony site than the present European honeybee (EHB) populations common in the United States. AHB's originated in Brazil when queens from South Africa and Tanzania were released in the 1950's. Since then AHB's have migrated northward, displacing resident EHB populations in South and Central America. AHB's entered the United States in 1990 at Hidalgo, Texas. In more than 30 years of hybridization with resident EHB populations, AHB behavior has not changed significantly. AHBs are a public health concern because of multiple sting attacks to humans, pets, domestic, and wild animals. A victim who cannot escape a bee attack may receive hundreds, or even thousands of stings. AHBs are slightly smaller but similar in appearance and color to EHBs. AHBs can be identified from EHBs only by extensive laboratory examination. The public will be unable to determine whether bees are European or Africanized and will have to rely on governmental authorities to ascertain when bee populations become Africanized.

Source: Agricultural Research Service, U.S. Department of Agriculture, Beltsville, MD 20705

DIFFERENCES BETWEEN AHBs AND EHBs



- AHBs and EHBs have similar toxic venom
- AHB workers have a shorter life cycle and life span than EHBs
- AHBs are more defensive of the nest site than EHBs
- AHBs respond faster to disturbances, attack for a longer period, and follow a victim a longer distance than EHBs
- AHBs remain agitated longer after a disturbance than EHBs
- AHBs swarm more frequently than EHBs
- AHBs abandon nest for a new location, EHBs do not
- AHBs migrate longer distances than EHBs

AHB NESTING SITES

AHBs build smaller nests in a greater variety of sites than EHBs

Enclosed	Exposed
tree cavities	under mobile homes
wall cavities	under building eaves
water meter boxes	abandoned cars
sewer manholes	under bridges
culverts and pipes	in trees and shrubs

Ticks *(Ixodes pacificus)*

Ticks are blood-sucking arthropods. They are important because some types can transmit diseases or parasites to humans, pets, and wildlife.

Ticks do not fly, jump, or fall out of trees. They are usually found in grassy areas, in brush, or in a wooded area. They wait on the tips of vegetation for a human or other animal host to pass by (called "questing"). As the host brushes against it, the tick makes contact, looks for a suitable location, and begins the feeding process.

Contrary to popular belief, ***ticks Do Not imbed their heads in skin.*** Ticks are equipped with mouthparts adapted to penetrate and hold fast in the skin of its host. Additionally, they secrete a cement-like material that helps them stay attached to their host.

Ticks go through four life stages: egg, larva, nymph, and adult. Both males and females in the last three stages require a blood meal.

Tick Species

Western Black-Legged Tick (*Ixodes pacificus*)

- Found in areas with high humidity from October to July
- Females can produce up to 3,000 eggs
- Larvae and nymphs feed on lizards, birds, and mammals
- Adults feed on large mammals (deer, fox) and humans

Pacific Coast Tick (Dermacentor occidentalis)

- Found in areas with high humidity from November to June
- Females can produce up to 4,500 eggs
- Larvae and nymphs feed on small rodents

- Adults feed on large mammals, especially deer

American Dog Tick (*Dermacentor variabilis*)

- Adult ticks are found from May to August
- Females can produce up to 6,500 eggs
- Larvae, nymphs, and adults feed on larger mammals like dogs

Brown Dog Tick (Rhipicephalus sanguineus)

- Found in dog kennels and homes year round
- Females can produce up to 4,000 eggs
- Larvae, nymphs, and adults feed on dogs
- Occasionally found on sheep, goats, cats, and humans
- Not a known vector in U.S.

Tick-Borne Diseases

The following three important diseases are known to occur in Sacramento and Yolo Counties.

Babesiosis

Babesiosis is a malaria-like infection caused by a protozoan that parasitizes red blood cells. It occurs primarily in the Northeastern U.S. and Wisconsin. Transmission is primarily by the black-legged tick. It causes flu-like symptoms (fever, chills, fatigue, headache, muscle pain), and a breakdown of red blood cells – known as hemolytic anemia.

Ehrlichiosis

Ehrlichiosis is caused by a microorganism called rickettsia. Most cases are reported from the south-central and southeastern U.S. The lone star tick is the suspected vector. Disease symptoms are flu-like (fever, headache, chills, severe muscle aches and pain, vomiting) with anemia, lung infection, abnormal decrease in white and red blood cells, decrease in platelets, or elevated liver enzymes.

Lyme Disease (LD)

Lyme Disease is a bacterial infection. The bacteria that causes LD is called *Borrelia burgdorferi*. Lyme disease has been reported from 49 states. Black-legged ticks transmit the Lyme disease bacteria in the eastern, northeastern, and southern parts of the U.S. The western black-legged tick is the vector on the west coast. The lone star tick is a suspected vector in the southern and eastern U.S. Early symptoms of LD may include head and muscle aches, sore throat, nausea, fever, stiff neck, or fatigue. About 50% of infected people develop a rash at the bite site (known as Erythema Migrans), which sometimes resembles a "bull's eye". Later symptoms may involve the skin, eyes, heart, nervous system, brain, or joints. Early detection is important in the treatment of LD. The bacteria can cross the placenta and may pose a hazard for pregnant women.

Rats

Roof rats (*Rattus rattus*) are non-native commensal rodents. They are a public health concern because they can transmit disease causing agents to humans and foul stored food. When roof rats enter homes, they can cause structural damage.

Disease Transmission

Roof rats can transmit disease causing agents to humans by ectoparasites, direct contact, or contaminated body fluids and droppings.

Plague (black death)

Plague is caused by a bacteria that is transmitted to humans by infected rodent fleas. The plague bacteria infects the blood, lymph glands or lungs. Untreated, it has a very high fatality rate.

Weils Disease (*leptospirosis*)

Weils Disease is caused by a spirochete bacteria. Humans become infected by coming in contact with infected rodent urine or blood. The Weils disease bacteria infects the kidney.

Bacterial food infection (*salmonellosis*)

Humans become infected by ingesting food contaminated with infected rodent excreta. The bacteria grows in the gastrointestinal tract causing headache, chills, vomiting, and diarrhea.

Trichinosis

Trichinosis is caused by a roundworm that encysts in the muscles. Hogs become infected when consuming rat droppings directly or in contaminated feed. Humans then become infected by ingesting improperly cooked pork.

Earthquake

Earthquake was rated as a HIGH RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

Earthquakes are sudden releases of strain energy stored in the earth's bedrock. The great majority of earthquakes are not dangerous to life or property either because they occur in sparsely populated areas or because they are small earthquakes that release relatively small amounts of energy. However, where urban areas are located in regions of high seismicity, damaging earthquakes are expectable, if not predictable, events.

Yolo County

There are several faults known to exist within Yolo County. They are the Midland Fault Zone and the Capay Valley area. No known faults are located under the major inhabited areas of the county. By California standards, Yolo County is a low earthquake probability zone. The most recent recorded earthquakes appear to have occurred in the late 1892.

City of Winters

The Midland fault zone is located between the City of Winters and the Coast Range in the southwestern part of the county. Two concealed faults are located within this zone. Within the Capay valley area, two major faults border the valley in the Capay Hills.

City of Woodland

The primary seismic and geologic hazards affecting Woodland include earthquake and expansive soils. Generally flat in topography. Woodland does not face risks from landslides or seiches.

Earthquakes occur infrequently, but can inflict major damage. In the 1890's, Woodland experienced moderate building damage from an earthquake. Since then, the city has experienced ground shaking from earthquakes in the area, but no major damage. Modern building construction codes require that buildings be designed to resist stresses produced by lateral forces caused by winds and earthquakes.

City of Woodland General Plan

City of Davis

No earthquake faults run through the Davis area, although the San Andreas fault system is to the west and the Western Sierra fault system is to the east. Numerous quakes along these faults have been felt in Davis. Major quakes occurred in 1833, 1968, 1892, 1902, 1906 and most recently in 1989, but Davis suffered no significant damage. The Office of Planning and Research has placed the Davis area in Seismic Activity Zone II, which indicates that the maximum intensity of an earthquake would be VII or VIII on the Modified Mercalli Intensity Scale. An earthquake of such magnitude would result in "slight damage in specifically designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures." The Uniform Building Code places all of California in the zone of greatest earthquake severity because recent studies indicate high potential for severe ground shaking.

City of Davis General Plan

City of West Sacramento

West Sacramento is located in one of the least active seismic regions in California. According to existing geologic information, there are no known or inferred faults within West Sacramento. The nearest known faults are generally located west to southwest of West Sacramento. The Midland fault zone is located approximately 18 miles southwest, the Greenville fault is situated about 40 miles southwest, and the Rodgers Creek fault is approximately 65 miles west of West Sacramento. Because these faults are reported to have had horizontal displacements in the past, they are considered potentially active.

The active faults nearest to West Sacramento are the Calaveras (50 miles east), the Hayward (60 miles west), and the San Andreas (80 miles west)… The critical earthquake for West Sacramento would originate at the nearest point of the Midland or Dunnigan Hills faults west of West Sacramento.

West Sacramento has experienced a relatively low level of historic seismic activity. While the area has not been the source of quakes in recent geologic time, activity in neighboring regions suggests that the West Sacramento area could be affected by future activity in those regions.

West Sacramento General Plan

Richter Scale

The overall energy release of an earthquake is its most important characteristic. Other important attributes include an earthquake's duration, its related number of significant stress cycles, and its accelerations.

Earthquake Size Descriptions		
Descriptive Title	**Richter Magnitude**	**Intensity Effects**[1]
Minor Earthquake	1 to 3.9	Only observed instrumentally or felt only near the epicenter.
Small Earthquake	4 to 5.9	Surface fault movement is small or does not occur. Felt at distances of up to 20 or 30 miles from the epicenter. May cause damage.
Moderate Earthquake	6 to 6.9	Moderate to severe earthquake range; fault rupture probable.
Major Earthquake	7 to 7.9	Landslides, liquefaction and ground failure triggered by shock waves.
Great Earthquake	8 to 8+	Damage extends over a broad area, depending on magnitude and other factors.

Seismic Ground Response

Most of Yolo County's development and population are located in areas of moderate to moderately low damage susceptibility. Major landslides, settling and tilting buildings on level ground, and failure of water retaining structures have been observed as a result of liquefaction. Local ground conditions vary. Sound structures on firm, dry alluvium typically perform well, but water-saturated areas are potentially hazardous. Underground components of utility systems are often extensively damaged during significant earthquakes. Pipelines for domestic and fire fighting water, sewer service, gas, and for electrical services and communications can be shattered. Aboveground transmission and distribution systems are also susceptible to earthquake damage, but they are usually easier and less expensive to restore than the underground installations.

Transportation facilities are vulnerable to earthquakes. Roads and streets are easily blocked, and are often buckled and broken, but emergency routes can be readily improvised. The major roadways within the county are State Route 113, US Highway 50, and Interstates 5, 80 and 505. The interchanges of freeways and similar installations (bridges and overpasses) are often damaged but not readily restored. A major earthquake affecting Yolo County would be expected to cause widespread damage to its transportation systems.

[1] Source: Compiled by Yolo County Community Development Department

Critical industrial facilities are of special concern because of potential hazardous materials spillage or critical industrial process disruption. Many forms of hazardous materials are present in Yolo County. They are present in permanent storage locations, roadway and railway transport mediums, long-distance pipelines and at various industrial and agricultural application sites. The County's location, astride major rail and highway transportation routes and its service as an agriculture center, indicate the potential for serious hazardous material incidents in the event of a major earthquake.

Ground Failure and Landslide Hazards

The major geologic hazards in Yolo County, aside from earthquake rupture and direct effects of ground shaking, are unstable hill slopes. Slopes may suffer landslides, slumping, soil slips, and rockslides. Reclaimed wetlands, whether filled or not, experience amplified lateral and vertical movements that can be damaging to structures, utilities, and transportation routes and facilities. During non-earthquake conditions, landslides most frequently occur during the rainy season.

Important effects of ground failure, in addition to direct life and structure loss and injuries, include loss of access for emergency services and repairs at important facilities, which are accessed by traversing unstable ground and the potential release of hazardous materials from containment facilities.

Although landslides due to slope failure are most frequent in "wet years" with above-average rainfall, they can occur anytime. Landslides may also occur on slopes of 15% or less; however, the probability is greater on steeper slopes, with old landslide deposits being the most likely to experience failure. Slope failures are not expected to produce a disaster affecting a large number of people. Rather, there is a persistent risk of damage to public and private property at isolated locations.

Whether a landslide will or will not occur presently cannot be predicted. Land which has a history of movement is believed to be generally more slide-prone, and also more sensitive to man-induced changes, such as grading, watering, removing or changing the type of vegetation, and changing drainage patterns, among many other factors.

Earthquake damage in Modified Mercalli Scale range of VII and greater would be felt by everyone in the area and would cause glass breakage as well as considerable damage to poorly built structures.

The Modified Mercalli Scale (Roman numerals I-XII) is used to measure the intensity of an earthquake in a particular area. It differs from the Richter scale, which measures the energy released by an earthquake.

Modified Mercalli Intensity Scale	
Numerical Code	**Description**
I	Not felt by people, except under especially favorable circumstances.
II	Felt only by persons at rest on the upper floors of buildings, some suspended objects may swing.
III	Felt by some people who are indoors, but may not be recognized as an earthquake. The vibration is similar to that caused by the passing of light trucks. Hanging objects swing.
IV	Felt by many people who are indoors and by a few outdoors. At night some people are awakened. Dishes, windows and doors are disturbed; walls make creaking sounds; stationary cars rock noticeably. The sensation is like a heavy object striking a building; the vibration is similar to that caused by the passing of heavy trucks.
V	Felt indoors by practically everyone, and by most people outdoors. The direction and duration of the shock can be estimated by the people outdoors. At night, sleepers are awakened and some run out of buildings. Liquids are disturbed and sometimes spilled. Small, unstable objects and some furnishings are shifted or upset. Doors close and open.
VI	Felt by everyone. Many people are frightened and run outdoors. Walking is difficult. Small church bells ring. Windows, dishes and glassware are broken. Liquid spills. Books fall from shelves and furniture is moved or overturned. Poorly built buildings may be damaged and weak plaster will crack.
VII	Causes a general alarm. Standing upright is very difficult. Persons driving cars also notice the shaking. Damage ids negligible in buildings of very good design and construction, slight to moderate in well-built ordinary structures, and considerable in poorly built or designed structures. Some chimneys are broken. Interiors of buildings and furnishings are damaged considerably. Architectural ornaments such as fountains, statues, and gargoyles are damaged. Small slides occur along sand or gravel banks of water channels; concrete irrigation ditches are damaged. Waves form on water surfaces and muddy bottoms become agitated.
VIII	General fright or panic. Steering cars is difficult. Damage is slight in specifically designed earthquake-resistant structures, considerable in well-built ordinary buildings, poorly built or designed buildings experienced partial collapse. Numerous chimneys fall; the walls of frame buildings are damaged; interiors are heavily damaged. Frame houses that are poorly bolted move off their foundation. Decayed pilings are broken off. Trees are damaged. Cracks appear in wet ground and steep slopes. Changes in water flow and temperature in springs and wells are noticed
IX	Panic is general. Interior damage is considerable in specially designed earthquake-resistant structures. Well-built ordinary buildings are severely damaged with partial collapse. Frame structures are thrown out of plumb or shifted off foundations. Unreinforced masonry buildings collapse. The ground cracks conspicuously and some underground pipes are broken. Reservoirs are severely damaged. Reservoirs are seriously damaged.
X	Most masonry and many frame structures are destroyed. Specially designed earthquake-resistant structures may suffer serious damage. Some well-built bridges are destroyed. Dams, dikes, and embankments are seriously damaged. Large landslides are triggered by the shock. Water is thrown onto banks of canals, rivers and lakes. Sand and mud are shifted horizontally on beaches and flat land. Railroad rails are bent slightly. Many buried pipes and conduits are broken.
XI	Few, if any masonry structures remain standing. Other structures are severely damaged. Broad fissures, slumps and slides develop in soft or wet ground. Underground pipelines and conduits are put completely out of service. Railroad rails are severely bent.
XII	Damage is total, with practically all works of construction severely damaged or destroyed. Waves are observed on ground surfaces. All soft or wet ground is greatly disturbed. Heavy objects are thrown into the air and large land masses are displaced.

Note: Input from Jon Price of the University of Nevada, Reno Campus indicates that the earthquake losses can be better described by HAZUS than by the Modified Mercalli Scale and the University is working towards that descriptive goal.

HAZUS

Description of HAZUS: Estimated Annualized Earthquake Losses for the United States

The following information is from the FEMA Mitigation Directorate Publication 366:

The HAZUS loss report is based on loss estimates generated by Hazards U.S. (HAZUS), a geographic information system (GIS)-based earthquake loss estimation tool, developed by the Federal Emergency Management Agency (FEMA) in cooperation with the National Institute of Building Sciences (NIBS). The HAZUS tool provides an approach to quantifying future earthquake losses that is national in scope, uniform in application, and comprehensive in its coverage of the built environment. The HAZUS Annualized Earthquake Loss (AEL) addresses the two key components of seismic risk; the probability of ground motion occurring in the study area, and the consequences of the ground motion.

Furthermore, the AEL takes into account that the seismic risk in the U.S. varies from region to region. For example, the level of seismic risk in the New Madrid Seismic Zone is measurably different from the seismic risk in the Los Angeles Basin, specifically with respect to:

- The probability of damaging ground motion, and
- The consequences of the ground motions, largely a function of building construction type and quality, and of the level of ground shaking and ground failure during the event.

The second parameter, Annualized Earthquake Loss Ratio (AELR), represents the AEL as a fraction of the replacement value of the local building inventory. For example, $10 million in earthquake damage in Evansville, Indiana represents a greater loss relative to the size of the city then a comparable dollar loss in San Francisco, a much larger city. The annualized loss ratio allows planners to gauge the relationship between average annualized loss and building replacement value. This ratio can be used as a measure of relative risk between regions and since it is normalized by replacement value, it can be directly compared across different geographic units such as metropolitan areas, counties or states.

The AEL does not include losses to lifeline infrastructure or indirect (long term) economic losses. The AEL quantifies the annualized earthquake losses in any single year.

The AEL and AELR for the State of California in the HAZUS 99 Estimated Annualized Earthquake Losses for the United States are as follows:

HAZUS Study, Yolo County

HAZUS-MH: Earthquake Event Report dated August 27,2004 using "Great Valley Source Event" to estimate losses in Yolo County.

General Description of the Region

HAZUS is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The primary purpose of HAZUS is to provide a methodology and software application to develop earthquake losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from earthquakes and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 1 county(ies) from the following state(s):

California

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 1,021.82 square miles and contains 37 census tracts. There are over 59 thousand households in the region and has a total population of 168,660 people (2000 Census Bureau data). The distribution of population by State and County is provided in Appendix B.

There are an estimated 45 thousand buildings in the region with a total building replacement value (excluding contents) of 9 ,408 (millions of dollars). Approximately 98.00 % of the buildings (and 83.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 2,633 and 653 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

HAZUS estimates that there are 45 thousand buildings in the region which have an aggregate total replacement value of 9, 408 (millions of dollars) . Appendix B provides a general distribution of the building value by State and County.

In terms of building construction types found in the region, wood frame construction makes up 89% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

HAZUS breaks critical facilities into two (2) groups: essential facilities and high potential loss (HPL) facilities. Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 151 beds. There are 68 schools, 6 fire stations, 5 police stations and 0 emergency operation facilities. With respect to HPL facilities, there are 7 dams identified within the region. Of these, 2 of the dams are classified as 'high hazard'. The inventory also includes 24 hazardous material sites, 0 military installations and 0 nuclear power plants.

Transportation and Utility Lifeline Inventory

Within HAZUS, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 2 and 3.

The total value of the lifeline inventory is over 3,286.00 (millions of dollars). This inventory includes over 306 kilometers of highways, 253 bridges, 5,946 kilometers of pipes.

Table 2: Transportation System Lifeline Inventory

System	Component	# locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	253	827.90
	Segments	35	1,330.30
	Tunnels	0	0.00
		Subtotal	**2,158.20**
Railways	Bridges	8	0.80
	Facilities	5	12.90
	Segments	49	121.00
	Tunnels	0	0.00
		Subtotal	**134.60**
Light Rail	Bridges	0	0.00
	Facilities	0	0.00
	Segments	0	0.00
	Tunnels	0	0.00
		Subtotal	**0.00**
Bus	Facilities	6	7.70
		Subtotal	**7.70**
Ferry	Facilities	0	0.00
		Subtotal	**0.00**
Port	Facilities	12	30.90
		Subtotal	**30.90**
Airport	Facilities	7	45.00
	Runways	7	256.70
		Subtotal	**301.70**
		Total	**2,633.20**

Table 3: Utility System Lifeline inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	59.50
	Facilities	0	0.00
	Pipelines	0	0.00
		Subtotal	**59.50**
Waste Water	Distribution Lines	NA	35.70
	Facilities	5	392.90
	Pipelines	0	0.00
		Subtotal	**428.60**
Natural Gas	Distribution Lines	NA	23.80
	Facilities	0	0.00
	Pipelines	0	0.00
		Subtotal	**23.80**
Oil Systems	Facilities	0	0.00
	Pipelines	0	0.00
		Subtotal	**0.00**
Electrical Power	Facilities	2	259.60
		Subtotal	**259.60**
Communication	Facilities	7	0.80
		Subtotal	**0.80**
		Total	**772.30**

Earthquake Scenario

HAZUS uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.

Scenario Name	Great Valley Source Event 6.9 M
Type of Earthquake	Source
Fault Name	Great Valley 3
Historical Epicenter ID #	934
Probabilistic Return Period	NA
Longitude of Epicenter	-122.04
Latitude of Epicenter	38.72
Earthquake Magnitude	6.90
Depth (Km)	7.00
Rupture Length (Km)	30.69
Rupture Orientation (degrees)	0.00
Attenuation Function	Project 2000 West - Non Extensional

Building Damage

Building Damage

HAZUS estimates that about 6,119 thousand buildings will be at least moderately damaged. This is over 13.00 % of the total number of buildings in the region. There are an estimated 209 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS technical manual. Table 4 below summaries the expected damage by general occupancy for the buildings in the region. Table 5 summaries the expected damage by general building type.

Table 4: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	9	0.03	5	0.04	4	0.09	2	0.20	1	0.25
Commercial	296	1.08	110	0.91	108	2.15	39	4.47	8	3.79
Education	8	0.03	3	0.03	2	0.04	1	0.06	0	0.02
Government	8	0.03	3	0.02	2	0.04	1	0.07	0	0.05
Industrial	39	0.14	13	0.11	13	0.27	5	0.52	1	0.42
Other Residential	2,203	8.07	1,129	9.35	1,134	22.56	544	61.68	118	56.24
Religion	11	0.04	4	0.04	4	0.07	1	0.14	0	0.11
Single Family	24,708	90.57	10,805	89.51	3,760	74.78	290	32.86	82	39.12
Total	**27,280**		**12,072**		**5,028**		**881**		**210**	

Table 5: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	126	0.04	4	0.04	6	0.11	2	0.19	0	0.11
MH*	1,107	4.06	716	5.93	954	18.96	503	57.08	111	52.80
Precast	82	0.23	22	0.18	25	0.49	10	1.11	2	1.04
RM*	436	1.55	107	0.89	110	2.19	40	4.49	4	1.71
Steel	116	0.06	10	0.08	13	0.27	6	0.73	1	0.47
UM*	38	0.14	19	0.15	16	0.32	7	0.74	3	1.23
Wood	25,375	92.85	11070	91.70	3,789	75.36	274	31.03	82	39.06
Total	**27,280**		**12,072**		**5,028**		**881**		**210**	

*Note:
RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 151 hospital beds available for use. On the day of the earthquake, the model estimates that only 67 hospital beds (45.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 78.00% of the beds will be back in service. By 30 days, 97.00% will be operational.

Table 6: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		Least Moderate Damage > 50%	Complete Damage > 50%	# likely Functional on day 1
Hospitals	2	0	0	2
Schools	68	0	0	68
EOCs	0	0	0	0
PoliceStations	5	0	0	5
FireStations	6	0	0	6

Table 7 provides damage estimates for the transportation system.

Table 7: Expected Damage to the Transportation Systems

System	Component	Number of Locations				
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	35	0	0	35	35
	Bridges	253	9	0	245	247
	Tunnels	0	0	0	0	0
Railways	Segments	49	0	0	49	49
	Bridges	8	0	0	8	8
	Tunnels	0	0	0	0	0
	Facilities	5	0	0	5	5
Light Rail	Segments	0	0	0	0	0
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Bus	Facilities	6	0	0	6	6
Ferry	Facilities	0	0	0	0	0
Port	Facilities	12	0	0	12	12
Airport	Facilities	7	2	0	7	7
	Runways	7	0	0	7	7

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 8-10 provide information on the damage to the utility lifeline systems. Table 8 provides damage to the utility system facilities. Table 9 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, HAZUS performs a simplified system performance analysis. Table 10 provides a summary of the system performance information.

Table 8 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	0	0	0	0	0
Waste Water	5	0	0	2	5
Natural Gas	0	0	0	0	0
Oil Systems	0	0	0	0	0
Electrical Power	2	1	0	1	2
Communication	7	2	0	6	7

Table 9 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (kms)	Number of Leaks	Number of Breaks
Potable Water	2,973	1284	321
Waste Water	1,784	1016	254
Natural Gas	1,189	1086	271
Oil	0	0	0

Table 10: Expected Potable Water and Electric Power System Performance

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	59,375	29,561	24,450	11,959	0	0
Electric Power		3,648	2,048	728	123	6

Induced Earthquake Damage

Fire Following Earthquake

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. HAZUS uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For this scenario, the model estimates that there will be 6 ignitions that will burn about 0.03 sq. mi 0.00 % of the region's total area.) The model also estimates that the fires will displace about 22 people and burn about 1 (millions of dollars) of building value.

Debris Generation

HAZUS estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 0 million tons of debris will be generated. Of the total amount, Brick/Wood comprises 36.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 0 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.

Social Impact

Shelter Requirement

HAZUS estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates (589 households to be displaced due to the earthquake. Of these, 156 people (out of a total population of 168,660 will seek temporary shelter in public shelters.

Casualties

HAZUS estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 11 provides a summary of the casualties estimated for this earthquake

Table 11: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	1	0	0	0
	Commuting	0	0	0	0
	Educational	0	0	0	0
	Hotels	1	0	0	0
	Industrial	1	0	0	0
	Other-Residential	68	12	1	2
	Single Family	49	5	0	0
	Total	**120**	**18**	**1**	**3**
2 PM	Commercial	87	19	3	5
	Commuting	0	0	0	0
	Educational	27	6	1	2
	Hotels	0	0	0	0
	Industrial	11	2	0	1
	Other-Residential	10	2	0	0
	Single Family	8	1	0	0
	Total	**143**	**31**	**4**	**8**
5 PM	Commercial	78	18	2	5
	Commuting	3	4	6	1
	Educational	5	1	0	0
	Hotels	0	0	0	0
	Industrial	7	1	0	0
5 PM	Other-Residential	25	5	0	1
	Single Family	18	2	0	0
	Total	**136**	**31**	**10**	**8**

Economic Loss

The total economic loss estimated for the earthquake is 621.76 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 496.49 (millions of dollars); 10 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 68 % of the total loss. Table 12 below provides a summary of the losses associated with the building damage.

Table 12: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Loses							
	Wage	0.00	0.66	14.04	0.56	0.73	15.98
	Capital-Related	0.00	0.28	11.56	0.33	0.25	12.42
	Rental	5.34	7.89	6.96	0.20	0.26	20.66
	Relocation	0.73	0.34	0.45	0.02	0.11	1.64
	Subtotal	**6.07**	**9.17**	**33.00**	**1.11**	**1.34**	**50.70**
Capital Stock Loses							
	Structural	27.84	13.88	19.56	2.77	3.65	67.70
	Non_Structural	142.77	70.34	45.45	9.01	8.56	276.13
	Content	48.69	17.13	22.13	5.98	4.98	98.91
	Inventory	0.00	0.00	1.35	1.44	0.26	3.05
	Subtotal	**219.30**	**101.35**	**88.48**	**19.21**	**17.45**	**445.79**
	Total	**225.37**	**110.52**	**121.48**	**20.32**	**18.79**	**496.49**

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, HAZUS computes the direct repair cost for each component only. There are no losses computed by HAZUS for business interruption due to lifeline outages. Tables 13 & 14 provide a detailed breakdown in the expected lifeline losses.

HAZUS estimates the long-term economic impacts to the region for 15 years after the earthquake. The model quantifies this information in terms of income and employment changes within the region. Table 15 presents the results of the region for the given earthquake.

Table 13: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	1,330.35	$0.00	0.00
	Bridges	827.90	$19.55	2.36
	Tunnels	0.00	$0.00	0.00
	Subtotal	**2158.20**	**19.60**	
Railways	Segments	120.96	$0.00	0.00
	Bridges	0.79	$0.00	0.08
	Tunnels	0.00	$0.00	0.00
	Facilities	12.86	$1.29	10.05
	Subtotal	**134.60**	**1.30**	
Light Rail	Segments	0.00	$0.00	0.00
	Bridges	0.00	$0.00	0.00
	Tunnels	0.00	$0.00	0.00
	Facilities	0.00	$0.00	0.00
	Subtotal	**0.00**	**0.00**	
Bus	Facilities	7.72	$1.70	22.03
	Subtotal	**7.70**	**1.70**	
Ferry	Facilities	0.00	$0.00	0.00
	Subtotal	**0.00**	**0.00**	
Port	Facilities	30.87	$2.99	9.70
	Subtotal	**30.90**	**3.00**	
Airport	Facilities	45.02	$10.25	22.78
	Runways	256.72	$0.00	0.00
	Subtotal	**301.70**	**10.30**	
	Total	**2633.20**	**35.80**	

Table 14: Utility System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.00	$0.00	0.00
	Facilities	0.00	$0.00	0.00
	Distribution Line	59.50	$11.56	19.43
	Subtotal	**59.47**	**$11.56**	
Waste Water	Pipelines	0.00	$0.00	0.00
	Facilities	392.90	$25.97	6.61
	Distribution Line	35.70	$9.14	25.62
	Subtotal	**428.62**	**$35.11**	
Natural Gas	Pipelines	0.00	$0.00	0.00
	Facilities	0.00	$0.00	0.00
	Distribution Line	23.80	$9.77	41.07
	Subtotal	**23.79**	**$9.77**	
Oil Systems	Pipelines	0.00	$0.00	0.00
	Facilities	0.00	$0.00	0.00
	Subtotal	**0.00**	**$0.00**	
Electrical Power	Facilities	259.60	$32.92	12.68
	Subtotal	**259.60**	**$32.92**	
Communication	Facilities	0.80	$0.12	14.92
	Subtotal	**0.83**	**$0.12**	
	Total	**772.30**	**$89.48**	

Table 15. Indirect Economic Impact with outside aid
(Employment as # of people and Income in millions of $)

	LOSS	Total	%
First Year			
	Employment Impact	0	0.00
	Income Impact	(147)	-5.92
Second Year			
	Employment Impact	0	0.00
	Income Impact	(158)	-6.34
Third Year			
	Employment Impact	0	0.00
	Income Impact	(161)	-6.49
Fourth Year			
	Employment Impact	0	0.00
	Income Impact	(161)	-6.49
Fifth Year			
	Employment Impact	0	0.00
	Income Impact	(161)	-6.49
Years 6 to 15			
	Employment Impact	0	0.00
	Income Impact	(161)	-6.49

Appendix A: County Listing for the Region

Yolo, CA

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
California	Yolo	168,660	7,841	1,566	9,408
Total State		**168,660**	**7,841**	**1,566**	**9,408**
Total Region		**168,660**	**7,841**	**1,566**	**9,408**

Severe Weather

Severe Weather was rated as a MODERATE RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

Thunderstorms

Thunderstorms are common types of severe weather in the State of California. Annually, throughout the United States, thunderstorms kill more people than tornadoes. The five main threats from thunderstorms are lightning, flooding, straight-line winds, hail and tornadoes.

Flash floods and floods from a thunderstorm have caused death in the State of California. Property damage from thunderstorms is also extensive annually (*see Flood*).

High Winds

Historical data indicates that there is no trend, or certain time period during a given year, for damaging high winds to occur in the State of California; however, high winds can accompany severe storms and thunderstorms in the State. For this reason, they are considered a risk factor. Examples of high winds are the nighttime down slope winds that blow out into the Reese River Valley at Austin. At times, when there is a large pressure change over a long distance, these winds become strong causing extensive damage.

Mobile homes, power lines, billboards, airplanes, vehicles, roofs and other structures have been damaged by severe winds. Due to the high incidence of damage to mobile homes, insurance companies have adopted policies which require tie downs.

Lightning

Lightning occurs with all thunderstorms. Nationally, lightning causes an average of 93 deaths and 300 injuries per year. (American Red Cross report on Thunderstorms and lightning.)

Source: Planning for Natural Hazards: The Oregon Technical Resource Guide

El Niño

On February 9, 1998, President Clinton, in response to a request from Governor Wilson, declared a major disaster for 27 counties in the State of California. The disaster was designated as FEMA-1203-DR-CA. On February 13, 1998 four additional counties were added; on February 26, four more counties were added, and on March 6, 1998, six additional counties were designated, bringing the total to 41.

The County of Los Angeles established a special task force comprised of county department members to distribute sandbags and clear flood channels. In Monterey County, farmers and landowners along the Salinas River banded together to reduce flooding that caused $240 million in damages in 1995. They formed a coalition and spent $2 million to clean out vegetation, sandbars, and other flow impediments along 40 miles of the river, and increased water flow capacity by 33 percent. As a result, the Salinas River did not flood during the El Nino ’98 Storms. In anticipation of El Nino-driven pounding

surf and high tides, City and Orange County crews built, along the beach, a 10-foot high berm several hundred yards long to protect scores of beach-front homes in the City of Seal Beach.

The National Flood Insurance Program reported a surge in Californians purchasing flood insurance following the El Nino Community Preparedness Summit held in October, 1997. The number of policies went from a pre-summit total of 264,914 to 333, 753 by the end of November. This number climbed to 365,000 by the end of December according to FEMA.

Disasters have unique and defining characteristics. The El Nino '98 Storms are no exception. The most distinct characteristic of FEMA-1203-DR-CA has been the landslides, coastal erosion, and related earth movement problems brought on by rapidly recurring storms which produce heavy rains, high winds, and large waves.

Overview of FEMA-1203-DR-CA

Disaster Declaration

On February 9, 1998, President Clinton signed a major disaster declaration that designated "El Nino '98, FEMA-1203-DR-CA." As a result of the Presidential declaration, section of the Robert T. Stafford Disaster Relief and Emergency Assistance Act were implemented, providing Individual Assistance and Public Assistance to the designated counties. The declaration also activated the Hazard Mitigation Grant Program (HMGP) which is applicable to all counties in the State. After the initial declaration by President Clinton, 14 additional counties requested to receive a federal declaration, bringing the total number of designated counties to 41.

The 41 designated counties were: Alameda, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, Fresno, Glenn, Humboldt, Kern, Lake, Los Angeles, Marin, Mendocino, Merced, Monterey, Napa, Orange, Riverside, Sacramento, San Benito, San Bernardino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Ventura, ***Yolo***, Yuba.

El Nino '98

In the spring of 1997, Pacific Ocean temperatures along the equator from South America to Australia were rising above normal, changing wind patterns in the area. This is a phenomenon known as El Nino. As part of the global impact of El Nino, heavy storms for 1997-1998 were predicted for the State of California.

In anticipation of a serious El Nino winter season, emergency services agencies throughout the State started making preparations. During a summit convened on October 6, 1997, Governor Pete Wilson directed the State to take a series of actions to prepare for the severe storms that were predicted to hit California as a result of El Nino. The Governor directed the Office of Emergency Services (OES) and the Department of Water Resources (DWR) to conduct a series of regional briefings over the next two months to assist local communities in their El Nino preparations. In October 1997, the first of six briefings for local and state agencies was held. FEMA held the "El Nino Community Preparedness Summit" in Santa Monica, on October 14, 1997

Agencies such as DWR and the Corps of Engineers accelerated efforts to complete projects and work which began as a result of the prior year's disastrous flooding. Many local agencies accelerated repairs, cleaned storm channels, and implemented community education efforts, while the State issued environmental permits that allowed repair and mitigation work to move forward prior to the arrival of the storms. Although difficult to quantify, it is clear that without these and a multitude of other efforts, the devastation from the disaster would have been far greater.

About 170% of normal precipitation was experienced in most areas, with several locations receiving 300% or more above normal. Rainstorms occurred continuously in February, ranging in duration from 1 to 3 days, with only a day of rest between cycles. The season's most severe storm occurred on February 2nd, and a series of storms continued until February 24, 1998. A strong jet stream was present across the Pacific during this time and this colder air mass also increased rain and snow. February rains were three times normal, and the mountain snow pack rose from 15% to 185%. The pattern was similar to the winter of 1982-83, the most serious past El Nino year. The El Nino '98 Storms were of average temperature --unlike those of 1997, which were warmer, resulting in rainfall at higher elevations.

Description of Damage and Impact

Damage occurred almost as soon as the first heavy rains began in November, 1997. In Orange County, the damage became serious enough for a local disaster declaration on December 6, 1997. This was followed by a gubernatorial disaster declaration on December 10, 1997.

Casualties included 17 confirmed deaths and 29 confirmed injuries. The total amount of residential damage was estimated at over $120 million. Roads, utilities, and levees were also damaged. As of April 29, 1998, the Disaster Field Office (DFO) estimated damages as follows: 91 homes have been destroyed, 2,303 homes suffered major damages, and 4,252 homes incurred minor damage.

According to the California Coastal Commission, *Storm Summary Report for Coastal California, March 10, 1998,* the El Nino '98 Storms caused extensive damage along Coastal California. In many cases, coastal bluff and mountain soils lost stability due to saturation from copious precipitation and large waves. High river levels caused flooding of several low elevation areas. There was a great deal of beach erosion in Los Angeles, Orange, and San Mateo Counties, as well as other parts of California. Storm waves damaged many low-lying oceanfront structures. The Coastal Commission issued approximately 75 emergency coastal permits, mostly for rip rap and seawall repairs to protect residential structures.

Impacts to Individuals

By April 28, 1998, FEMA's Human Services Division had received over 70,125 tele-registrations for FEMA disaster assistance. The Disaster Housing Program had received a total of 46,730 applications, and had provided $20.6 million in assistance. As of April 15th the Small Business Administration (SBA) had issued 31,509 home and personal property loan applications and had approved more than $16 million in low interest loans. In addition, the SBA had issued 9,699 business loan applications and approved $6,504,400 in business loan funds. The Individual and Family Grant Program (IFGP) had received 37,093 requests as of April 28th. For serious, unmet needs beyond the maximum IFGP award, the State Supplemental Grant (SSG) could provide up to an additional $10,000, and had awarded 17 grants for an additional $82,663 in aid to individuals. The Public Assistance (Infrastructure) Program had received 269 Damage Survey Reports (DSRs) totaling $26,582,560 as of April 28, 1998. According to the preliminary damage assessment, damage to local government facilities was estimated at $300 million.

Shelters

The El Nino '98 Storms created a need to feed and shelter thousands of people. The American Red Cross (ARC), members of the National Volunteer Organizations Active in Disaster (NVOAD), and numerous other voluntary agencies, are usually the first to respond to the needs of disaster victims. The Red Cross provided housing for 5,112 people at 91 shelter locations, more than 140,000 meals were served, and financial assistance was extended to more than 2,300 households. The Red Cross relief efforts for the El Nino winter storms exceeded $4.6 million.

Levees

Unlike the flooding in the previous year (FEMA-1155-DR-CA), California Winter Storms of 1997), there were less widespread floods and levee problems. Due in part top the lower temperatures, the duration of rains, and pre-storm repair efforts to shore-up levees at risk, there were only a few levee breaks and seepage. According to DWR, The Sacramento River was not strained to capacity. The San Joaquin River briefly approached flood stage at the Vernalis Gage, but did not exceed it. Many of the areas that flooded were predictable, such as Rio Linda in Sacramento County and the residential areas along the Pajaro River in Monterey County. The area around Clear Lake in Lake County repeated its flooding history, and set a record for the stage height. The Russian River at Guerneville was above flood stage, as was the Petaluma River.

Landslides

Landslides and debris flows had a greater impact during this disaster than in the federal disasters of 1995 and 1997. The severity of the problems ranged from the catastrophic losses in the Rio Nido community of Sonoma County, to small erosion problems with minor impact. Landslides and erosion also caused residential damage and destruction in Alameda County, Humboldt County, Los Angeles County, San Mateo County, San Francisco County, Santa Cruz County, Ventura County, and various other sites within the state.

Geological Discussion

The frequent storms that occurred in February 1998 saturated soils and triggered numerous debris flows and landslides, resulting in severe damage throughout river valleys and coastal areas. Eroding cliffs jeopardized homes, and debris flows forced many residents to evacuate their homes. Such headline grabbing events focused attention on the geologic problems produced by the wet season. It should be noted, however, that deep-seated landslide movements could continue after the heavy rains have stopped.

Soil and rock that comprises hill slopes will eventually move downhill. Some of this material will move grain-by-grain thorough erosion and soil creep, and some will move as larger slabs or liquefied masses, commonly called landslides and mudslides. Geologists generally classify landslides on their shape, rate (speed) of movement, type of motion, and material properties. In most classification schemes, there are three distinct types of movement: flow (e.g. debris flows and mudflows); sliding along a discrete plane or failure (e.g. debris slide); and falling (e.g. rock falls and avalanches).

Landslides can be small, involving only a few cubic yards of material, or large, involving more than a square mile of land. Some landslides are shallow, only a few feet deep, while others can be hundreds of feet deep. Landslides can be slow, and move only a few inches a year. It can also be fast and move at tens to hundred of miles per hour.

While most hill slopes are marginally stable under dry conditions, the addition of water from rainfall, snowmelt, or human activities (e.g. watering lawns) can radically alter the character of the soil and weathered rock and lessen the stability of slopes. Generally, all other conditions being equal, if groundwater is at or near the ground surface, there is a great probability that a landslide or debris flow will occur.

Another major factor that may trigger landslides is sudden changes in the shape of the slope. Slope changes that may trigger landslides include, but are not limited to, man-made cuts and fills, undermining of slopes by stream erosion or formation of gullies, or undermining and overloading of slopes due to landslide movement on adjacent land. In fact, landslide movement in one part of a hill slope can radically affect the stability of adjacent slopes. Events at Rio Nido in Sonoma County

illustrate how complex the changes in stability can be. In simplified terms, the Rio Nido landslide began when a block of soil and rock, high on a ridge, rotated down and out on the slope. This movement pushed a bulge of material onto the existing steep slope at the toe of the landslide. Fissures opened at both the top of the rotational block and within the toe of the landslide. The rotational movement of the landslide also undermines up-slope areas (decreasing stability), changing the groundwater flow patterns (increasing stability in parts of the slide while decreasing stability in other). Because the toe of the landslide was no longer supported by the surrounding slope (the slope became overly steep), the saturated outside edge failed by toppling and breaking apart. This loose material then mobilized as debris flow down a stream channel, picking up additional debris, including sediment and trees, as it flowed toward the houses on the canyon flow below. Immediate concerns were that the landslide mass would continue to move high on the slope, and as it did, the entire mass would break apart and fail as a massive debris flow that would inundate a much larger down slope area. Currently, the rotational component of the Rio Nido landslide has not shifted since monitoring equipment was installed two weeks after the failure began.

Hillsides may also be more vulnerable to debris flows following wildfires. Removal of vegetation generally makes hillsides more susceptible to erosion and landslides. After a forest fire there is reduction in the amount of vegetation on the hillsides to hold the soil in place. Also, the roots decay over a period of years following the fire. This results in an increased landslide hazard for 3 to 5 years following a large fire. In 1997, Southern California had 27 wildfires greater than 300 acres. At least 22 of those sites had some erosion damage in 1987, and it came in the form of debris flows and minor flooding.

There is evidence to suggest that most landslides and debris flows occur where they have happened in the past. For example, the Rio Nido landslide is next to an existing landslide deposit identified on a CA Division of Mines and Geology (DMG) map.

Though landslides are fairly common in California's hillside areas, there is considerable pressure to construct new homes at these locations. Some communities require site-specific investigations prior to permitting development. Engineers attempt to stabilize slopes by providing drainage, flattening slopes, and filing-in valleys. Sometimes, these modified slopes and fills require maintenance and while many of these modified slopes could last decades, some failures occur. This is what happened to houses in Laguna Niguel, Orange County, which were built on an engineered slope that had shown signs of distress for three years.

Just as there is pressure to develop hill slope areas, the beautiful ocean views from sea cliffs make them desirable places to live. During the recent disaster, accelerated cliff erosion in Pacifica resulted from slightly higher than normal seasonal ground water infiltration. When the ground becomes saturated, wave action can more easily remove materials that have fallen to the bottom of the cliffs, temporarily accelerating cliff retreat in the areas up slope. The rocks in these particular cliffs are highly fractured and nonresistant. They include sandstone, shale, and metamorphic rocks that are prone to rapid erosion during the rainy season. Erosion usually has occurred episodically, not continually at the same time. This year the cliffs locally eroded as much as 10 feet, compared to the frequently noted annual averages of 3 to 4 inches.

Sinkholes & Subsidence

Sinkholes & Subsidence were rated as LOW RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

Land subsidence (the vertical downward movement of the land surface) has a variety of causes, including some that are related exclusively to human activities (e.g. mining and drainage of organic soils). We have already seen that subsidence can result from isostatic adjustments and natural compaction. Now we shall examine subsidence caused by fluid withdrawal, sinkhole development, and hydrocompaction.

Deep Subsidence

Deep subsidence is the slow downward movement of land caused by the compaction of sediments that occur below the earth's surface.

Deep subsidence occurs in locations where fluids under pressure are withdrawn from the subsurface. This includes groundwater taken from confined aquifers and fluids pumped from oil and gas reservoirs.

Central Valley, California: world's largest area of subsidence (geology)Long Beach, CA: up to 30 feet of subsidence occurred over an oil field

When fluids held under pressure within the subsurface are withdrawn, the fluid pressure drops. If the formation from which fluids were taken is composed of compressible sediments, a reduction in fluid pressure can cause the overlying formations to slowly subside.

Santa Clara Valley, CA: groundwater levels correlate with subsidence. Long Beach, CA: subsidence has been halted by using injection wells

Sinkholes

There are three types of sinkholes, each of which forms in a different way. Collapse sinkholes are by far the most hazardous because of how suddenly they can form.

1. SOLUTION SINKHOLES

Solution sinkholes form where soluble bedrock (i.e., limestone, dolomite, marble, or rock salt) is exposed at the land surface and therefore subject to dissolution by surface water. Runoff collects in natural depressions (often where bedrock fractures intersect) and slowly dissolves a sinkhole.

2. SUBSIDENCE SINKHOLES

Subsidence sinkholes are similar to solution sinkholes, except the soluble bedrock is covered by a thin layer of unconsolidated material (e.g., soil and/or sediment). Surface water infiltration dissolves cavities where the bedrock is most intensely fractured, and the overlying sediments gradually move downward into the expanding cavity.

3. COLLAPSE SINKHOLES

Collapse sinkholes form when surface materials suddenly sink into a subsurface cavity or cave. The cavities form slowly over time, as groundwater moves along fractures in soluble bedrock and enlarges them through dissolution. Collapse can occur in two different ways: (where caves are found)

When a cavity gets sufficiently large, the "roof" becomes too thin to support its own weight and the weight of any overlying rock or sediment, so it collapses into the cavity.

Sometimes cavities are able to support the weight of overlying materials (usually sediments) by virtue of being completely filled with groundwater. If the groundwater level is lowered, then the overburden will first erode and then collapse into the dewatered cavity.

Hydrocompaction

Hydrocompaction (the subsidence of shallow soils and sediments as a result of adding water to the land surface. Typically this occurs in dry regions where agriculture relies on extensive irrigation) is notable not for the magnitude of the subsidence that occurs but for the fact that much of the western United States has the type of geologic conditions which are susceptible to this phenomenon.

The sediments that are susceptible to hydrocompaction were loosely deposited in an arid or semi-arid environment by processes that left them with a very high porosity (> 45%). As these sediments dry out, their high-porosity structure is preserved by clay particles that act as "bridges" to cement the larger particles together. If water is added, the clay "cement" loses its strength, and the sediment subsides under its own weight.

Volcanic Activity

Volcanic Activity was rated as a LOW RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

There is a history of ancient volcanic action in the State of California; however, the risk is not considered significant within the State's geographic area. Volcanic activity surrounding the State of California could potentially cause some ash fall over portions of the State. However this is predicted to cause little or no damage or significant disruptions.

There is no immediate indication of renewed volcanic activity in the State of California. (U.S. Geological Survey)

The following Forum Report was made available to the Hazard Mitigation Steering Committee on volcanic hazard risks in California from the California Bureau of Mines and Geology:

Volcanic Hazards

The most likely volcanic hazard for California is an eruption from the Mono Craters area near Mono Lake in Eastern California. Small eruptions from these volcanoes have sent ash into California as recently as about 260 years ago. Other volcanoes that could deposit ash in California include Mount Lassen, Mount Shasta and the Long Valley Caldera in California and volcanoes in the Cascade Mountains in Oregon.

The biggest threat for California from eruptions in California and Oregon is damage to flying aircraft. Ash from eruptions in California or Oregon is not likely to cause long-term problems in California, because the ash deposits are likely to be thin, typically only a few inches thick at most.

A massive eruption from the Long Valley Caldera near Mammoth Lakes, California over 700,000 years ago devastated a considerable area. Air-fall ash from these eruptions did collect as thick piles of ash in parts of California, and some of the ash may have been hot enough or thick enough to devastate the landscape locally. Scientists would expect to see strong indications from seismographs before another eruption of this magnitude. The U.S. Geological Survey continues to monitor the area around Mammoth Lakes, and will issue warnings prior to any subsurface changes that could precede a major eruption.

Technological & Human-caused Hazards

Levee Failure

Levee Failure was rated as a HIGH RISK PRIORITY for each jurisdiction by the Hazard Mitigation Planning Steering Committee.

Background

If a levee or floodwall does not meet the base flood protection criteria, it is not recognized on the Flood Insurance Rate Map (FIRM). Because these levees do prevent damage from smaller, more frequent floods, they may receive CRS credit.

Many communities are protected to some extent by levees or floodwalls. (As used in this activity, the word "levee" includes floodwalls.) The National Flood Insurance Program (NFIP) has mapping criteria for areas protected by levee systems (44 *CFR* 65.10). If it does, the protected area is mapped as a B, C, or X Zone and flood insurance rates are lower than if it remained an A Zone. The community is required to maintain the levee to its design standard in order to keep the favorable zone designation.

Activity Description

This activity provides credit to communities protected by levees that are properly maintained and operated but are not high enough to meet the criteria for base flood levees. A community may also receive credit for a levee that protects to the base flood elevation or above if the levee is not reflected on the community's FIRM. There is no credit under this activity if the area protected by the levee is designated as an AO, A99, AR, B, C, or X Zone or an AE or A numbered zone with the base flood elevation lower than on the water side of the levee.

CRS credit is only provided for levees and floodwalls built before January 1, 1991, and those that provide protection to at least the 25-year flood elevation.

In addition to having adequate design and maintenance, there must be emergency response plans for situations in which the levees are threatened with overtopping or failure. This activity is not intended to encourage construction of new flood control structures or to duplicate credit given to base flood levees by current mapping procedures.

The area protected by a levee on a community's FIRM must show the protected area as an SFHA. The base flood elevation must be the same on both sides of the levee. If the area protected by a levee is mapped as a B, C, or X Zone, the levee was considered to provide base flood protection when the FIRM was prepared and no credit is available under this activity.

There are other activities related to levees that are not included here because they are credited elsewhere. For example, Activity 330 (Outreach Projects) could provide credit for advising residents of the protected area about the levee and its shortcomings.

Levee Protection for the City of Woodland

The U. S. Army Corps of Engineers draft Feasibility Study for Flood Protection Alternatives for the City of Woodland (dated 2002) identified two viable alternatives; the Lower Cache Creek Flood Barrier Plan and the Modified Wide Setback Levee project. In March 2004, the voters in Woodland rejected the

flood barrier concept and approved a policy the would provide a "regional" solution. No "regional" solution has been identified to date.

Lower Cache Creek Flood Barrier Plan Proposal

The Lower Cache Creek Flood Barrier (LCCFB) Plan includes constructing a levee along the northern urban limit line of Woodland. The LCCFB levee would be approximately 6 miles in length, originating near the intersection of County Road 19B and County Road 96B and extending to the Cache Creek Settling Basin, just north of Woodland. At the west end, the levee would be outflanked by floods having a peak flow greater than 70,000 cubic feet per second. The volume of these flows is small and would not result in flood damages in Woodland.

Where possible, existing roads would be raised to match the top-of-levee elevation of the LCCFB. In locations where the roads could not be raised sufficiently, stoplog structures would be constructed to close the gap in the levee. A stoplog structure would also be provided at the California Northern Railroad opening in the I-5 embankment.

A section of the west levee of the settling basin would be removed for the construction of a concrete inlet weir. Water levels above the weir crest elevation would drain into the settling basin and then into the Yolo Bypass. Water levels below the inlet weir crest elevation would drain into the settling basin through a low-level drainage structure with culverts. Flapgates would be installed on the culverts to prevent backflow from the settling basin into the area west of the settling basin. Gated culverts would also be installed through the LCCFB levee to convey water to Woodland's pumping station. The amount of water flowing through this culvert would be controlled by the City of Woodland.

A flood warning system would be incorporated to initiate evacuation of the flood plain and closure of crossings.

The LCCFB would not reduce flood damages to the largely agricultural area north of the city or to the area north of Cache Creek. The plan would require occasional flowage easements on some areas north of the LCCFB where increases in the depth and duration of flooding would be substantial. The area where occasional flowage easements would be required is primarily between County Road 101 and the west levee of the settling basin. Flood protection to the area between the LCCFB and Cache Creek would continue to rely on the existing Cache Creek levee system, which the State of California would continue to operate and maintain.

Plan Accomplishments

- The LCCFB Plan would have a 97 percent conditional annual chance of not flooding for the 1 in 100 chance flood event.
- The LCCFB Plan would remove Woodland and an area of Yolo County south of the LCCFB from the FEMA 1 in 100 chance flood plain associated with Cache Creek.
- Although not a feature of the LCCFB Plan, the existing levee system would continue to be maintained to provide the existing level of flood protection to the areas adjacent to lower Cache Creek.
- The LCCFB Plan would involve significantly less direct effects to the Cache Creek biological environment than the Modified Wide Setback Levee Plan.

- The LCCFB Plan would involve the acquisition of significantly fewer residences and structures than the Modified Wide Setback Levee Plan and the conversion/loss of significantly less agricultural land.

Modified Wide Setback Levee Proposal

The Modified Wide Setback Levee (MWSL) Plan consists of constructing approximately 19 miles of levees along lower Cache Creek. Levee improvements begin at the west levee of the settling basin and terminate upstream near County Road 94B.

The levee alignments were selected to reduce the environmental mitigation associated with the location of elderberry plants and also to reduce effects to homes and farm structures. All bridge approaches would be modified. Modifications to the bridges would consist of rebuilding the bridge approaches and replacing the existing embankment approaches with viaduct approaches. These viaducts would substantially increase bridge openings and flow capacity, reducing the flow velocities and eliminating the need for rock slope protection and subsequent environmental mitigation. Concrete linings would still be necessary under bridges and in the main channel for erosion and scour protection.

Although rock slope protection is reduced at the bridges, rock slope protection would be required on a small portion of the left bank downstream from I-5. Furthermore, hard points (stone fills) would be installed at the outer bend near the vicinity of the town of Yolo. Due to the geomorphology of Cache Creek in these locations, bank protection is necessary to ensure lateral channel stability.

Toe drains, acting as lateral drainage channels, would also be installed on the waterside of the levees to facilitate over-bank drainage. Additionally, approximately 70 percent of the existing levee system would be removed to allow water to flow back and forth from the channel and overbank area. The other 30 percent is expected to naturally degrade over time, minimizing disturbance to the nearby elderberry shrubs and substantially reducing environmental effects.

The MWSL Plan would, however, protect a larger area than the LCCFB Plan, including areas both north and south of the creek. The area between the levees of the MWSL would be inundated.

Plan Accomplishments

- The MWSL Plan would have an 89 percent conditional annual chance of not flooding for the 1 in 100 chance flood event.

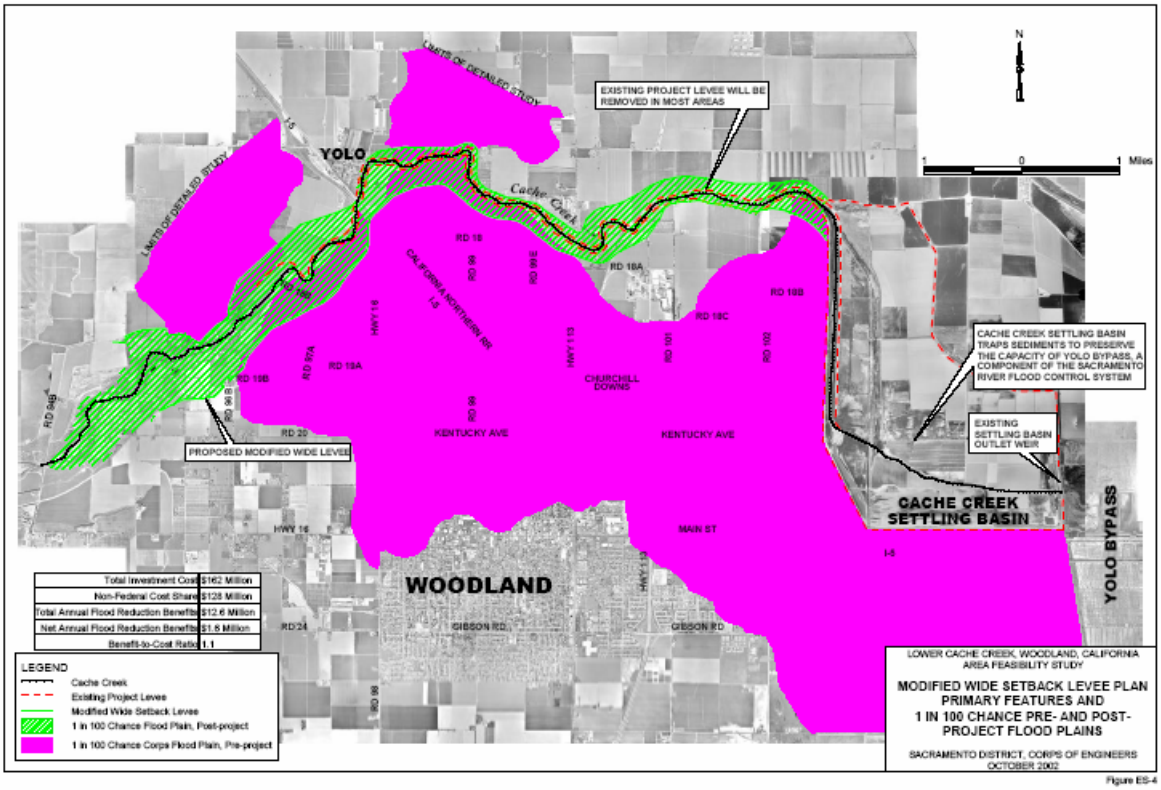
- The MWSL Plan would remove Woodland and a large portion of the land north and south of lower Cache Creek from the FEMA 1 in 100 chance flood plain.

- The MWSL Plan would allow for future restoration of Cache Creek.

- The MWSL Plan would involve fewer transportation effects from flooding than the LCCFB Plan.

Other Levee Issues

There are networks of levees along the I-80 causeway and Yolo Bypass that occasionally are cause for concern during heavy flooding. The main levees between main channels and the causeway are maintained by Yolo County. Many of the levees intertwining the area are maintained by Reclamation Districts or privately maintained.



Levee System Integrity Program CALIFORNIA BAY-DELTA AUTHORITY MULTI-YEAR PROGRAM PLAN (YEARS 4-7) LEVEE SYSTEM INTEGRITY PROGRAM

The goal of the Levee System Integrity Program is to provide long-term protection for multiple Delta resources by maintaining and improving the integrity of the extensive Delta levees system. These efforts are being undertaken in a manner consistent with the Ecosystem Restoration Program and Conveyance Program.

The CALFED Record of Decision (ROD) identified five commitments to be met. For each ROD commitment, key objectives have been identified for the Levee System Integrity Program:

Provide Base Level Protection.

Provide funding to help local reclamation districts reconstruct all Delta levees to a base level of protection (the PL 84-99 standard).

• **Implement Special Improvement Projects.**

− Identify projects that will enhance flood protection beyond that provided by base level standard, necessary for identified public benefits including life and personal property protection, water quality, protecting agricultural production, and protecting ecosystems.

• **Implement a Levee Subsidence Control Plan.**

− Develop “best management practices” to correct subsidence adjacent to levees.
− Coordinate research to quantify effects and extent of inner-island subsidence.

•

Implement a Levee Emergency Management and Response Plan.

- Enhance the ability of local, State, and Federal agencies to rapidly respond to levee emergencies.

• **Perform a Delta Levee Risk Assessment.**

- Perform a risk assessment to quantify the major risks to Delta resources from floods, seepage, subsidence and earthquakes, evaluate the consequences, and develop recommendations to manage the risk.

Dam Failure

Dam Failure was rated as a HIGH RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

Dam failure is the uncontrolled release of impounded water from behind a dam. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, and terrorism can all cause a dam to fail. Dam failure causes downstream flooding that can affect life and property.

California has had about 45 failures of non-federal dams. The failures occurred for a variety of reasons, the most common being overtopping. Other reasons include specific shortcomings in the dams themselves or an inadequate assessment of surrounding geomorphologic characteristics.

California's first notable dam failure was in 1883 in Sierra County, while the most recent failure occurred in 1965. The most catastrophic event was the failure of William Mulholland's infamous St. Francis Dam, which failed in 1928 and killed an estimated 450 people, only slightly fewer then the 1906 San Francisco earthquake. The actual number of dead from the St. Francis Dam failure was likely substantially higher. San Francisquito Canyon, which was flooded in the event, was home to hundreds of transients and illegal immigrants who were never accounted for in the death totals.

Since 1929, the state has supervised all non-federal dams in California to prevent failure for the purpose of safeguarding life and protecting property. Supervision is carried out through the state's Dam Safety Program under the jurisdiction of DWR. The legislation requiring state supervision was passed in response to the St. Francis Dam failure and concerns about the potential risks to the general populace from a number of water storage dams. The law requires:

- Examination and approval or repair of dams completed prior to August 14, 1929, the effective date of the statute
- Approval of plans and specifications for and supervision of construction of new dams and the enlargement, alteration, repair, or removal of existing dams
- Supervision of maintenance and operation of all dams under the state's jurisdiction

The 1963 failure of the Baldwin Hills Dam in Southern California led the Legislature to amend the California Water Code to include within state jurisdiction both new and existing off-stream storage facilities.

Dams and reservoirs subject to state supervision are defined in California Water Code §6002 through §6004, with exemptions defined in §6004 and §6025. In administering the Dam Safety Program, DWR must comply with the provisions of CEQA. As such, all formal dam approval and revocation actions must be preceded by appropriate environmental documentation.

In 1972, Congress moved to reduce the hazards from the 28,000 non-federal dams in the country by passing Public Law 92-367, the National Dam Inspection Act. With the passage of this law, Congress authorized the USACE to inventory dams located in the United States. The action was spurred by two disastrous earthen dam failures during the year, in West Virginia and South Dakota that caused a total of 300 deaths.

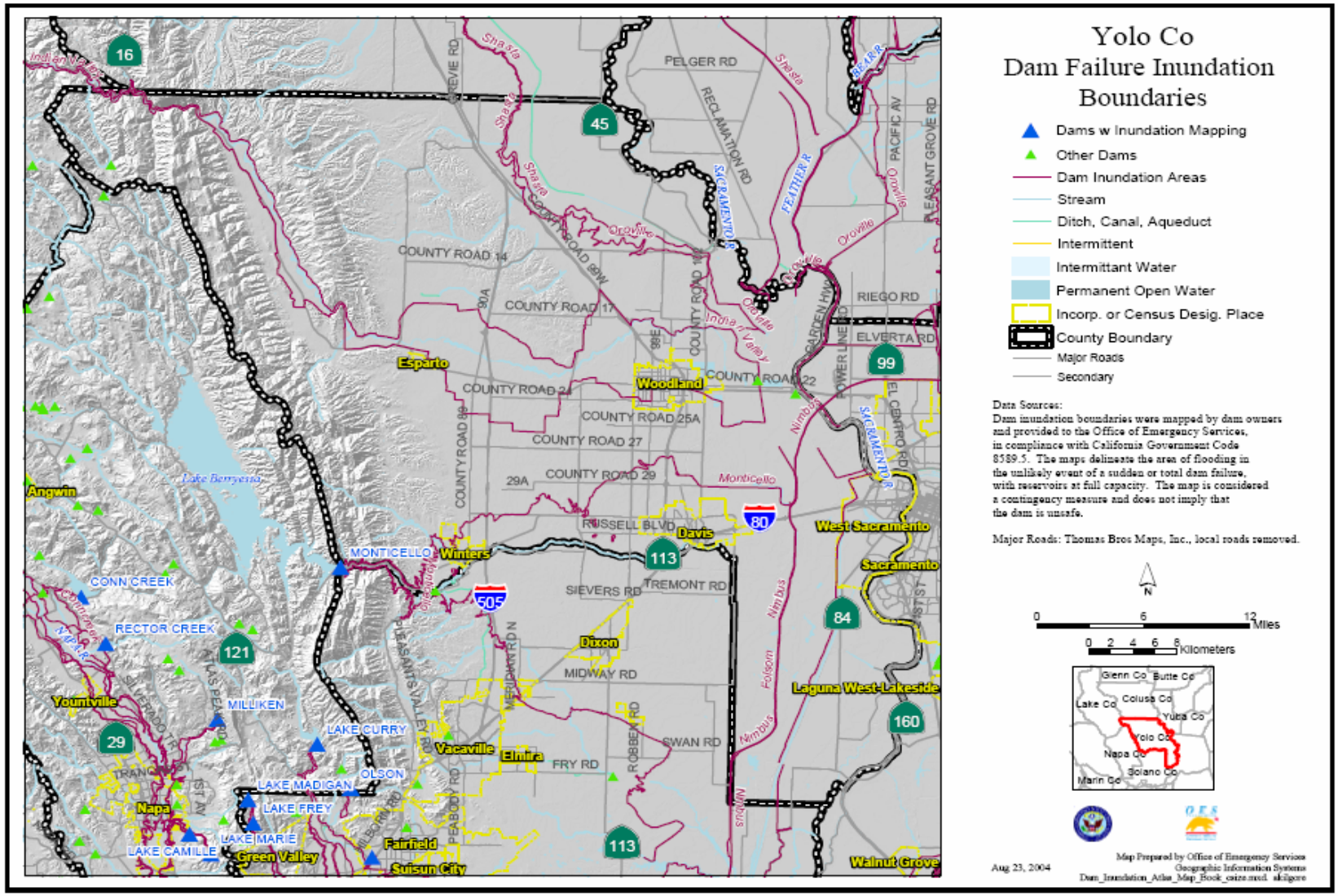
Dams in Yolo County

In the area there are six dams of various constructions, the failure of any one of which would cause some degree of flooding and possible damage in Yolo County:

Monticello Dam	Putah Creek
Indian Valley Dam	Cache Creek
Shasta Dam	Sacramento River
Oroville Dam	Feather River
Folsom Dam	American River
Nimbus Dam	American River

The Water Resources Development Act of 1986 (P.L 99-662) authorized USACE to maintain and periodically publish an updated National Inventory of Dams (NID). The Water Resources Development Act of 1996 (P.L. 104-303), Section 215, re-authorized periodic updates of the NID by USACE.

The map below shows possible inundation (flooding) in the case of a dam failure. The purple lines are labeled with dam name failure that would cause the inundation



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Monticello Dam

Monticello Dam is located on Putah Creek where the stream crosses the eastern boundary of Napa County. It regulates flows along the lower reaches of Putah Creek and stores surplus water. The dam is a concrete, medium-thick arch structure with a height of 304 feet above the foundation and a crest length of 1,023 feet.

Monticello Dam was built in 1983. It is at the base of the Monticello Dam, and has 3 generators. The was built under a FERC license and is owned, operated and maintained by Solano Irrigation District. Lake Berryessa has a storage capacity of 1,602,000 acre-feet.

Statistics

General

- Vicinity Map
- Region (Map) ..... Mid Pacific
- State (Map) ..... California
- County ..... Yolo
- Project ..... Solano
- Dam type ... Concrete medium thick arch
- Location ..... 30 mi W of Sacramento, CA
- Watercourse ..... Putah Creek
- Reservoir ..... Lake Berryessa
- Original construction 1953-1957
- National ID Number CA10170
- Hydrologic Unit Code .....

Hydraulics

- Total storage to
- El. 455.5 ..... 1,602,000 acre-ft
- Service spillway
  Capacity at El. 455.5 ..... 48,400 cfs
- Outlet works
  Capacity at El. 455.5 ..... 2,580 cfs

Geology

- Foundation:

Dimensions

- Crest Elevation ..... 456.0 ft
- Structural Height ..... 304 ft
- Hydraulic Height ..... 239 ft
- Crest Length ..... 1,023 ft
- Crest Width ..... 12 ft
- Base Width ..... 100 ft
- Volume of Concrete ..... 326,000 cu yd

Hydrology

- Drainage area ..... 566 sq mi
- Hydrometeorological Report ..... HMR
- PMF .....
- Volume .....
- Peak inflow .....
- Maximum water surface .....

City of Winters

Monticello Dam is a thin arch concrete structure 270 feet high. It impounds a maximum of 1,602,300 area-feet creating Lake Berryessa in Napa County, 10 miles west of Winters. Seismic evaluation of Monticello Dam indicates it could withstand an earthquake of Richter magnitude 6.5 with the epicenter located .5 miles from the dam. Thus the dam is considered safe from such an occurrence. In the event of failure, Monticello presents a high hazard to downstream areas and extensive loss of life and property would likely to occur. The City of Winters is directly within this path of destruction. The estimated time from a Dam break to over 15 feet of fast-moving flood water in the City of Winters is 30 minutes to 1 hour.

City of Davis

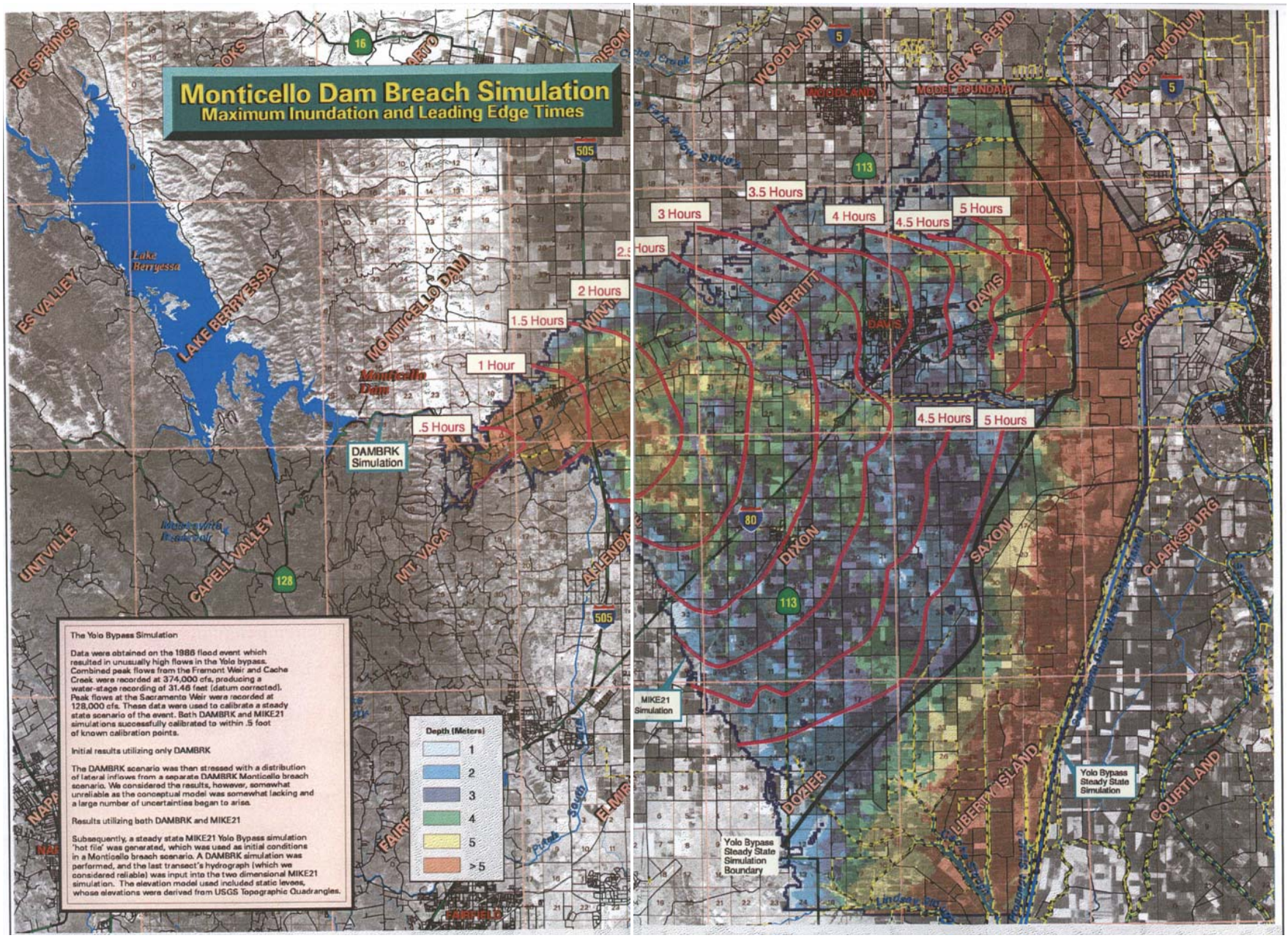
The inundation from a breach in Monticello Dam would continue east and spread south into low lying southern Yolo and northern Solano County agricultural land. The time estimate for inundation flooding to reach the western limits of the City of Davis is 3 hours from breach. By that time, flood waters from between 6 – 12 feet would be entering Davis. In approximately 4.25 hours from breach, the entire city would have felt the effects of the flood. The Sacramento Deep Water Shop Channel and several irrigation or Tule Canals would stop the spread short of the City of West Sacramento at it's western limits.

(See the Monticello Dam Breach Simulation Map on next page.)

Flooding and Flood-related Releases

Flood routings performed in 1996 calculated that the dam may be overtopped by floods in excess of about 53% of the PMF. Maximum overtopping could be 11.7 feet for 50.3 hours. The dam is expected to withstand the overtopping because it is a concrete dam founded on well-indurated rock; however, there is some concern about the potential during overtopping for hydraulic jacking of foundation blocks and undermining the dam foundation, leading to structural failure. Also, debris carried by the large spillway could damage the spillway lining and lead to scour and cavitation of the tunnel lining. Spillway cavitation could cause progressive internal foundation erosion resulting in an undermining of the dam and ultimate structural failure, Signs of spillway cavitation, increased seepage and foundation undercutting would be difficult to detect during a flood and overtopping event.

Monticello Dam Emergency Action Plan; Solano Irrigation District


Monticello Dam Breach Simulation
Maximum Inundation and Leading Edge Times
Lake Berryessa
LAKE BERRYESSA
MONTICELLO DAM
Monticello Dam
.5 Hours
1 Hour
1.5 Hours
2 Hours
DAMBRK Simulation
The Yolo Bypass Simulation
Data were obtained on the 1986 flood event which resulted in unusually high flows in the Yolo bypass. Combined peak flows from the Fremont Weir and Cache Creek were recorded at 374,000 cfs, producing a water-stage recording of 31.46 feet (datum corrected). Peak flows at the Sacramento Weir were recorded at 128,000 cfs. These data were used to calibrate a steady state scenario of the event. Both DAMBRK and MIKE21 simulations successfully calibrated to within .5 foot of known calibration points.
Initial results utilizing only DAMBRK
The DAMBRK scenario was then stressed with a distribution of lateral inflows from a separate DAMBRK Monticello breach scenario. We considered the results, however, somewhat unreliable as the conceptual model was somewhat lacking and a large number of uncertainties began to arise.
Results utilizing both DAMBRK and MIKE21
Subsequently, a steady state MIKE21 Yolo Bypass simulation 'hot file' was generated, which was used as initial conditions in a Monticello breach scenario. A DAMBRK simulation was performed, and the last transect's hydrograph (which we considered reliable) was input into the two dimensional MIKE21 simulation. The elevation model used included static levees, whose elevations were derived from USGS Topographic Quadrangles.
Depth (Meters)
1
2
3
4
5
>5
WOODLAND
MODEL BOUNDARY
3 Hours
3.5 Hours
4 Hours
4.5 Hours
5 Hours
MERRITT
DAVIS
SACRAMENTO WEST
DIXON
SAXON
CLARKSBURG
MIKE21 Simulation
DOZIER
LIBERTY ISLAND
COURTLAND
Yolo Bypass Steady State Simulation
Yolo Bypass Steady State Simulation Boundary

Indian Valley Dam

Indian Valley Dam and Reservoir lie in a widening area of a deep canyon of the North Fork of Cache Creek approximately five miles north of Highway 20 in Lake County, California., 13 miles upstream from its confluence with the main stem of Cache Creek. Upstream and downstream, the terrain is steeply sloped mountainous country. Other than the main access road from Highway 20, access to the dam is via a jeep trail through rugged country along Walker Ridge from Bartlett Springs Road, which lies to the north.

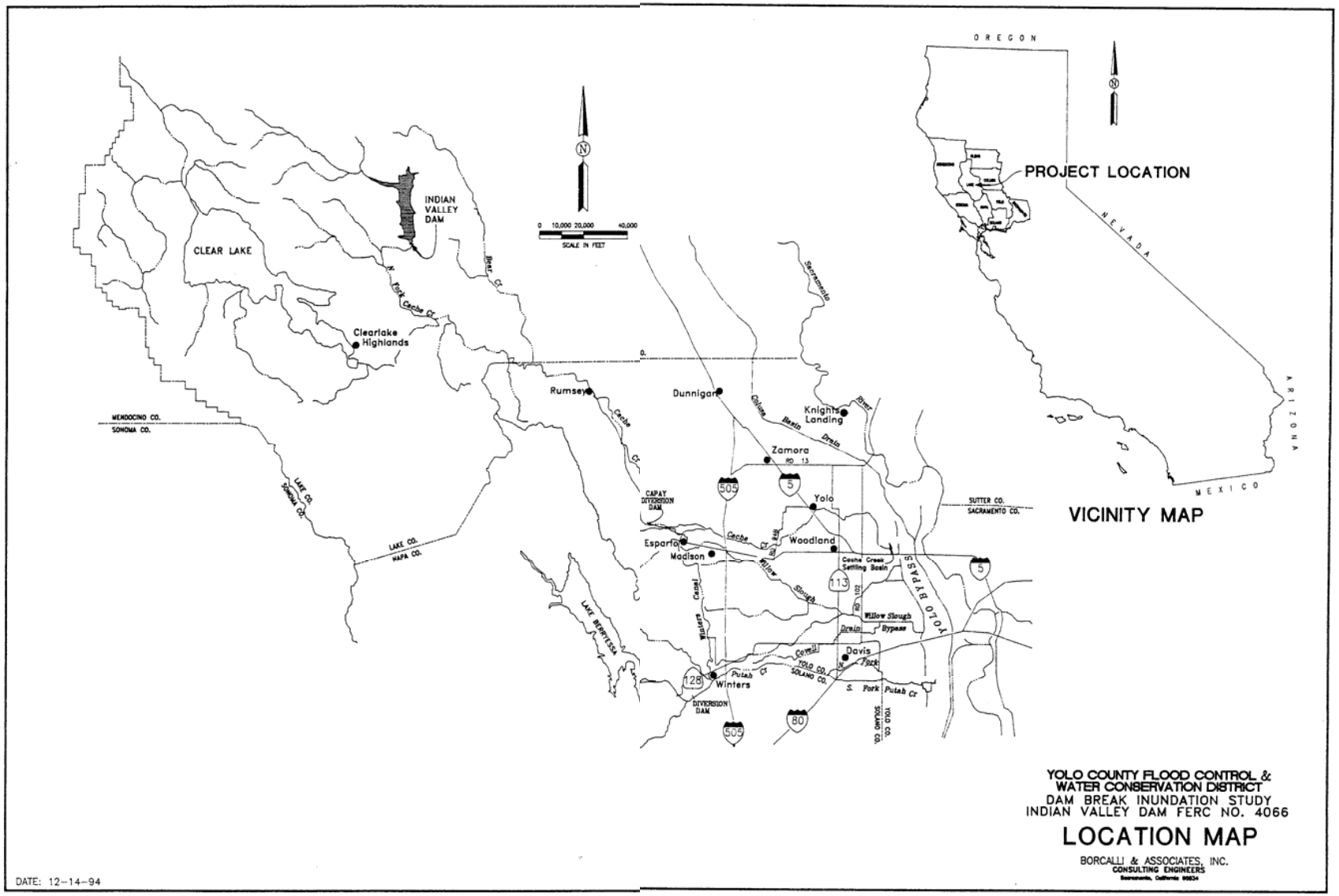
The dam was completed in 1976, with the major portion of the dam being constructed in 1973 and 1974. It is owned, operated and maintained by the Yolo County Flood Control and Water Conservation District in Woodland, California. The dam is a zoned earthfill structure with a maximum height of 207 feet above streambed and a crest length of 965 feet. The crest elevation of the dam is 1,502 feet above mean sea level.

The gated spillway structure is located near the east abutment of the dam. The spillway has a crest length of 65 feet and a crest elevation of 1,463 feet above sea level. Two radial gates, each 29.5 feet by 23 feet, control discharge into the concrete lined spillway chute and stilling basin. The spillway design capacity is 35,000 cubic feet per second at spillway design flood pool elevation 1,498 feet above sea level. The reservoir storage at the spillway design flood pool elevation is 359,000 acre-feet.

INDIAN VALLEY DAM EMERGENCY ACTION PLAN
DAM FEATURES
(Construction Completed in 1976)

Dam	Reservoir Elevation, ft-msl	Capacity, ac-ft
Crest	1,502.0	
Height of Dam	207.0	
Top of Spillway Design	1,498.4	359,000
Surcharge Pool		58,400
Top of Flood Pool	1,485.0	300,600
Flood Pool		40,000
Top of Conservation Pool	1,474.7	260,600
Top of Inactive Pool	1,334.0	4,000
Streambed of Reservoir	1,295.0	0
Gated Spillway	**Elevation, ft-mls**	**Discharge, cfs**
Open Gate	1,498.4	35,000
Design Flood Pool		
Closed Gate	1,485.0	0
Maximum Water Surface		
Crest	1,463.0	0
Outlet Works	**Elevation, ft-mls**	**Capacity, cfs**
60-inch-Diameter Steel Circular Pipe		
60-inch Butterfly Valve	1,297.7 (Invert)	0
14-inch Ball Valve	1,297.7 (Invert)	0
12-inch Hollow Jet Valve	1,292.7 (Invert)	0
60-inch Hollow Jet Valve	1,293.6 (Invert)	0
Discharge @ Maximum Water Surface	1,498.4	900
Discharge @ Top of Conservation Pool	1,474.7	840
Power Plant		
Turbine Room Floor	1,285.5	0
1400 kW Unit (2)		
100 kW Unit (1)		

Location Map of Indian Valley Dam and Downstream Communities



Downstream Communities

Inhabited areas subject to inundation as a result of failure of Indian Valley Dam and the time from dam break to flooding at specified locations along Cache Creek are listed in the following table:

Location	Front Wave Travel Time*
Cache Creek along stream channel from Indian Valley Dam to Rumsey	0 – 1.25 hours
Highway 20 & Long Valley Rd	31 minutes
Highway 16 where it parallels Cache Creek	1.5 – 8+ hours (location dependent)
Cache Creek Canyon Regional Park	1 hr 40 minutes
Camp Haswell (Boy Scouts of America)	1 hr 52 minutes
Runsey	1 hr 59 minutes
Guida	2 hrs 24 minutes
Tancred	3 hrs 4 minutes
Brooks	3 hrs 25 minutes
Capay	4 hrs
Esparto	4 hrs
Madison	5 hrs
Interstate 505	5 hrs
Road 94B	5 hes 30 minutes
Interstate 5 to Yolo	7 hrs
Road 113 North of Interstate 5	7 hrs 30 minutes
Road 113 South of Interstate 5	8 hrs
Woodland	8 hrs
Colusa Basin Drainage Canal	8 hrs 15 minutes
Interstate 80 at Davis	9 hrs
Yolo Bypass	10 hrs 48 minutes

* "Front of Wave Travel Time," is defined as that time that has elapsed following a failure before the stream channel is full to the top of its banks.

As documented in the Indian Valley Dam Break Analysis (FERC Project No. 4066) by Borcalli & Associates, Inc., dated December 23, 1994.

Inundation Maps

Seven inundation maps prepared by Borcalli & Associates (10-6-94) are on file with the Yolo County Flood Control and Water Conservation District filed under "Dam Break Inundation Study – Indian Valley Dam FERC. NO. 4066.

Shasta Dam

Shasta Dam, on the Sacramento River near Redding, California, serves to control floodwaters and store surplus winter runoff for irrigation in the Sacramento and San Joaquin Valleys, maintain navigation flows, provide flows for the conservation of fish in the Sacramento River and water for municipal and industrial use, protect the Sacramento-San Joaquin Delta from intrusion of saline ocean water, and generate hydroelectric power.

Shasta Dam is the second largest dam in mass in the United States (Grand Coulee on the Columbia River in Washington State is the largest). The dam is 602 feet high, with a crest length of 3,460 feet. It is 883 feet thick at the bottom and 30 feet thick at the top. Shasta Dam is a curved concrete gravity-type dam with 6.5 million cubic yards of concrete weighing 15 million tons. Construction of the dam started in 1938 and ended in 1945. The spillway is 487 feet long--the largest manmade waterfall in the world. It is 375 feet wide with three drum gates each 110 feet wide, 28 feet tall, and weighing 500 tons each. There are 18 outlets on the face of the dam, each 8 ½ feet in diameter with a maximum capacity of 186,000 cubic feet per second.

Shasta Dam stores flood waters to prevent flooding, and through controlled releases, supplies irrigation water downstream. Prior to construction of Shasta, floods frequently ravaged the Sacramento Valley, including the State capital. Reclamation uses flood control regulations prescribed by the Corps of Engineers for Shasta's operations, as per an agreement between the two entities.

Shasta has prevented over 5 billion dollars in flood damages.

Shasta Powerplant has the capacity to generate 676,000 kilowatts of electricity when at full operation. Keswick Powerplant adds another 117,000 kilowatts of power. Keswick Dam acts as an afterbay for Shasta Dam, stabilizing the erratic flow of water from the larger dam's powerplant.

A breach in Shasta Dam, although very unlikely, would devastate the entire northern Central Valley. The Sacramento River and its tributaries would overtop levees and banks. Massive flooding in the low lands and along the river route would occur. Interstate 5 would no doubt be affected to the point of closure crippling transportation throughout Yolo County.

Statistics

General

- Vicinity Map
- Region (Map) ..... Mid Pacific
- State (Map) ..... California
- County ..... Shasta
- Project ..... CVP - Shasta/Trinity
- Dam type ..... Concrete curved gravity
- Location ..... 12 mi NW of Redding, CA
- Watercourse ..... Sacramento River
- Reservoir ..... Shasta Lake
- Original construction 1938-1945
- Modified in 1995-1996
- National ID Number CA10186
- Hydrologic Unit Code .....

Hydraulics

- Total storage to
  El. 1067 ..... 4,552,000 acre-ft
- Service spillway
  Capacity at El. 1065 ..... 186,000 cfs
- Outlet works
  Capacity at El. 1065 ..... 81,800 cfs

Dimensions

- Crest Elevation ..... 1077.5 ft
- Structural Height ..... 602 ft
- Hydraulic Height ..... 522.5 ft
- Crest Length ..... 3,460 ft
- Crest Width ..... 30 ft
- Base Width ..... 543 ft
- Volume of Concrete ..... 6,270,000 cu yd

Hydrology

- Current Reservoir Storage
- Drainage area ..... 6,665 sq mi
- Hydrometeorological Report ..... HMR 36
- PMF ..... 1984 Winter
- Volume ..... 4,266,000 acre-ft over 15 days
- Peak inflow ..... 623,000 cfs
- Maximum water surface ..... 1076.2 ft

Geology

- Foundation: Hard, tough, durable greenstone; usually hard and sound beneath streambed. In abutments, decay of the geologically ancient formation penetrates deeply along many joints and occasional small crush zones.

Oroville Dam

Oroville Dam and its Appurtenances, along with the Thermalito facilities comprise a multiple purpose project, which includes water conservation, power generation flood control, recreation, and fish and wildlife enhancement. The lake stores winter and spring runoff, which is released into the Feather River as necessary to provide project needs and commitments. The pump-storage capability of the Oroville facilities permits maximum use of peaking capabilities and increases the value of power produced by the release.

Water releases from Edward Hyatt Powerplant are largely diverted from the Feather River at the Thermalito Diversion Dam, a concrete gravity structure with a radial gate crest section. These diversions pass through the Thermalito Power Canal and Thermalito Forebay, through Thermalito Powerplant, and into the Thermalito Afterbay. The Thermalito Diversion Pool, Power Canal, and Forebay have a common water surface to accommodate flow reversals for the pumped-storage operation. Thermalito Afterbay stores the plant discharges for the pumped storage or conventional operation and re-regulates flow fro uniform return to the Feather River.

Oroville Dam, on the Feather River 5 miles east of the City of Oroville, is the highest earthfill dam in the United States. It rises 770 feet above streambed excavation and spans 5,600 feet between abutments at its crest. The 80,000,000-cubic yard embankment is made up of an inclined impervious clay core resting on a concrete core block, with appropriate transitions and rockfilled shell zones on both sides. Lake Oroville is a 3,538 million acre-foot reservoir impounded behind Oroville Dam.

The spillway, located on the right abutment of the dam, has two separate elements: a controlled or gated flood control outlet and an uncontrolled emergency spillway. The flow control outlet consists of an unlined approach channel headworks with eight radial gates 17’7” wide by 33’6” high, and a lined chute extending to the River. The emergency spillway consists of a 1,730 foot long, concrete overpour section with its crest set 1 foot above normal maximum storage level. Emergency spill would flow to the River over natural terrain.

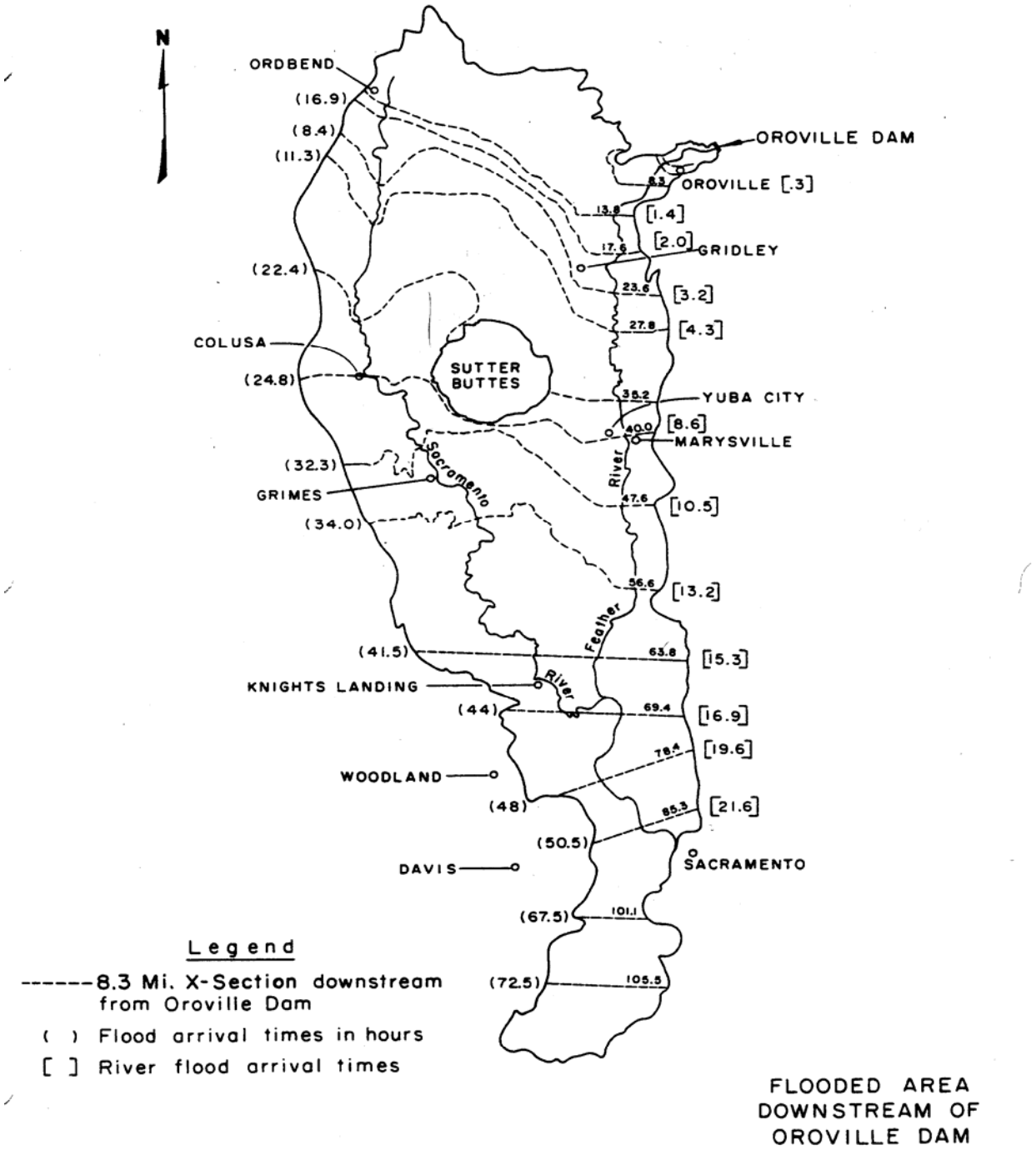
Oroville Dam lies in the foothills on the western slope of the Sierra Nevada approximately 70 miles north of Sacramento, a westerly tilted fault block with a core of granite rock. A series of tightly folded, steeply dipping, metamorphic rocks overlie the granite core along its western and northwestern flanks.

Downstream Communities

The inundation floodplain for Oroville Dam is primarily a rural farming area, however several communities lie within this inundation area. These communities and their populations are listed in order of expected flood arrival times.

City	Population	Miles from Dam	Estimated Flood Arrival
Oroville	12,000	3	.3 hrs
Biggs	1,720	13	7.6
Gridley	4,600	16	8.4
Richvale	400	18	8.5
Live Oak	5,400	20	9.4
Butte City	100	24	10.0
Princeton	250	26	11.3
Yuba City	27,400	28	24.7
Marysville	12,300	29	24.7
Linda	13,000	30	25.8
Olivehurst	9,700	32	29.8
Colusa	5,500	34	24.8
Knights Landing	642	51	42.9
East Nicolaus	115	52	43.3
Nicolaus	165	52	43.3
WEST SACRAMENTO	30,200	66	54.1

Map showing depths and times of arrival of flood waters from Oroville Dam

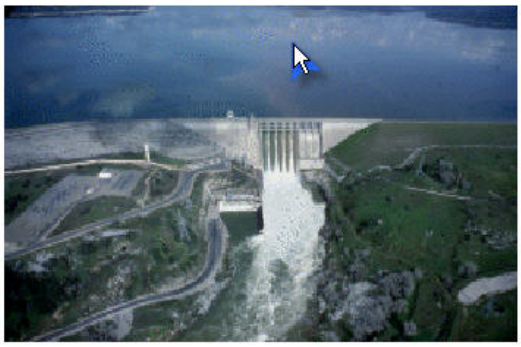


FLOODED AREA DOWNSTREAM OF OROVILLE DAM

Figure :

Folsom Dam

Originally authorized in 1944 as a 355,000 acre-feet flood control unit, Folsom Dam was reauthorized in 1949 as a 1,000,000 acre-feet multiple-purpose facility. The U.S. Army Corps of Engineers constructed Folsom Dam and transferred it to Reclamation for coordinated operation as an integral part of the Central Valley Project. Construction of the dam began in October 1948 and was completed in May 1956. Water was first stored in February 1955. Folsom Dam is a concrete gravity dam 340 feet high and 1,400 feet long. The main section is flanked by two earthfill wing dams. The right wing dam is 6,700 feet long and 145 high, and the left wing dam is 2,100 feet long and 145 feet high. In addition to the main section and wing dams, there is one auxiliary dam and eight smaller earthfill dikes.



Statistics

General

- Vicinity Map
- Region (Map) ..... Mid Pacific
- State (Map) ..... California
- County ..... Sacramento
- Project ..... CVP-Auburn-Folsom
- Dam type ..... Straight Concrete gravity
- Location ... 20 mi NE of Sacramento, CA
- Watercourse ..... American River
- Reservoir ..... Folsom Lake
- Original construction 1948-1956
- Modified 1997
- National ID Number CA10148
- Hydrologic Unit Code .....

Hydraulics

- Total storage to
  El. 466 ..... 1,010,000 acre-ft
- Service spillway
  Capacity at El. 475.4 ..... 567,000 cfs
- Outlet works
  Capacity at El. 466 ..... 30,960 cfs
- Safe channel capacity ..... 115,000 cfs

Geology

- Foundation: Grantic Rock

Dimensions

- Crest Elevation ..... 480.5 ft
- Top of Parapet Elevation ..... 484.0 ft
- Structural Height ..... 340 ft
- Hydraulic Height ..... 275.4 ft
- Crest Length ..... 1,400 ft
- Crest Width ..... 36.25 ft
- Base Width ..... 270 ft
- Volume of Concrete ..... 1,170,000 cu yd

Hydrology

- Drainage area ..... 1,875 sq mi
- Hydrometeorological Report ..... HMR 58
- PMF ..... 1996 General rain on snow
- Volume ... 2,762,000 acre-ft over 200 hours
- Peak inflow ..... 681,000 cfs
- Maximum water surface ..... 480.0 ft

Nimbus Dam

Nimbus Dam is on the American River in Sacramento County, California, 7 miles downstream from Folsom Dam. It re-regulates the releases for power made through the Folsom Power plant.

Nimbus Dam is a concrete gravity dam 1,093 feet long and 87 feet high. Eighteen radial gates, each 40-feet by 24-feet, control the flows. The total volume of material used in the dam is 121,100 cubic yards. Reclamation operates the dam. Nimbus Dam and Power plant was completed and accepted by the Government in July 1955. Nimbus Dam forms Lake Natoma, with a capacity of 8,760 acre-feet and a surface area of 540 acres.

Statistics

General

- Vicinity Map
- Region (Map) ..... Mid Pacific
- State (Map) ..... California
- County ..... Sacramento
- Project ..... CVP-Folsom
- Dam type ..... Concrete gravity
- Location .... 7 mi below Folsom Dam, CA
- Watercourse ..... American River
- Reservoir ..... Lake Natoma
- Original construction 1952-1955
- National ID Number CA10174
- Hydrologic Unit Code .....

Hydraulics

- Total storage to
- El. 125 ..... 8,760 acre-ft
- Service spillway
  Capacity at El. 126.5 ..... 300,000 cfs
- Outlet works
  Capacity at El. _ ..... _ cfs

Dimensions

- Crest Elevation ..... 132.0 ft
- Structural Height ..... 87 ft
- Hydraulic Height ..... 46 ft
- Crest Length ..... 1,093 ft
- Crest Width ..... 28 ft
- Base Width ..... 135 ft
- Volume of Concrete ..... 121,000 cu yd

Hydrology

- Drainage area ..... 1,898 sq mi
- Hydrometeorological Report .....
- PMF
- Volume
- Peak inflow
- Maximum water surface

Geology

- Foundation: Up to 20 feet of alluvium underlain by bedded deposits of compacted tuffs and clayey volcanic sandstones and conglomerates

Terrorism & Weapons of Mass Destruction (WMD)

Terrorism & Weapons of Mass Destruction were rated as a HIGH RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

Terrorism is defined as the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives (FBI). Weapons of Mass Destruction associated with terrorism are defined as chemical, biological, radiological, nuclear, and explosive (CBRNE) in origin.

Technological Terrorism is defined as a potential disruption in the nation's data control systems similar to the threat posed by Y2K. Recent cyber-attacks on financial, business, and governmental computer systems are being considered as terrorist-related acts.

The Department of Justice (DOJ) Federal Bureau of Investigation (FBI) is the primary response agency for domestic terrorism. The Department of Justice through the FBI will coordinate the domestic preparedness programs and activities of this nation to address the threat posed by terrorists and the use of weapons of mass destruction. The establishment of the Department of Homeland Security may change the Federal Lead Agency Status.

According to the FBI, sporting events, political conventions, and other special events are attractive targets for domestic and foreign terrorists because they are highly visible and attract celebrities and political leaders. Other targets of opportunity for terrorism include large public works facilities, utilities, transportation facilities such as airports, train stations, subways, bridges and ferries, military bases, schools, medical facilities and other state and federal facilities. Examples of terrorism include the World Trade Center bombing in New York City, the Murrah Federal Building bombing in Oklahoma City, the Olympic Centennial Park bombing in Atlanta, and the Pan American Flight bombing over Lockerbie, Scotland.

Acts of terrorism may originate from a single person, special interest groups, or acts sponsored by a foreign government. The most popular method used in recent events in the United States has been terrorism by bombing. Terrorist acts include the use of arson, hostile takeovers, shootings, biological agents (such as anthrax, plague, botulism and others); chemical agents (such as hydrogen cyanide, sulfur mustard, sarin and chlorine), and hostage taking.

The complexity, scope, and potential consequences of a terrorist threat or incident require that there be a rapid and decisive capability to resolve the situation. The resolution to an act of terrorism demands an extraordinary level of coordination of crisis and consequence management functions and technical expertise across all levels of government. No single Federal, State, or local governmental agency has the capability or requisite authority to respond independently and mitigate the consequences of such a threat to national security.

The incident may affect a single location or multiple locations, each of which may be a disaster scene, a hazardous scene and/or a crime scene simultaneously.

Differences Between WMD Incidents and Other Incidents

As in all incidents, WMD incidents may involve mass casualties and damage to buildings or other types of property. However, there are several factors surrounding WMD incidents that are unlike any other type of incidents that must be taken into consideration when planning a response. First Responders' ability to identify aspects of the incident (e.g., signs and symptoms exhibited by victims) and report them accurately will be essential to maximizing the use of critical local resources and for triggering a Federal response.

1. The situation may not be recognizable until there are multiple casualties. Most chemical and biological agents are not detectable by methods used for explosives and firearms. Most agents can be carried in containers that look like ordinary items.

2. There may be multiple events (e.g., one event in an attempt to influence another event's outcome).

3. Responders are placed at a higher risk of becoming casualties. Because agents are not readily identifiable, responders may become contaminated before recognizing the agent involved. First responders may, in addition, be targets for secondary releases or explosions.

4. The location of the incident will be treated as a crime scene. As such, preservation and collection of evidence is critical. Therefore, it is important to ensure that actions on-scene are coordinated between response organizations to minimize any conflicts between law enforcement authorities, who view the incident as a crime scene, and other responders, who view it as a hazardous materials or disaster scene.

5. Contamination of critical facilities and large geographic areas may result. Victims may carry an agent unknowingly to public transportation facilities, businesses, residences, doctors' offices, walk-in medical clinics, or emergency rooms because they don't realize that they are contaminated. First responders may carry the agent to fire or precinct houses, hospitals, or to the locations of subsequent calls.

6. The scope of the incident may expand geometrically and may affect mutual aid jurisdictions. Airborne agents flow with the air current and may disseminate via ventilation systems, carrying the agents far from the initial source.

7. There will be a stronger reaction from the public than with other types of incidents. The thought of exposure to a chemical or biological agent or radiation evokes terror in most people. The fear of the unknown also makes the public's response more severe.

8. Time is working against responding elements. The incident can expand geometrically and very quickly. In addition, the effects of some chemicals and biological agents worsen over time.

9. Support facilities, such as utility stations and 911 centers along with critical infrastructures, are at risk as targets.

10. Specialized State and local response capabilities may be overwhelmed.

State of California Terrorism Guidance

The catastrophic attacks on the World Trade Center Building in New York City and the Alfred P. Murrah Federal Building in Oklahoma City shocked the nation into the reality that there are no domestic safe havens from acts of terrorism. These two apparently unrelated events punctuate our nation's vulnerability, and highlight California's risk of similar attack against its public officials, private and multi-national corporations, public infrastructure, and government facilities.

Historically, California has had a long experience combating terrorist groups, both domestic and international. Domestic terrorist groups in the state have been largely issue-oriented, while the few known internationally based incidents have mostly targeted the state's émigré communities and been related to foreign disputes. Today, however, both groups are more likely to be aligned nationally and/or internationally through electronic networking. The issues and politics of these groups remain essentially unchanged but now include increasing expressions of hatred for existing forms of government. The World Trade Center Incident demonstrates that international terrorist groups have the potential to operate with deadly effectiveness in this country. Such groups may offer no allegiance to any particular country but seek political or personal objectives that transcend national/state boundaries.

There is appropriate concern that such attacks as witnessed in Tokyo, New York City, and Oklahoma City could occur in California. A terrorist acting alone or in concert with any of the known national or international groups could readily commit acts of terrorism in California. The open availability of basic shelf-type chemicals and mail order biological research materials, coupled with an access to even the crudest laboratory facilities, could enable the individual extremist or an organized terrorist faction to manufacture proven highly lethal substances or to fashion less sophisticated weapons of mass destruction. The use of such weapons could result in mass casualties, long term contamination, and wreak havoc to both the state and national economies.

The freedom of movement and virtually unrestricted access to government officials, buildings, and critical infrastructure afforded to California's citizens and foreign visitors, presents the terrorist with the opportunity and conditions of anonymity to deliver such devastation and its tragic consequences with only the crudest devices of nuclear, chemical, or biological content.

Terrorist incidents create a unique environment in which to manage emergency response. Local responders are typically the first on scene during an actual incident and local government has primary responsibility for protecting public health and safety. Ordinarily, the local first response will be conducted under California's Standardized Emergency Management System (SEMS) which forms the basis of California's concept of operations for managing any kind of emergency or disaster, including terrorist incidents. The local responders will manage all aspects of the incident until the FBI assumes command, by virtue of its legal authority, of the law enforcement aspects relating to identifying, apprehending, and neutralizing the terrorists and their weapons. Local and state authorities always maintain control of their response resources and continue to operate utilizing SEMS.

Governor's Office of Emergency Services Terrorism Response Plan

Biological & Chemical Terrorism

The Public Health Response to Biological and Chemical Terrorism: Interim Planning Guidance for State Public Health Officials (hereafter referred to as the Planning Guidance) outlines steps for strengthening the capacity of the public health system to respond to and protect the nation against the dangers of a terrorism incident. Although the Planning Guidance focuses on the biological and chemical terrorism preparedness efforts of state-level health department personnel, it can be used as a planning tool by anyone in the response community, regardless of his or her position within that community or level of government.

The public health community at large also can use this document to improve its terrorism preparedness and develop terrorism response plans. The preparedness program outlined in this Planning Guidance, once implemented, should improve the ability of all public health agencies to respond to emergency situations arising from all sources, not just terrorism.

The Planning Guidance focuses on the capabilities that state health departments are likely to need to respond effectively to a terrorism incident. Despite the public health focus of this document, the terrorism plan ultimately should not be agency-specific. Instead, the terrorism plan should be integrated, outlining the roles and responsibilities of all agencies that participate in a response. This coordinated terrorism plan should then be annexed to the state's all-hazard Emergency Operations Plan (EOP)

Background

The intentional release of sarin, an organophosphate nerve agent, into the Tokyo subway system helped to focus the United States on its need to prepare for what was once unthinkable. Aum Shinrikyo, the group responsible for the Tokyo incident, disbursed botulinum toxin and anthrax bacteria, and the group attempted to obtain Ebola.

The World Trade Center and Oklahoma City bombings confirm that terrorism is not an event that occurs only on foreign soil. Terrorism incidents or threats involving *Salmonella* and ricin amply demonstrate that the United States is vulnerable not only to bombs but to biological and chemical threats as well.

These and other events caused health departments across the country to consider their ability to respond to a terrorism incident. In addition to their more traditional responsibilities in disease surveillance and management, health departments are defining their roles to respond effectively to an intentional release of biological organisms or hazardous chemicals into an unsuspecting population.

Because states differ in size, population, risks, needs, and capabilities, terrorism preparedness and response efforts inevitably must differ. Health department officials will identify the health and medical effects that an explosion or the intentional release or threatened release of a biological organism or hazardous chemical could have on the population, and prepare to address the public health consequences of those effects.

Well-developed surveillance and epidemiologic capacity is the foundation on which health departments will detect, evaluate, and design effective responses to terrorism events. Not only will this capacity facilitate the initial detection and response in a terrorism event, it will be essential to monitoring the impact of these events and the effectiveness of public health responses. Detection of acute or insidious terrorism attacks using biological (or certain chemical) agents also will require linking of data from a variety of sources. An effective public health response will depend on the timeliness and quality of communications among numerous public health agencies at local, state, and federal levels; clinicians; laboratories; poison centers; medical examiners; and other health response partners.

Complementing the need for accurate and timely case reports is the need for expertise to analyze the information properly. Epidemiologic expertise is critical to judging whether the incident involves biological or chemical agents or is a consequence of a natural phenomenon, an accident, or terrorism. Expertise also is critical in determining the likely site and time of the exposure; size and location of the population exposed; prospect for delayed exposure or secondary transmission of an infectious agent; and whether any people should receive prophylaxis (either medications or vaccines) and, if so, which population groups.

Timely and accurate information and analysis must be coupled with effective and rapid dissemination of information to those who need to know (e.g., response partners and the public) to instill confidence in both the short- and long-term response of the affected community.

Chemical Agents

Chemical agents are intended to kill, seriously injure, or incapacitate people through physiological effects. A terrorist incident involving a chemical agent will demand immediate reaction from emergency responders—fire departments, police, hazardous materials (HazMat) teams, emergency medical services (EMS), and emergency room staff—who will need adequate training and equipment. Hazardous chemicals, including industrial chemicals and agents, can be introduced via aerosol devices (e.g., munitions, sprayers, or aerosol generators), breaking containers, or covert dissemination. Such an attack might involve the release of a chemical warfare agent, such as a nerve or blister agent or an industrial chemical, which may have serious consequences.

Bio-Terrorism Chemical Agent Risks

Anthrax – Overview

Naturally Occurring Anthrax

Anthrax, a gram-positi ve spore-forming rod, is a zoonotic disease rarely seen in the United States. In humans, anthrax has three somewhat clinically distinct syndromes: cutaneous, inhalation and gastrointestinal. The cutaneous form occurs most frequently on the hands, forearms, neck and face of persons working with infected livestock (cattle, sheep, goats and horses). Gastrointestinal anthrax is transmitted to humans by ingesting insufficiently cooked meat from infected animals. Inhalation anthrax, also known as Woolsorter's disease, results from the inhalation of spores and occurs primarily in persons who handle contaminated hides, wool, and furs. No case of inhalation anthrax has been reported in the United States since 1978 making even a single case a cause for alarm today.

Bioterrorism Epidemiology

Anthrax bacteria are easy to cultivate and spore formation is readily induced. The spores are highly resistant to sunlight heat and disinfectants. As a bioterrorism agent, anthrax can be delivered as a bio-aerosol. Anthrax is not transmitted from person to person. If anthrax spores are released intentionally as a bio-aerosol, there will be a sudden influx of many persons with severe flu-like symptoms seeking treatment in the hospital's emergency rooms. Most likely, these persons will require assisted ventilation and immediate antibiotic support. The mortality rate will be high even in the setting of modern medical technology.

Incubation Period

The incubation period for inhalation anthrax is normally 1 – 6 days but may be as long as 60 days after spores are released. During an outbreak of inhalation anthrax in the Soviet Union in 1979, exposed persons became ill up to six weeks after the aerosol release.

Clinical Presentation

Cutaneous Anthrax

Infections of the skin, commonly exposed hands, forearms and head, occur when the spore enters a cut or abrasion on the skin. This form of anthrax is seen in persons handling wool, hides, leather and hair products from contaminated animals. Skin infection begins as a raised, pruritic bump or papule that resembles an insect bite. Within 1-2 days, the bump fills with fluid and then ruptures to form a painless ulcer (eschar) with a characteristic black necrotic area in the center. After about 1 – 2 weeks, the lesion dries and the eschar separates from the skin leaving a permanent scar. There is pronounced edema associated with the ulcer due to the release of edema toxin by *B. anthracis* resulting in swelling of the lymph glands in the adjacent area. Approximately 20% of the untreated cases result in death, either because the disease becomes systemic or because of respiratory distress caused by edema in the cervical or upper thoracic region.

Gastrointestinal Anthrax

The gastrointestinal form of the disease is generally caused by consumption of contaminated meat. There are two possible clinical presentations: abdominal and oropharyngeal. Abdominal symptoms include nausea, loss of appetite, vomiting and fever followed by abdominal pain, vomiting of blood and possibly severe, bloody diarrhea. Lesions may be seen in the colon.

The oropharyngeal form generally presents with edema and tissue necrosis in the cervical area. The primary clinical presentation would be sore throat, dysphagia, fever, and regional lympadenopathy in the neck and toxemia.

Inhalation Anthrax

Initially the disease onset is insidious with non-specific flu-like symptoms including fever, dyspnea, malaise, fatigue, headache, vomiting, chills, and abdominal discomfort. The person may also develop a non-productive cough and mild chest discomfort. These initial symptoms may be followed by a short period (several hours to 2 – 3 days) of improvement followed by an abrupt onset of severe respiratory distress with dyspnea, diaphoresis, stridor (high-pitched whistling respirations) and cyanosis. Septicemia, shock and death occur within 24-36 hours after the onset of respiratory distress and mortality approaches 100%. Approximately 50% of cases will develop hemorrhagic meningitis.

Brucellosis – Overview

Naturally Occurring Brucellosis

Brucellosis, also known as “undulant fever”, is a common veterinary disease caused by one of six *Brucellae species.* Four species *(B abortis*, *B melitensis*, *B suis*, and *B canis*) are pathogenic to humans. In the United States, most cases of human brucellosis are associated with the ingestion of unpasteurized dairy products. Infections are primarily limited to abattoirs and laboratory workers. In animals, the disease primarily involves the reproductive tract causing septic abortion and orchitis.

Bioterrorism Epidemiology

Exposure to as few as 10 – 100 organisms may result in clinical infection. Person to person transmission does not occur. Large numbers of temporally clustered persons presenting to a clinic or an emergency room with similar symptoms should be reported to the local health department immediately.

Incubation Period

The incubation period ranges from 5 to 60 days.

Clinical Manifestations

The person generally presents with non-specific complaints resembling influenza. The onset of disease may be acute or insidious over several weeks. Fever, headache, myalgias, arthralgias, back pain, sweats, chills, generalized weakness and malaise are the most common complaints. Cough and pleuritic chest pain may occur in about 20% of the cases. Gastrointestinal symptoms include anorexia, nausea, vomiting, diarrhea and constipation.

Complications

Persons infected with Brucellae species have a low mortality rate but the disease can be relatively prolonged and incapacitating. The disease is systemic and may affect many organs and tissues. Ileitis, colitis, and granulomatous or mononuclear infiltrative hepatitis may occur in 45 - 65% of cases. Lumbar pain and tenderness can occur in up to 60% of cases and may be due to various osteoarticular infections of the axial skeleton. Vertebral osteomyelitis, intervertebral disc space infection, paravertebral abscess and sacroiliac infection occur in a minority of cases. Joint involvement may vary from pain to immobility and effusion. Although the sacroiliac joints are most commonly involved, the peripheral joints of the hips, knees, and ankles may be affected. Meningitis, encephalitis, peripheral neuropathy, radiculoneuropathy and meningovascular syndromes have been observed in rare instances. Behavioral disturbances and psychoses appear out of proportion to fever elevation or central nervous system disease. Endocarditis occurs in about 2% of the cases and accounts for the majority of brucellosis-related deaths.

Botulism – Overview

Naturally Occurring Botulism

Clostridium botulinum is an anaerobic, spore-forming bacterium that produces seven (7) different, but related, toxins (A through G). Only toxins A, B, E and F cause disease in humans. The spores are ubiquitous and are found throughout the world in soil and marine sediments.

Botulism is generally a food borne disease and is ingested with improperly prepared foods. The toxin is absorbed in the small bowel and carried through the blood stream to the peripheral cholinergic synapses preventing the release of acetylocholine. Over recent years, wound botulism has increased in persons who are injecting drug users. In this form of the disease, the spores germinate in the wound. The exact cause of infant and adult botulism is not known but prior colonization of the bowel with subsequent overgrowth due to the administration of antibiotics may be associated with this form of the disease.

Bioterrorism Epidemiology

Botulinum toxin is one of the most potent toxins in nature and is 100,000 times more toxic than sarin gas. As a bioterrorist agent the most likely route of exposure would be in the form of a bio-aerosol. The symptoms would be very similar to those caused by ingesting the toxin however the incubation period might be longer. Intentional contamination of food and water is another possible concern. Botulism is not transmitted from person to person. All materials initially contaminated by the toxin must be handled with extreme care. The toxins are detoxified in the air within 12 hours. Sunlight inactivates the toxins with 1 - 3 hours. Heat destroys the toxins in 30 minutes at 80° C and in several minutes at 100° C. Any material containing botulinum toxin must be handled with care as exposure to minute quantities may cause disease.

Incubation Period

The normal incubation period following the ingestion of contaminated food is 12 – 36 hours but may be as short as 6 hours or as long as 10 days depending on the size of the inoculum ingested. Recent primate studies indicate the symptoms may not appear for several days when a low dose of toxin is inhaled.

Clinical Presentation

Cranial nerve palsies are prominent early, with eye symptoms such as blurred vision due to mydriasis, diplopia, ptosis, and photophobia. Other cranial nerve symptoms include dysarthria, dysphonia, and dysphagia. Flaccid skeletal muscle paralysis follows in a symmetrical, descending, and progressive manner. Collapse of the upper airway may occur due to weakness of the oropharyngeal muscles. As the descending motor weakness progresses, the diaphragm and accessory muscles lead to respiratory failure. The autonomic effects of botulism are manifested by the typical anticholinergic signs and symptoms. These include dry mouth, ileus, constipation, and urinary retention. Nausea and vomiting may occur as nonspecific sequelae of an ileus. Dilated pupils (mydriasis) are seen in approximately 50% of cases.

Sensory symptoms usually do not occur. The toxins do not cross the blood/brain barrier and do not cause central nervous system disease. However, the psychological sequelae of botulism may be severe and require specific intervention.

On physical examination, the patient is generally afebrile, alert, and oriented. Postural hypotension may be present. The mucous membranes may be dry and crusted and the patient may complain of a sore throat, difficulty swallowing and speaking. The gag reflex may be absent and the p upils may be dilated and even fixed. Ptosis and extraocular muscle palsies may be present. Variable degrees of skeletal muscle weakness may be observed depending on the degree of progression in the individual patient. Deep reflexes may be present or absent. Cyanosis or narcosis from CO_2 retention may be evident as the respiratory muscles become paralyzed.

Individual cases might be confused clinically with other neuromuscular disorders such as Guillian-Barré syndrome, myasthenia gravis, or tick paralysis. The edrophonium or Tensilon® test may be transiently positive in botulism so it may not distinguish botulism intoxication from myasthenia. The cerebrospinal fluid in botulism is normal and the paralysis is generally symmetrical, which distinguishes it from enteroviral myelitis. Mental status changes are generally seen in viral encephalitis but not generally with botulinum intoxication. Other diseases to consider would be stroke, chemical intoxication (e.g., carbon monoxide, barium carbonate, methyl chloride, organic phosphorus compound or atropine), mushroom poisoning, medication reactions (e.g., neomycin, streptomycin, kanamycin and gentamicin), and poliomyelitis.

Q Fever – Overview

Naturally Occurring Q Fever

Q fever is caused by the rickettsia, *Coxiella burnetii,* and is common to animals such as cattle, sheep, and goats. Animals do not develop clinical disease but can shed large numbers of organisms in placental tissue and in body fluids including milk, urine, and feces. Humans normally acquire the disease by inhalation of *C burnetii* that have been aerosolized from contaminated environmental reservoirs such hay, straw, manure, dust, or dirt.

Bioterrorism Epidemiology

As a bioterrorism agent, Q fever would cause symptoms similar to naturally occurring disease. A single inhaled organism may produce clinical illness in some persons. Following a bio-aerosol release, air samples may be positive for up to two weeks and viable organisms may be re-aerosolized into the environment from contaminated soil for up to 150 days. Significant numbers of persons who present to a clinic or an emergency room with a non-specific febrile illness associated with pulmonary symptoms should be reported to the local health officer immediately.

Incubation Period

The incubation period is from 2 – 14 days.

Clinical Manifestations

Q fever is generally a self-limiting, febrile disease lasting 2 – 14 days. Prominent symptoms include fever and severe headache. Other symptoms may include fatigue, chills, sweats, myalgias, nausea, vomiting, diarrhea, and pleuritic chest pain. Pneumonia occurs in about one half of persons infected with Q fever however fewer than 30% of persons with pneumonia will have a productive cough or rales. Pneumonia can be atypical, rapidly progressive or present with fever but no pulmonary symptoms. Physical examination of the chest may be normal. About 33% of persons infected with Q fever may develop acute hepatitis with jaundice. Splenomegaly may also be present.

Complications

Complications may include acute hepatitis in the absence of pulmonary symptoms, culture-negative endocarditis, aseptic meningitis, encephalitis, and osteomyelitis.

Tularemia – Overview

Naturally Occurring Tularemia

Tularemia, also know as rabbit fever and deer fly fever, is a zoonotic disease typically acquired by humans after skin or mucous membrane contact with infected animals. Ticks, deer flies and mosquitoes can also transmit the infection. Less commonly, inhalation of contaminated dust or ingestion of contaminated food or water may result in clinical disease.

Bioterrorism Epidemiology

Exposure to as few as 10 – 50 aerosolized organisms may result in clinical disease. Person to person transmission does not occur. Large numbers of temporally clustered persons presenting to a clinic or an emergency room with similar symptoms should be reported to the local health officer immediately.

Incubation Period

The average incubation period is 3 – 5 days (range 1 – 21 days).

Clinical Presentation

Tularemia may present as one of six indistinct, overlapping clinical syndromes: pneumonic, systemic, ulceroglandular, glandular, oculoglandular, and oropharyngeal. The symptoms range from asymptomatic to acute sepsis leading to rapid death.

Pneumonic tularemia

Pneumonic tularemia would presumably be the most likely clinical presentation of an intentional bio-aerosol release of *F. tularensis*. The onset of symptoms may be abrupt and include:

- Fever, non- to minimally productive cough, sub-sternal tightness, pleuritic chest pain, occasional hemoptysis (rare), chills, headache, malaise, anorexia, and fatigue
- Chest x-ray (CXR) may show infiltrates without symptoms. Other CXR findings may include subsegmental/lobar infiltrates, hilar adenopathy, pleural effusion, or military infiltrates (may mimic tuberculosis)
- Pleural fluid is usually exudative with more than 1000 leukocytes/mm
- Granulomas may develop and occasionally caseate and may be confused with tuberculosis
- Secondary skin rashes can occur within the first two weeks of illness in up to 35% of cases

Systemic tularemia

- Febrile illness without typical clinical features of other forms of tularemia,
- Non descript symptoms also include fever, chills, headache, myalgias, cough, sore throat, nausea, vomiting, watery diarrhea (rarely bloody), and abdominal pain,
- More common in persons with chronic diseases and may lead to rapid death or protracted illness. Oropharyngeal, Ulceroglandular, Glandular, and Oculoglandular Tularemia (unlikely bio-aerosol release presentations)
- Oropharyngeal tularemia results from the direct invasion of the oropharynx (contaminated food and water) causing a sore throat with exudative tonsillitis and pharyngitis with the formation of ulcer(s); also may involve cervical, preparotid, and retropharyngeal lymph nodes with possible abscess formation.
- Ulceroglandular and glandular tularemia generally present with enlarged, local tender lymph nodes. Skin lesions can appear before, simultaneously, or after lymphadenopathy. The ulcers start as red, painful papule(s) that progress to necrotic draining ulcers with raised borders.

- Glandular tularemia is the same as ulceroglandular without the skin lesions.
- Oculoglandular tularemia results from the inoculation of bacteria onto the eye resulting in photophobia and excessive lacrimation, swollen eyes, painful infected conjunctiva and yellowish conjunctival ulcers.

Plague – Overview

Naturally Occurring Plague

The most common form of plague, bubonic, is transmitted to humans who have been bitten by plague-infested fleas. The bacteria migrate to regional lymph nodes where they rapidly multiply and form a painful bubo. Another form of the disease, septicemic plague, can also result from a fleabite and is not normally associated with a bubo. Both forms of plague can result in secondary pneumonic plague by hematogenous spread of the bacteria to the lungs. Up to 80% of persons with bubonic plague can also become septicemic and about 15% will develop pneumonic plague.

Bioterrorism Epidemiology

Pneumonic plague would be the most likely result of an intentional bio-aerosol release. Numerous, previously healthy persons would require immediate emergency care including antibiotic therapy and life support systems. Pneumonic plague is transmitted by close, face-to-face (within 3 feet) contact with infectious respiratory droplets generated when the person coughs or talks.

Incubation Period

The range of time between a bio-aerosol exposure and the development symptoms ranges from 1-6 days (average 2 - 4 days).

Clinical Presentation

The onset is generally fulminant and the person generally presents with a high fever, chills, malaise, headache, hypotension, myalgias and a productive cough. The sputum is generally bloody and, less commonly, watery or purulent. The pulmonary symptoms may progress rapidly to dyspnea, stridor, and cyanosis. Gastrointestinal symptoms may include nausea, vomiting, abdominal pain and diarrhea. Cervical buboes, although rarely seen in primary pneumonic plague, may be identified.

Complications

Plague septicemia can produce thromboses in the acral vessels, with necrosis and gangrene. Black necrotic appendages and purpuric lesions caused by endotoxemia may be present. Plague meningitis occurs in about 6% of the septicemic and pneumonic cases. If treatment is delayed beyond 18 hours, the mortality rate for bubonic plague approaches 60% and for pneumonic plague about 100%.

Smallpox – Overview

Naturally Occurring Smallpox

Smallpox was once considered the most contagious infection known to afflict man. Eradicated worldwide in 1977, the World Health Association (WHO) recommended that all countries cease vaccination programs in 1980. There is now only a limited supply of smallpox vaccine available.

Bioterrorism Epidemiology

The most likely method of introducing variola or smallpox virus is by aerosolization. The intentional release of variola virus into the non-immune population could result in multiple primary exposures with a subsequently large number of secondarily exposed persons if the disease is not recognized quickly.

The virus can survive in the environment for up to 6 hours when subjected to high temperatures (31 – 33 degrees C) with a relative humidity of 80%. Cooler temperatures and a lower humidity will increase the length of time that the virus will remain viable in the environment. Smallpox is highly infectious and person-to-person transmission occurs by the airborne route and by contact with skin lesions or articles such as clothing and bed linens soiled or contaminated with lesion drainage. About 30% of susceptible contacts will become infected.

Incubation Period

The incubation period ranges from 7-17 days (average is 12-14 days).

Transmission

Person-to-person transmission occurs by inhalation of virus that is shed in droplets of saliva during face-to-face (= 6.5 feet) contact with an infected person. At the onset of the rash, lesions appear first in the oropharynx. As the lesions ulcerate, large amounts of virus are released into saliva. Of particular concern is that smallpox virus may be shed from the oropharynx without clinical manifestation of the infection. In the absence of special ventilation, ambient air currents can disperse the viral particles into corridors, stairwells and elevator shafts exposing non-infected persons on different levels of a multi-level building such as a hospital. Viral particles are also shed from vesicles on the skin. Any contact with an infected person's skin, clothing, bed linens, or other contaminated surfaces or articles may result in transmission. Smallpox is contagious from the onset of rash and until all scabs have separated and fallen off the skin. For isolation purposes; however, it may be safer to assume that the virus can be transmitted by oropharyngeal and respiratory secretions within 24 hours prior to the onset of the rash.

Clinical Presentation

An asymptomatic viremia occurs within 2-4 days following the first exposure date. During this phase, the virus multiplies and spreads to the bone marrow, lymph nodes, and spleen. The person is not infectious at this time.

About 5-8 days following the first exposure date, a secondary viremia occurs. The symptoms include high fever, fatigue, headache, backache, abdominal pain, vomiting, and possible delirium. As the fever pattern begins to spike (40 – 40.□°C) an erythematous, maculopapular rash appears on the mucosa of the mouth, pharynx, face, and forearms. It subsequently spreads to the truck, legs, hands, and feet, including the palms and soles. The rash is centrifugal in distribution, i.e., more dense on the face and extremities than on the trunk. On any given part of the body, the lesions are generally at the same stage of development. Within 1 - 2 days, the rash becomes vesicular and, later, pustular. The pustules are round, tense, and deeply embedded in the dermis. Crusts begin to form about the 8 th or 9 th day after the appearance of the rash. At least 90% of all cases are clinically characteristic.

Complications

Death occurs during the second week after the onset of rash in about 30-40% of those infected.

Malignant smallpox occurs in 2 - 5% of the cases due to inadequate cell-mediated immune response. The patient is generally toxic and the lesions, slow to develop, resemble flat, coalesced papules that fail

to form pustules. The skin develops a fine-grained reddish color. The mortality rate is about 95% in unvaccinated persons.

Hemorrhagic smallpox occurs in less than 3% of the cases and is more common in pregnant women. Symptoms include extensive petechia, mucosal hemorrhage, and intense toxemia (high fever, headache, backache and abdominal pain). The patient generally dies before the typical smallpox rash develops. Differential diagnosis includes meningococcemia and acute leukemia.

Viral Hemorrhagic Fevers (VHF) – Overview

Naturally Occurring VHF

The viral hemorrhagic fevers are a diverse group of naturally occurring illnesses caused by viruses from four different families: *Arenaviridae, Bunyaviridae, Filoviridae,* and *Flaviviridae*.

- The arenaviruses include Argentine (Junin virus), Bolivian (Machupo virus), Brazilian (Sabia virus) and Venezuelan (Guanarito virus) and Lassa (Lassa) hemorrhagic viruses. These viruses are transmitted from rodent reservoirs to humans by inhalation of dust contaminated with rodent feces.

- The bunyaviruses include Rift Valley fever (Phlebovirus), Crimean-Congo fever (Nairovirus), and Hantaviruses (Hantavirus renal syndrome [HFRS] and hantavirus pulmonary syndrome [HPS]). These viruses are transmitted to humans from a variety of reservoirs including mosquito and domestic animal slaughter (Rift Valley fever), ticks and domestic animal slaughter (Crimean-Congo fever) and rodents (Hantavirus).

- The filoviruses include Marburg and Ebola viruses. Their natural reservoir is unknown.

- The flaviviruses include yellow fever and dengue fever. Both viruses are mosquito-borne.

Each of these viral families shares a number of common features:

- They are all RNA viruses covered or enveloped in a fatty (lipid) coating.

- Their survival is dependent of an animal or insect host, called a natural reservoir.

- The viruses are geographically restricted to the areas where their host species live.

- Humans are not the natural reservoir for any of these viruses. Humans are infected when they are exposed to infected hosts. However, after accidental transmission from the host, humans can transmit some of these viruses to other humans.

- Human cases or outbreaks of hemorrhagic fevers occur sporadically and irregularly and outbreaks cannot be predicted.

- With a few noteworthy exceptions, there is no cure or established drug treatment for VHF.

Bioterrorism Epidemiology

All of the VHF viruses (except dengue virus) are infectious by aerosol and could conceivably be used by an adversary as a bioterrorism agent.

Incubation Period

The incubation period for each of the VHF varies from 5 – 42 days depending on the virus.

Clinical Presentation

The VHF syndrome develops to varying degrees in persons infected with these viruses and exposure does not necessarily result in clinical disease. The target organ is the vascular bed and the dominant clinical features are generally a consequence of microvascular damage and changes in vascular permeability. Common presenting complaints include fever, myalgias, and prostration. On physical examination conjunctival injection, mild hypotension, flushing and petechial hemorrhages may be evident. The disease often progresses to shock and generalized mucous membrane hemorrhage accompanied by neurological, hematological and pulmonary manifestations. Renal insufficiency is proportional to cardiovascular compromise.

Nuclear/Radiological

The difficulty of responding to a nuclear or radiological incident is compounded by the nature of radiation itself. In an explosion, the fact that radioactive material was involved may or may not be obvious, depending upon the nature of the explosive device used. Unless confirmed by radiological detection equipment, the presence of a radiation hazard is difficult to ascertain. Although many detection devices exist, most are designed to detect specific types and levels of radiation and may not be appropriate for measuring or ruling out the presence of radiological hazards. The table below lists some indicators of a radiological release.

General Indicators of Possible Nuclear Weapon/Radiological Agent Use

• A stated threat to deploy a nuclear or radiological device
• The presence of nuclear or radiological equipment (e.g., spent fuel canisters or nuclear transport vehicles)
• Nuclear placards or warning materials along with otherwise unexplained casualties

The scenarios constituting an intentional nuclear/radiological emergency include the following:

1. Use of an **Improvised Nuclear Device (IND)** includes any explosive device designed to cause a nuclear yield. Depending on the type of trigger device used, either uranium or plutonium isotopes can fuel these devices. While “weapons-grade” material increases the efficiency of a given device, materials of less than weapons grade can still be used.

2. Use of a **Radiological Dispersal Device (RDD)** includes any explosive device utilized to spread radioactive material upon detonation. Any improvised explosive device could be used by placing it in close proximity to radioactive material.

3. Use of a **Simple RDD** that spreads radiological material without the use of an explosive. Any nuclear material (including medical isotopes or waste) can be used in this manner.

Conventional Explosive Devices

The easiest to obtain and use of all weapons is still a conventional explosive device, or improvised bomb, which may be used to cause massive local destruction or to disperse chemical, biological, or radiological agents. The components are readily available, as are detailed instructions to construct such a device. Improvised explosive devices are categorized as being explosive or incendiary, employing high or low filler explosive materials to explode and/or cause fires.

Bombs and firebombs are cheap and easily constructed, involve low technology, and are the terrorist weapon most likely to be encountered. Large, powerful devices can be outfitted with timed or remotely triggered detonators and can be designed to be activated by light, pressure, movement, or radio transmission. The potential exists for single or multiple bombing incidents in single or multiple municipalities. Historically, less than five percent of actual or attempted bombings were preceded by a threat. Explosive materials can be employed covertly with little signature, and are not readily detectable. Secondary devices may be targeted against responders.

Combined Hazards

WMD agents can be combined to achieve a synergistic effect—greater in total effect than the sum of their individual effects. They may be combined to achieve both immediate and delayed consequences. Mixed infections or intoxications may occur, thereby complicating or delaying diagnosis. Casualties of multiple agents may exist; casualties may also suffer from multiple effects, such as trauma and burns from an explosion, which exacerbate the likelihood of agent contamination. Attacks may be planned and executed so as to take advantage of the reduced effectiveness of protective measures produced by employment of an initial WMD agent. Finally, the potential exists for multiple incidents in single or multiple municipalities.

Potential Targets

In determining the risk areas within a jurisdiction (and in multiple jurisdiction areas participating in an emergency response), the vulnerabilities of potential targets should be identified, and the targets themselves should be prepared to respond to a WMD incident. In-depth vulnerability assessments are needed for determining a response to such an incident. In addition, reference Risk Management Plans and Emergency Planning and Community Right-to-Know Act (EPCRA) Plans, which include potential target areas and information on industrial chemical facilities, can be obtained from the Sheriff's Department.

Release Area

Standard models are available for estimating the effects of a nuclear, chemical, or biological release, including the area affected and consequences to population, resources, and infrastructure. Some of these models include databases on infrastructure that can be useful in preparing the TIA. A good source of information on available Federal government models is the *Directory of Atmospheric Transport and Diffusion Consequence Assessment Models*, published by the Office of the Federal Coordinator for Meteorology (OFCM). **See resources section for acronym identification*

Domestic Terrorism

There exists no precise or widely accepted definition of terrorism. Some governments, for example, label as terrorism all violence committed by their political opponents, whereas antigovernment extremists frequently claim to be the victims of government terror. What is called terrorism thus often seems to depend on one's point of view.

Hence, common usage of the word terrorism is more a catchall than a precise definition, referring to a variety of violent acts perpetrated by states, their political opponents, and ostensibly non-political criminals as well. It is this political element that distinguishes economically motivated crimes from politically motivated (i.e., terrorist) violence. The ordinary criminal certainly uses short-term terror to achieve his goals, be it brandishing a knife in front of a mugging victim or using a gun in a bank robbery. But the purpose of the criminal act does not go beyond the act itself or the acquisition of money and other valuables. The terrorist act is different in that the violence employed is not only in pursuit of some long-range *political* goal but is designed to have far reaching psychological repercussions on a particular target audience.

In sum, terrorism is violence, or the threat of violence, calculated to create an atmosphere of fear and alarm. These acts are designed to coerce others into taking actions they would otherwise not undertake or to refrain from taking actions that they desire to take. All terrorist acts are crimes. Many would also be violations of the rules of war, if a state of war existed. This violence or threat of violence is generally directed against civilian targets. The motives of all terrorists are political, and terrorist actions are generally carried out in a way that will achieve maximum publicity. The perpetrators are members of an organized group, and, unlike other criminals, they often claim credit for their acts. Finally, terrorist acts are intended to produce effects beyond the immediate physical damage they cause by having long-term psychological repercussions on a particular target audience. The fear created by terrorists, for example, may be intended to cause people to exaggerate the strength of the terrorists and the importance of their cause, to provoke governmental overreaction, to discourage dissent, or simply to intimidate and thereby enforce compliance with their demands.

Although the United States is the country most frequently targeted abroad by terrorists, it is somewhere near the bottom of the list in the number of terrorist attacks annually recorded within its own borders. For example, according to the FBI, 12 terrorist attacks occurred in the United States in 1993; only four in 1992; five in 1991; seven in 1990; four in 1989; nine in 1987; and 25 in 1986. Moreover, until the 1993 bombing of New York's World Trade Center, where six persons died, no one had been killed in a terrorist incident in the United States since 1986.[1] Nevertheless, the United States is not immune to terrorism from within its own borders. A variety of ethnic/émigré groups, purely indigenous terrorist organizations, and foreign terrorist groups are committed to the use of violence in pursuit of their political objectives. Indeed, the continuing violence perpetrated by Puerto Rican separatists, opponents of legalized abortion, and foreign elements, as dramatically demonstrated by the February 1993 bombing of New York City's World Trade Center, underscores the fact that the threat of terrorism in this country can by no means be discounted. There are five potential types of terrorist organizations in the United States:

- Ethnic separatist and émigré groups;
- Left-wing radical organizations;
- Right-wing racist, anti-authority, survivalist-type groups;
- Foreign terrorist organizations;
- Issue-oriented groups (including anti-abortionists,[2] animal rights, and environmental extremist groups).

Reported Terrorism Threats, by Population Category

Population	Total Sample Population	Terrorist Groups in Jurisdiction No.	Terrorist Groups in Jurisdiction %	Population-Based Sample	Terrorist Groups in Jurisdiction No.	Terrorist Groups in Jurisdiction %
<10,000	27	3	11	15	1	6
10,000–50,000	41	10	24	18	10	28
50,001–100,000	22	5	23	15	4	26
100,001–250,000	21	12	57	17	9	53
250,001–500,000	13	7	54	6	3	50
500,001–1,000,000	19	8	44	11	3	30
1,000,000+	5	3	60	2	1	50
Total	148	48		84	31	

Frequency of Terrorist Acts, by Groups, as Reported by Municipalities

Terrorist Group	0	1–5	6–10	11–15	16–20	21+	Unknown
Reported Rate (%) in Overall Sample (N=148)							
Right-wing	66	18	8	3	1	2	1
Left-wing	93	5	0	0	0	<1	1
International	95	2	2	0	0	0	1
Ethnic	86	7	3	2	0	<1	1
Issue-specific	61	22	5	5	2	5	<1
Other	94	2	3	0	<1	0	<1
Reported Rate (%) in Population-Based Sample (N=84)							
Right-wing	70	14	10	1	1	1	2
Left-wing	93	5	0	0	0	0	2
International	93	4	1	0	0	0	2
Ethnic	83	6	5	2	0	1	2
Issue-specific	62	23	5	4	2	4	1
Other	93	1	4	0	1	0	1

NOTES: Missing responses are counted as 0 incidents. Percentage totals may not add across rows because of rounding.

Groups Associated with Acts of Domestic Terrorism

The following is a list of some of the better known organizations and groups that are known to have been associated with acts of domestic terrorism:

Armed Forces of National Liberation
Aryan Nations
Christian Patriots Defense League
The Covenant
Jewish Defense League
Ku Klux Klan
Macheteros
Neo-Nazis
The Order
Posse Comitatus
Skinheads
United Underground
Earth Liberation Front

Impact on Jurisdictions

An act of terrorism directed at a target within any of the jurisdictions represented in this plan may not imply the impact of the 9/11 acts in the east, but any communities subjected to the consequences of a terrorist attack in Yolo County, whether international or domestic, would most likely reel from its affects. Even though terrorism preparedness has been at the forefront of emergency services organizations

throughout the country for several years, a terrorist act that brings on disastrous consequences would severely strain the agencies whose duty it is to respond perhaps even to the point of not being able to provide services because of limited budgets and staffing shortages. Yolo Operational Area realizes this and has identified the need to work on mitigating the impact on the communities it enjoins.

Since Yolo County is not a highly visible area of the Country, and not the seat of major political or high profile governmental representation, it is likely not to be targeted by international terrorist organizations; however, on the domestic front, Yolo County houses the University of California, Davis, which has been targeted by domestic extremists for its forefront involvement in animal research and scientific study. A well organized, well financed extremist organization could potentially conduct a disastrous act of terrorism directed at the institution that may impact the surrounding communities of Woodland and (perhaps hardest hit) Davis, as well as the unincorporated areas in the vicinity.

Targets are not readily identifiable in West Sacramento, but an attack directed at the capitol city of California, the fifth largest economy in the world, could directly impact the infrastructure and citizens of West Sacramento, a mere stone's throw across the Sacramento River from the capitol.

UC Davis & Agro-Terrorism

<u>$4.7 Million Federal Grant to Protect California's Food Supply (</u>August 23, 2004)

A $4.7 million dollar grant was presented today to the University of California, Davis, to help protect the food supply of California and the nation against acts of terrorism.

The two-year grant was presented to UC Davis' Western Institute for Food Safety and Security. It will support development and delivery of training programs aimed at helping personnel in the food production system prevent, recognize and deal with potential terrorist acts directed at the nation's food supply.

"This award is a very important step toward preventing terrorist attacks on the food systems in California," said Jerry Gillespie, director of the institute and principal investigator. "Because California leads the nation in dairy, fruits and vegetables, and other specialty-crop production for this nation, and because of the state's dominance in international food trade, it is extremely important that we do all we can to ensure the safety of our food systems. "One of the most effective strategies for achieving this goal is to have food industry employees informed and actively participating in protection strategies," he added.

Presenting the grant to the campus was Suzanne Mencer, director of the Office of Domestic Preparedness for the U.S. Department of Homeland Security. Mencer said that UC Davis is receiving the largest such grant awarded nationwide to 14 out of 217 applicants.

UC Davis expects the training to be a national model for bringing together food system employees, health officials, law enforcement personnel, and government officials to prepare for a prompt and effective response to agro-terrorist activity.

More than three dozen biological and chemical agents are considered to be potential agricultural threats. This includes those that cause bacterial and viral diseases like anthrax, brucellosis, botulism, hantavirus and salmonella. Also included are chemical agents that range from pesticides to flammable liquids and corrosive industrial acids. Some could cause extensive illness in humans or food animals, while others could have a devastating economic impact by affecting agricultural crops or livestock.

Fresh and processed tomatoes, apples and dairy products will be the three focus food groups for the training program. These were selected because they are considered to be at risk of terrorist attack; to represent high per-capita consumption, especially among infants and children; to constitute major U.S.

production, particularly in California; or to be used widely as ingredients in other foods or prepared meals.

The training program, which is expected to impact more than 1 million front-line personnel, will begin immediately, Gillespie said. It will expand existing programs that are currently offered through the Western Institute for Food Safety and Security as well as UC Cooperative Extension, University Extension and other campus academic programs.

Its mission is to develop the capability to identify food-borne hazards more rapidly and accurately, and to develop effective methods to prevent natural and intentional food contamination that might lead to food-borne illnesses and outbreaks.

Collaborating with the institute on the new training grant are 14 partners representing agriculture, public health, law enforcement, and emergency services and management.

Sacramento Bee, August 23, 2004

Utility Loss

Utility loss was rated as a HIGH RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

The recent Black Out on the East Coast, and predictions of West Coast Energy shortages have raised the issue among local jurisdictions on the prioritization of risks for Yolo Operational Area.

Utilities play a vital role in the quality of life enjoyed by communities in State of California. Services provided by utilities include electrical, gas, water and wastewater management. Energy emergencies can include electrical disruptions as well as vehicle, heating, and electrical power generation fuel shortages. Oil embargoes, terrorism and economic turmoil can cause shortages. Severe storms, technological failures and natural disasters may cause disruptions to power and other utilities requiring emergency governmental response.

Any disruption in the supply of energy, water or utility causes human suffering and economic loss. The causes of most of shortages are beyond control of local governments. Responses to these emergencies may include rationing, and emergency supply distribution.

The 2000-2001 California electricity crisis brought to light many critical issues surrounding the state's power generation and distribution system, including its dependency on out-of-state resources. Although California has implemented effective energy conservation programs, the state continues to experience both population growth and weather cycles that contribute to a heavy demand for power.

Hydro-generation provides approximately 25 percent of California's electric power, with the balance coming from fossil fuels, nuclear, and green sources. As experienced in 2000 and 2001, blackouts can occur due to losses in transmission or generation and/or extremely severe temperatures that lead to heavy electric power consumption.

The Impact of Loss of Power on Water & Sewer Systems

California is a populous state that receives minimal rainfall. Approximately 70% of the population obtains its drinking water from surface sources with the remainder relying on ground water supplies. The basic types of system used by the water companies are pressurized (pressure fed) and non-pressurized (gravity fed) systems. The basic types of system used by the sewer companies are collection and treatment systems that use force pumps to move sewerage.

Drinking water is supplied to California residents through a myriad of governmental agencies, cities, districts, private utilities, mutual water companies, private businesses, and individually owned wells. There are over 10,000 public water suppliers in the state serving water to approximately 29 million consumers. Less than 10% of the public water systems in the state serve collectively more than 95% of the state's population. The remaining 90% of the systems serves less than 5% of the population. D.01-05-089 added Category M (limited other customers as necessary to protect public health and safety, to the extent exempted by the Commission) to the list of essential customers normally exempt from rotating outages.

Due to the energy situation and rolling blackouts that occurred earlier in the year, the Water Division has conducted an informal inquiry into the impact of the rolling blackouts and has concluded that during the first four months of the year, California energy situation and rolling blackouts have had no significant impact upon the California Water and Sewer System Industries, in part due to the "Y2K" efforts in 1999.

Water utilities and sewer system utilities appear to have the matter well under control with little to no impact on customer service at this time.

California has experienced many power outages from natural disasters such as fires, floods, earthquakes, and severe storms. This means that water and sewer systems must have adequate back up power for extended electric outages independent of rolling blackouts. Many large water systems have adequate storage facilities and have installed backup generators to maintain system pressures during power failure due to "Y2K" efforts. Rotating power outage duration is usually less than two hours or between two to four hours. Therefore, rolling blackouts have little impact on customer service.

In addition, water and sewer treatment utilities may request partial or complete rotating outage exemption from electric utilities in times of emergency identified as requiring their service, such as fire fighting.

Mitigation measures available for these systems

Backup power was a big issue due to the energy situation and rolling blackouts that occurred this summer. Many water systems have argued that backup power was not necessary since they received electrical power from more than one substation, but the power shortage has negated that argument. Many large water systems have adequate storage facilities and have installed backup generators to maintain system pressures during power failures due to "Y2K" efforts. It is the smaller systems that generally do not have backup power. To mitigate possible public health and safety impacts due to a loss of power, the Water Division recommends that all water companies with pressurized systems and sewer companies install backup generators on the wells with the largest pumping capacity or the lead wells. This will assure system integrity.

The Effects on Public Health & Safety

Public health and safety must be the primary factor used to evaluate a customer's eligibility for exemption from rotating outages. Exempting a fire department from rotating outages is of little value if the water resources needed to fight these fires are not available to it, particularly during the high fire season. Fires that start during extreme fire weather conditions are a high risk to the safety of the residents and firefighters, and have a high probability of spreading rapidly and inflicting major property loss, if water pumping facilities are compromised.

Power Failures

Power shortages and electrical blackouts have become a fact of life in California. Most of the state, including Yolo County, is in territory controlled by the California Independent System Operator (Cal-ISO). When electricity demand approaches the available supply, Cal-ISO issues the appropriate notices. Cal-ISO provides a System Status web-page which shows current load and indicates if a notice has been issued. The levels of notice are:

Alert

The lowest level of notice, an Alert advises Market Participants (e.g. energy providers) of marginal conditions and requests market response for resolution.

Warning

A Warning advises Market Participants of marginal conditions, requests market response for resolution, and allows the ISO more flexibility in acquiring resources.

An **Emergency** notice advises Market Participants and/or the public of conditions threatening electric system reliability, enabling additional acquisition of resources and obligating response from all Market Participants as directed by the ISO. The three Stages of Emergency Notice are:

Stage 1

The lowest stage is initiated to advise the public of potential power shortages and to ask all customers to conserve electricity to ensure there will be enough power to meet future demand. The request for demand reduction is not intended to disrupt employment or curtail industrial production or commerce.

Stage 2

This stage is declared when reserves drop below five percent. At this level, large commercial customers that have signed up to voluntarily curtail power during high demand days will be asked to do so.

Stage 3

The most severe stage is initiated if an operating reserve of less than one-and-a-half percent is unavoidable. Involuntary curtailments of service to customers including "rotating blackouts" are possible during this emergency declaration.

Yolo Operational Area Energy Emergency Contingency Plan

The Yolo Operational Area Energy Emergency Contingency Plan addresses the County of Yolo's policies and procedures providing for, or coordinating activities during an energy shortage. The plan establishes a framework which:

- Provides an energy emergency management system and communications plan consistent with existing California state and federal energy emergency response plans.
- Identifies critical energy needs for County government operations necessary to ensure that essential public services are maintained during an emergency supply disruption.
- Identifies a menu of energy conservation strategies that can be implemented by the County of Yolo, with cooperation from industry and the public, to provide emergency reductions in demand for petroleum fuels, natural gas and/or electricity.

Energy Resources

Yolo County

Yolo County staff generates status sheets on all equipment in the county. These sheets are updated periodically and enable county staff to immediately determine what equipment is available and where it is located. Yolo County has 10 backup generators. The jail has a 150 Kw backup generator. The communications tower in West Sacramento has a separate generator.

City of Winters

The City of Winters has no energy costs associated with traffic lights because there are no traffic lights. The one water well in Winters has a backup generator. There is a manual pump for gas stored in an above ground tank for city equipment.

City of Davis

The City of Davis has taken the following steps to prepare for energy emergencies:

All fire stations, City Hall, the Administration Building, and the Public Works Building have some backup power.

The water system is computerized and radio operated. When a problem is identified, the computer program immediately dials a name on an on-call list to notify that person.

The City of Davis committed to Community involvement and participation in issues which affect the jurisdiction in emergency and non-emergency situations.

Electrical Power

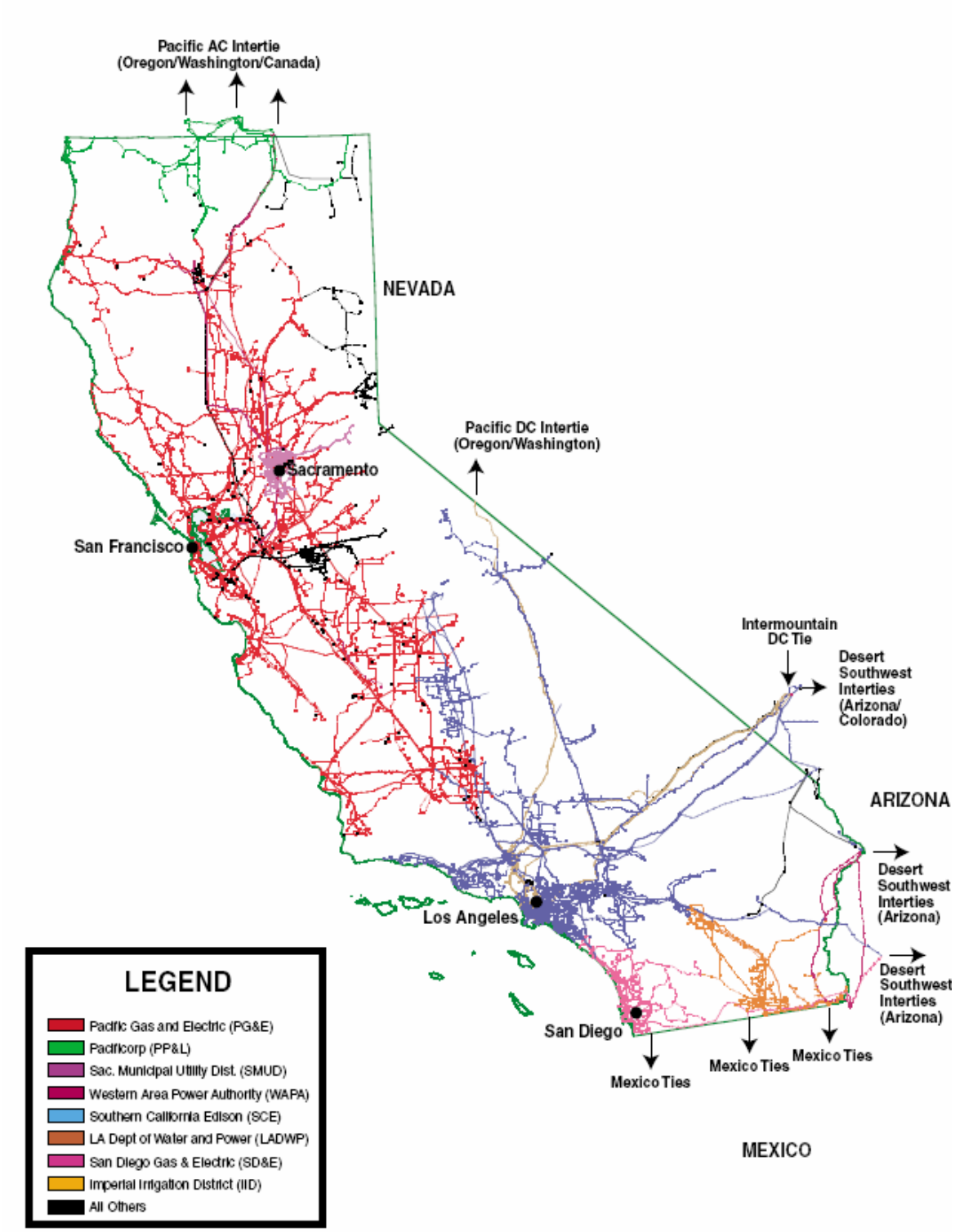
The Yolo District of Pacific Gas & Electric (PG&E) is responsible for operating and maintaining the electrical transmission and distribution system in Yolo County. PG&E supplies electric service to over 65,000 residential, agricultural, commercial and industrial customers in a 1,200 square mile area of Yolo County.

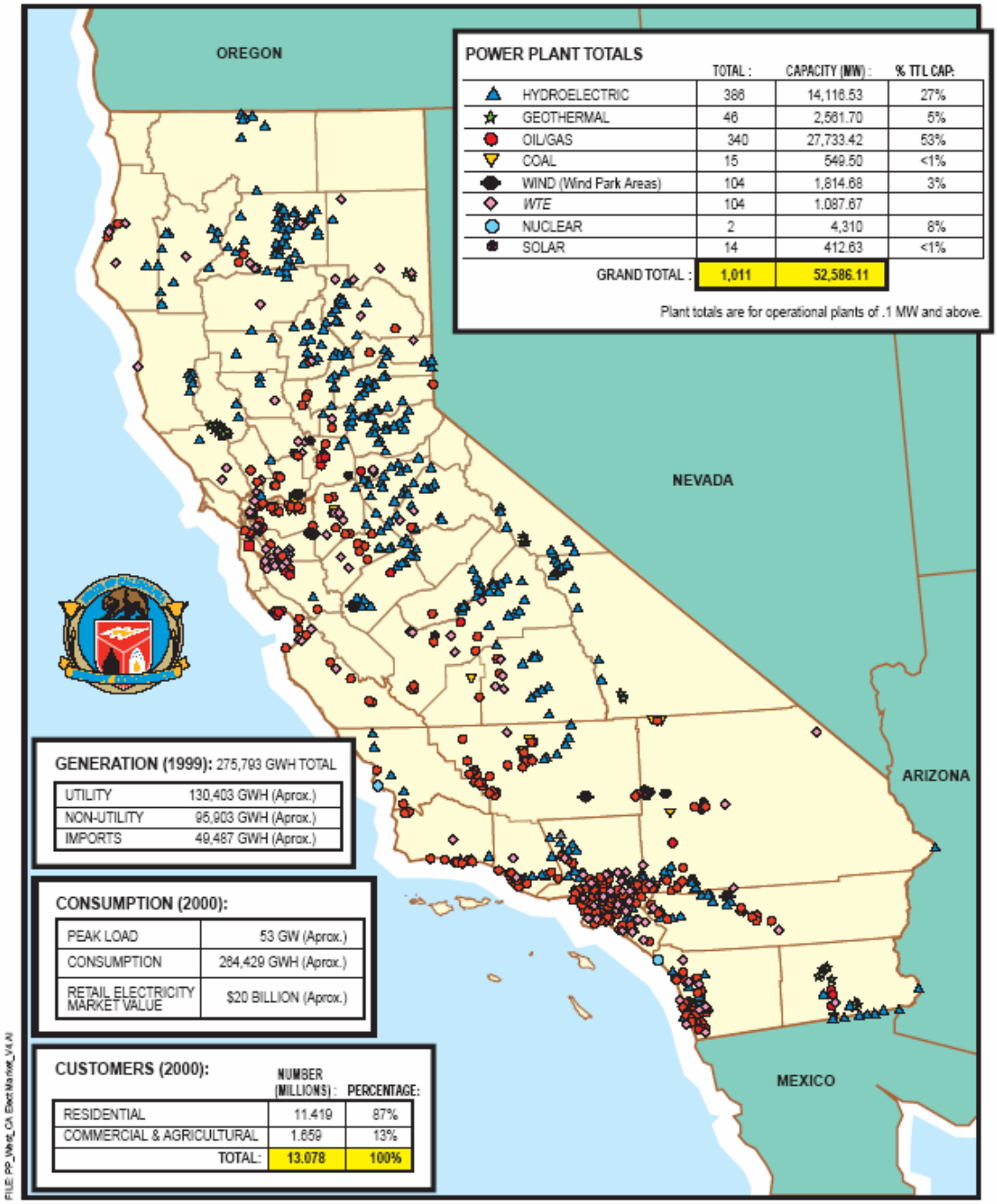
PG&E operates and maintains approximately 750 miles of electrical transmission lines, 2,200 miles of distribution lines, and 11 electrical substations in Yolo County. The distribution lines and substation facilities are capable of delivering 365 Megawatts during peak demand periods which occur from June through September.

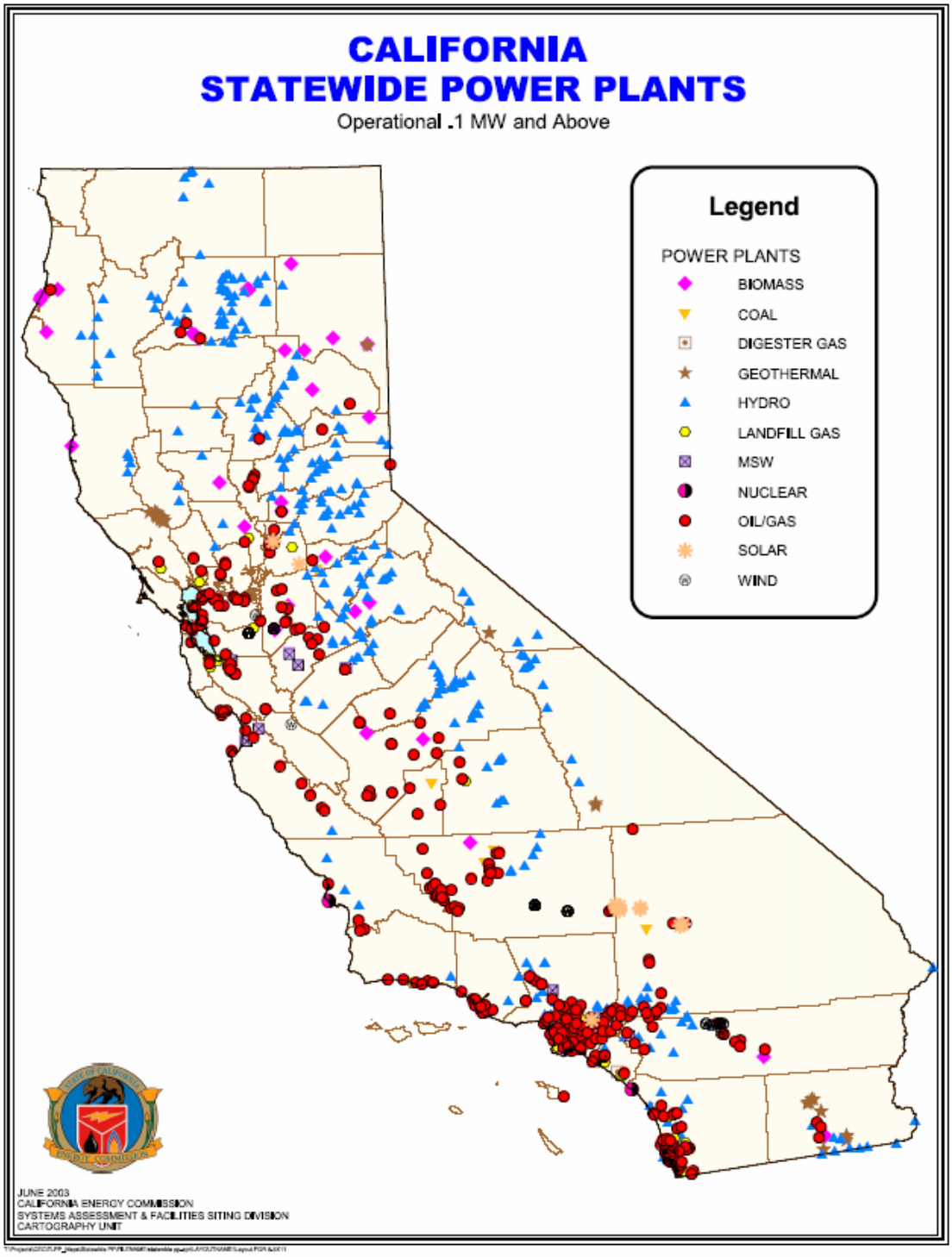
The California Independent System Operator (ISO) administers an Electrical Emergency Plan which is a statewide plan to assist in maintaining reserve margins during foreseeable electrical capacity and energy shortages. The purpose of the plan is to minimize the effects of foreseeable electrical emergencies on PG&E's customers.

During major unscheduled outages, PG&E relies upon load shedding equipment to automatically maintain the integrity of the electrical system. System integrity or stability is measured by the amount of deviation from the established frequency of 60 cycles per second. Automatic load shedding enables the electrical system to remain stable during an emergency and avoid system collapse.

Power Transmission Lines in California




CALIFORNIA'S ELECTRICITY MARKET
OREGON
NEVADA
ARIZONA
MEXICO
POWER PLANT TOTALS
TOTAL : CAPACITY (MW) : % TTL CAP:
HYDROELECTRIC 386 14,116.53 27%
GEOTHERMAL 46 2,561.70 5%
OIL/GAS 340 27,733.42 53%
COAL 15 549.50 <1%
WIND (Wind Park Areas) 104 1,814.68 3%
WTE 104 1,087.67
NUCLEAR 2 4,310 8%
SOLAR 14 412.63 <1%
GRAND TOTAL : 1,011 52,586.11
Plant totals are for operational plants of .1 MW and above.
GENERATION (1999): 275,793 GWH TOTAL
UTILITY 130,403 GWH (Aprox.)
NON-UTILITY 95,903 GWH (Aprox.)
IMPORTS 49,487 GWH (Aprox.)
CONSUMPTION (2000):
PEAK LOAD 53 GW (Aprox.)
CONSUMPTION 284,429 GWH (Aprox.)
RETAIL ELECTRICITY MARKET VALUE $20 BILLION (Aprox.)
CUSTOMERS (2000):
NUMBER (MILLIONS) : PERCENTAGE:
RESIDENTIAL 11.419 87%
COMMERCIAL & AGRICULTURAL 1.659 13%
TOTAL: 13.078 100%
FILE: PP_Wkst_CA Elect Market_V4.AI
CALIFORNIA ENERGY COMMISSION -SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION
APRIL 2001


CALIFORNIA
STATEWIDE POWER PLANTS
Operational .1 MW and Above
Legend
POWER PLANTS
BIOMASS
COAL
DIGESTER GAS
GEOTHERMAL
HYDRO
LANDFILL GAS
MSW
NUCLEAR
OIL/GAS
SOLAR
WIND
JUNE 2003
CALIFORNIA ENERGY COMMISSION
SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION
CARTOGRAPHY UNIT

Data & Telecommunications

Data / Telecommunications Loss was rated as a HIGH RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

Data and/or telecommunications loss may result as a secondary hazard to most any other natural or human-caused hazard discussed in this analysis. It is important to assure that adequate safeguards are in place to protect vital data and telecommunications systems in the event of a catastrophic event.

Yolo County and municipal governments depend on data and telecommunications to provide internal services as well as a great majority of service to the communities they serve. A serious loss of data and telecommunications ability could result in degraded or loss of emergency dispatch capabilities, planning services, infrastructure monitoring capabilities, access to statistical data, financial and procurement services, and access to personnel records.

Data / Telecommunications Security

An effective risk management process is an important component of a successful IT security program. The principal goal of an organization's risk management process should be to protect the *organization and its ability to perform their mission*, not just its IT assets. Therefore, the risk management process should not be treated primarily as a technical function carried out by the IT experts who operate and manage the IT system, but as an essential management function of the organization.

Computer Security Breaches

Computer breach incidents have risen sharply since the 1980s. These include viruses, worms, Trojan horses, break–ins, and other damaging breaches. Whereas only six incidents were reported in 1988, the number rose gradually during the late 1980s and 1990s, they made a sharp rise beginning in 1998, and have risen exponentially since. To date, there have been over 142, 500 computer breaches.

The 2002 Computer Security Institute (CSI) Computer Crime and Security Survey revealed that each year, over half of all databases have some kind of breach and that the average breach amounts to nearly $4 million in losses. This percentage is staggeringly high given that these are the security problems that companies are reporting. Organizations don't want to advertise the fact that their internal people have access to customer data, can steal that data, cover their tracks, give the data to anybody and stay undetected and employed while a crime is committed.

California recently enacted a law mandating the public disclosure of computer security breaches involving confidential information. The law covers not just state agencies but all private enterprises doing business in California. Starting July 1, 2003, any entity that fails to disclose that a breach has occurred could be liable for civil damages or face class action suits.

Cyber Crime

"…Cyber crime is becoming one of the Net's growth businesses. The recent spate of attacks that gummed up Web sites for hours--known as "denial of service"--is only one type. Today, criminals are doing everything from stealing intellectual property and committing fraud to unleashing viruses and committing acts of cyber terrorism in which political groups or unfriendly governments nab crucial information. Indeed, the tactic used to create mayhem in the past few days is actually one of the more

innocuous ones. Cyber thieves have at their fingertips a dozen dangerous tools, from "scans" that ferret out weaknesses in Web site software programs to "sniffers" that snatch passwords. All told, the FBI estimates computer losses at up to $10 billion a year.

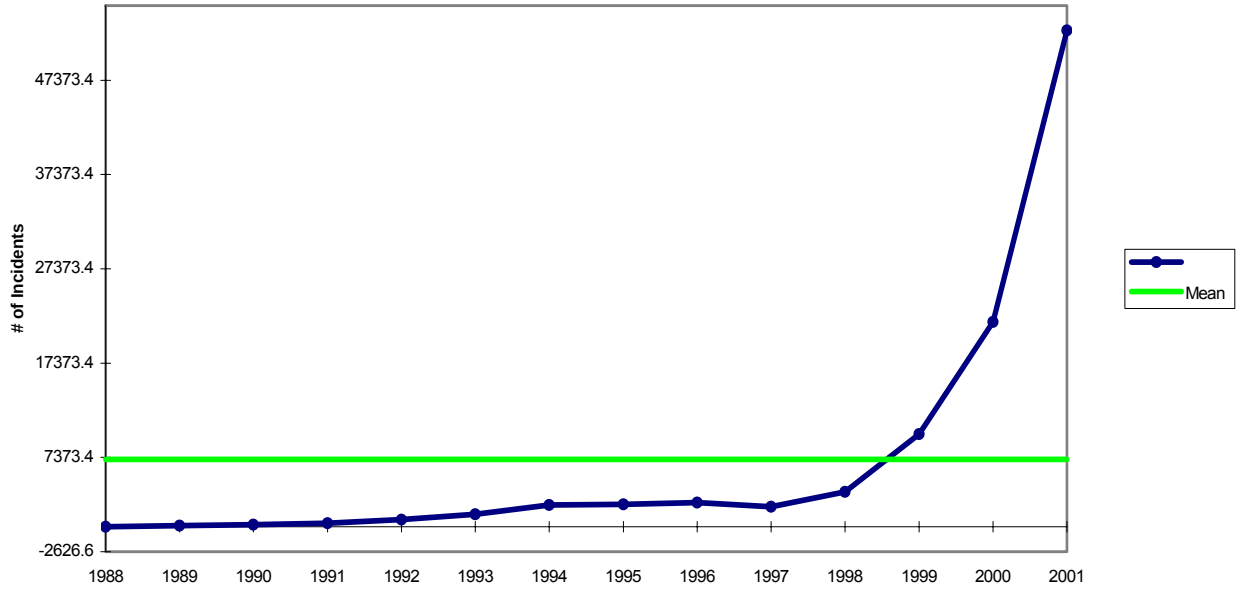
As grim as the security picture may appear today, it could actually get worse as broadband connections catch on. Then the Web will go from being the occasional dial-up service to being "always on," much as the phone is. That concept may be nirvana to e-tailers, but could pose a real danger to consumers if cyber crooks can come and go into their computer systems at will. Says Bruce Schneier, chief technical officer at Counterpane Internet Security Inc. in San Jose, Calif.: "They'll keep knocking on doors until they find computers that aren't protected."

Sadly, the biggest threat is from within. Law enforcement officials estimate that up to 60% of break-ins are from employees. Take the experience of William C. Boni, a digital detective for PricewaterhouseCoopers in Los Angeles. Last year, he was called in by an entertainment company that was suspicious about an employee. The employee, it turns out, was under some financial pressure and had installed a program called Back Orifice on three of the company's servers. The program, which is widely available on the Internet, allowed him to take over those machines, gaining passwords and all the company's financial data. The employee was terminated before any damage could be done.

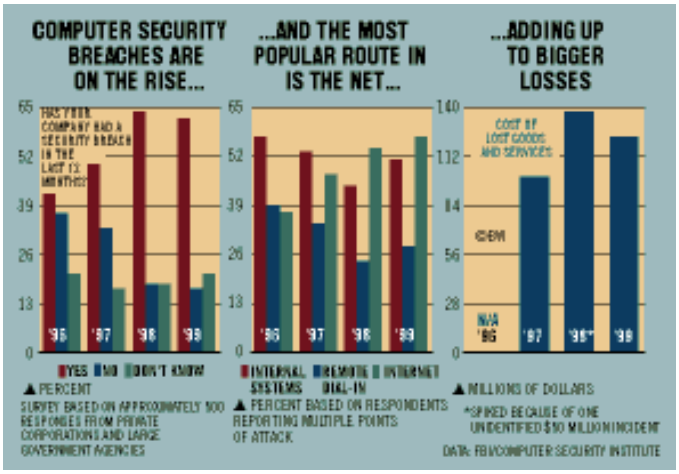
The dirty little secret is that computer networks offer ready points of access for disgruntled employees, spies, thieves, sociopaths, and bored teens. Once they're in a corporate network, they can lift intellectual property, destroy data, sabotage operations, even subvert a particular deal or career. "Any business on the Internet is a target as far as I'm concerned," says Paul Field, a reformed hacker who is now a security consultant.

Reported Database Breaches/Incidents

Source of Data: CERT® Coordination Center



It's point and click, then stick 'em up. Interested in a little mayhem? Security experts estimate that there are 1,900 Web sites that offer the digital tools--for free--that will let people snoop, crash computers, hijack control of a machine, or retrieve a copy of every keystroke. Steve O'Brien, vice-president for information operation assessments at Info-Ops.com, an Annapolis (Md.)-based company that provides intrusion detection services and security solutions, says the number of ways to hack into computers is rising fast. He tracks potential threats both from hacker groups and from the proliferation of programs. Once a rare find, he now discovers at least three new nasty software programs or vulnerabilities every day. And those tools aren't just for the intellectually curious. "Anyone can get them off the Internet--just point and click away," says Robert N. Weaver, a Secret Service agent in charge of the New York Area Electronic Crimes Task Force.



Experts say the first step for companies is to secure their systems by searching for hacker programs that might be used in such attacks. They also suggest formal security policies that can be distributed to employees letting them know how often to change passwords or what to do in case of an attack. An added help: Constantly updating software with the latest versions and security patches. Down the road, techniques that can filter and trace malicious software sent over the Web may make it harder to knock businesses off the Net. Says Novell Inc. CEO Eric Schmidt: "Security is a race between the lock makers and the lock pickers." Regulators say that cybercrime thrives because people accord the Internet far more credibility than it deserves. "You can get a lot of good information from the Internet--95% of what you do there is bona fide," says G. Philip Rutledge, deputy chief counsel of the Pennsylvania Securities Commission. "Unfortunately, that creates openings for fraud."…"

Excerpts from "Business Week Online, Ira Sager in New York, with Steve Hamm and Neil Gross in New York, John Carey in Washington, D.C., and Robert D. Hof in San Mateo, Calif.

Top Ten Computer Security Breaches

Systems affected: All system and network devices

BIND weaknesses: The Berkeley Internet Name Domain (BIND) package is the most widely used implementation of Domain Name Service (DNS) by which we locate systems on the Internet by name, without having to know specific IP addresses. In a typical example of a BIND attack, intruders erase system logs, and install tools to gain administrative access. They then compile and install IRC utilities and network scanning tools, which are used to scan more than a dozen class-B networks in search of additional systems running vulnerable versions of BIND. In a matter of minutes, they can use the compromised system to attack hundreds of remote systems.

Systems affected: Multiple UNIX and Linux systems

Vulnerable CGI (Common Gateway Interface) programs and application extensions (e.g., ColdFusion) installed on Web servers: Most Web servers support CGI for data collection and verification. Intruders are known to have exploited vulnerable CGI programs to vandalize Web pages, steal credit card information, and set up back doors to enable future intrusions, even if the CGI programs are secured. As a general rule, sample programs should always be removed from production systems.

Systems affected: All Web servers

Remote procedure call (RPC) weaknesses: Remote procedure calls (RPC) allow programs on one computer to execute programs on a second computer. They are widely used to access network services such as shared files in NFS. There is compelling evidence that the vast majority of distributed denial of service attacks launched during 1999 and early 2000 were executed by systems that had been victimized because they had RPC vulnerabilities. The broadly successful attack on US military systems during the Solar Sunrise incident also exploited an RPC flaw found on hundreds of Department of Defense systems.

Systems affected: Multiple UNIX and Linux systems

RDS security hole in Microsoft Internet Information Server (IIS): Programming flaws in Microsoft's Internet Information Server (IIS) used to host websites deployed on Microsoft Windows NT and Windows 2000 are employed by malicious users to run remote commands with administrator privileges. Some participants who developed the "Top Ten" list believe that exploits of other IIS flaws, such as .HTR files, are at least as common as exploits of RDS.

Systems affected: Microsoft Windows NT systems using Internet Information Server

Sendmail: Sendmail is the program that handles most e-mail on the Internet. It's widespread use makes it a prime target. In one of the most common exploits, the attacker sends a crafted mail message to the machine running Sendmail, and Sendmail reads the message as instructions requiring the victim machine to send its password file to the attacker's machine (or to another victim) where the passwords can be cracked.

Systems affected: Multiple UNIX and Linux systems

Sadmind and mountd: Sadmind allows remote administration access to Solaris systems, providing graphical access to system administration functions. Mountd controls and arbitrates access to NFS mounts on UNIX hosts. Buffer overflows in these applications can be exploited, allowing attackers to gain control with root access.

Systems affected: Multiple UNIX and Linux systems; Sadmind: Solaris machines only

Global file sharing and inappropriate information sharing via NetBIOS and Windows NT ports: These services allow file sharing over networks. When improperly configured, they can expose critical system files or give full file system access to hostile parties.

Systems affected: UNIX, Windows and Macintosh systems.

User IDs, especially root/administrator with no passwords or weak passwords: Some systems come with "demo" or "guest" accounts with no passwords or with widely-known default passwords. Service workers often leave maintenance accounts with no passwords, while some database management systems install administration accounts with default passwords. In addition, busy system administrators often select system passwords that are easily guessable ("love," "money," "wizard" are common) or just use a blank password. Many attackers try default passwords and then try to guess passwords before resorting to more sophisticated methods.

Systems affected: All systems.

IMAP and POP buffer overflow vulnerabilities or incorrect configuration: IMAP and POP are popular remote access mail protocols, allowing users to access their e-mail accounts. The "open access" nature of these services makes them especially vulnerable to exploitation because openings are frequently left in firewalls to allow for external e-mail access. Attackers who exploit flaws in IMAP or POP often gain instant root-level control.

Systems affected: Multiple UNIX and Linux systems

Default SNMP community strings set to 'public' and 'private': The Simple Network Management Protocol (SNMP) is widely used by network administrators to monitor and administer all types of network-connected devices, ranging from routers to printers to computers. SNMP uses an unencrypted "community string" as its only authentication mechanism. Lack of encryption is bad enough, but the default community string used by the vast majority of SNMP devices is "public", with a few clever network equipment vendors changing the string to "private". Attackers can use this vulnerability in SNMP to reconfigure or shut down devices remotely.

Express Computer Business Weekly

Information Technology Security Practices

Computer Security Policy

The term *computer security policy* has more than one meaning. Policy is senior management's directives to create a computer security program, establish its goals, and assign responsibilities. The term policy is also used to refer to the specific security rules for particular systems. Additionally, policy may refer to entirely different matters, such as the specific managerial decisions setting an organization's e-mail privacy policy or fax security policy.

Program Management

Managing computer security at multiple levels brings many benefits. Each level contributes to the overall computer security program with different types of expertise, authority, and resources. In general, executive managers (such as those at the headquarters level) better understand the organization as a whole and have more authority. On the other hand, front-line managers (at the computer facility and applications levels) are more familiar with the specific requirements, both technical and procedural, and problems of the systems and the users. The levels of computer security program management should be complementary; each can help the other be more effective. Many organizations have at least two levels of computer security management; the *central* level and the *system* level.

Risk Management

Risk is the possibility of something adverse happening. Risk management is the process of assessing risk, taking steps to reduce risk to an acceptable level and maintaining that level of risk. Risk management requires the analysis of risk, relative to potential benefits, consideration of alternatives, and, finally, implementation of what management determines to be the best course of action. Risk management consists of two primary and one underlying activity; risk assessment and risk mitigation are the primary activities and uncertainty analysis is the underlying one. An organization should consider the following when assessing risks.

Life Cycle Planning

Security, like other aspects of an IT system, is best managed if planned for *throughout* the IT system life cycle. There are many models for the IT system life cycle but most contain five basic phases: initiation, development/acquisition, implementation, operation, and disposal.

Personnel/User Issues

Many important issues in computer security involve users, designers, implementors, and managers. A broad range of security issues relate to how these individuals interact with computers and the access and authorities they need to do their job. No IT system can be secured without properly addressing these security issues.

Preparing for Contingencies and Disasters

Contingency planning directly supports an organization's goal of continued operations. Organizations should practice contingency planning because it makes good business sense. Contingency planning addresses how to keep an organization's critical functions operating in the event of disruptions, both large and small. This broad perspective on contingency planning is based on the distribution of computer support throughout an organization. The following six steps describe the basic functions an organization should employ when developing contingency plans.

Computer Security Incident Handling

A computer security incident can result from a computer virus, other malicious code, or a system intruder, either an insider or an outsider. The definition of a computer security incident is somewhat flexible and may vary by organization and computing environment. An incident handling capability may be viewed as a component of contingency planning, because it provides the ability to react quickly and efficiently to disruptions in normal processing. Incident handling can be considered that portion of contingency planning that responds to malicious technical threats.

Awareness and Training

An effective computer security awareness and training program requires proper planning, implementation, maintenance, and periodic evaluation.

Security Considerations in Computer Support and Operations

Computer support and operations refers to system administration and tasks external to the system that support its operation (e.g., maintaining documentation). Failure to consider security as part of the support and operations of IT systems is, for many organizations, a significant weakness. Computer security system literature includes many examples of how organizations undermined their often expensive security measures because of poor documentation, no control of maintenance accounts, or other shoddy practices.

Physical and Environmental Security

Physical and environmental security controls are implemented to protect the facility housing system resources, the system resources themselves, and the facilities used to support their operation. An organization's physical and environmental security program should address the following seven topics. In doing so, it can help prevent interruptions in computer services, physical damage, unauthorized disclosure of information, loss of control over system integrity, and theft.

Identification and Authentication

Identification and Authentication is a critical building block of computer security since it is the basis for most types of access control and for establishing user accountability. Identification [6] and Authentication is a technical measure that prevents unauthorized people (or unauthorized processes) from entering an IT system. Access control usually requires that the system be able to identify and differentiate among users. For example, access control is often based on *least privilege*, which refers to the granting to users of only those accesses minimally required to perform their duties. User accountability requires the linking of activities on an IT system to specific individuals and, therefore, requires the system to identify users.

Logical Access Control

Access is the ability to do something with a computer resource (e.g., use, change, or view). Logical access controls are the system-based means by which the ability is explicitly enabled or restricted in some way. Logical access controls can prescribe not only who or what (e.g., in the case of a process) is to have access to a specific system resource but also the type of access that is permitted.

Audit Trails

Audit trails maintain a record of system activity by system or application processes and by user activity. In conjunction with appropriate tools and procedures, audit trails can provide a means to help accomplish *several* security-related objectives, including individual accountability, reconstruction of events, intrusion detection, and problem identification.

Cryptography

Cryptography is a branch of mathematics based on the transformation of data. It provides an important tool for protecting information and is used in many aspects of computer security. Cryptography is traditionally associated only with keeping data secret. However, modern cryptography can be used to provide many security services, such as electronic signatures and ensuring that data has not been modified. Several important issues should be considered when designing, implementing, and integrating cryptography in an IT system.

Transportation/Pipeline Accident

Transportation/Pipeline Accidents were rated as a HIGH RISK PRIORITY for each jurisdiction by the Hazard Mitigation Steering Committee.

Hazardous materials incidents may occur anywhere and at any time in Yolo County. The potential for a hazardous materials incident in Yolo County depends on the volume, distribution, and/or use of chemicals and other hazardous substances in a particular area. In general, the likelihood of a hazardous materials incident is greatest in the following areas:

Transportation Routes - Highways, railways, and commercial and military aviation routes constitute a major threat because of the multitude of chemicals and hazardous substances transported along them. Interstates 5, 80, and 505, U. S. Highway 50 and State Routes 16, 45, 84, 113, 128, and 275 traverse the county. The Union Pacific railroad tracks roughly parallel I-80 and I-5 / SR 113 and the Yolo Shortline tracks connect Woodland, West Sacramento and Clarksburg. In addition, the Port of Sacramento, in West Sacramento, offers the potential for hazardous materials incidents.

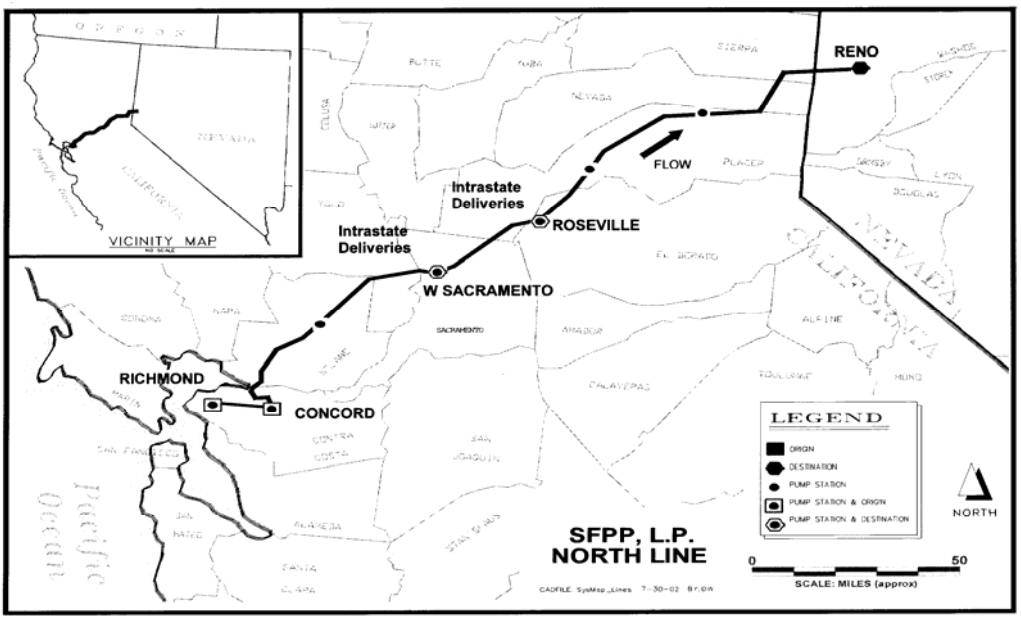
Pipelines . The main natural gas pipeline for the state is generally underground and passes through the western portion of Yolo County while a feeder line for the Sacramento Municipal Utility District

(SMUD) heads east across the county. A portion of the pipeline running through the City of Davis is above ground above the Richards underpass. Other natural gas pipelines run along I-5 and I-80, with connections between Woodland and I-80. A fuel pipeline also generally follows I-80 as it traverses the county.

The California Highway Patrol (CHP) acts as the Incident Commander for hazardous materials incidents which occur on a highway or highway right-of-way within CHP jurisdiction. Their responsibilities are to:

- Provide traffic supervision and control on all highways constructed as freeways, all state-owned vehicular crossings (toll bridges), and on most highways and roadways (state or county) within the unincorporated areas of Yolo County.
- Act as the State Agency Coordinator for all hazardous materials incidents occurring on California highways.
- Serve as statewide information, assistance, and notification coordinator for all on-highway hazardous materials incidents.
- Upon request, provide technical support and expertise concerning commercial vehicle equipment regulations and/or hazardous materials transportation provisions.
- Evaluate and report road conditions to the Incident Commander.
- Provide traffic control in support of evacuation and/or relocation.
- Reroute traffic under CHP jurisdiction in coordination with local authorities.
- Prevent unauthorized entry into contaminated areas.
- Assist local authorities in maintaining law and order.

If highway traffic on routes within CHP jurisdiction is, or is likely to be adversely affected by a hazardous materials incident originating in, and extending from, a local jurisdiction, the Commander of the Woodland Area office is to be notified by the Incident Commander. The Area Commander shall be requested to send a staff member to the Incident Command Post as a liaison (Agency Representative).



Water/Waste Water Disruption

Water/Waste Water Disruption was rated as a MODERATE RISK PRIORITY for each jurisdiction by the Hazard Mitigation Planning Steering Committee.

Water

With a growing population and economy, increasing environmental concerns and vibrant agriculture industry at play, how we choose to collect, store, distribute, use and dispose of water has never been more critical.

Every drop of water not used by a household, farm or business can be used to create higher river flows to benefit fisheries and floodways. Likewise, recycled water stored in new reservoirs can be used to recharge over-drafted groundwater aquifers. In short, new and innovative ideas are on the table that will help California rework its waterworks so that it is not necessary to choose between the environment, the economy, and people's livelihoods and lifestyles.

From the northern reaches to the San Joaquin Delta, which provides two-thirds of the state's residents with their drinking water, California is under the gun to reconstruct and rehabilitate its water and wastewater systems. The challenge is being met on many fronts. On these pages you will find a summary of the water and wastewater challenges California faces today, along with the lowdown on solutions in the works.

Problems

- Our groundwater basins are over-drafted and our existing surface storage cannot meet future water demands, particularly in times of drought.

- The gap between water supply and demand in California is predicted to total 2.4 million acre feet during drought-years and up to 6.2 million acre feet in drought years by 2020. (An acre foot is enough to meet the annual needs of between one and two households.) Six million feet is roughly triple the amount of water the Bay Area uses in a year. At the same time, growers, manufacturers and businesses are demanding more reliable and better quality water.

- It can take 20 years or longer to develop and finance a supplemental water supply for new developments.

- About 894 gallons of water are needed to grow the food for the daily diet of an average person. On an annual basis, an individual's water use is about 326,310 gallons.

- Some of our cities rely on water mains and sewers that are more than 100 years old.

- In 2001 California officials issued more than 2,000 beach closings and health advisories because of sewer spills and overflows. Spills and overflows typically happen because wastewater systems have not been upgraded to facilitate new growth, and sewer pipes have not been replaced in time to avert a main break.

- When it rains, at times as little as one-quarter inch, the volume of combined runoff and wastewater becomes too great for sewage treatment plants to handle, and the flow is diverted to outfall points that discharge raw sewage, toxic industrial waste and floatables such as garbage and syringes.

- California needs an estimated $8.4 billion for local wastewater treatment improvements.

Solutions - Water

Through a state/federal partnership known as CALFED, for example, some $10 billion in expanded storage, increased recycling and conservation, ecological restoration of key watersheds, and improved water distribution and conveyance has been identified that over the next few decades help meet some of these challenges. Cities are expanding wastewater treatment systems, improving water distribution infrastructure, and developing local recycling programs as well, some using funds from the CALFED program.

To offset water shortages, the state's water recycling program needs more investment. In 1998, the last year it revised its state Water Plan, the California Department of Water Resources issued a 10-year capital improvement forecast calling for more than $1.6 billion in spending to ensure delivery of clean water. In addition, a state/federal partnership known as CALFED is overseeing a vast reworking of the state's water storage and distribution system. The CALFED program as it is known foresees $10 billion in environmental and ecological restoration projects, new storage facilities, recycling programs, water transfer arrangements to help strike a balance the state's competing water needs.

Solutions - Wastewater

State and federal water quality regulations require cities and other municipalities to upgrade wastewater treatment and distribution systems to prevent overflows during wet weather no later than 2014. Pipe replacement projects, construction of new retention ponds, increased recycling and conservation programs, and expanded treatment facilities are all part of the mix of solutions.

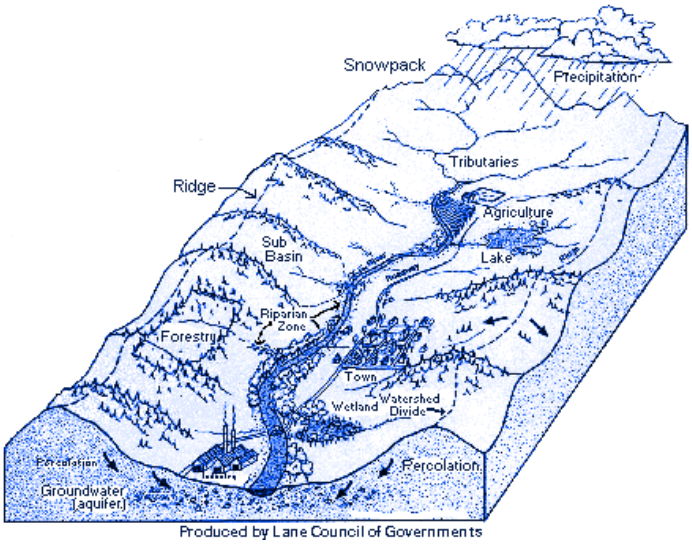
California Dept. of Water Resources, Water Education Foundation, Natural Resources Defense Council

Watersheds

A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place. John Wesley Powell, scientist geographer, put it best when he said that a watershed is:

"that area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community."

Watersheds come in all shapes and sizes. They cross county, state, and national boundaries. No matter where you are, you're in a watershed!



The Small Watershed Program in California - PL 83-566 and PL 73-534

The USDA's Small Watershed Program assists local organizations in conducting watershed surveys and investigations, and in planning and installing structural and land treatment measures for watershed protection and flood prevention. In California, the Watershed Planning and Engineering staffs are responsible for implementation of these programs.

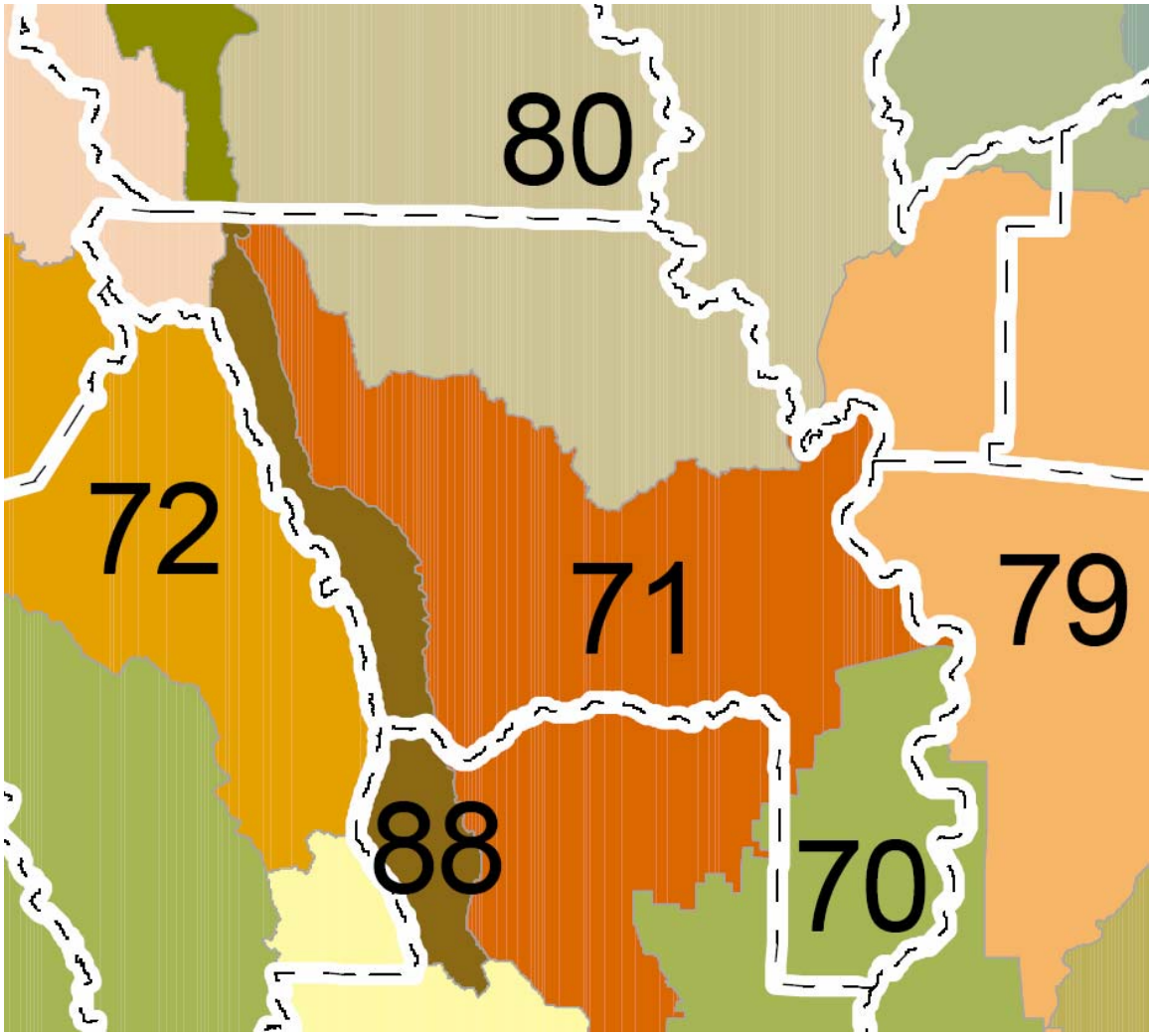
The watershed is the unit of landscape and framework around which to think together about the land and its role in peoples' lives. The lessons learned through the implementation of PL 73-534 and PL 83-566 - the ability to work with private landowners and communities to plan and install conservation measures on a watershed scale - forms the foundation upon which locally-led conservation is built and supported by NRCS.

Yolo County Local Small Watershed Groups

Cache Creek Basin Resource Coalition	Janet Levers	36750 County Rd. 20	Woodland	CA	95695
Putah Creek Council	Susan Sanders	P.O. Box 743	Davis	CA	95616

California Watersheds

(Detail next page)



Watersheds in and around Yolo County

70	5510	SACRAMENTO DELTA
71	5511	VALLEY PUTAH-CACHE
72	5512	PUTAH CREEK
73	5513	CACHE CREEK
74	5514	AMERICAN RIVER
75	5515	MARYSVILLE
76	5516	BEAR RIVER
77	5517	YUBA RIVER
78	5518	FEATHER RIVER
79	5519	VALLEY-AMERICAN
80	5520	COLUSA BASIN
81	5521	BUTTE CREEK
82	5522	STONY CREEK
83	5523	BALL MOUNTAIN
84	5524	SHASTA BALLY
85	5525	UPPER SACRAMENTO
86	5526	PIT RIVER
87	5527	LAKEVIEW
88	5560	UPPER ELMIRA

Background

USDA's Small Watershed Program was authorized by the Flood Control Act of 1944, Public Law 78-534, and the Watershed Protection and Flood Prevention Act of 1954, Public Law 83-566. The original program, PL 78-534, was established for 11 selected watersheds throughout the country, including the Los Angeles River and Santa Ynez River in California. The subsequent legislation, PL 83-566, was passed to expand the program to all of the nation's watersheds.

USDA's Small Watershed Program has three general purposes: 1) preventing damage from erosion, floodwater and sediment, 2) furthering the conservation development, utilization, and disposal of water, and 3) further the conservation and proper utilization of land.

The program applies to watersheds 250,000 acres and smaller. At least 20 percent of any project benefits must be related directly to agriculture, including rural communities. A local sponsoring organization is needed to carry out, maintain, and operate works of improvement.

The program has two main components, each of which is funded separately: 1) watershed surveys and planning; and 2) watershed and flood prevention operations and construction.

Status of the Program in California

The Small Watershed Program in California has been used primarily for flood control, agricultural water management, and watershed protection work. There are 30 completed watershed projects in California and 15 operational projects. About 30 watersheds are currently receiving technical assistance for local planning activities.

From 1978 through 2002, over $100 million was spent in California under PL83-566 operations to install conservation measures. During this same time period, over $120 million was spent in 45 counties in California under Emergency Watershed Protection to provide emergency flood and fire repair work.

In fiscal year 2002, California received PL83-566 annual appropriations of $950,000 for watershed planning, $1,390,000 for technical assistance, and $3,351,136 for installing practices.

Emergency Response Plans

All water systems serving a population of 3,300 or more (1,000 connections or more) must update their Emergency Response Plan (ERP) and send a completed certification form to EPA within 6 months of completing their Security Vulnerability Assessment (Security VA). All water systems are required to have an Emergency Notification Plan (ENP). CRWA is putting on a series of FREE ERP classes, which will include a free manual and a free CD that will assist you in updating or creating an Emergency Response Plan for your water system. It also includes a special section on how to prepare a Drought Response Plan as a key component of your ERP. All systems no matter what size are invited to attend and will benefit from this class, and attendees will earn contact hours for Distribution and Water Treatment certification renewal.

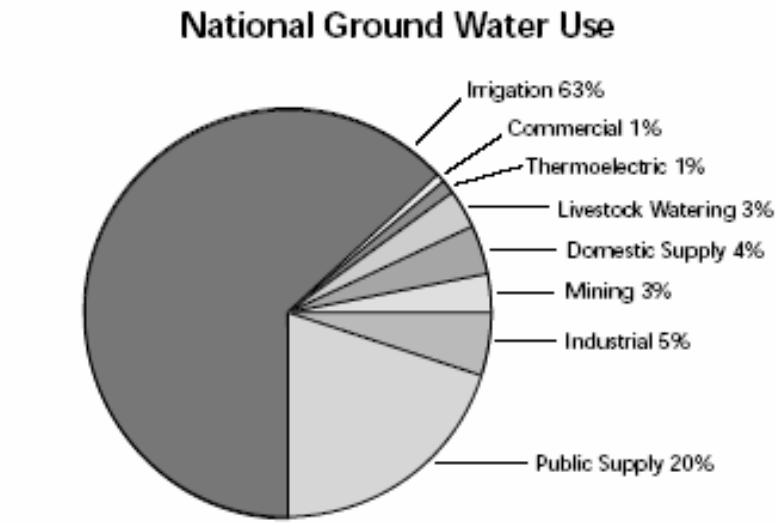
Ground Water

Ground water is an important component of our nation's fresh water resources. The use of ground water is of fundamental importance to human life and is also significant to economic vitality. Inventories of ground water and surface water use patterns in the United States emphasize the importance of ground water. The United States Geological Survey (USGS) compiles national water use information every 5 years and publishes a report that summarizes this information.

The latest USGS report was issued in October 1998 for the 1995 water year. The USGS report shows that ground water provides water for drinking and bathing, irrigation of crop lands, livestock watering, mining, industrial and commercial uses, and thermoelectric cooling applications.

Figure 1 illustrates how ground water use is proportioned among these categories. As shown, irrigation (63%) and public water supply (20%) are the largest uses of ground water. About 77,500 million gallons of ground water are withdrawn daily.

Figure 1



Source: *Estimated Use of Water in the United States in 1995.* U.S. Geological Survey Circular 1200, 1998.

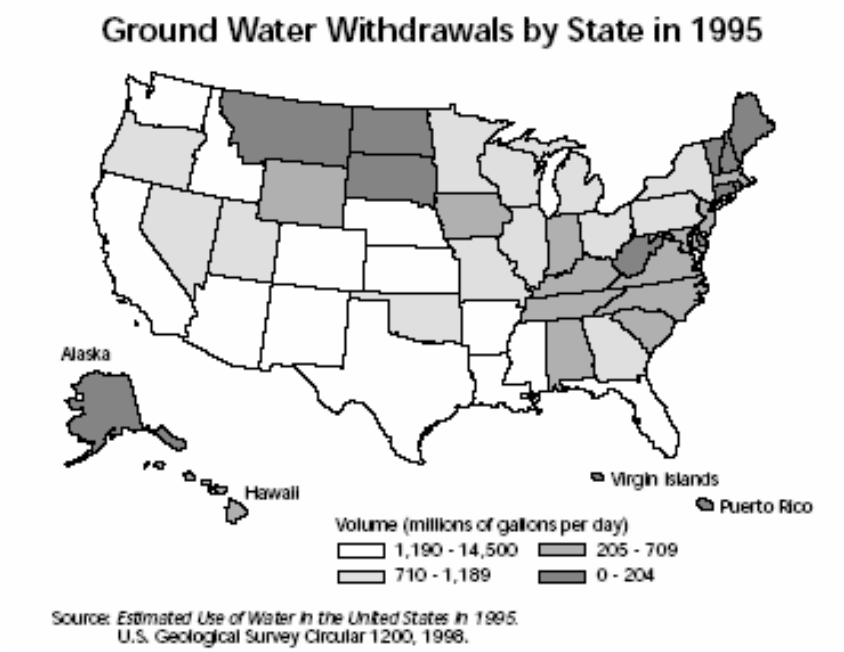
In 1995, the USGS reported that ground water supplied 46% of the nation's overall population and 99% of the population in rural areas with drinking water. Our nation's dependence on this valuable resource is clear.

Every state uses some amount of ground water. Nineteen states obtain more than 25% of their overall water supply from ground water. Ten states obtain more than 50% of their total water supply from ground water.

Each state uses its ground water differently. Ground water use in individual states is a result of numerous interrelated factors generally associated with geography and climate, the principal types of business activities occurring in the state, and population distribution. Fresh ground water withdrawals during 1995 were highest generally in the western states, primarily to supply an increasing population and to sustain important agricultural activities.

Figure 2 shows the volume of ground water withdrawn by states. The 13 states that have the greatest withdrawals account for 69% of all ground water that is withdrawn nationally.

Figure 2



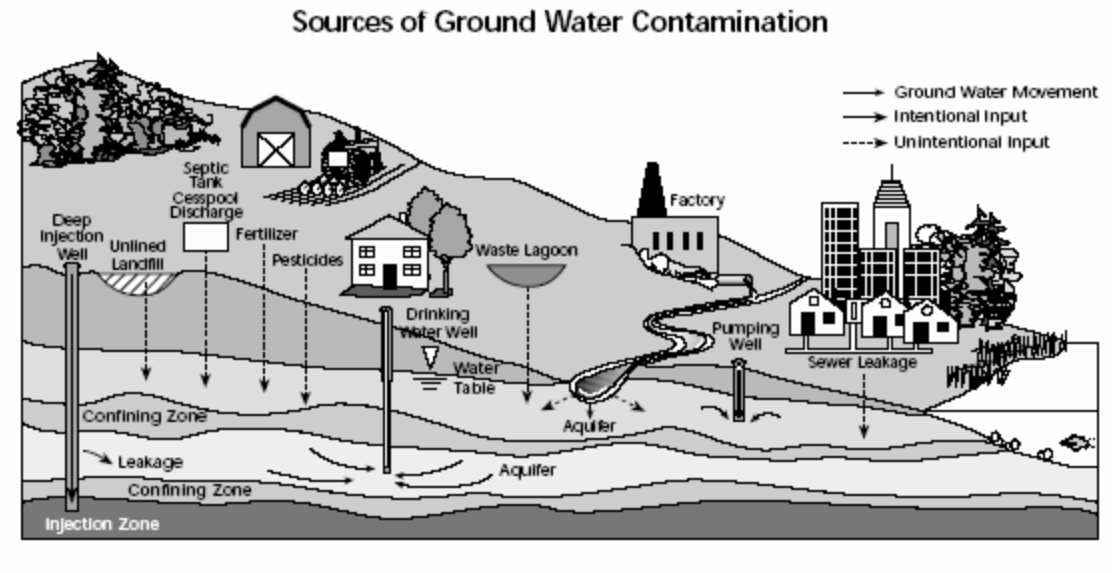
Source: *Estimated Use of Water in the United States in 1995.* U.S. Geological Survey Circular 1200, 1998.

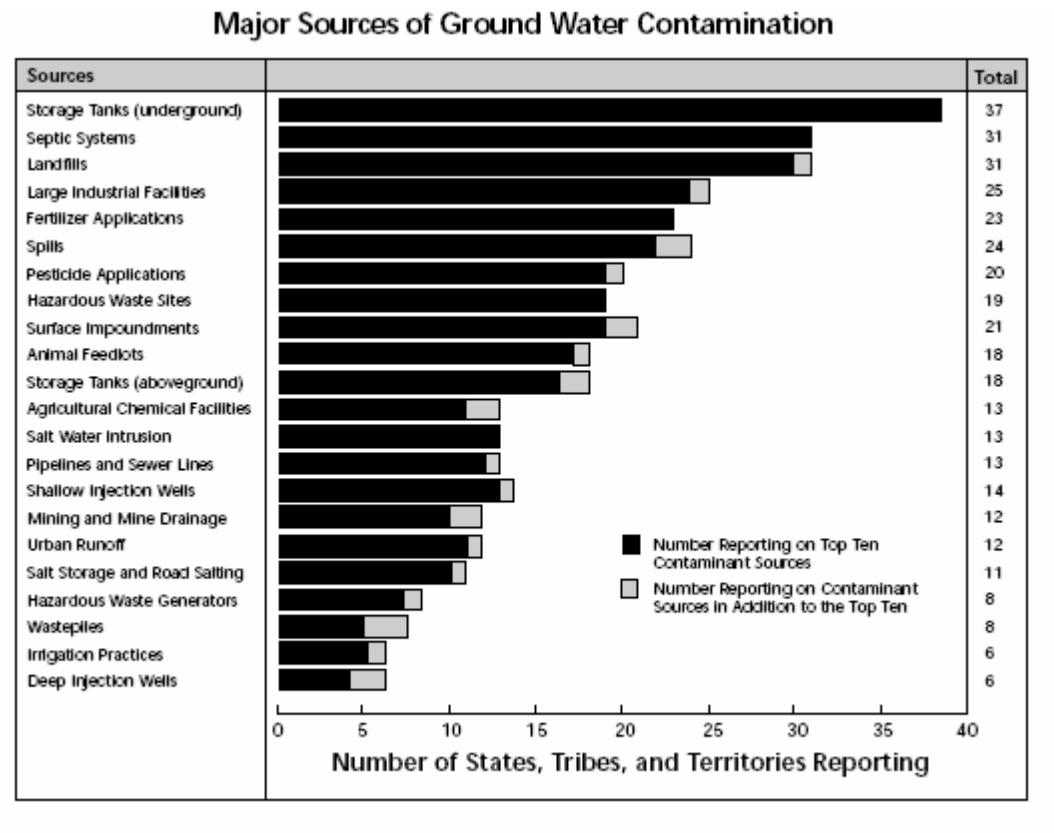
Sources of Ground Water Contamination

Ground water quality may be adversely impacted by a variety of potential contaminant sources. It can be difficult to identify which sources have the greatest impact on ground water quality because each source varies in the amount of ground water it contaminates. In addition, each source impacts water quality differently.

An EPA/state workgroup developed a list of potential contaminant sources and requested each state to indicate the 10 top sources that potentially threaten their ground water resources. States added sources as was necessary based on state-specific concerns. When selecting sources, states considered numerous factors, including the number of each type of contaminant source in the state

- The location relative to ground water sources used for drinking water purposes
- The size of the population at risk from contaminated drinking water
- The risk posed to human health and/or the environment from releases
- Hydro-geologic sensitivity (the ease with which contaminants enter and travel through soil and reach aquifers)
- The findings of the state's ground water assessments and/or related studies.





EPA, National Water Quality Inventory"

Methyl Tertiary Butyl Ether (MTBE)

Senate Bill 521 was introduced February 24, 1997 in response to a growing awareness of the possible environmental and health effects associated with the use of Methyl Tertiary Butyl Ether (MTBE) as an oxygenate blending agent in gasoline fuels throughout California (Appendix A). Since 1979, MTBE had been used in the State as a replacement for tetraethyl lead and as an octane booster. Although used in California since 1979 in volumes ranging from 0.5 to 3.5 percent, the volumes of MTBE in gasoline have increased to 11 percent since 1996. SB 521, which became effective January 1, 1998, called for the University of California to perform an assessment of the benefits and risks associated with the uses of MTBE in California.

This assessment report addresses: 1) the current impacts of MTBE to the state's groundwater used for drinking; 2) risks to the state's groundwater resources associated with MTBE leaking from storage tanks and other petroleum storage and conveyance facilities; and 3) potential future risks to the state's groundwater should MTBE continued to be used.

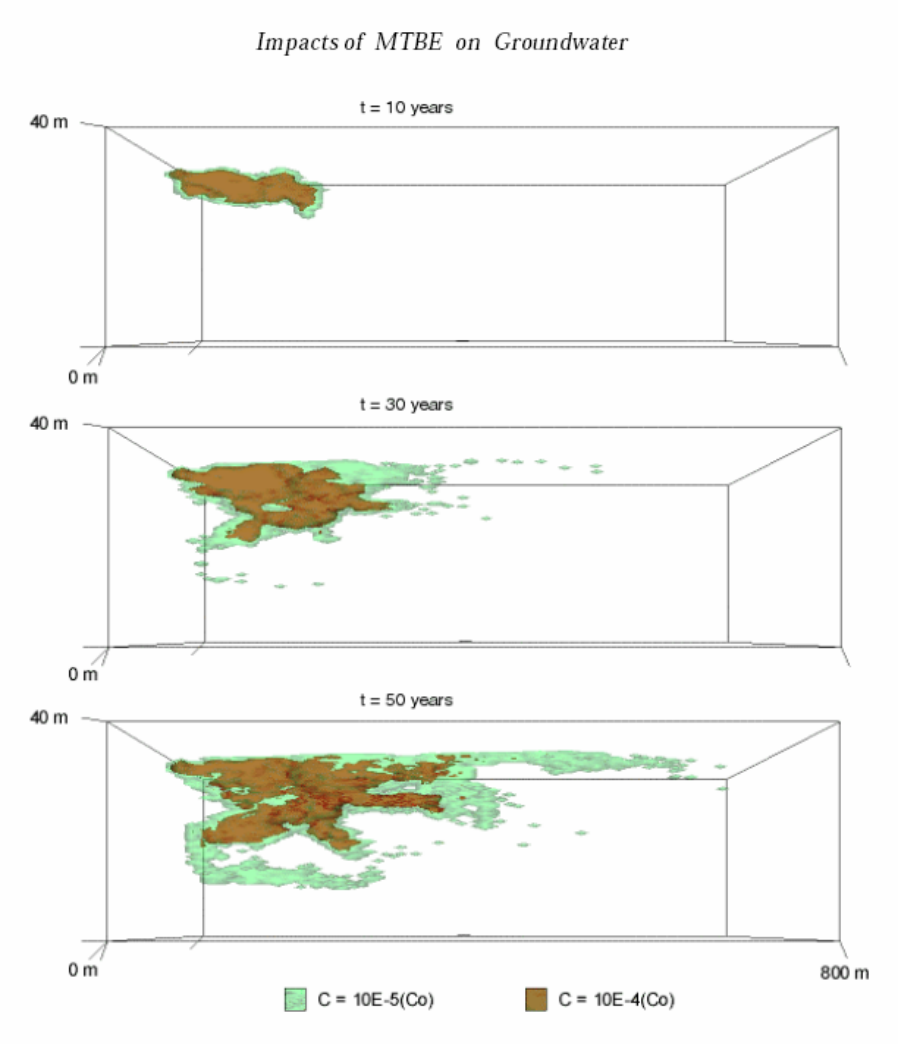
The general approach was to compile statewide data on the occurrence of MTBE groundwater contamination. The data consisted of MTBE detections and concentrations at leaking underground storage tank sites from Regional Water Quality Control Boards and MTBE detections and concentrations in water supply wells based on information from the Department of Health Services, Local Primacy Agencies, and Regional Water Quality Control Boards. We used various modeling approaches to then assess potential future impacts of MTBE on groundwater resources, focusing primarily on plume behavior in aquifer systems consisting of alluvial materials (i.e., sand, gravel, silt and clay). This report also includes specific information on MTBE impacts on groundwater in the Tahoe Basin.

A recent investigation into the impacts of MTBE on California groundwater by Happel et al. (1998) provided an important foundation for this study. The analysis of groundwater impacts contained herein complements the work of Happel et al. (1998) by accumulating more recent statewide information with broader geographic coverage. Moreover, we use plume length statistics compiled by Happel et al. (1998) as a basis for calibrating models that simulate future MTBE plume growth.

The use of MTBE in gasoline has increased steadily since it was first approved for use in gasoline by the United States Environmental Protection Agency (USEPA) in 1979. MTBE is produced from isobutene, a waste product of the petroleum refining process. In 1994, MTBE was ranked as the eighteenth most produced chemical in the United States. By 1995 it was ranked twelfth, and by 1997 it was ranked second (OEHHA, 1998). MTBE was used in California's lead phase out program in 1979 at volumes up to 2 percent as a lead substitute and octane booster.

The US EPA approved use of MTBE in 1981 up to 10 percent and in 1988 approved its use up to 15 percent by volume (CAEPA, 1998). As early as 1988, MTBE use in southern California had begun to increase. In 1988, a refiner introduced an environmentally clean fuel in California that included 6 to 8 percent MTBE by volume. This refiner reportedly supplied 30 percent of the fuel in California of which approximately 20 percent of this refiner's sales was the environmentally clean fuel. This fuel was sold principally in southern California (D. Simeroth, personal communication, 1998).

The complete phase out of lead in fuel occurred in 1992, at which time the Winter Time Oxygenate Program began in California. There was an increased use of MTBE in the southern part of the state, with longer wintertime intervals and an earlier commencement of the year-round oxygenate program starting in 1995 rather than 1996. After March 1, 1996, all gasoline sold in California was Phase 2 reformulated gas containing 11 percent by volume MTBE. Approximately, 92 billion gallons of MTBE was produced in 1997 (Zogorski et al., 1998). California is reportedly the third largest worldwide consumer of MTBE, second only to the rest of the United States and the former Soviet Union (OEHHA, 1998).



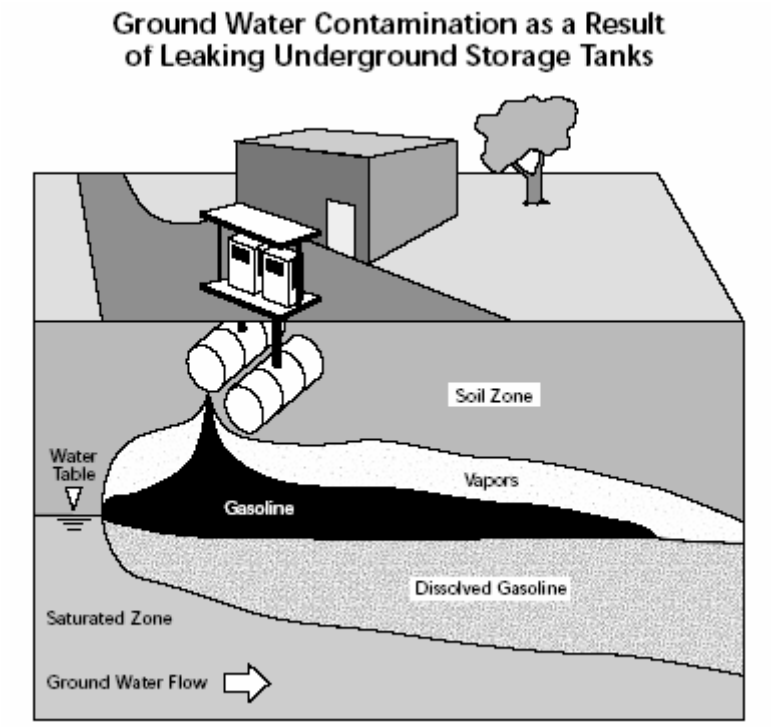
3-D simulated MTBE plume snap shots at (top to bottom) 10, 30, and 50 yr. Total thickness of the box is 40.5 m, and total length is 810 m. Regional flow is left to right. Screened interval of the pumping well is located in the center of the domain at a depth of 20 m.

University of California at Davis; "Impacts of MTBE on California Groundwater"

Sources of MTBE in Groundwater

MTBE sources of groundwater contamination include leaking underground fuel tanks (LUFT's), above ground storage tanks, farm tanks, leaking petroleum fuel pipelines, underground storage tanks containing fuels other than gasoline, surface spills due to automobile or tanker truck accidents, surface spills due to abandoned or parked vehicles, MTBE contaminated surface water, and precipitation. The LUFT sites are numerous, widely dispersed, proportional to the state's population, and involve enormous volumes of fuel products. As of June 30, 1998 there were 32,779 known sites where chemical compounds, including gasoline and non-gasoline products, were discharged to the environment from underground storage tanks. Ninety percent of these discharges involve petroleum products.

University of California at Davis; "Impacts of MTBE on California Groundwater"



Ground Water Protection

The responsibility for ground water protection collectively belongs to government agencies at the federal, state, and local levels. Federal and state governments regulate ground water through laws, regulations, and policies. In many cases, state and local laws are stricter versions of federal legislation, which serves as a valuable baseline on which state and local laws can build.

At the federal level, the Clean Water Act (CWA) ensures protection of surface waters designated, in part, for use as drinking water. Other environmental laws—the Safe Drinking Water Act (SDWA) (which includes the Wellhead Protection [WHP] Program, the Sole Source Aquifer [SSA] Program, and the Underground Injection Program); the Resource Conservation and Recovery Act (RCRA); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); and the

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)—provide authorities, financial support, and technical assistance to protect sources of drinking water, especially ground water.

EPA is developing a regulation on ground water that specifies the appropriate use of disinfection and addresses other components of ground water systems to ensure public health protection. Various studies seem to indicate that the number of ground water sources with evidence of fecal contamination is significant. EPA is analyzing the data to determine if they represent public wells nationally. The proposed rule also encourages the use of alternative approaches, including best management practices and source control.

EPA, "National Water Quality Inventory"

Waste Water

Clean water is essential for everyday life. *Water treatment plant and system operators* treat water so that it is safe to drink. *Liquid waste treatment plant and system operators*, also known as wastewater treatment plant and system operators, remove harmful pollutants from domestic and industrial liquid waste so that it is safe to return to the environment.

Water is pumped from wells, rivers, streams, and reservoirs to water treatment plants, where it is treated and distributed to customers. Liquid waste travels through customers' sewer pipes to liquid waste treatment plants, where it is either treated and returned to streams, rivers, and oceans or reused for irrigation and landscaping. Operators in both types of plants control equipment and processes that remove or destroy harmful materials, chemical compounds, and microorganisms from the water. They also control pumps, valves, and other equipment that moves the water or liquid waste through the various treatment processes, after which they dispose of the removed waste materials.

Operators read, interpret, and adjust meters and gauges to make sure that plant equipment and processes are working properly. Operators operate chemical-feeding devices, take samples of the water or liquid waste, perform chemical and biological laboratory analyses, and adjust the amounts of chemicals, such as chlorine, in the water. They use a variety of instruments to sample and measure water quality and common hand and power tools to make repairs. Operators also make minor repairs to valves, pumps, and other equipment.

Water and liquid waste treatment plant and system operators increasingly rely on computers to help monitor equipment, store the results of sampling, make process-control decisions, schedule and record maintenance activities, and produce reports. When equipment malfunctions, operators also may use computers to determine the cause of the malfunction and seek its solution.

Occasionally, operators must work during emergencies. A heavy rainstorm, for example, may cause large amounts of liquid waste to flow into sewers, exceeding a plant's treatment capacity. Emergencies also can be caused by conditions inside a plant, such as chlorine gas leaks or oxygen deficiencies. To handle these conditions, operators are trained to make an emergency management response and use special safety equipment and procedures to protect public health and the facility. During these periods, operators may work under extreme pressure to correct problems as quickly as possible. Because working conditions may be dangerous, operators must be extremely cautious.

The specific duties of plant operators depend on the type and size of plant. In smaller plants, one operator may control all of the machinery, perform tests, keep records, handle complaints, and perform repairs and maintenance. A few operators may handle both a water treatment and a liquid waste treatment plant. In larger plants with many employees, operators may be more specialized and monitor only one process. The staff also may include chemists, engineers, laboratory technicians, mechanics, helpers, supervisors, and a superintendent.

Water pollution standards have become increasingly stringent since the adoption of two major Federal environmental statutes: the Clean Water Act of 1972, which implemented a national system of regulation on the discharge of pollutants; and the Safe Drinking Water Act of 1974, which established standards for drinking water. Industrial facilities sending their wastes to municipal treatment plants must meet certain minimum standards to ensure that the wastes have been adequately pretreated and will not damage municipal treatment facilities. Municipal water treatment plants also must meet stringent drinking water standards. The list of contaminants regulated by these statutes has grown over time. As a result, plant operators must be familiar with the guidelines established by Federal regulations and how they affect their plant. In addition to knowing and understanding the Federal regulations, operators must be aware of any guidelines imposed by the State or locality in which the plant operates.

Hazards

Waste Water Treatment Plants have inherent hazards associated with the process used to provide their services to communities. A summary of these hazards includes:

- On-site bulk hazardous material inventories including
    - ✓ Sodium Hydroxide (50%)
    - ✓ Sulfuric Acid (93%)
    - ✓ Gasoline
    - ✓ Diesel
    - ✓ Sodium Hypochlorite (12.5%)
    - ✓ Sodium Thiosulfate
    - ✓ Polymer
    - ✓ Ferric Chloride (43.5%)
    - ✓ Methane Gas (large quantities)
    - ✓ Lab Chemicals
    - ✓ Waste Oils
    - ✓ Miscellaneous Flammables/Solvents
- Sewage Overflows and Back-ups
- Large Quantities of Bio-solids
- Aircraft Crash (into or around facility)
- Major Power Outages Affecting System Operation
- Underground Storage Tank Failure
- Flood Damage to Facilities and External System Connections
- Natural Gas Leaks and Risk of Catastrophic Explosion
- Earthquake Damage to Facilities and External System Connections
- Damage to Facilities from Severe Storms
- Terrorism/Sabotage Directed at Facilities and Systems
    - ✓ Bomb Damage
    - ✓ System Vandalism

Generally, waste water treatment facilities have functioning security and sensing systems that are designed to warn of system breaches or failures, or unwarranted changes is system operation. Catastrophic events (disasters) raise the potential for waste water facility failure or breach, thereby exposing the surrounding community to secondary, perhaps more dangerous and concentrated hazards.

Waste water treatment districts are required to maintain a consolidated emergency response plan for each facility as well as train individuals responsible for management, operation and maintenance of

those facilities in emergency response protocols. A correct and fast response to an emergency could avert compounding the impact of a natural of other human-caused event.

Biological Hazards

Bacteria may cause diarrhea, fever, cramps, and sometimes vomiting, headache, weakness, or loss of appetite. These are some bacteria and diseases they cause: E-coli, shigellosis, typhoid fever, salmonella, and cholera.

Funguses

Aspergillus and other funguses often grow in compost. These can lead to allergic symptoms (such as runny nose) and sometimes can lead to lung infection or make asthma worse. If you have other health problems, you may be more likely to get sick from aspergillus.

Parasites

Cryptosporidium and giardia lamblia may cause diarrhea and stomach cramps, and even nausea or a slight fever.

Roundworm (ascariasis). Most people have no symptoms. With a lot of roundworms, you may cough and have trouble breathing or you may have pain in your belly and blocked intestines.

Viruses

Hepatitis A causes liver disease. You may feel tired, pain in your belly, nauseous off and on; you may have jaundice (yellow skin) or diarrhea or not be hungry. The CDC says sewage workers are not at more risk of hepatitis A infection than other workers (see [1] , below). If a lot of people in the community have hepatitis A, your risk may be higher than usual.

Bloodborne viruses are a hazard mainly to workers in health care facilities. Hepatitis B and HIV are bloodborne:

Hepatitis B causes liver disease. You may feel tired, have jaundice (yellow skin), pain in your belly, feel nauseous off and on, throw up, or not be hungry. The disease has not been linked to exposure to sewage in the U.S.

Human immunodeficiency virus (HIV) causes AIDS. There are no known cases of wastewater workers getting HIV from their jobs in the US

Hazardous chemicals

Small amounts of chemicals from cleaning and disinfection operations are regularly discharged into sewers.

Pharmaceuticals

Small quantities of pharmaceuticals are usually discharged to the sewers from hospital pharmacies and from the various wards.

Related Hazards

In disasters, outbreaks of cholera and E-coli may occur.

Wastewater Treatment Plant Security

The nation's wastewater infrastructure is one of America's most valuable assets, valued at more than $2 trillion. Facts:

- 190 million people are hooked up to 16,000 Public Water Treatment Facilities
- 600,000 miles of municipal sewers
- 3,000 systems serve major metropolitan sewers

Security at wastewater plants may not have received the attention that should have over the years, but now times are different. Operators protect this huge public investment by looking at such issues as guarding against intruders, increased lighting, access to SCADA systems, and emergency response plans.

As a response to the significant role that water treatment and wastewater treatment facilities play in our society, there has been an interest in assessing the security of this sector of our infrastructure.

The need is quite obvious for water treatment facilities. Wastewater treatment is rarely recognized as the last bastion prior to release to the environment. Significant environmental damage, impacts to recreation, and contaminated water supplies can be attributed to losses in wastewater treatment.

WWTP Assets

Current security assessment is based on a series of five (5) assets common to wastewater facilities. These five include the **Physical Plant**, the **People** (employees), the **Knowledge Base** (As-built drawings, plans, records, SOP's deeds, legal agreements, O&M manuals, contracts and other business critical documents), **Information Technology** or IT Platform (internet use, SCADA systems, telephone and communications), and lastly, **Customers** (the sustainable revenue stream critical to the utility). The potential threats against these assets are not limited to the following: natural disaster, low-level vandalism, employee sabotage, terrorist sabotage, computer hacking, theft, and fires.

Criticality and Vulnerability

There are two factors assigned to assets. The first is the "criticality" which evaluates the consequences of the asset if it fails or is compromised. The second factor is the "vulnerability" which evaluates the ability to survive a threat. An asset's ability to survive a threat is based on the existing counter-measures, and the potential for additional counter-measures. An example might be a SCADA system's exposure to vandalism. The system may have existing counter-measures like the location in a separate building, and clear glass walls for observation. If the criticality identifies that failure of this system is so severe that service is interrupted for a prolonged period and is deemed unacceptable, then additional counter-measures may be sought. Perhaps a self locking door with security access, or station a secretary at the entrance to track who comes and goes, or possibly CCTV (closed circuit television) to a security office monitor may be employed.

The concept of criticality and vulnerability can be visually portrayed by using the following four by four (4x4) **"risk matrix"**:

Criticality Rating				**Vulnerability Level**
1 (Very High)	2 (High)	3 (Moderate)	4 (Low)	
1A	2A	3A	4A	A (Very High)
1B	2B	3B	4B	B (High)
1C	2C	3C	4C	C (Moderate)
1D	2D	3D	4D	D (Low)

The matrix shows that assets falling in the upper left corner have the highest criticality and vulnerability which yields the highest risk levels. Conversely, assets in the lower right corner have the least criticality and vulnerability with the lowest risk levels. Assets that fall into the high risk areas of the matrix can be lowered by reducing the criticality, vulnerability, or both. This can be accomplished through the addition of new or improved counter-measures. Many times the criticality cannot be lowered although vulnerability may. "Time" is a prime component that controls vulnerability regarding security issues. Many of the counter-measures employed will relate to time options. Three (3) time options exist that can reduce the vulnerability:

- Reduce detection time of a security related event.
- Increase delay time, i.e. force the security breach to take longer to be perpetrated.
- Shorten the response time to minimize the impact of the event.

The identification of risk is determined from the matrix. Once determined, the acceptability of these risks depends on a rational threat assessment, recognition of consequences, evaluation of vulnerability, effectiveness of counter-measures, and most importantly the cost associated with an asset loss. The decision for risk reduction is often governed by the expense of the counter-measures that are required. These financial decision variables are:

- Risk Reduction - All necessary steps will be taken since the risk cannot be accepted at any cost.
- Benefit/Cost Analysis - The risk will be reduced by the approach which yield the greatest net benefits.
- Risk/Cost Analysis - The risk will be reduced by the approach which yield the greatest reduction in unit risk per dollar invested.
- Regret Analysis - The risk will be reduced by the approach that minimizes the expected value of residual losses.

Using the above analyses, estimated damages can be projected for individual and combined counter-measures helping to determine which ones are appropriate for a given scenario. The final phase is to implement the counter-measures.

Inherent Danger to Waste Water Systems

CALIFORNIA WASTEWATER TREATMENT OPERATOR ADMITS TO WATER TAMPERING

FOR RELEASE: FRIDAY, APRIL 9, 1999

CALIFORNIA WASTEWATER TREATMENT OPERATOR ADMITS TO WATER TAMPERING

Bernardino Lopez, former wastewater treatment plant operator for the Niland Sanitary District, pleaded guilty on March 29 in U.S. District Court for the Southern District of California in San Diego, to violating the Clean Water Act (CWA). Lopez admitted that in August and September of 1998, he repeatedly added chlorine to wastewater samples that were to be tested for E. coli. bacteria. The samples were used to develop monthly reports to the Regional Water Quality Control Board. Adding chlorine to the samples concealed the fact that both treatment plants were discharging wastewater with E. coli. levels that exceeded the limits allowed in their CWA National Point Discharge Elimination System permits. Human exposure to wastewater containing excessive levels of E. coli. can cause skin and intestinal infections. Wastewater from both plants flows into the Salton Sea. When sentenced, Lopez faces a maximum penalty of two years imprisonment and/or a $10,000 fine. This case was investigated by the Imperial County Environmental Task Force, which includes EPA's Criminal Investigation Division, and was prosecuted by the U.S. Department of Justice.

City of West Sacramento

The following information was provided by the City of West Sacramento for inclusion in this plan:

The City of West Sacramento's main water source is the Sacramento River. Our intake structure is located at Bryte Bend, upstream of the confluence of the Sacramento and American rivers. To ensure an adequate water supply for West Sacramento's current and future needs, the city maintains water supply contracts with the federal Bureau of Reclamation, the state Central Valley Project and with the North Delta Water Agency. In addition to our surface water, the city operates five ground water wells. These wells are currently on standby status and are available to supply additional water during emergencies. The city did not utilize ground water in 2003.

Source Water Protection

A community's drinking water source is a valuable resource worth protecting. The quality and reliability of source water can have a significant impact on a community's economy and quality of life. Given the importance of the Sacramento River to West Sacramento's continuing growth and to the health and well-being of our residents, the city actively participates in several source water protection programs:

The Rice Pesticide Workgroup, in partnership with the city of Sacramento, the county of Sacramento and the East Bay Municipal Utility District, keeps us up to date on this important water quality issue. In 2003, our program of frequent monitoring at our raw water intake during rice season was expanded to include new rice pesticides. In addition, we voiced our concerns about the impact of rice growing activities on source water quality in meetings with the California State Department of Pesticide Regulation (DPR), Regional Water Quality Control Board (RWQCB) staff members, the California Rice Commission, and Agriculture Commissioners of the major rice growing counties. We also presented our concerns directly to the RWQCB and to rice growers at industry meetings.

The Keep the Waters Clean Campaign, in partnership with the city of Sacramento, the county of Sacramento and the East Bay Municipal Utility District, encourages boaters and other recreational users of the Sacramento River to use pump-outs and public restrooms in order to protect water quality.

The Sanitary Survey of the Sacramento River Watershed, an ongoing project in partnership with the city of Sacramento, keeps us up to date on developments in the watershed. The most recent update of the Sanitary Survey was completed in December 2000.

The Drinking Water Source Assessment Program (DWSAP) allows us to identify and respond to possible sources of contamination near our water treatment plant and throughout the watershed. Our Source Water Assessment was completed in November 2000. The DWSAP survey has identified agricultural drainage as the potential contaminating activity to which West Sacramento's surface water source is most vulnerable. A copy of the DWSAP survey is available for your review at the city's Public Works Department, 1951 South River Road in West Sacramento.

Water Treatment: Surface Water

Water withdrawn from the Sacramento River is treated at the city's Bryte Bend Water Treatment Plant, which is operated 24 hours a day by state certified Water Treatment Plant Operators. Over 4.0 billion gallons of Sacramento River water were treated in 2003. Untreated surface water is subject to runoff and other sources of contamination. Possible contaminants in untreated surface water include the following: Microbial contaminants, such as viruses, bacteria and protozoa resulting from the presence of livestock and wildlife, as well as human activity, agriculture and septic systems.

Inorganic contaminants, such as salts and metals, which can occur naturally or as a result of urban runoff, mining or farming. Organic contaminants, such as pesticides, herbicides and hydrocarbons resulting from agriculture, urban runoff, residential and industrial uses. Radioactive contaminants, either naturally occurring or as a result of petroleum production or mining activity. The water treatment process begins as raw water is pumped through an intake structure, screened to keep out fish and

debris, into the treatment plant. As the raw water enters the plant, chlorine is added as a disinfectant and to oxidize taste and odor-causing materials. Either alum or aluminum chlorhydrate is added, causing small particles suspended in the water to adhere to one another and form larger particles.

The larger, heavier particles settle out of the water and are later removed. Filtration through layers of sand and anthracite removes any remaining suspended particles. Anionic polymers are used to enhance the filtration process. Zinc orthophosphate or caustic soda is added to inhibit corrosion in the distribution system. Before the filtered water enters the distribution system, chlorine is again added to suppress bacterial growth.

In accordance with the city's Water Master Plan and in order to keep pace with West Sacramento's continuing growth, the Bryte Bend Water Treatment Plant (BBWTP) is undergoing an expansion from 24 MGD to 40 MGD. Construction started in July 2002 with an expected completion date in late 2004. In November 2003, water treatment at the BBWTP was converted to the ACTIFLO clarification process. The ACTIFLO process rapidly and efficiently removes suspended particles from raw water through the use of microsand and anionic polymer. Also in November, conventional sand/anthracite filtration was replaced with granular activated carbon (GAC) filtration. These enhanced treatment processes will further ensure the safe and palatable water supply that our citizens have come to expect.

Water Treatment: Ground Water

Filtration of ground water takes place naturally as water moves through porous layers of soil. This process, called percolation, removes most suspended material from ground water. Ground water pumped from West Sacramento's wells is further mechanically filtered and then chlorinated before being pumped into the water distribution system. The city did not utilize ground water in 2003.

The City of Winters

The City of Winters owns and operates its own municipal water system. The system consists of 5 groundwater wells. Each well is located within the city limits. The population of the City is 6.875. The daily average production rate is approximately 1.5 million gallons. There are approximately 25 miles of distribution lines with 1900 connections. Approximately 100 connections are commercial and the remaining are residential. There are no above ground storage tanks. The aquifer is used for storage.

One well is supplied with an alternate power source. The other four wells are installed with quick couplers to be able to receive power supply from a portable generator. The system is disinfected with 12.5% sodium hypochlorite. It is injected at each well. No other chemicals are added to the water. City staff maintains a 55-60 psi pressure on the system.

Risk Assessment for City of Winters Water System

Threat #	Threat Name	Probability of Occurrence (P)	Severity of Consequence (C)	Effectiveness of Deterrents (E)	Relative Risk (R=PxCxE)
1	Well #2 – Power Loss	4	1	1	4
2	Well #2 - Vandalism	2	1	2	4
3	Well #2 - Sabotage	1	2	2	4
4	Well #2 – Terrorism	1	3	2	6
5	Well #2 – Natural Disaster	2	2	1	4
6	Well #3 – Power Loss	4	1	1	4
7	Well #3 - Vandalism	2	1	2	4
8	Well #3 - Sabotage	1	2	2	4
9	Well #3 – Terrorism	1	3	2	6
10	Well #3 – Natural Disaster	2	2	1	4
11	Well #4 – Power Loss	4	1	1	4
12	Well #4 - Vandalism	2	1	2	4
13	Well #4 - Sabotage	1	2	2	4
14	Well #4 – Terrorism	1	3	2	6
15	Well #4 – Natural Disaster	2	2	1	4
16	Well #5 – Power Loss	4	1	1	4
17	Well #52 - Vandalism	2	1	2	4
18	Well #52 - Sabotage	1	2	2	4
19	Well #5 – Terrorism	1	3	2	6
20	Well #5 – Natural Disaster	2	2	1	4
21	Well #6 – Power Loss	4	1	1	4
22	Well #6 - Vandalism	2	1	2	4
23	Well #6 - Sabotage	1	2	2	4
24	Well #6 – Terrorism	1	3	2	6
25	Well #6 – Natural Disaster	2	2	1	4
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					

SUGGESTED FACTORS FOR P, E, AND C

Probability of Occurrence (P)

Not likely to happen	1
Not likely but possible	2
Could happen and is likely	3
Likely (has happened)	4

Consequence of Action (C)

Low	1
Medium	2
High	3

Effectiveness of Deterrents (E)

Highly Effective	1
Moderately Effective	2
Ineffective	3

Biological & Health Emergencies

Biological and Health Emergencies were rated as a MODERATE RISK PRIORITY for each jurisdiction by the Hazard Mitigation Planning Steering Committee.

Severe Acute Respiratory Syndrome (SARS)

Los Angeles County includes major port cities, and as such diseases anywhere in the world constitute a potential threat. Severe acute respiratory syndrome (SARS), a recently recognized, contagious febrile lower respiratory infection caused by a novel corona virus called SARS-CoV, is an example of a potential threat to a port city.

The worldwide outbreak of SARS that occurred between November 2002 and July 2003 most likely originated in China and then spread through travel. During this outbreak 22 potential SARS cases were investigated in Los Angeles. Seven were considered probable SARS but none of these cases had a specimen that was positive for SARS-CoV infection. The investigation and monitoring required for 22 potential cases was considerable.

It is possible that SARS may re-emerge; therefore, it is important that Los Angeles County be prepared to immediately identify cases and contain the disease.

The California Health and Safety Code (H&S), the California Code of Regulations (CCR) and the Los Angeles County Code (LACC) grant the Los Angeles County Health Officer authority to collect records and data with respect to communicable disease, initiate disease control measures, control property and manage persons (including isolation and quarantine).

SARS Case Count

During November 2002-July 2003, a total of 8,098 probable SARS cases were reported to the World Health Organization (WHO) from 29 countries. In the United States, only 8 cases had laboratory evidence of infection with SARS-CoV. Since July 2003, when SARS-CoV transmission was declared contained, active global surveillance for SARS-CoV disease has detected no person-to-person transmission of SARS-CoV. CDC has therefore archived the case report summaries for the 2003 outbreak.

During the 2003 epidemic, CDC and the Council of State and Territorial Epidemiologists (CSTE) developed surveillance criteria to identify persons with SARS in the United States. The surveillance case definition changed throughout the epidemic, to reflect increased understanding of SARS-CoV disease.

In California, there were a total of 29 cases 22 of which were suspect, 5 were probably SARS and 2 were confirmed.

SARS Surveillance

The key to controlling a SARS outbreak is prompt detection of cases and their contacts, followed by rapid implementation of control measures. Identification of SARS cases is the basic step in prevention efforts, whereas contact tracing provides a means to focus case-finding and containment efforts on persons who are at greatest risk of SARS-CoV disease. Two features of SARS-CoV disease pose

challenges for case surveillance. First, the early signs and symptoms are not specific enough to reliably distinguish SARS-CoV disease from other common respiratory illnesses. Second, existing laboratory diagnostic tests are not adequately sensitive early in the course of illness. Therefore, risk of exposure (i.e., to another case of SARS-CoV disease or to a setting where SARS-CoV transmission is occurring) is key to considering the likelihood of a diagnosis of SARS-CoV disease.

Potential sources of SARS-CoV for future exposures include persistent infection in previously ill persons or reintroduction to humans from an animal reservoir. In the absence of SARS-CoV transmission worldwide, the most likely sites of recurrence are the original site of introduction of SARS-CoV from animals to humans and locations where person-to-person SARS-CoV transmission previously occurred. Laboratories that contain live SARS-CoV could be a source of further transmission if compromised laboratory techniques result in laboratory-acquired infections. A report from the Department of Health, Taiwan says that because persons with SARS-CoV disease tended to appear in clusters (e.g., in healthcare facilities, households, and a few special settings) during the 2003 outbreaks, early signals of the reappearance of the illness in U.S. communities could include unusual clusters of unexplained pneumonia.

In the presence of person-to-person SARS-CoV transmission anywhere in the world, patients with SARS-CoV disease or sites of SARS-CoV transmission become the most likely sources of exposure. Contact tracing, the identification of persons who had contact with a potential case of SARS-CoV disease or may have been exposed while present in locations (e.g., hospitals) with known SARS-CoV transmission, is essential for the implementation of appropriate measures to reduce further spread of the disease.

The overall goals of SARS surveillance are to:

- Maximize early detection of cases and clusters of respiratory infections that might signal the re-emergence of SARS-CoV disease while minimizing unnecessary laboratory testing, concerns about SARS-CoV, implementation of control measures, and social disruption.

- If person-to-person SARS-CoV transmission recurs, maintain prompt and complete identification and reporting of potential cases to facilitate outbreak control and management.

- Identify and monitor contacts of cases of SARS-CoV disease to enable early detection of illness in persons at greatest risk.

Lessons Learned

The following lessons from the global experience with SARS surveillance have been considered in developing this document:

- Astute healthcare providers will likely be the key to early detection and reporting of initial cases of SARS-CoV disease.

- The key to recognizing persons with SARS-CoV disease is identification of an epidemiologic link of exposure to another case of SARS-CoV disease or to a setting (e.g., hospital) where SARS-CoV transmission is occurring.

- Screening criteria for epidemiologic linkages need to reflect 1) the status of SARS-CoV transmission globally and the risk of exposure from international and domestic travel, and 2) the status of SARS activity in the community, at the work site, or in other settings where a patient with SARS-like illness may have been.

- In a setting of extensive SARS-CoV transmission, the possibility of SARS-CoV disease should be considered in all persons with a fever or lower respiratory illness, even if an epidemiologic link cannot be readily established.

- Healthcare facilities were disproportionately affected by SARS-CoV, and healthcare workers were among the first and most severely affected groups in every large outbreak reported.

- Contact tracing is resource intensive yet critical to containment efforts since it allows early recognition of illness in persons at greatest risk.

- Collection of appropriate and timely clinical specimens for laboratory testing is central to monitoring the status of SARS-CoV transmission at the local, state, and federal levels.

- Timely reporting of cases, updates on the clinical status and disposition of patients, real-time analysis of data, and timely dissemination of information are essential for outbreak-management decisions.

- Paper-based reporting systems are too slow and labor intensive to manage a large SARS outbreak. A rapid and efficient electronic reporting system that facilitates real-time analysis of clinical, epidemiologic, and laboratory information at the local level is essential.

- Frequent communication and data sharing among public health officials and healthcare providers are needed to update the status of potential and confirmed cases of SARS-CoV disease.

Mad Cow Disease (Creutzfeldt-Jakob disease (vCJD))

Background

New variant CJD (vCJD) is a rare, degenerative, fatal brain disorder in humans. Although experience with this new disease is limited, evidence to date indicates that there has never been a case of vCJD transmitted through direct contact of one person with another. However, a case of probable transmission of vCJD through transfusion of blood components from an asymptomatic donor who subsequently developed the disease has been reported.

As of December 1, 2003, a total of 153 cases of vCJD had been reported in the world: 143 from the United Kingdom, six from France, and one each from Canada, Ireland, Italy, and the United States (note: the Canadian, Irish, and U.S. cases were reported in persons who resided in the United Kingdom during a key exposure period of the U.K. population to the BSE agent).

Almost all the 153 vCJD patients had multiple-year exposures in the United Kingdom between 1980 and 1996 during the occurrence of a large UK outbreak of bovine spongiform encephalopathy (BSE, commonly known as mad cow disease) among cattle.

There has never been a case of vCJD that did not have a history of exposure within a country where this cattle disease, BSE, was occurring.

It is believed that the persons who have developed vCJD became infected through their consumption of cattle products contaminated with the agent of BSE. There is no known treatment of vCJD and it is invariably fatal.

Since 1996, evidence has been increasing for a causal relationship between ongoing outbreaks in Europe of a disease in cattle, called bovine spongiform encephalopathy (BSE, or "mad cow disease"),

and a disease in humans, called variant Creutzfeldt-Jakob disease (vCJD). Both disorders are invariably fatal brain diseases with unusually long incubation periods measured in years, and are caused by an unconventional transmissible agent.

On December 23, 2003, the U.S. Department of Agriculture (USDA) announced a presumptive diagnosis of bovine spongiform encephalopathy (BSE, or "mad cow" disease) in an adult Holstein cow from Washington State. The diagnosis was confirmed by an international reference laboratory in Weybridge, England, on December 25. Preliminary trace-back based on an ear-tag identification number suggests that the BSE-infected cow was imported into the United States from Canada in August 2001.

Description

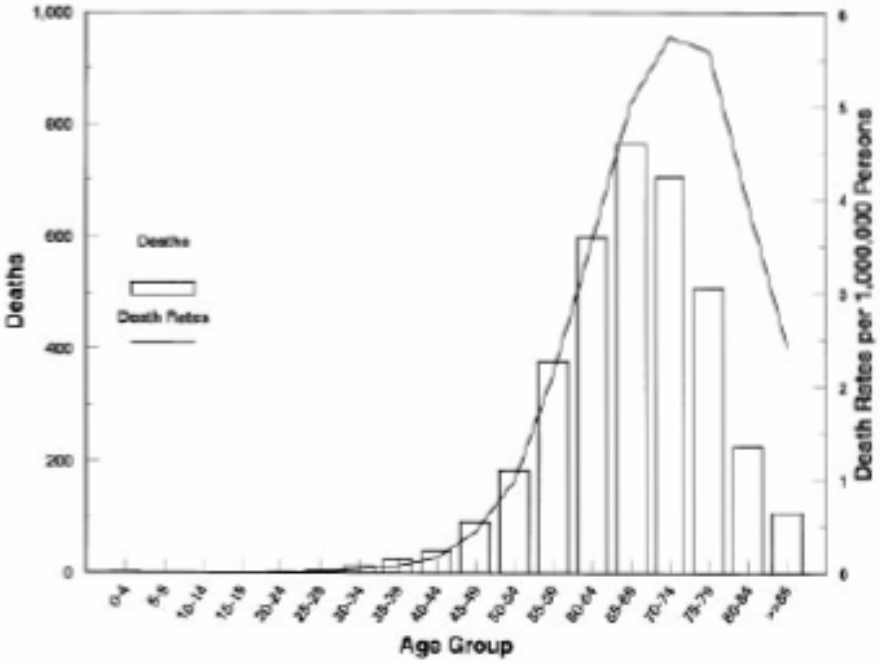
Since 1996, strong evidence has accumulated for a causal relationship between ongoing outbreaks in Europe of disease in cattle called bovine spongiform encephalopathy (BSE, or "mad cow disease") and a disease in humans originally called new variant Creutzfeldt-Jakob disease or more recently simply variant CJD (vCJD). Both disorders are invariably fatal brain diseases with unusually long incubation periods measured in years and are caused by an unconventional transmissible agent. Although there is very strong evidence that the agent responsible for the human disease is the same agent responsible for the BSE outbreaks in cattle, the specific foods that might be associated with the transmission of this agent from cattle to humans are unknown. However, bioassays have identified the presence of the BSE agent in the brain, spinal cord, retina, dorsal root ganglia (nervous tissue located near the backbone), distal ileum, and the bone marrow of cattle experimentally infected with this agent by the oral route.

In addition to cattle, sheep are susceptible to experimental infection with the BSE agent by the oral route. Thus, in countries where flocks of sheep and goats may have been exposed to the BSE agent through contaminated feed, a theoretical risk exists that these animals might have developed infections caused by the BSE agent and that these infections are being maintained in the flocks, even in the absence of continued exposure to contaminated feed (for example, through maternal transmission). Regardless, as of July 2002, cattle remain the only known food animal species with disease caused by the BSE agent.

U.S. Surveillance for CJD

The Centers for Disease Control and Prevention (CDC) monitors the trends and current incidence of CJD in the United States by analyzing death certificate information from U.S. multiple cause-of-death data, compiled by the National Center for Health Statistics, CDC. By 3- or 4-year periods from 1987 through 2001, the average annual death rates of CJD (not vCJD) have remained relatively constant, ranging from 0.95 cases per 1 million in 1999-2001 to 1.14 cases per 1 million in 1995-1998. In addition, deaths from non-iatrogenic CJD in persons aged <30 years in the United States remain extremely rare (<5 cases per 1 billion per year). In contrast, in the United Kingdom, over half of the patients who died with vCJD were in this young age group.

In addition, CDC collects, reviews and, when indicated, actively investigates reports by health care personnel or institutions of possible CJD or vCJD cases. Also, in 1996-97, CDC established, in collaboration with the American Association of Neuro-pathologists, the National Prion Disease Pathology Surveillance Center at Case Western Reserve University, which performs special diagnostic tests for prion diseases, including post-mortem tests for vCJD.



Creutzfeldt-Jakob disease deaths and death rates by age group. United States, 1979 through 1994.

California Creutzfeldt-Jakob Disease (CJD) Surveillance Project

The California Creutzfeldt-Jakob Disease Surveillance Project is funded by the federal Centers for Disease Control and Prevention (CDC) through the California Emerging Infections Program (EIP) to improve the public health capacity to detect cases of CJD. In 1996, the first cases of variant CJD occurring in unusually young persons and resulting from ingestion of bovine spongiform encephalopathy (BSE)-contaminated beef were identified in the United Kingdom. Since then, the CDC and the EIP have conducted enhanced surveillance and death certificate reviews. National surveillance has indicated that the incidence of CJD in the United States is about 1 case per million population per year.

(JAMA, Vol. 284, No. 18, November 8, 2000).

Recently, one confirmed case of variant CJD was identified in a Florida resident and another in a Canadian resident, both of whom resided in the United Kingdom during the height of the BSE epidemic. In addition, the identification of chronic wasting disease (CWD), a form of transmissible spongiform encephalopathy affecting deer and elk in the mid-western United States, has led to heightened awareness and surveillance efforts for any associated potential human public health risks.

CDC Dispatch, Vol. 2, No. 4—October-December 1996 Emerging Infectious Diseases

Influenza (Flu)

Epidemics of influenza typically occur during the winter months and have been responsible for an average of approximately 36,000 deaths/year in the United States during 1990–1999. Influenza viruses also can cause pandemics, during which rates of illness and death from influenza-related complications can increase dramatically worldwide. Influenza viruses cause disease among all age groups. Rates of

infection are highest among children, but rates of serious illness and death are highest among persons aged ≥ 65 years and persons of any age who have medical conditions that place them at increased risk for complications from influenza.

Influenza vaccination is the primary method for preventing influenza and its severe complications. In this report from the Advisory Committee on Immunization Practices (ACIP), the primary target groups recommended for annual vaccination are 1) groups that are at increased risk for influenza-related complications (e.g., persons aged ≥ 65 years and persons of any age with certain chronic medical conditions); 2) the group aged 50–64 years because this group has an elevated prevalence of certain chronic medical conditions; and 3) persons who live with or care for persons at high risk (e.g., health-care workers and household contacts who have frequent contact with persons at high risk and who can transmit influenza to persons at high risk). Vaccination is associated with reductions in influenza-related respiratory illness and physician visits among all age groups, hospitalization and death among persons at high risk, otitis media among children, and work absenteeism among adults. Although influenza vaccination levels increased substantially during the 1990s, further improvements in vaccine coverage levels are needed, chiefly among persons aged <65 years who are at increased risk for influenza-related complications among all racial and ethnic groups and among blacks and Hispanics aged ≥ 65 years. ACIP recommends using strategies to improve vaccination levels, including using reminder/recall systems and standing orders programs. Although influenza vaccination remains the cornerstone for the control and treatment of influenza, information is also presented regarding antiviral medications, because these agents are an adjunct to vaccine.

Biology of Influenza

Influenza A and B are the two types of influenza viruses that cause epidemic human disease. Influenza A viruses are further categorized into subtypes on the basis of two surface antigens: hemagglutinin (H) and neuraminidase (N). Influenza B viruses are not categorized into subtypes. Since 1977, influenza A (H1N1) viruses, influenza A (H3N2) viruses, and influenza B viruses have been in global circulation. In 2001, influenza A (H1N2) viruses that probably emerged after genetic re-assortment between human A (H3N2) and A (H1N1) viruses began circulating widely. Both influenza A and B viruses are further separated into groups on the basis of antigenic characteristics. New influenza virus variants result from frequent antigenic change (i.e., antigenic drift) resulting from point mutations that occur during viral replication. Influenza B viruses undergo antigenic drift less rapidly than influenza A viruses.

A person's immunity to the surface antigens, including hemagglutinin, reduces the likelihood of infection and severity of disease if infection occurs. Antibody against one influenza virus type or subtype confers limited or no protection against another. Furthermore, antibody to one antigenic variant of influenza virus might not protect against a new antigenic variant of the same type or subtype. Frequent development of antigenic variants through antigenic drift is the virologic basis for seasonal epidemics and the reason for the usual incorporation of ≥ 1 new strains in each year's influenza vaccine.

Influenza Epidemic

The influenza (flu) epidemics that happen nearly every year are important events. Influenza is a respiratory illness that makes hundreds of thousands of people sick each year. The illness can cause severe health problems for the elderly and younger people with diseases, such as diabetes, heart or lung disease, and illness that can weaken the immune system. Typical primary influenza illness lasts about a week and is characterized by abrupt onset of fever, muscle aches, sore throat, and nonproductive cough. In some persons, severe malaise and cough can persist for several days or weeks.

Influenza infection not only causes primary illness but also can lead to severe secondary medical complications, including influenza viral pneumonia, secondary bacterial pneumonia, worsening of

underlying medical conditions, such as congestive heart failure, asthma, or diabetes, or other complications such as ear infections (i.e., otitis media) in children.

Elderly persons (i.e., those 65 years and over) and persons with certain underlying medical conditions, such as chronic heart or lung disease, are at increased risk for developing complications from influenza infection. These complications increase the risk for hospitalization or death.

One of the most important features about influenza viruses is that their structure changes slightly but frequently over time (a process known as “drift”), and that this process results in the appearance of different strains that circulate each year. The composition of the flu vaccine is changed each year to help protect people from the strains of influenza virus that are expected to be the most common ones circulating during the coming flu season.

The ability of the vaccine to protect against influenza during a particular season depends on several factors, but particularly 1) the match between influenza strains in the vaccine and strains circulating in the community, and 2) the ability of each person's immune system to mount a protective response as a result of the vaccination. Although the vaccine may not prevent everyone who takes it from getting sick, it does reduce the risk of severe illness, hospitalization, and death. That's why it is so important for anyone who wants to reduce his or her risk of getting severely ill from influenza to receive the vaccine each year.

Influenza Pandemic

By contrast to the more gradual process of drift, in some years, the influenza virus changes dramatically and unexpectedly through a process known as “shift.” Shift results in the appearance of a new influenza virus to which few (if any) people are immune. If this new virus spreads easily from person to person, it could quickly travel around the world and cause increased levels of serious illness and death, affecting millions of people. **This is called an influenza pandemic.**

Fortunately, pandemics don't occur very often. There has not been an influenza pandemic since 1968. In 1997, however, a flu virus, that had previously infected only birds, caused an outbreak of illness in humans. This virus, known as the “avian flu,” resulted in 18 illnesses and six deaths in Hong Kong but did not easily spread from person to person. Still, it provided a frightening reminder that the next pandemic could occur at any time. Governments around the world took notice. The U.S. government worked with State and local governments, and private-sector partners, to develop strategies and programs that would prepare our country for a pandemic.

Influenza Pandemic Start

There are three main types of influenza viruses: A, B, and C. Influenza C causes only mild disease and has not been associated with widespread outbreaks. Influenza types A and B, however, cause epidemics nearly every year. Influenza A viruses are divided into subtypes, based on differences in two surface proteins: hemagglutinin (H) and neuraminidase (N). Influenza B viruses are not divided into subtypes. During an influenza flu season, usually one or more influenza A subtype and B viruses circulate at the same time.

A pandemic is possible when an influenza A virus makes a dramatic change (i.e., "shift") and acquires a new H or H+N. This shift results in a new or "novel" virus to which the general population has no immunity. The appearance of a novel virus is the first step toward a pandemic. However, the novel influenza A virus also must spread easily from person to person (and cause serious disease) for a pandemic to occur. Influenza B viruses do not undergo shift and do not cause influenza pandemics.

The reservoir for Type A influenza viruses is wild birds, but influenza A viruses also infect animals such as pigs and horses, as well as people. The last two pandemic viruses were combinations of bird and human influenza viruses. Many persons believe that these new viruses emerged when an intermediate host, such as a pig, was infected by both human and bird influenza A viruses at the same time. A new virus was created. Events in Hong Kong in 1997, however, showed that this is not the only way that humans can become infected with a novel virus. Sometimes, an avian influenza virus can "jump the species barrier" and move directly from chickens to humans and cause disease.

Since, by definition, a novel virus is a virus that has never previously infected humans, or hasn't infected humans for a long time, it's likely that almost no one will have immunity, or antibody to protect them against the novel virus. Therefore, anyone exposed to the virus--young or old, healthy or weak--could become infected and get sick. If the novel virus is related to a virus that circulated long ago, older people might have some level of immunity. It is possible that the novel virus may be especially dangerous to some age groups that are not usually at risk of severe illness or death from annual influenza (such as healthy young adults). Such widespread vulnerability makes a pandemic possible and allows it to have potentially devastating impact.

Influenza Pandemic Impact

There's no simple answer to the question of how serious a pandemic might be. It all depends on how virulent (severe) the virus is, how rapidly it can spread from population to population, and the effectiveness of pandemic prevention and response efforts. The 1918 Spanish flu is an example of a worst-case scenario because the strain was highly contagious and quite deadly. This pandemic killed more Americans than all the wars of the 20th century. Since our world today is vastly more populated, and people travel the globe with ease, the spread of a next pandemic could be more rapid than that of previous pandemics.

The impact of a pandemic isn't measured only by how many people will die. If millions of people get sick at the same time, major social consequences will occur. If many doctors and nurses become ill, it will be difficult to care for the sick. If the majority of a local police force is infected, the safety of the community might be at risk. If air traffic controllers are all sick at once, air travel could grind to a halt, interrupting not only business and personal travel, but also the transport of life-saving vaccines or anti-viral drugs. Therefore, a vital part of pandemic planning is the development of strategies and tactics to address all these potential problems.

Avian Influenza (Bird Flu)

Influenza viruses that infect birds are called " avian influenza viruses." Only influenza A viruses infect birds. All known subtypes of influenza A virus can infect birds. However, there are substantial genetic differences between the subtypes that typically infect both people and birds. Within subtypes of avian influenza viruses there also are different strains (described in "Strains").

Avian influenza H5 and H7 viruses can be distinguished as "low pathogenic" and "high pathogenic" forms on the basis of genetic features of the virus and the severity of the illness they cause in poultry; influenza H9 virus has been identified only in a "low pathogenicity" form. Each of these three avian influenza viruses (H5, H7, and H9) can theoretically be partnered with any one of nine neuraminidase surface proteins; thus, there are potentially nine different forms of each subtype (e.g., H5N1, H5N2, H5N3, …H5N9).

Below is summary information about these three prominent subtypes of avian influenza virus:

Influenza A H5

- Potentially nine different subtypes
- Can be highly pathogenic or low pathogenic
- H5 infections have been documented among humans, sometimes causing severe illness and death

Influenza A H7

- Potentially nine different subtypes
- Can be highly pathogenic or low pathogenic
- H7 infection in humans is rare, but can occur among persons who have close contact with infected birds; symptoms may include conjunctivitis and/or upper respiratory symptoms

Influenza A H9

- Potentially nine different subtypes
- Documented only in low pathogenic form
- Three H9 infections in humans have been confirmed.

Spread of Avian Influenza Viruses among Birds

Avian influenza viruses circulate among birds worldwide. Certain birds, particularly water birds, act as hosts for influenza viruses by carrying the virus in their intestines and shedding it. Infected birds shed virus in saliva, nasal secretions, and feces. Susceptible birds can become infected with avian influenza virus when they have contact with contaminated nasal, respiratory, or fecal material from infected birds. Fecal-to-oral transmission is the most common mode of spread between birds.

Most often, the wild birds that are host to the virus do not get sick, but they can spread influenza to other birds. Infection with certain avian influenza A viruses (for example, some H5 and H7 strains) can cause widespread disease and death among some species of domesticated birds.

Avian Influenza Infection in Humans

Although avian influenza A viruses do not usually infect humans, several instances of human infections and outbreaks of avian influenza have been reported since 1997. Most cases of avian influenza infection in humans are thought to have resulted from contact with infected poultry or contaminated surfaces. However, there is still a lot to learn about how different subtypes and strains of avian influenza virus might affect humans. For example, it is not known how the distinction between low pathogenic and highly pathogenic strains might impact the health risk to humans. Of the documented cases of human infection with avian influenza viruses, illnesses caused by highly pathogenic viruses appear to be more severe.

Because of concerns about the potential for more widespread infection in the human population, public health authorities closely monitor outbreaks of human illness associated with avian influenza. To date, human infections with avian influenza viruses detected since 1997 have not resulted in sustained human-to-human transmission. However, because influenza viruses have the potential to change and gain the ability to spread easily between people, monitoring for human infection and person-to-person transmission is important.

To date, there have been no recorded cases of Avian Influenza in California. Documented cases in North America include: British Columbia, Canada; The Eastern United States; and Texas.

Small Pox

Smallpox virus is a high-priority "Category A" agent that poses a risk to Yolo County, California and national security because it can be easily disseminated and transmitted from person to person, results in high mortality rates and has the potential for major public health impact, might cause public panic and social disruption, and requires special action for public health preparedness.

The Yolo County Health Department developed this Smallpox Preparedness, Response and Recovery Plan for the County to prepare for the possibility of an outbreak of smallpox in the County.

If an outbreak of smallpox were to occur, several factors could contribute to a more rapid spread of smallpox than was routinely seen before this disease was eradicated in 1977. These factors include: 1) virtually non-existent immunity to smallpox in the absence of naturally occurring disease and the discontinuation of routine vaccination in the United States in the early 1970's, 2) potentially delayed recognition of smallpox by health personnel who are unfamiliar with the disease, 3) increased mobility and crowding of the population, and 4) potential use of higher virulence "weaponized" viruses with decreased incubation periods. Because of these factors, a single case of smallpox would require an immediate and coordinated public health and medical response to contain the outbreak and prevent further infection of susceptible individuals.

Vaccination

The federal government has not yet provided definitive guidance on the extent of preparedness vaccination (smallpox vaccination of persons prior to a confirmed case of smallpox). It is anticipated that the guidance will be forthcoming in the near future. Such guidance, and release of sufficient quantities of smallpox vaccine, may be for: (1) specified first responders only, (2) a larger group of health care workers, law enforcement, and emergency responders, or (3) the entire population on a voluntary basis. Guidance may be provided in a phased manner for these, or other, groups over time.

The Yolo County Health Department is prepared to implement the guidance received from the federal government on preparedness vaccination. Since this vaccination will take place prior to a smallpox emergency and there will be no urgency to complete vaccination within a few days (as required in a smallpox emergency), existing facilities and staff are deemed sufficient to carry out preparedness vaccination of the first two groups. It may even be that federal personnel will be utilized for this preparedness vaccination of limited numbers of persons.

Monkey Pox

The Centers for Disease Control and Prevention (CDC) and state and local health departments continue to investigate cases of monkeypox among persons who had close contact with wild or exotic mammalian pets or persons with monkeypox. Results of serologic testing, polymerase-chain-reaction analysis, viral culture and gene sequencing performed at the CDC indicate that the causative agent is monkeypox virus, a member of the orthopoxvirus group of viruses. CDC is updating previous interim guidance concerning infection control precautions and exposure management in the health-care and community settings. The guidance will be further updated as additional information about the epidemiology of disease transmission is better understood.

Limited data on transmission of monkeypox virus are available from studies conducted in Africa. Person-to-person transmission is believed to occur primarily through direct contact and also by respiratory droplet spread. Transmission of monkeypox within hospitals has been described, albeit

rarely. Extrapolating from smallpox for which airborne transmission has been clearly described, airborne transmission of monkeypox virus cannot be excluded, especially in patients presenting with cough.

To date in the United States there has been no evidence of person-to-person transmission of monkeypox. However, recovery of monkeypox virus from skin lesions and tonsillar tissue demonstrates the potential for contact and droplet transmission, and at least a theoretical risk for airborne transmission.

A recent modification of CDC.s infection control guidance is based on the accumulating experience in the United States that suggests a relatively low risk of person-to-person transmission. All health-care settings, i.e., hospitals, emergency departments, physician offices, have the capacity to care for monkeypox patients and protect health-care workers and other patients from exposure.

Centers for Disease Control and Prevention

Hoof & Mouth Disease

In the United States we usually call it "Hoof and Mouth Disease." In the U.K. they call it "Foot and Mouth Disease." But, wherever it appears, and whatever it's called, this highly contagious livestock disease means trouble. The outbreak of the disease in Great Britain quickly spread to the European continent, and British officials even considered eradicating that country's entire livestock population. The last major outbreak in the U.S. was in 1929.

Hoof and mouth disease is a viral infection that afflicts animals with cloven hooves such as cattle, pigs, and sheep. Onset of the disease is characterized by fever, which is followed by the development of blisters inside the mouth and on the feet. It is transmitted easily among animals through fluids such as blood, saliva, and milk. Fluid from broken blisters has especially high concentrations of the virus. The disease is not necessarily fatal, and symptoms can clear up after several weeks, but the disease generally leaves animals underweight and sometimes disabled. Because of the highly infectious nature of the disease, and the condition in which it leaves animals even after they have recovered, farmers almost always destroy infected animals and burn their carcasses.

While not susceptible to the hoof and mouth, humans can carry and transmit the disease without even realizing it. This makes an already highly contagious disease even more difficult to contain. Governments can control the export and import of farm animals, and can destroy animals possibly exposed to the disease, but confining the human carriers of the virus is much more difficult.

Hepatitis

Hepatitis is inflammation of the liver. Several different viruses cause viral hepatitis. They are named the hepatitis A, B, C, D, and E viruses.

All of these viruses cause acute, or short-term, viral hepatitis. The hepatitis B, C, and D viruses can also cause chronic hepatitis, in which the infection is prolonged, sometimes lifelong.

Other viruses may also cause hepatitis, but they have yet to be discovered and they are obviously rare causes of the disease.

Hepatitis Incidence/Epidemiology

Hepatitis A occurs sporadically and epidemically worldwide, with a tendency to cyclic recurrences.

Epidemics are uncommon in developing countries where adults are generally immune. Improved sanitation and hygiene conditions in different parts of the world leave large segments of the population susceptible to infection, and outbreaks may result whenever the virus is introduced.

Common-source epidemics, related to contaminated food or water, may evolve explosively, as did the largest mollusc-linked epidemic in Shanghai, in 1988, involving about 300 000 people.

Worldwide, HAV infections account for 1.4 million cases annually.

Strain	Disease Spread	People at Risk	Prevention	Treatment
Hepatitis A	Primarily through food or water contaminated by feces from an infected person. Rarely, it spreads through contact with infected blood	International travelers; people living in areas where hepatitis A outbreaks are common; people who live with or have sex with an infected person; during outbreaks, day care children and employees, men who have sex with men, and injection drug users	The hepatitis A vaccine, also, avoiding tap water when traveling internationally and practicing good hygiene and sanitation	Hepatitis A usually resolves on its own over several weeks
Hepatitis B	Through contact with infected blood, through sex with an infected person, and from mother to child during childbirth	People who have sex with an infected person, men who have sex with men, injection drug users, children of immigrants from disease-epidemic areas, infants born to infected mothers, people who live with an infected person, health care workers, hemodialysis patients, people who received a transfusion of blood or blood products before July 1992 or clotting factors made before 1987, and international travelers	Hepatitis B vaccine	For chronic hepatitis B: drug treatment with alpha interferon, peginterferon, lamivudine, or adefovir dipivoxil. Acute hepatitis B usually resolves on its own. Very severe cases can be treated with lamivudine
Hepatitis C	Primarily through contact with infected blood, less commonly, through sexual contact and childbirth	Injection drug users, people who have sex with an infected person, people who have multiple sex partners, health care workers, infants born to infected women, hemodyalysis patients, and people who received a transfusion of blood or blood products before July 1992 or clotting factors made before 1987	There is no vaccine for hepatitis C; the only way to prevent the disease is to reduce the risk of exposure to the virus. This means avoiding behaviors like sharing drug needles or sharing personal items like toothbrushes, razors, and nail clippers with an infected person	Chronic hepatitis C: drug treatment with perginterferon alone or combination treatment with peginterferon and the drug ribavirin. Acute hepatitis C: treatment is recommended if it does not resolve within 2 to 3 months
Hepatitis D	Through contact with infected blood. This disease occurs only in people who are already infected with hepatitis B	Anyone infected with hepatitis B: injection drug users who have hepatitis B have the highest risk. People who have hepatitis B are also at risk if they have sex with a person infected with hepatitis D or if they live with an infected person. Also at risk are people who received a transfusion of blood or blood products before July 1992 or clotting factors made before 1987	Immunization against hepatitis B for those not already infected; also. avoiding exposure to infected blood, contaminated needles, and an infected person's personal items.	Chronic hepatitis D: drug treatment with alpha interferon
Hepatitis E	Through food or water contaminated by feces from an infected person. This disease in uncommon in the United States	International travelers; people living in areas where hepatitis E outbreaks are common; and people who live or have sex with an infected person	There is no vaccine for hepatitis E; the only way to prevent the disease is to reduce the risk of exposure to the virus. This means avoiding tap water when traveling internationally and practicing good hygiene and sanitation	Hepatitis E usually resolves on its own over several weeks or months

Hepatitis Facts

- An estimated 40,000 people were infected with the hepatitis C virus (HCV) in 1998.
- There are an estimated 3.9 million people who are or have been infected with hepatitis C, 2.7 of whom are chronically infected; approximately 70% of people infected do not know they have the virus.
- 8,000 – 10,000 people die of hepatitis C each year. The Centers for Disease Control and Prevention (CDC) estimate that the number of annual deaths from hepatitis C will triple in the next 10 –20 years.
- Hepatitis B is responsible for 5,000 deaths annually, including 3,000 – 4,000 from cirrhosis and approximately 1,000 – 1,500 from primary liver cancer.
- One out of every 250 people is a carrier of hepatitis B and can pass it on to others, often unknowingly.
- There were approximately 80,000 estimated new infections of hepatitis B in the United States in 1999.
- Up to 90% of pregnant women who are carriers of the hepatitis b virus could transmit the virus to their children. Vaccinations of the newborns would prevent them from becoming carriers.
- Due to the screening of pregnant women for HBV and vaccinations of newborns with the hepatitis B vaccine, there has been a decline in that number of infected newborns.
- Hepatitis B is 100 times more infectious than HIV, the virus that causes AIDS. There are 500 million hepatitis B viral particles in one teaspoon of blood compared to 5-10 HIV particles.
- The estimated medical and work loss cost per year of hepatitis B is $700 million; the estimated medical and work loss cost per year of hepatitis C is $600 million.
- One out of every 20 people will be infected with hepatitis B in his/her lifetime.
- Approximately 5,000 liver transplants were performed in 2000. Because of the shortage of organs, it is estimated that nearly 1,700 prospective recipients died in 2001 while waiting for a liver for transplantation. There are currently over 18,000 people waiting for a liver transplant.
- Non-Hispanic African Americans have the highest infection rate for hepatitis C; Asian and Pacific Islanders have the highest rate for hepatitis B infection.

Other Diseases

Plague

Plague is transmitted to humans by fleas or by direct exposure to infected tissues or respiratory droplets; the disease is characterized by fever, chills, headache, malaise, prostration, and leukocytosis that manifests in one or more of the following principal clinical forms:

- Regional lymphadenitis (bubonic plague)
- Septicemia without an evident bubo (septicemic plague)
- Plague pneumonia, resulting from hematogenous spread in bubonic or septicemic cases (secondary pneumonic plague) or inhalation of infectious droplets (primary pneumonic plague)
- Pharyngitis and cervical lymphadenitis resulting from exposure to larger infectious droplets or ingestion of infected tissues (pharyngeal plague)

Brucellosis

Brucellosis is an infectious disease caused by the bacteria of the genus *Brucella*. These bacteria are primarily passed among animals, and they cause disease in many different vertebrates. Various *Brucella* species affect sheep, goats, cattle, deer, elk, pigs, dogs, and several other animals. Humans become infected by coming in contact with animals or animal products that are contaminated with these bacteria. In humans brucellosis can cause a range of symptoms that are similar to the flu and may include fever, sweats, headaches, back pains, and physical weakness. Sever infections of the central nervous systems or lining of the heart may occur. Brucellosis can also cause long-lasting or chronic symptoms that include recurrent fevers, joint pain, and fatigue.

Brucellosis is not very common in the United States, where 100 to 200 cases occur each year. But brucellosis can be very common in countries where animal disease control programs have not reduced the amount of disease among animals.

Botulism (Food-borne)

Ingestion of botulinum toxin results in an illness of variable severity. Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.

Botulism (Wound)

An illness resulting from toxin produced by *Clostridium botulinum* that has infected a wound. Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.

Economic Disruption

Economic Disruption was rated as a MODERATE RISK PRIORITY for each jurisdiction by the Hazard Mitigation Planning Steering Committee.

Economic loss disasters have historically been caused by natural events which affect a commercial venture. Examples are fisheries losses, crop losses due to pests or plant infection. Examples are the Mediterranean Fruit Fly, Mexican Fruit Fly and Salmon Fisheries disaster declarations. A State of California Economic Disaster was declared in 1979 because of a severe gasoline shortage.

An example of one the largest projected economic losses for the State of California with a potentially significant impact on Yolo County would be an outbreak of Hoof and Mouth Disease. Yolo County has a high number of ranches with livestock at risk for the disease. Yolo County agriculture also produces large amounts of livestock feed for at-risk animals.

Disaster-related Economic Loss

Almost all other economic impact losses are a subset of damage due to a natural or human-caused disaster. The recent Jones Tract Levee break in San Joaquin County would be an example of such a loss. The declaration was for flooding due to levee break, however the damage was economic and land-use losses because of the flooding.

Utility outages cause widespread economic losses to governments and their citizens due to loss of employment, wholesale and retail sales, extra ordinary expenses related to utility loss and increased medical risks.

Economic impacts for governments from disasters are generally felt by loss of business sales tax revenues and property tax revenues for individual jurisdictions. These losses come with increased demands on the welfare and family support systems in the jurisdiction. In addition, according to GIS Development News, "…There are direct and indirect economic losses. The first to get affected is the infrastructure, the railways and roads. All of the utilities get affected, the telephone lines get broken, the electricity is disrupted, water pipes get broken and water gets contaminated. Many businesses close and people lose their jobs. As per post disaster studies, 40% of the small businesses never open again. The most obvious damage to business is the physical structure and capital equipment. With the break in infrastructure and transport the interruption to business is real. Infrastructure loss resulting in long term electrical outages and unusable roads leads to halts in operations, supplies not being received and mission critical systems not operating. The community also loses it residents. Essentially, for the business, it means loss of customers and the existing market. Even short periods of downtime can lead to heavy business losses."

Yolo County Example

Yolo County Economic Risk would come from any event that significantly impacts the governmental and commercial work force. A closure at University California Davis Campus for any length of time would have wide-spread impacts on unemployment and student dollar losses in the community. UC Berkeley released a 2001 study that forecasts even a brief closure at the University after a major earthquake would mean economic loss for the region. The research team found that the closure of UC Berkley for one year would mean the loss during that period of nearly 9,000 jobs, $680 million in personal income and $861 million in sales in Alameda, Contra Costa and San Francisco Counties. With a closure of UC Davis we could expect similar impacts on Yolo and surrounding Counties.

The Cost of Natural Disasters

USGS researchers Dr. Christopher Barton and Dr. Stuart Nishenko report that USGS has developed a new method to examine fatality and dollar-loss data, and to make probabilistic estimates of the frequency and magnitude of future events. Natural disasters have become so expensive that the Federal Government shares in the economic risk. Insurance coverage for losses resulting from natural disasters is typically less then 20 percent of the total loss, because of limited participation in voluntary insurance coverage. The remainder of the dollar losses is covered through emergency allocations, the amount of which can increase the national debt.

The U.S. Public Interest Research Group Education Fund published a summary of Disaster deaths and economic loss in the U.S. for the year 2000, and the years 1990 to 1999. The following table depicts that summary.

1990-1999	Deaths	In 2000 dollars Economic Loss	Year 2000 Deaths	Economic Loss
United States	3,997	$204.3 Billion	222	$8.4 Billion
World Wide	330,129	$646.2 Billion	8,851	$31.4 billion

This group goes on to report that in the 1990s," American communities experienced more than $87.2 billion in weather-related insured losses, and the government spent more than $65.5 billion in government assistance. In 2000 alone, insured losses in the United States totaled $4.3 billion while the government spent nearly $6.2 billion to respond to and mitigate extreme weather damages.

Weather related damage throughout the 1990s was not centralized in one area of the country. The five states experiencing the most damage for the decade were in descending order: Florida, Texas, California, North Carolina and Minnesota"

HAZUS-MH and Predicting Loss

Utilizing HAZUS-MH as a disaster mitigation tool is one mitigation strategy local governments can consider for quantifying the risk of a study area of any size. Using ArcGIS technology, HAZUS-MH combines hazard layers with national data bases, and then applies standardized loss estimation and risk assessment methodology. The GIS environment allows users to create graphic presentation, helping communities visualize and understand their hazard risks and solutions. Nation wide databases built into HAZUS-MH include data sets on demographics, building stock, essential facilities, transportation, utilities and facilities with high potential for loss. The software is reported to estimate losses from earthquake, hurricane, winds, and floods. Updated hazard models supplement these new features.

- Earthquake Model – This model provides estimates of damage and loss to buildings, essential facilities, transportation and utility lifelines, and population based on scenario or probabilistic earthquakes. In addition to estimating direct damage the new model addresses debris generation, fires, casualties, and shelter requirements.
- Flood Model-Flood risk is determined by nationwide data sets through analyses of possible flooding based hydrologic information. The flood model allows users to characterize flooding and then estimated expected levels of damage to buildings and infrastructure.

The experienced HAZUS users have reported that using nationwide data and dollar loss estimates may not always apply to a particular area. An example would be the current HAZUS-MH values school structures at $500,000.00. This building loss estimate would not cover the replacement of a school in California which would seriously underestimate the dollar damage to facilities. However, jurisdictions

can upgrade the data basis with jurisdiction actual replacement value costs and utilize the program for more accurate data.

Disaster Injury Losses

The National Safety Council makes estimates of the average costs of fatal and nonfatal unintentional injuries to illustrate their impact on the nation's economy. The costs are a measure of the dollars, due to accidents, injuries, and fatalities. These figures can be used to gage rough estimates in disaster injuries and losses.

Death		Incapacitating injury	Non-incapacitating injury	Possible Injury	No Injury
Automobile Costs	$3,610,000.00	$181,000.00	$46,200.00	$22,000.00	$2,000.
Home Injuries	$4,100,000.00				
Public non-motor injuries	$4,500,000.00				
Work Injuries without uninsured employer costs	$31,700,000.00				
Work injuries with uninsured employers costs	$31,700,000.00				

Social & Economic impact of flooding (City of Woodland)

On a short-term basis, flooding from a greater storm than one having a 1 in 10 chance could disrupt economic activity in Woodland, and unincorporated areas of Yolo County in the study area, depending on flood flow and duration.

On a more permanent basis, landowners in the FEMA 1 in 100 chance (100-year) flood plain with a federally insured mortgage would be required to purchase flood insurance. New development in the FEMA 1 in 100 chance flood plain would be possible, but only with flood proofing measures and added insurance costs. Woodland's industrial sector could be less competitive due to potential risk and insurance costs. The city may not attract as many new businesses for the same reasons. The loss of businesses within the city would cost Woodland revenue.

Special Events

Special Events were rated as a MODERATE RISK PRIORITY for each jurisdiction by the Hazard Mitigation Planning Steering Committee.

Risks Related to Special Events

Large crowds, gathered for special events, represent disaster hazards in the following ways:

- Viable targets for terrorists
- Concentration of people in a relatively small, enclosed area during earthquakes
- Site for mass casualties in the event of an aviation or other transportation disaster
- Challenge to egress in the event of a large fire elevating the risk of mass casualties
- Depending on the event, could be prone to civil disobedience or riots

Yolo County Special Events

The three largest special event venues in Yolo County are:

- University of California at Davis in Davis including the Mondavi Center;
- Raley Field, in West Sacramento, which hosts Sacramento River Cats Baseball Games;
- Yolo County Fair Grounds in Woodland which also hosts the Annual County Fair and Scottish Highland Games.

Mondavi Center for the Performing Arts

Robert and Margrit Mondavi Center for the Performing Arts is a 104,000-square foot facility with state-of-the-art acoustic design and a program of world-class performing artists. It will elevate the visibility of performing arts at UC Davis and throughout the Sacramento region.

The Mondavi Center's architecture and technology are state-of-the-art. Features include an orchestra shell that rises out onto the main hall' s stage on "air casters," and acoustic curtains that allow spaces to be tuned for a single spoken voice or for large, amplified concert performances. The facility includes two performance venues supported by a full complement of performance, production support space, and reception areas:

- Barbara K. and W. Turrentine Jackson Hall is a 1,800-seat performance hall.

- The Studio Theater is a versatile space for up to 250 people that will host dance and choral performances, lectures, banquets, arts education programs, and theater productions.

Project Budget

Construction	$53.5 million
Operating endowment	$5 million
Startup costs	$2.4 million
Total	$60.9 million

Raley Field

Raley Field is a $29.5 million dollar open-air structure Triple A baseball stadium with 11,093 fixed seats, 37 luxury suites, 450 club seats, private membership club, electric Videotron scoreboard, and concert facilities with amenities typically associated with modern, first class minor league stadiums.

Raley Field is home of the Sacramento River Cats professional Pacific Coast League Baseball team. Games played at home typically draw between 8000-11000 people. It is also used to host special shows demanding a large-capacity open-air facility.

Yolo County Fair and Sacramento Valley Scottish Games

Yolo County Fair

The fairgrounds cover 55 acres in the City of Woodland and the annual fair event generally attracts over 140,000 visitors during its five day run.

Sacramento Valley Scottish Games

Held the last weekend in April	
Name: **Sacramento**	Type: **Full Games**
Event Founded: **1877** Data Collected: **2003** Estimated Attendance: **15000**	Actual Attendance: **1000** Vendors Attending: **60** Clans Attending: **100**
Site: **Yolo County Fairgrounds** City, State: **Woodlands , CA**	Near: **Sacramento** Directions: **corner of East St. and Gum Ave.**

Other Special Events and Facilities in Yolo County

- ASUCD Experimental College, University of California, Davis
- Acme Theatre Company
- Alternative Recreation, Parks and Community Services Department
- Archery Range, Yolo Bowmen
- Bohart Museum of Entomology, Department of Entomology, University of California, Davis
- Buddhist Meditation Center, Davis Shambhala Center
- Camping, YMCA
- Craft Center, University of California, Davis
- Davis Aquatic Masters (DAM)
- Davis Art Center
- Davis Bike Club
- Davis Chinese School
- Davis Conference and Visitors Bureau (Davis CVB, DCVB)
- Davis Flower Arrangers
- Davis Genealogy Club and Library, Davis Senior Center (Genealogy Club and Library)
- Davis Macintosh User Group (DMUG)
- Davis Musical Theatre Company (DMTC)
- Davis Stake Family History Center, Church of Jesus Christ of Latter-day Saints (Family History Center, FHC)
- Design Alliance, Environmental Design, Department of
- Equestrian Center, University of California, Davis

- Explorit Science Center
- Friends of Art
- Genealogical Association of Sacramento (GAS)
- Gorman Museum, Native American Studies Department, University of California, Davis (Carl Gorman Museum)
- Heidrick Ag History Center (Ag History Center, Heidrick Antique Ag Collection, Hays Antique Truck Museum)
- Internet Users Group (IUG)
- Linux Users' Group of Davis (LUGOD)
- Memorial Union Art Gallery, Music and Periodicals Center, University of California, Davis (MU Art Gallery)
- Memorial Union Games Area, University of California, Davis (MUGA)
- Memorial Union Programs and Campus Recreation, University of California, Davis (Campus Recreation)
- Mondavi Center for the Performing Arts, University of California, Davis
- National Youth Sports Program (NYSP, Academic Enrichment Sports Program)
- Nor-Cal Woodturners
- Outdoor Adventures, University of California, Davis (OA, UCD)
- Pence Gallery
- Recreation Pool, University of California, Davis (UCD Rec Pool)
- Teen Program, YMCA
- Visitor Services, University of California, Davis
- Volunteer Connection, Hands Together, Inc
- Woodland Art Center (WAC)
- Woodland Camera Forum (Camera Forum)
- Woodland Gymnastics
- Woodland Library Rose Club (Rose Club)
- Woodland Opera House (Opera House, WOH)
- Woodland Toy Library (WTL)
- Yolo Basin Foundation, Inc (YBF)
- Yolo County Concert Band
- Yolo County Fair, California, State of
- Yolo County Historical Society (Historical Society)
- Yolo Sportsmen's Association (YSA)
- Youth Sports, YMCA

Transportation Loss

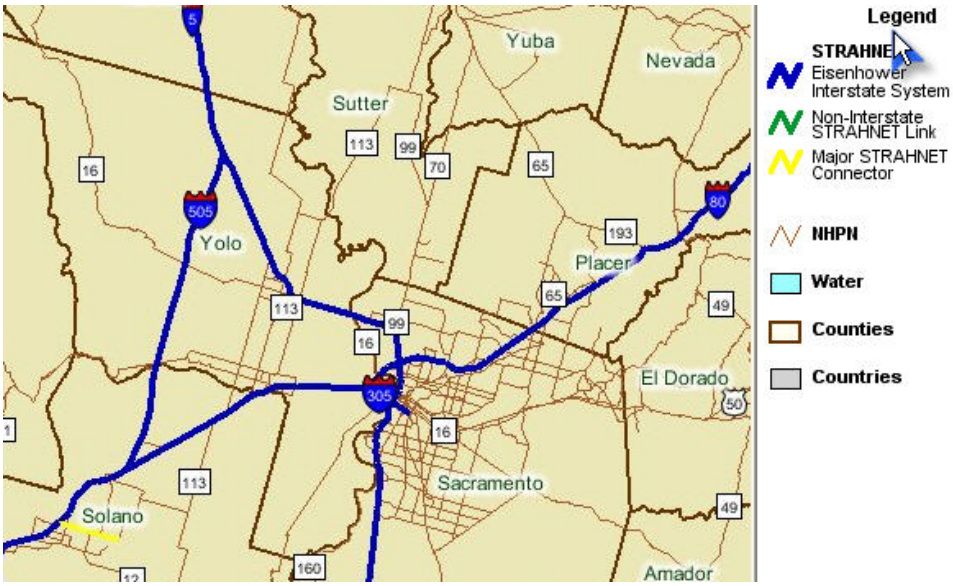
Transportation Loss was rated as a MODERATE RISK PRIORITY for each jurisdiction by the Hazard Mitigation Planning Steering Committee.

The following State maintained highways pass through Yolo County:

- Interstate 5
- Interstate 80
- Interstate 505
- US Highway 50
- State Route 16
- State Route 45
- State Route 84
- State Route 113
- State Route 128
- State Route 275

United States Strategic Highway Network (STRAHNET)

STRAHNET is a system of public highways that is a key deterrent in United States strategic policy. It provides defense access, continuity, and emergency capabilities for movements of personnel and equipment in both peace and war. It is over 60,000 miles and includes the Eisenhower Interstate System and over 15,000 miles of other important public highways. STRAHNET Connectors (about 1,700 miles) are additional highway routes linking over 200 important military installations and ports to STRAHNET. The Intermodal Surface Transportation Efficiency Act of 1991 and the National Highway System Designation Act of 1995 provided for the inclusion of STRAHNET and important STRAHNET Connectors in the 160,000-mile National Highway System (NHS).



Flooding Affects on Transportation

The potential for flooding during major storms remains without a flood damage reduction project for the City of Woodland. Transportation would be affected during a severe storm due to the temporary disruption and potential damage to the California Northern Railroad, a north-south freight transportation railway, and I-5. The portion of I-5 east of the City of Woodland would be particularly subject to disruption and damage because the flood flows would pond against the Yolo Bypass levees. County roads would also be flooded.

Loss Consequences

The major loss of transportation elements in Yolo County and/or its municipalities could have serious affects on the County's economy and ability to provide services. Generally, when transportation loss is addressed, it is assumed that it would be long term and affect a populated area. Loss of travel ability on the state and federal highways and/or rail system would result in loss of commerce (pick-up and delivery of goods, delivery of services, etc.). Also, it may seriously degrade the ability of the County and municipalities to provide emergency services to its citizens by delaying response times or cutting off routes to stationed equipment (fire, law enforcement and ambulance services). The ability to receive shipments of fuel for vehicles and heating may be degraded if not cut off to some areas.

The affects of re-routed traffic could have serious affects on communities, especially if they are in the path of a closed interstate or major highway. Heavy volumes of traffic on routes that were not designed to handle it would cause damage, burdening a municipality's or the County's finances, staffing and equipment. Transit would be affected by forcing route changes or curtailment reducing the ability of citizens who depend on it to travel for the purpose of procuring goods and services.

Radiological Emergencies

Radiological Emergencies were rated as a LOW RISK PRIORITY for each jurisdiction by the Hazard Mitigation Planning Steering Committee.

There are two operating nuclear power plants (NPP) in California, Diablo Canyon Power Plant in San Luis Obispo County, and San Onofre Nuclear Generating Station in San Diego County. Two other nuclear power plants, Humboldt Bay and Rancho Seco, are not operational, but have spent fuel stored on-site.

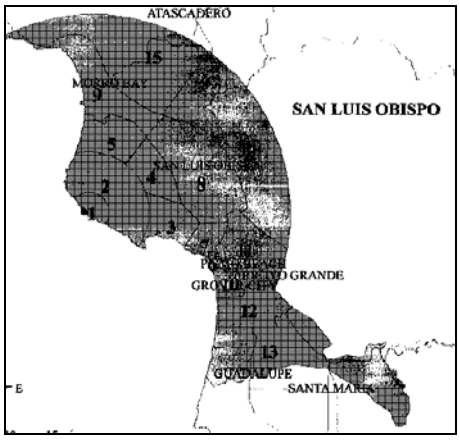
State and local governments having jurisdiction within ten miles of an operating nuclear power plant must plan, train, and conduct emergency exercises annually in accordance with federal regulations. Detailed emergency plans are maintained by each affected agency.

Four Emergency Classification Levels (ECLs) have been established in federal regulations to characterize the severity of the emergency and the response actions required. The ECLs must be used as the foundation for emergency response planning, training and exercises. ECLs are described in the table below.

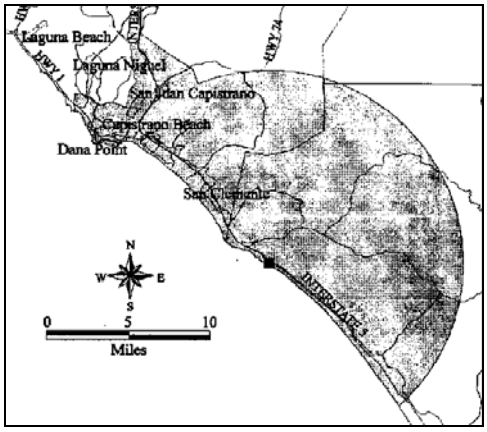
As part of the planning basis, affected agencies must establish emergency planning zones (EPZs), which is an approximate ten-mile radius drawn around each plant site. The exact EPZ size is established to provide for substantial reduction in early severe health effects in the event of a worst-case core melt accident.

To date, there have been no deaths or injuries resulting from a nuclear emergency event at a California nuclear power plant. For this reason they are classified as a less significant hazard.

Emergency Classification Levels	ECL Description and Purpose	Populations Effected	Occurrences
Notification of Unusual Event	Issued when events have occurred that potentially could degrade the level of plant safety. No radioactive releases requiring emergency response are expected.	On site only	Average 1-2 per year.
Alert	Issued when events have occurred that involves a substantial degradation of plant safety. Any radioactive releases are expected to be a fraction of federal exposure guidelines requiring protective actions.	On site only	1 (SONGS, March 1999)
Site Area Emergency	Issued when events have occurred that involve the failure of major plant functions needed to protect the public. Radioactive releases are not expected to exceed federal exposure guidelines at the site boundary.	Site area, schools, beaches, & transient populations within the EPZ.	0
General Emergency	Issued when events have occurred that involve substantial core degradation or loss of containment integrity. Radioactive releases are expected to exceed federal exposure guidelines.	Designated areas within the (EPZ)	0



EPZ for the Diablo Canyon NPP



EPZ for SONGS

(Source: Mark Johnson, CA OES, Radiological Coordinator, Radiological Preparedness Unit)

The Nuclear Regulator Commission (NRC) regulates the operation of nuclear power plants in the Unites States. The NRC is responsible for ensuring that the NPPs in California are safe from hazards such as earthquakes and fires, as well as hazards from hostile sources such as terrorism. FEMA evaluates the ability of local and state governments to protect the public in the event of a nuclear power plant emergency.

Due to strict regulation of nuclear power plants in the United States, significant nuclear power incidents that can cause harm to the public have low probability of occurrence, and none have occurred in California. The interstate highways that run through Yolo County (I-5, I-80, I-505) and the railroads are authorized routes for the shipment of radioactive materials.

Explosions

Explosions were rated as LOW RISK PRIORITY for each jurisdiction by the Hazard Mitigation Planning Steering Committee.

Yolo County's susceptibility to consequences from a catastrophic explosion is low. This is based on the lack of such occurrences over recent history.

Aviation Disasters

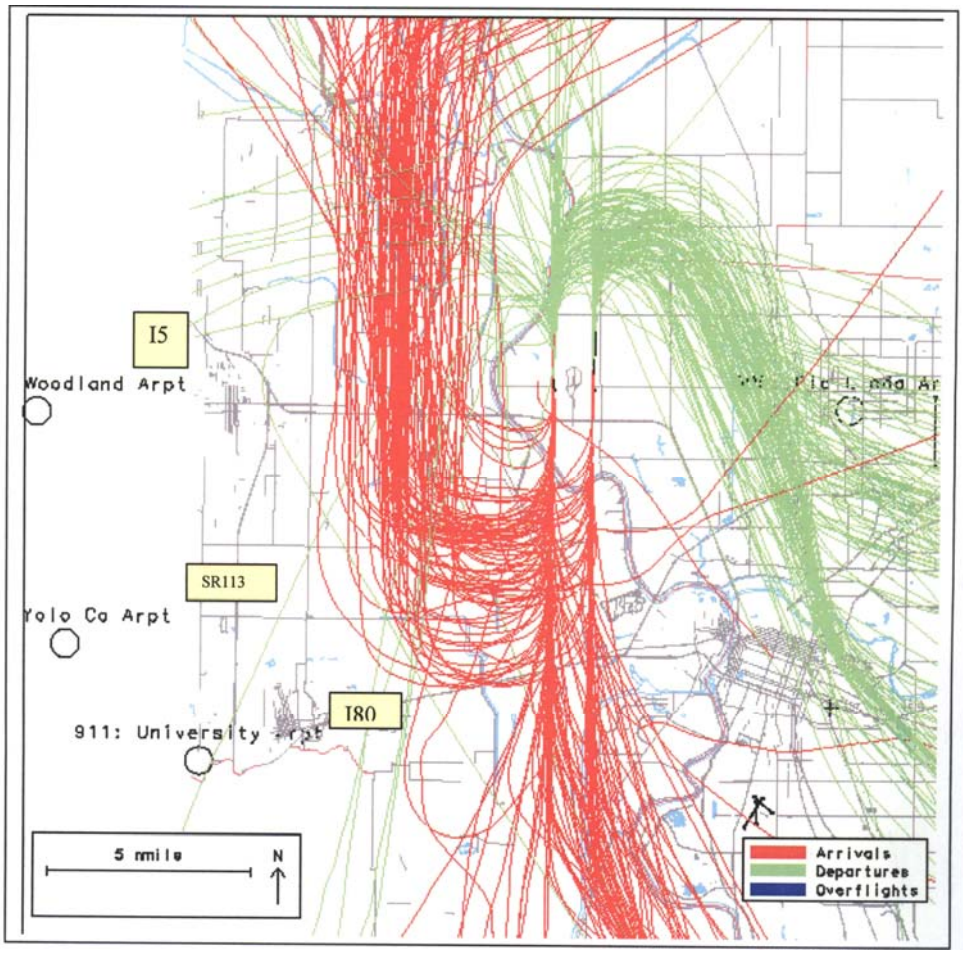
Aviation Disasters were rated as a LOW RISK PRIORITY for each jurisdiction by the Hazard Mitigation Planning Steering Committee.

Yolo County has no history of recent aviation disasters. The County's lack of international and trans-continental air traffic terminals reduces the exposure, however, parts of the County remain in the flight path of international carriers.

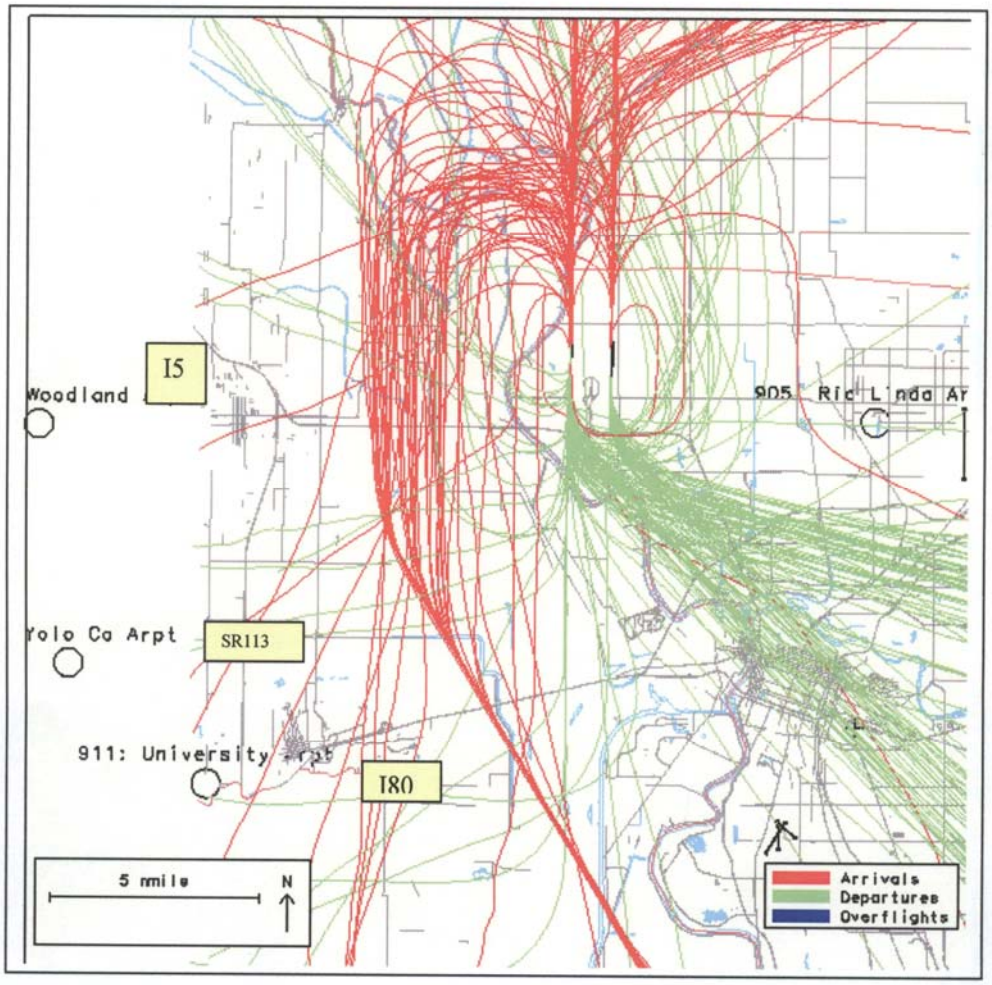
Sacramento International Airport (SMF) located in northwestern Sacramento County poses the greatest potential for an aviation disaster that would affect Yolo County. SMF is operated around the clock with two major runways and serves thousands of passengers every day. Several major air carriers operate out of SMF most operating light to medium weight passenger jets. Some airlines provide SMF with periodic heavy jetliner service.

General approaches to and takeoffs from the runways are from the north and south. Approach and takeoff patterns are generally over rural farmland, however, occasionally patterns are adjusted over populated locations in Yolo County, namely Davis, Woodland and West Sacramento.

Sample of North Flow Tracking (Sacramento International Airport)



Sample of South Flow Tracking (Sacramento International Airport)



Mine Accidents

Mine Accidents were rated as a LOW RISK PRIORITY for each jurisdiction by the Hazard Mitigation Planning Steering Committee.

Mine accidents have declined dramatically both in number and severity as a result of decades of research, technology, education, and preventive programs. Today, mine accidents resulting in five or more deaths are no longer common. However, preventing recurrence of disasters like those of the past remains a top priority requiring constant vigilance by management, labor, and government.

Yolo County has no recent history of catastrophic mine accidents as well as no known large-scale mine operations.

SECTION THREE: Demographics & Statistics

Yolo County was organized in 1850. The County Seat is in the City of Woodland at the County Administration Building 625 Court Street. The county is approximately 1,012 square miles in size and with a population of 184,500 per the Department of Finance population estimate of January 2004.

Yolo County

General Description

Agriculture is Yolo County's primary industry. The eastern two-thirds of the County consists of nearly level alluvial fans, flat plains, and basins, while the western third is largely composed of rolling terraces and steep uplands used for dry-farmed grain and range. The elevation ranges from slightly below sea level near the Sacramento River around Clarksburg to 3,000 feet along the ridge of the western mountains.

Yolo County's 661,760 acres is home to over 161,875 people. Nearly 88% of the population lives in the County's four cities (Davis, West Sacramento, Woodland, Winters). Its proximity to Sacramento International Airport as well as two major interstates place it within a major transportation hub of the state.

History of Yolo County

Yolo County was one of the original 27 counties created when California became a state in 1850. "Yolo" is derived from the native Poewin Indian word "yo-loy" meaning "abounding in the rushes". Other historians believe it to be the name of the Indian chief, Yodo, or the Indian village of Yodoi.

The first recorded contact with Westerners occurred in the late 1820s. These included Spanish missionaries as well as trappers and hunters who could be found along the banks of "Cache Creek" - named by French-Canadian trappers. The first white settler was William Gordon who received a land grant from the Mexican government in 1842 and began planting wheat and other crops.

The towns of Yolo County were out growths of native villages along waterways. Its first town, Fremont, was founded in 1849 along the confluence of the Sacramento and Feather Rivers and became the first county seat. Knights Landing, Washington, Cacheville (later called Yolo), Clarksburg, Winters. Esparto, Capay, Guinda, and Davisville (Davis) were all built near waterways. Davisville had the added advantage of being on the path of the newly constructed railroad. Woodland, which became the county seat in 1862, began in a wooded area of valley oaks and was also served by a nearby railroad.

In 1906, to further emphasize agriculture's role in Yolo County, the University of California chose a 780-acre farm belonging to Jerome Davis for establishment of a university farm to serve as part of the College of Agriculture. The Davis farm has since become a separate campus of the University and has received world-wide fame for its research and education work.

In 1987, West Sacramento became Yolo County's fourth incorporated city. It is home to the Port of Sacramento and Sacramento Deep Water Channel, providing worldwide access to Yolo County's agricultural and manufacturing production.

If you build it, we'll come. And we did. In the Spring of 2000, a new stadium, Raley Field, arrived in West Sacramento on the riverfront in the First Supervisorial District. Yolo County, Sacramento County and the City of West Sacramento all formed a partnership with River City Baseball Association and brought a Triple-A baseball team from Canada to West Sacramento, now known as the Rivercats.

Statistics

People	Yolo County	California
Population, 2003 estimate	183,042	35,484,453
Population, percent change, April 1, 2000 to July 1, 2003	8.5%	4.8%
Population, 2000	168,660	33,871,648
Population, percent change, 1990 to 2000	19.4%	13.6%
Persons under 5 years old, percent, 2000	6.5%	7.3%
Persons under 18 years old, percent, 2000	25.2%	27.3%
Persons 65 years old and over, percent, 2000	9.4%	10.6%
Female persons, percent, 2000	51.1%	50.2%
White persons, percent, 2000 (a)	67.7%	59.5%
Black or African American persons, percent, 2000 (a)	2.0%	6.7%
American Indian and Alaska Native persons, percent, 2000 (a)	1.2%	1.0%
Asian persons, percent, 2000 (a)	9.9%	10.9%
Native Hawaiian and Other Pacific Islander, percent, 2000 (a)	0.3%	0.3%
Persons reporting some other race, percent, 2000 (a)	13.8%	16.8%
Persons reporting two or more races, percent, 2000	5.2%	4.7%
Persons of Hispanic or Latino origin, percent, 2000 (b)	25.9%	32.4%
White persons, not of Hispanic/Latino origin, percent, 2000	58.1%	46.7%
Living in same house in 1995 and 2000', pct age 5+, 2000	41.8%	50.2%
Foreign born persons, percent, 2000	20.3%	26.2%
Language other than English spoken at home, pct age 5+, 2000	32.1%	39.5%
High school graduates, percent of persons age 25+, 2000	79.8%	76.8%
Bachelor's degree or higher, pct of persons age 25+, 2000	34.1%	26.6%
Persons with a disability, age 5+, 2000	26,084	5,923,361
Mean travel time to work (minutes), workers age 16+, 2000	21.2	27.7
Housing units, 2002	64,228	12,507,767
Homeownership rate, 2000	53.1%	56.9%
Housing units in multi-unit structures, percent, 2000	31.0%	31.4%
Median value of owner-occupied housing units, 2000	$169,800	$211,500
Households, 2000	59,375	11,502,870
Persons per household, 2000	2.71	2.87
Median household income, 1999	$40,769	$47,493
Per capita money income, 1999	$19,365	$22,711
Persons below poverty, percent, 1999	18.4%	14.2%

Employment	Yolo County	California
Private nonfarm establishments with paid employees, 2001	3,467	806,733
Private nonfarm employment, 2001	59,829	13,239,616
Private nonfarm employment, percent change 2000-2001	4.2%	2.8%

Nonemployer establishments, 2000	8,597	2,103,178
Manufacturers shipments, 1997 ($1000)	1,514,918	379,612,443
Retail sales, 1997 ($1000)	1,026,737	263,118,346
Retail sales per capita, 1997	$6,777	$8,167
Minority-owned firms, percent of total, 1997	14.6%	28.8%
Women-owned firms, percent of total, 1997	22.0%	27.3%
Housing units authorized by building permits, 2002	1,409	159,573
Federal funds and grants, 2002 ($1000)	1,023,484	206,401,495
Geography	**Yolo County**	**California**
Land area, 2000 (square miles)	1,013	155,959
Persons per square mile, 2000	166.5	217.2
Metropolitan Area	Yolo, CA PMSA	
FIPS Code	113	06

(a) Includes persons reporting only one race.
(b) Hispanics may be of any race, so also are included in applicable race categories.

FN: Footnote on this item for this area in place of data
NA: Not available
D: Suppressed to avoid disclosure of confidential information
X: Not applicable
S: Suppressed; does not meet publication standards
Z: Value greater than zero but less than half unit of measure shown
F: Fewer than 100 firms

Data Quality Statement
What do you think of QuickFacts?

Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, 2000 Census of Population and Housing, 1990 Census of Population and Housing, Small Area Income and Poverty Estimates, County Business Patterns, 1997 Economic Census, Minority- and Women-Owned Business, Building Permits, Consolidated Federal Funds Report, 1997 Census of Governments

Native Americans

The American Indians in the Yolo Area are known as the Hill Patwin or "Win" and the River Patwin. The group of American Indians living in the Capay Valley today refer to themselves as the Rumsey Band of Wintun Indians. The history of the local California Indians has been one of suffering and struggle. They are well known for their Cache Creek Casino, which has enabled them to become self-sufficient and to have a degree of autonomy today.

Bands of Wintun people lived in the Capay Valley along Cache Creek for thousands of years. When the first white men arrived in the area and asked who they were, the Indians responded with "Patwin," meaning "people" in their native language. Since that time the Wintun and related tribes along the valley and Cache Creek were known as "Patwin."

Today on the Rumsey Rancheria the families help run the rancheria and their sovereignty is officially recognized by the federal government. In addition to the well-known Cache Creek Casino, the tribe is involved in other business and agricultural enterprises with the goal of remaining self-sufficient.

Tribal Outreach for Hazard Mitigation

Yolo County OES invited the Rumsey Band of Wintun Indians to participate in the hazard mitigation planning process, along with the County and Cities represented. In March 2004, OES briefly spoke in person with the Assistant Fire Chief and provided him with documentation about the DMA-2000

requirement to develop a plan. He was made aware that the five jurisdictions were joining together in a cooperative effort and the tribe was welcome to participate as well. A subsequent phone call continued that discussion. Additionally, in May 2004, OES made a presentation on the hazard mitigation planning process and how jurisdictions not currently part of the collective effort could participate to a meeting of the Yolo County fire chiefs attended by representatives of the tribe's Rumsey Rancheria Fire Department

Proposed Mitigation of Impact of Casino Expansion Agreement

Yolo County and the Tribe have proposed to enter into an agreement for the purposes of: (1) establishing a mechanism for mitigation of off-Reservation impacts expected to result from the Casino Expansion and Hotel Project in a manner that recognizes the uniqueness of the Capay Valley; (2) providing financial resources to help fund those mitigation measures; and (3) strengthening the government-to government relationship between the County and the Tribe.

Communities and Cities in Yolo County

- Brooks
- Capay
- Clarksburg
- Davis*
- Dunnigan
- Esparto
- Guinda
- Knights Landing
- Madison
- Rumsey
- West Sacramento*
- Winters*
- Woodland (County Seat)*
- Yolo
- Zamora

* Jurisdiction represented in this plan

County Mission

Our mission is to create and sustain a higher quality of life for Yolo County by:

- Promoting Leadership in Agriculture, Education and Industry
- Stimulating Cooperation, Partnerships and Innovation
- Efficiently and Fairly Allocating Public Resources
- Delivering Quality Services
- Using Advanced Technology
- Celebrating Diversity and Heritage
- Modeling Continuous Quality Improvement
- Considering Customers First
- Holding Ourselves Accountable

This mission identifies the duties of the county, allowing for departments to focus on those activities that are necessary to satisfactorily serve the public and policy makers and provide direction and a foundation on which departments can build.

The vision of Yolo County is to provide the most effective, trusted, and respected local government services.

County Core Values

DOING RIGHT BY PEOPLE

We are in the "people" business. Our success is determined by those we serve and is achieved by those of us who work here. In order to earn the trust, confidence and support of those we serve and those who do the work, all are entitled to be treated with respect, dignity, courtesy, enthusiasm and responsiveness. One way we treat each other right is by finding ways to support each other. Another

way is by doing right by ourselves--making sure that we stay physically and mentally fit. Commitment to the highest standards of ethics and integrity is also essential if we are to do right in our relationships with people.

STRIVING ALWAYS TO BE BETTER

Cost-consciousness is what we stand for. We are thrifty with public money and continuously seek to find the most efficient and productive ways to deliver our services. Our organization must have an environment within which creativity and innovation can flourish; where prudent and planned risk-taking is encouraged. We recognize that we, as human beings, can never be perfect--and that means we can always get better. And we understand that we are better only as the people we serve believe we are better.

MAKING DEMOCRACY WORK

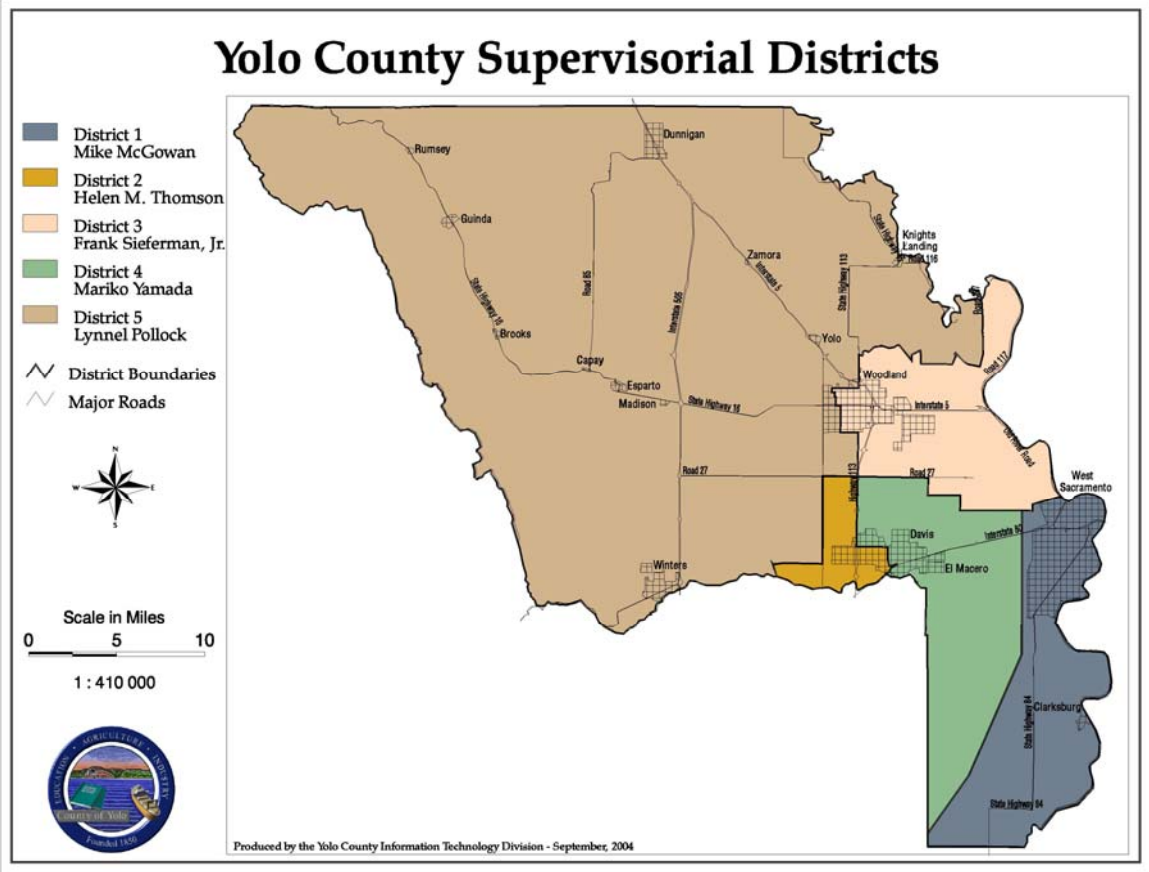
Democratic values must be an integral part of how we function as an institution. The better informed the public is about the county, the more intelligent their judgments about us will be. Thus, all of us have an obligation to be the best source of information about Yolo County as we can be. And beyond that, we must constantly improve our ability to communicate with each other and with the public about what we do, how well we do it and how we are trying to do it better. We welcome public involvement, public scrutiny, cooperative efforts with public and private entities, public- private partnerships and openness in all our communications. We should set the kind of example and exhibit the kind of pride in our work that earns the trust and confidence of all our citizens.

CREATING AND NURTURING DIVERSITY

We value our differences as much as we value what we have in common. Understanding diversity and appreciating differences can help us provide the quality of services expected of us by the public. We seek diverse individuals to join and strengthen our organization and we strive to create a work environment that nurtures and encourages good people to remain a part of our Yolo County team.

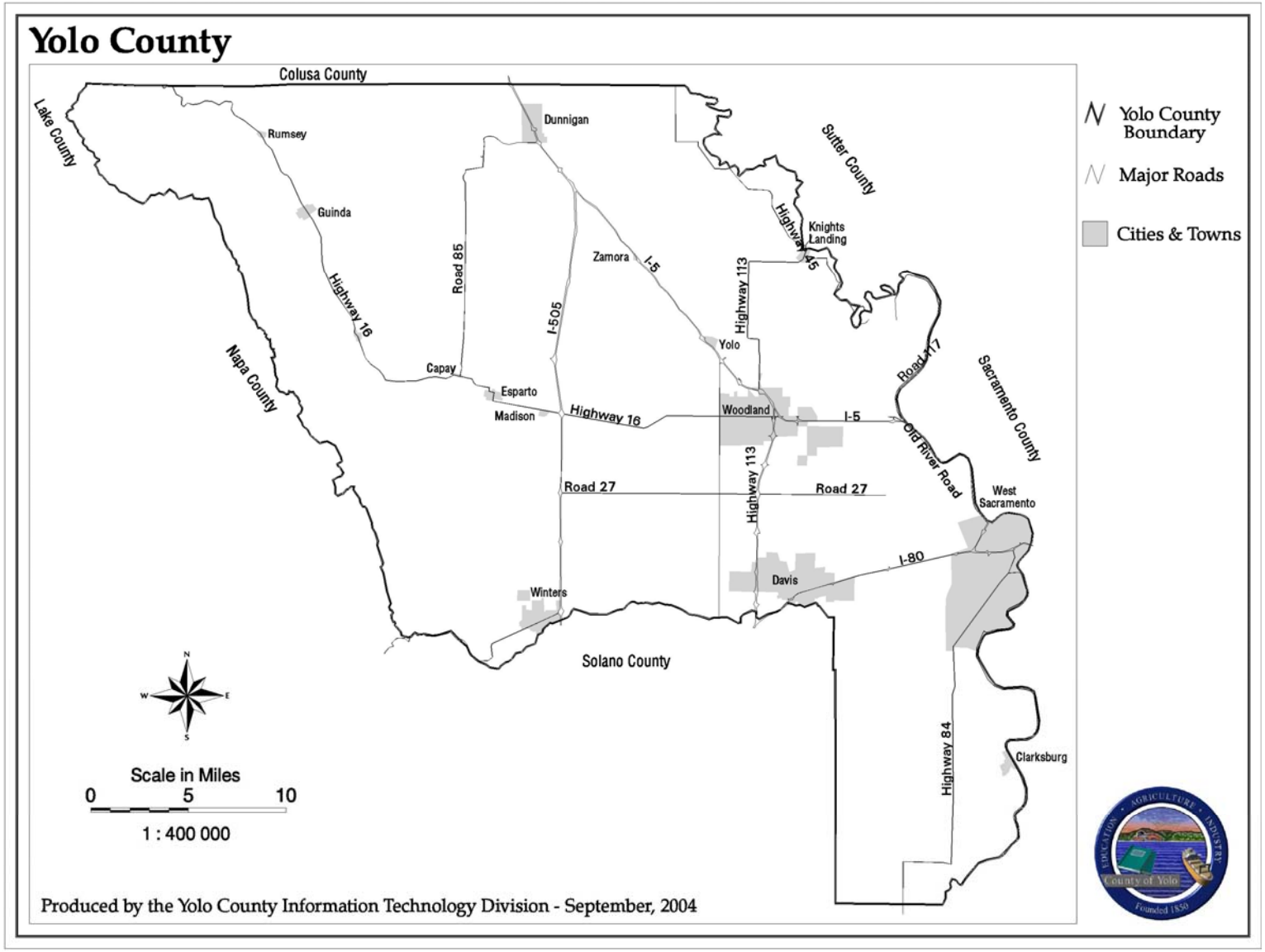
Government & Legislative Body

The Board of Supervisors serves as the legislative body of Yolo County for the planning and provision of services related to public needs and the requirements of state and federal laws. California law provides for five Supervisors to be elected by district. Each Supervisor is elected for a four-year term. As elected representatives of the people of Yolo County, the Board of Supervisors establishes overall county priorities and sets governmental policy.



County Departments

- Agriculture
  - Forms & Handouts
  - Programs & Services
- Alcohol, Drug and Mental Health
- Animal Services (See Sheriff Department)
- Assessor
  - Assessment Information
  - Forms
  - Parcel Numbers
- Auditor-Controller
- Board of Supervisors
  - District 1
  - District 2
  - District 3
  - District 4
  - District 5
  - Agendas
  - Minutes
- Central Services Division
- Clerk-Recorder
- Community Partnership
- Cooperative Extension
- County Administrative Office
- County Counsel
- Courts
- County Library
  - Clarksburg Branch
  - Davis Branch
  - Esparto Branch
  - Knights Landing Branch
  - Arthur F. Turner Branch (W Sac)
  - Winters Branch
  - Yolo Branch
- Child Support Services
- District Attorney
- Economic Development
- Elections (See Clerk-Recorder)
- Employment and Social Services
- Health
  - Environmental Health
  - Indigent Health Programs
  - Public Health Programs
  - Health Reports & Bulletins
- Human Resources
  - Benefits
  - Employment Opportunities
- Information Technology
- Law Library
- Office of Emergency Services (JPA)
- Office of Revenue and Reimbursement
- Planning and Public Works
  - Building Division
  - Engineering Division
  - GIS (Geographic Information System)
  - Parks & Resources Management
  - Planning Division
  - Road Construction / Closures
  - Waste Management Division
- Probation
- Public Defender
- Public Guardian/Administrator
- Sheriff-Coroner
  - Contact Us
- Social Services (See Employment and Social Services)
- Treasurer-Tax Collector


Yolo County
Colusa County
Lake County
Napa County
Sutter County
Sacramento County
Solano County
Rumsey
Guinda
Dunnigan
Zamora
Knights Landing
Yolo
Capay
Esparto
Madison
Woodland
Davis
Winters
West Sacramento
Clarksburg
Highway 16
Road 85
I-505
I-5
Highway 113
Highway 45
Road 17
Old River Road
Road 27
I-80
Highway 84
Yolo County Boundary
Major Roads
Cities & Towns
Scale in Miles
0 5 10
1 : 400 000
Produced by the Yolo County Information Technology Division - September, 2004

Yolo County General Plan (Safety Goals & Objectives)

S 1. Yolo County shall regulate, educate, and cooperate to reduce death and injuries or damage to property and to minimize the economic and social dislocation resulting from fires; geologic hazards; streets, highways, bikeways and pedestrian ways; floods; transportation or industrial accidents; civil disturbances; catastrophic pollution, epidemic; or water disaster; and other public safety hazards.

S 2. Yolo County shall develop an inventory of significant urban, rural, and natural hazards, including geologic hazards, and provide standards for location of uses and for avoidance or mitigation of such hazards.

S 3. Yolo County shall review all development proposals and shall require the design, construction, and operation of all such land uses to meet laws and codes for safety amended.

S 4. Yolo County shall apply a special overlay zone to those areas which will probably be affected by the results of a seismic event such as dam or dike failures or earth slumps or landslides.

S 5. Yolo County shall regulate, educate, and provide guidelines and standards for avoiding and mitigating the effects of flooding.

S 6. Yolo County shall adopt and apply standards and ordinances for control of development relating to potential flooding and local drainage and require mitigation of identified impacts. The County may, at a future time, establish a policy for a Countywide drainage plan, but does not require such a plan at this time.

S 7. Yolo County shall require development of all kinds, in areas of "acceptable low risk flooding," to be floodproof.*

> * Floodproof: Structures and facilities designed and constructed to accept the maximum 100 year flood circumstance without significant hazard to the public, to occupants, or to users, not to sustain significant damage to vital systems which would lead to such hazards.

S 8. Yolo County shall not approve residential development, including farm dwellings, or other structures housing large numbers of overnight residents, in the Yolo By-Pass or other designated floodways.

S 9. Yolo County shall use the Federal Flood Insurance Program maps and standards in regulating and advising on development proposals in flood plains and these maps are a part of this General Plan by reference.

S 10. Yolo County shall regulate building spacing, building densities, building on slopes, and the provision of appropriate fuel breaks as minimum devices to assist in promoting fire safety.

S 11. Yolo County shall develop a plan and standards for evacuation routes, peak load water supplies, minimum road widths, and clearances around structures, and shall require adequate facilities for these things in all development or redevelopment.

S 12. Yolo County shall carry out the requirements of the Yolo County Fire Protection Programs for wildland areas, 1980, as amended.

S 13. Yolo County will coordinate and encourage enhanced fire services with the Yolo County Fire Advisory Board.

S 14. Yolo County shall cooperate with the fire districts, enforce planning, zoning, and building codes and advise and encourage development to enhance fire safety.

S 15. Yolo County shall request review of and comment on significant development proposals, rezoning, specific plans, and General Plan amendments by the respective fire districts and the Yolo County Sheriff.

S. 16. Yolo County shall encourage appropriate consolidations and improvements of fire districts.

S 17. Yolo County shall develop standards for location, construction, and operation of new development and redevelopment to enhance public protection from crime and to avoid generating facilities conducive to crime. Among the arrangements and devices required to achieve this policy are:

- Defensible space design and construction
- Adequate lighting
- Mutual surveillance of public areas
- Detection and alarm systems
- Construction to discourage unauthorized entry
- Fire breaks
- Fire and smoke detection
- Adequate clear spaces and fuel reduction
- Adequate escape routes and facilities
- Adequate public protection services.

S 18. Yolo County shall develop emergency plans for implementation in the event of accident, fire, or flood involving toxic or hazardous materials.

S 19. Yolo County shall cooperate with other agencies in prevention and control of potential oil spills, including coordination with the State Oil Spill Program and this program shall be prescribed for application in local emergency and safety plans, standards, and ordinances.

S 20. Yolo County shall regulate land divisions and land use in the vicinity of the several airports to avoid or mitigate potential safety and nuisance conflicts or hazards between airport and airspace users and nearby persons and land uses as well as the general public.

S 21. Yolo County shall develop, review, and maintain a County Emergency Plan and such Plan shall be a part of the Safety and Seismic Safety Element of this General Plan, as amended, by reference.

S 22. Yolo County shall respond to catastrophic emergencies by:

- Continuing government
- Directing and controlling emergency property
- Saving lives and protecting property
- Repairing and restoring essential public systems and services
- Protecting and managing use of remaining resources
- Coordinating operations with other jurisdictions
- Establishing emergency operating centers and maintaining communications.

S 23. Yolo County shall follow a program designed to enhance long range recovery actions, following any disaster, to return to normal life and rebuild, while avoiding development of long term public problems by application of short term, expedient measures.

S 24. Yolo County shall require environmental assessments and reports to address safety and seismic safety issues and to provide adequate mitigation for existing and potential hazards identified.

S 25. Yolo County shall regulate land use, circulation, and housing functions with appropriate regard for the Safety and Seismic Safety policies of this General Plan. Open Space, Conservation, Airport, and the several Urban Area and Community Plans shall also be utilized to avoid, eliminate, or to mitigate the possible hazards related to the Safety and Seismic Safety issues and policies of this General Plan.

S 26. Yolo County shall implement the universal emergency telephone number, "911," as soon as possible.

S 27. Yolo County shall develop uniform policies and standards of enforcement and seek agreement establishing a joint Delta Boat Patrol.

Major Employers

This list of major employers was developed using the **2002** America's Labor Market Information System (ALMIS) Employer Database from infoUSA and is sorted in alphabetical order by company name. The industry shown is based upon the Standard Industrial Classification.

Employer Name	Location	Industry
County of Yolo	Multiple Locations (Woodland is County Seat)	Public Administration (Government)
Dade Behring Inc	West Sacramento	Medical Instruments & Supplies
Davis Joint Unified School District	Davis	Elementary & Secondary Schools
Fleming Foods	West Sacramento	Groceries & Related Products
Flowmaster	West Sacramento	Motor Vehicles & Equipment
MTS Inc (Tower Records)	West Sacramento	Radio, Television, & Computer Stores
Pacific Coast Producers	Woodland	Preserved Fruits & Vegetables
Raley's Inc	West Sacramento	Grocery Stores
Rite Aid Pharmacy	Woodland	Public Warehousing & Storage
Sacramento River Cats	West Sacramento	Misc. Amusement, Recreation Services
Target	Woodland	Department Stores
University of California, Davis	Davis	Colleges & Universities
US Post Office	West Sacramento	U.S. Postal Service
Woodland Healthcare	Woodland	Hospitals

This list was developed using the America's Labor Market Information System (ALMIS) Employer Database from infoUSA. Users should be aware that in some instances, the company shown here may

have its headquarters in the county, but the employees are actually located throughout the state. In many areas, government agencies are major employers but may not be shown here.

Historic Monthly Labor Force Data (2003-2004)

Civilian Labor Force, Employment, and Unemployment -- Updated 8/11/2004

March 2003 Benchmark; Data are not seasonally adjusted

Notes: 1) The unemployment rate is calculated using un-rounded data.

2) Labor force data for all geographic areas for 1990 to 2004 now reflect the March 2003 annual revision (or benchmark) and Census 2000 population controls at the state level. Therefore, labor force data for periods before January 1990 are not comparable with data for January 1990 and later.

Source: Employment Development Department, Labor Market Information

2004	Labor Force	Employment	Unemploymen	Unemp. Rate
January	100,400	93,800	6,600	6.6%
February	99,900	93,600	6,300	6.3%
March	99,700	93,300	6,400	6.4%
April	99,400	94,400	5,000	5.0%
May	99,500	94,900	4,500	4.6%
June	100,700	96,000	4,600	4.6%
July	100,400	95,700	4,700	4.7%
August				
September				
October				
November				
December				
Annual Average				

2003	Labor Force	Employment	Unemployment	Unemp. Rate
January	96,800	90,200	6,600	6.8%
February	96,900	90,600	6,300	6.5%
March	97,900	92,100	5,800	6.0%
April	98,000	93,000	5,000	5.1%
May	98,600	94,100	4,500	4.6%
June	99,000	94,300	4,700	4.8%
July	98,100	93,100	5,000	5.1%
August	99,600	95,300	4,300	4.3%
September	99,100	95,100	4,000	4.1%
October	99,800	95,100	4,700	4.7%
November	98,800	93,400	5,300	5.4%
December	99,200	93,600	5,500	5.6%
Annual Average	98,500	93,300	5,200	5.2%

Occupations with Greatest Growth, 2001-2008

(Sorted by Numerical Change)
Yolo County
2001-2008

Released December 2003

SOC Code	Occupation	Annual Average Employment		Employment Change		Education/Experience
		2001 (2)	2008	Number	Percent	
53-7062	Laborers & Freight, Stock, & Material Movers, Hand	3,190	3,650	460	14.4	Short-Term OJT (11)
41-2011	Cashiers	2,040	2,470	430	21.1	Short-Term OJT (11)
43-9061	Office Clerks, General	6,680	7,110	430	6.4	Short-Term OJT (11)
25-9041	Teacher Assistants	1,700	2,110	410	24.1	Short-Term OJT (11)
35-3021	Comb Food Prep & Serving Wrkrs, Incl Fast Food	2,110	2,450	340	16.1	Short-Term OJT (11)
15-1031	Computer Software Engineers, Applications	620	930	310	50.0	BA/BS Degree (5)
37-2011	Janitors & Clean, Ex Maids & Housekeep Cleaners	1,140	1,420	280	24.6	Short-Term OJT (11)
15-1032	Computer Software Engineers, Systems Software	490	750	260	53.1	BA/BS Degree (5)
47-2031	Carpenters	690	930	240	34.8	Long-Term OJT (9)
53-3032	Truck Drivers, Heavy & Tractor-Trailer	1,720	1,940	220	12.8	Moderate-Term OJT (10)
15-1041	Computer Support Specialists	330	520	190	57.6	Associate Degree (6)
37-2012	Maids & Housekeeping Cleaners	540	730	190	35.2	Short-Term OJT (11)
41-2031	Retail Salespersons	1,190	1,370	180	15.1	Short-Term OJT (11)
43-4051	Customer Service Representatives	710	880	170	23.9	Moderate-Term OJT (10)
47-2061	Construction Laborers	760	930	170	22.4	Moderate-Term OJT (10)
11-1021	General & Operations Managers	1,170	1,330	160	13.7	BA/BS + Experience (4)
25-1041	Agricultural Sciences Teachers, Postsecondary	490	640	150	30.6	Doctoral Degree (2)
33-9032	Security Guards	450	600	150	33.3	Short-Term OJT (11)
43-6014	Secretaries, Except Legal, Medical, & Executive	1,800	1,950	150	8.3	Moderate-Term OJT (10)
37-3011	Landscaping & Groundskeeping Workers	600	740	140	23.3	Short-Term OJT (11)
39-9011	Child Care Workers	580	720	140	24.1	Short-Term OJT (11)
53-3033	Truck Drivers, Light or Delivery Services	1,460	1,600	140	9.6	Short-Term OJT (11)
53-7064	Packers & Packagers, Hand	1,150	1,290	140	12.2	Short-Term OJT (11)
25-2021	Elementary School Teachers, Except Special Ed	910	1,030	120	13.2	BA/BS Degree (5)
35-3031	Waiters & Waitresses	670	790	120	17.9	Short-Term OJT (11)
15-1051	Computer Systems Analysts	350	460	110	31.4	BA/BS Degree (5)
15-1071	Network & Computer Systems Administrators	240	350	110	45.8	BA/BS Degree (5)

SOC Code	Occupation	Annual Average Employment		Employment Change		Education/Experience
		2001 (2)	2008	Number	Percent	
25-1191	Graduate Teaching Assistants	370	480	110	29.7	BA/BS Degree (5)
39-3031	Ushers, Lobby Attendants, & Ticket Takers	260	370	110	42.3	Short-Term OJT (11)
33-3051	Police & Sheriff's Patrol Officers	310	410	100	32.3	Long-Term OJT (9)
15-1061	Database Administrators	150	240	90	60.0	BA/BS Degree (5)
29-1111	Registered Nurses	600	690	90	15.0	Associate Degree (6)
35-2021	Food Preparation Workers	440	530	90	20.5	Short-Term OJT (11)
41-1011	First-Line Sups/Mgrs of Retail Sales Workers	520	610	90	17.3	Work Experience (8)
43-4081	Hotel, Motel, & Resort Desk Clerks	180	270	90	50.0	Short-Term OJT (11)
43-6011	Executive Secretaries & Administrative Assistants	880	970	90	10.2	Moderate-Term OJT (10)
47-2111	Electricians	480	570	90	18.8	Long-Term OJT (9)
51-2092	Team Assemblers	790	880	90	11.4	Moderate-Term OJT (10)
25-1032	Engineering Teachers, Postsecondary	250	330	80	32.0	Doctoral Degree (2)
25-1071	Health Specialties Teachers, Postsecondary	250	330	80	32.0	Doctoral Degree (2)
31-1012	Nursing Aides, Orderlies, & Attendants	510	590	80	15.7	Short-Term OJT (11)
39-3011	Gaming Dealers	240	320	80	33.3	Post-Sec. VocEd (7)
35-1012	First-Line Sups/Mgrs of Food Prep & Serving Wrkrs	370	440	70	18.9	Work Experience (8)
35-3022	Counter Attends, Cafe, Food Concess, & Coffee Shop	310	380	70	22.6	Short-Term OJT (11)
51-4121	Welders, Cutters, Solderers, & Brazers	270	340	70	25.9	Post-Sec. VocEd (7)
53-7051	Industrial Truck & Tractor Operators	620	690	70	11.3	Short-Term OJT (11)
13-1111	Management Analysts	180	240	60	33.3	BA/BS + Experience (4)
25-1081	Education Teachers, Postsecondary	180	240	60	33.3	Doctoral Degree (2)
35-2014	Cooks, Restaurant	270	330	60	22.2	Long-Term OJT (9)
43-3031	Bookkeeping, Accounting, & Auditing Clerks	1,350	1,410	60	4.4	Moderate-Term OJT (10)

(1) Excludes "All Other" occupational groups.
(2) March 2001 Benchmark

Source: California EDD

Agriculture

Item	Yolo County
Farms Number	1,060
Land In Farms Acres	550,407
Average Size Of Farm Acres	519
Median Size Of Farm Acres	70
Estimated Market Value Of Land And Buildings 1:	
Average Per Farm Dollars	1,531,470
Average Per Acre Dollars	3,645
Estimated Market Value Of All Machinery And Equipment 1:	
Average Per Farm Dollars	135,930
Farms By Size:	
1 To 9 Acres	178
10 To 49 Acres	321
50 To 179 Acres	233
180 To 499 Acres	128
500 To 999 Acres	76
1,000 Acres Or More	124
Total Cropland Farms	890
Acres	370,844
Harvested Cropland Farms	758
Acres	315,336
Irrigated Land Farms	739
Acres	298,670
Market Value Of Agricultural Products Sold (See Text) $1,000	315,462
Average Per Farm Dollars	297,605
Crops $1,000	302,794
Livestock, Poultry, And Their Products $1,000	12,667
Farms By Value Of Sales:	
Less Than $2,500	290
$2,500 To $4,999	58
$5,000 To $9,999	108
$10,000 To $24,999	128
$25,000 To $49,999	90
$50,000 To $99,999	96
$100,000 Or More	290
Government Payments Farms	263
$1,000	7,117
Total Income From Farm-Related Sources,	
Gross Before Taxes And Expenses (See Text) Farms	299
$1,000	11,135
Total Farm Production Expenses 1 $1,000	287,064
Average Per Farm Dollars	270,560
Net Cash Farm Income Of Operation (See Text) 1 Farms	1,061
$1,000	51,145
Average Per Farm Dollars	48,204
Principal Operator By Primary Occupation:	
Farming Number	689
Other Number	371
Principal Operator By Days Worked Off Farm:	

Item	Yolo County
Any ..... Number	517
200 Days Or More Number	354
Livestock And Poultry:	
Cattle And Calves Inventory Farms	148
Number	16,909
Beef Cows Farms	115
Number	6,773
Milk Cows Farms	13
Number	2,012
Cattle And Calves Sold Farms	117
Number	8,525
Hogs And Pigs Inventory Farms	27
Number	963
Hogs And Pigs Sold Farms	19
Number	2,146
Sheep And Lambs Inventory Farms	71
Number	17,113
Layers 20 Weeks Old And Older Inventory Farms	46
Number	714
Broilers And Other Meat-Type Chickens Sold Farms	5
Number	65
Selected Crops Harvested:	
Corn For Grain Farms	57
Acres	19,628
Bushels	3,535,209
Corn For Silage Or Greenchop Farms	7
Acres	1,115
Tons	19,645
Wheat For Grain, All Farms	112
Acres	35,413
Bushels	2,838,406
Winter Wheat For Grain Farms	106
Acres	34,720
Bushels	2,779,713
Spring Wheat For Grain Farms	7
Acres	693
Bushels	58,693
Selected Crops Harvested - Con.	
Wheat For Grain, All - Con.	
Durum Wheat For Grain Farms	-
Acres	-
Bushels	-
Oats For Grain Farms	7
Acres	324
Bushels	26,071
Barley For Grain Farms	14
Acres	4,409
Bushels	324,488
Sorghum For Grain Farms	7
Acres	1,178
Bushels	107,649
Sorghum For Silage Or Greenchop Farms	1

Item	Yolo County
Acres	(D)
Tons	(D)
Dry Edible Beans, Excluding Limas Farms	8
Acres	2,037
Cwt	42,465
Cotton, All Farms	6
Acres	3,996
Bales	8,839
Upland Cotton Farms	6
Acres	3,996
Bales	8,839
Pima Cotton Farms	-
Acres	-
Bales	-
Potatoes Farms	7
Acres	27
Cwt	(D)
Sweet Potatoes Farms	1
Acres	(D)
Cwt	(D)
Forage - Land Used For All Hay And All Haylage,	
Grass Silage, And Greenchop (See Text) Farms	208
Acres	83,691
Tons, Dry	470,464
Rice Farms	67
Acres	31,875
Cwt	2,425,313
Sunflower Seed, All Farms	33
Acres	6,332
Pounds	7,537,305
Sugarbeets For Sugar Farms	-
Acres	-
Tons	-
Peanuts For Nuts Farms	-
Acres	-
Pounds	-
Vegetables Harvested For Sale (See Text) Farms	132
Acres	54,700
Land In Orchards ..... Farms	434
Acres	42,397

Special Districts

The following is a list of special districts in Yolo County

- Clarksburg Lighting District
- Dunnigan Lighting District
- Dunnigal Water District
- Dunnigan CSA
- Esparto Community Service District
- El Macero CSA
- Madison Service District
- North Davis Meadows CSA
- Rollong Acres PRD
- Snowball CSA
- Willowbank CSA
- Yolo County Flood Control & Water Conservation Dsitrict
- Yolo-Zamora Water District
- Reclamation Districts 108, 150, 1600, 2035, 2068, 2076, 307, 537, 730, 752, 765, 785, 787, 827, 999
- Yolo County Fire Districts (see map)
- Yolo County School Districts (see map)
- Yolo County Cemetery Districts
- Yolo County Supervisorial Districts (see map)

University of California at Davis

Colleges/schools/divisions:

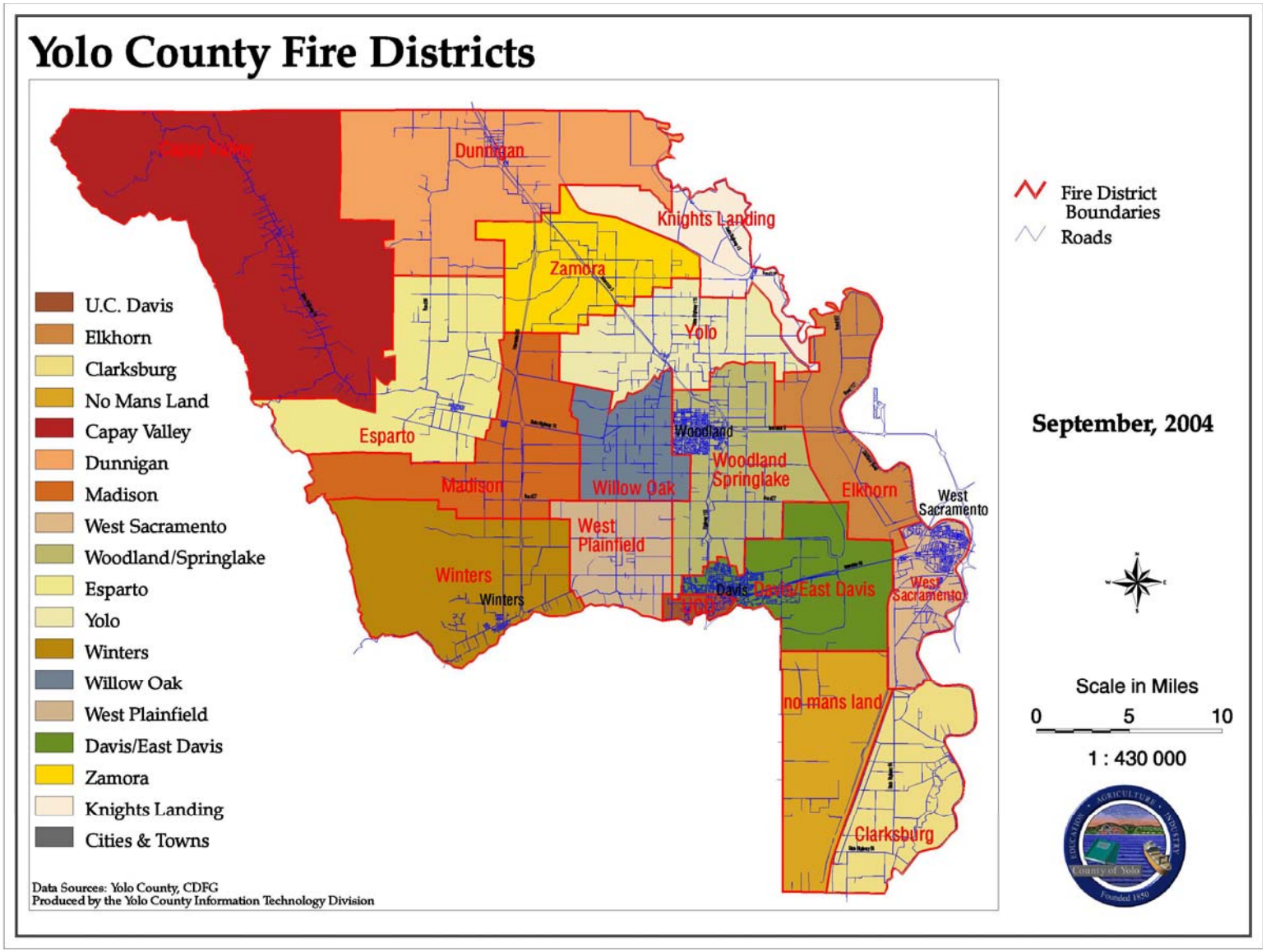
3 colleges (Agricultural and Environmental Sciences, Engineering, Letters and Science).

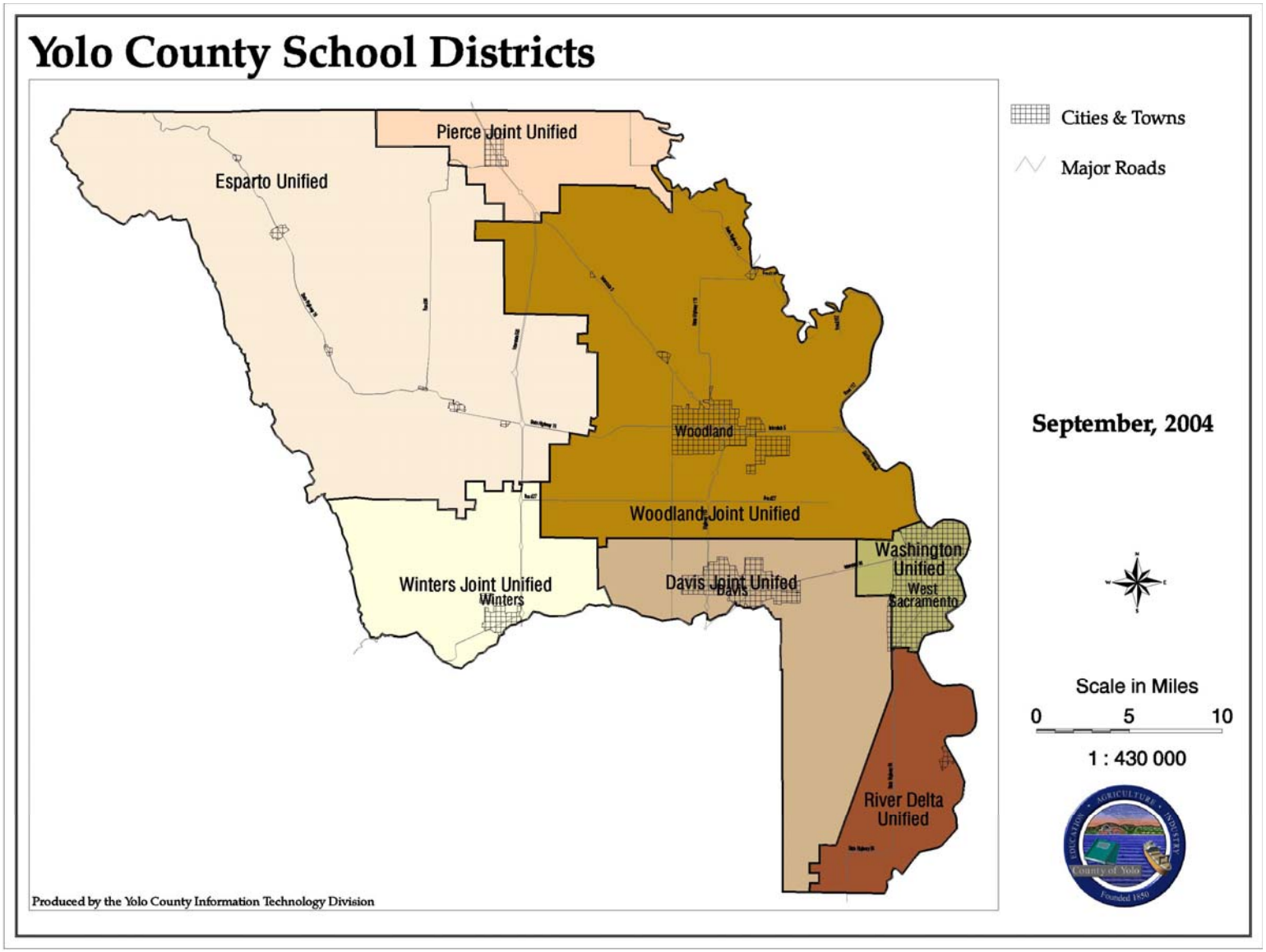
5 professional schools (Education, Law, Management, Medicine, Veterinary Medicine).

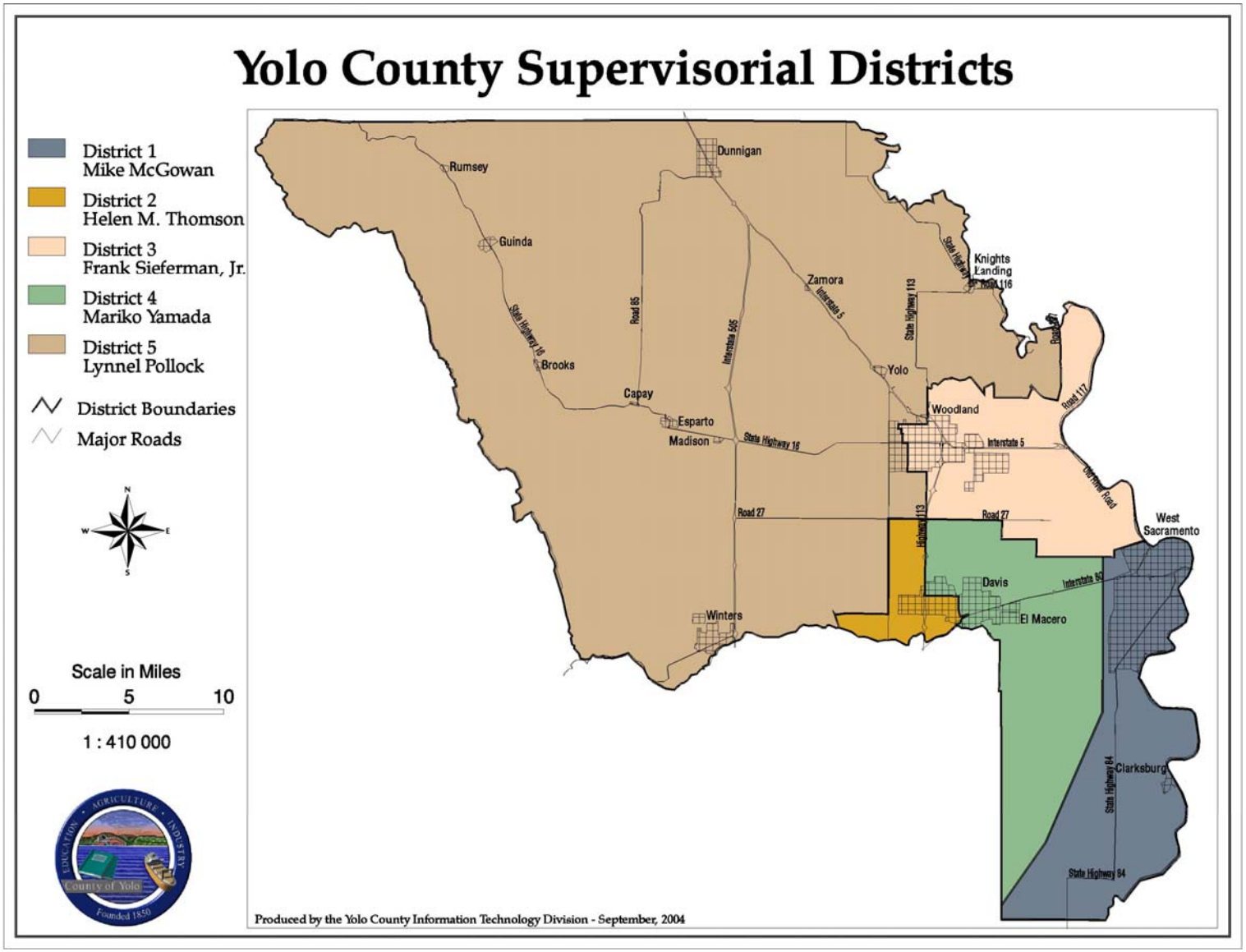
1 division (Biological Sciences).

Student enrollment: 30,229 (fall 2003)

Campus acreage: 5,300 acres (largest UC campus) This Campus houses many programs critical to Emergency Management and hazard mitigation. The following is one example of these programs.


Yolo County Fire Districts
Dunnigan
Knights Landing
Zamora
Yolo
Esparto
Woodland
Woodland Springlake
Madison
Willow Oak
Elkhorn
West Sacramento
West Plainfield
Winters
Winters
Davis
Davis/East Davis
West Sacramento
no mans land
Clarksburg
U.C. Davis
Elkhorn
Clarksburg
No Mans Land
Capay Valley
Dunnigan
Madison
West Sacramento
Woodland/Springlake
Esparto
Yolo
Winters
Willow Oak
West Plainfield
Davis/East Davis
Zamora
Knights Landing
Cities & Towns
Fire District Boundaries
Roads
September, 2004
Scale in Miles
0 5 10
1 : 430 000
Data Sources: Yolo County, CDFG
Produced by the Yolo County Information Technology Division


Yolo County School Districts
Pierce Joint Unified
Esparto Unified
Woodland
Woodland Joint Unified
Winters Joint Unified
Winters
Davis Joint Unifed
Davis
Washington Unified
West Sacramento
River Delta Unified
Cities & Towns
Major Roads
September, 2004
Scale in Miles
0 5 10
1 : 430 000
Produced by the Yolo County Information Technology Division


Yolo County Supervisorial Districts
District 1
Mike McGowan
District 2
Helen M. Thomson
District 3
Frank Sieferman, Jr.
District 4
Mariko Yamada
District 5
Lynnel Pollock
District Boundaries
Major Roads
Scale in Miles
0
5
10
1 : 410 000
Rumsey
Dunnigan
Guinda
Zamora
Knights Landing
Brooks
Yolo
Capay
Esparto
Madison
Woodland
West Sacramento
Davis
El Macero
Winters
Clarksburg
State Highway 16
Road 85
Interstate 505
Interstate 5
State Highway 113
State Highway 116
Road 117
Road 27
Interstate 80
State Highway 84
Produced by the Yolo County Information Technology Division - September, 2004

County Asset Inventory

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
		YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT						
	County FINE ARTS	county wide	Woodland	CA	0	$0	$0	$0	$0	$200,000	$200,000
		0	0	None	0						
232	Public Works Garage	Alpha & Woodland	Woodland	CA	95695	$224,942	$12,295	$0	$0	$0	$237,237
		1950	1	Wood Frame	2,400						
233	Shop & Warehouse	Alpha & Woodland Ave	Woodland	CA	95695	$300,000	$16,136	$0	$0	$0	$316,136
		1950	1	Wood Frame	2,400						
234	Office	Alpha & Woodland Ave	Woodland	CA	95695	$36,538	$2,870	$0	$0	$0	$39,408
		1950	1	Joisted Masonry	240						
235	Esparto Convenience Center	Road 87/19A	Esparto	CA		$16,560	$1,147	$0	$0	$0	$17,707
		1981	1	Wood Frame	108						
236	Turner Library	1212 Merkeley Ave.	West Sacramen	CA	95691	$989,909	$2,004,850	$0	$0	$0	$2,994,759
		1974	1	Wood Frame	8,584						
237	Communication Shed	3rd & "B" Streets	West Sacramen	CA		$21,127	$104,540	$0	$0	$0	$125,667
		1970	1	Steel Frame	320						
238	Library	201 First Street	Winters	CA	95694	$605,213	$872,488	$0	$0	$0	$1,477,701
		1953	1	Joisted Masonry	6,600						
239	Probation/Storage	218 West Beamer	Woodland	CA	95695	$927,476	$65,774	$0	$0	$0	$993,250
		1965	2	Joisted Masonry	8,140						
240	Probation Annex	218 West Beamer	Woodland	CA	95695	$189,897	$13,475	$0	$0	$0	$203,372
		1976	1	Wood Frame	1,248						
241	Alcohol/Drug/Mental Health	213 West Beamer	Woodland	CA	95695	$411,963	$49,763	$0	$0	$0	$461,726
		1948	2	Wood Frame	4,596						

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
242	Alcohol/Drug/Mental Health	201 West Beamer	Woodland	CA	95695	1948	1	Joisted Masonry	1,736	$264,142	$18,988	$0	$0	$0	$283,130
243	Juvenile Hall/Court	238 West Beamer	Woodland	CA	95695	1976	1	Masonry - NonCombus	20,238	$3,724,437	$235,115	$0	$0	$0	$3,959,552
244	Old Branch Jail	"C" Street	Woodland	CA	95695	1948	1	Steel Frame	8,640	$436,861	$37,023	$0	$0	$0	$473,884
247	Garage/Storage	"C" Street	Woodland	CA	95695	1977	1	Steel Frame	8,640	$283,066	$38,229	$0	$0	$0	$321,295
248	Agriculture Office	70 Cottonwood	Woodland	CA	95695	1955	1	Joisted Masonry	7,506	$816,231	$81,965	$0	$0	$0	$898,196
249	Agriculture Shop	70 Cottonwood	Woodland	CA	95695	1955	1	Joisted Masonry	6,000	$343,541	$91,436	$0	$0	$0	$434,977
250	Agriculture Storage	Imperial St at Buckeye	Woodland	CA	95695	1970	1	Steel Frame	4,880	$321,984	$409,776	$0	$0	$0	$731,760
251	PUBLIC WORKS/Planning	292 West Beamer	Woodland	CA	95695	1969	1	Joisted Masonry	11,160	$946,624	$125,212	$0	$0	$0	$1,071,836
252	PW-Maintenance Shop	292 West Beamer	Woodland	CA	95695	1969	1	Joisted Masonry	13,284	$1,206,263	$143,178	$0	$0	$0	$1,349,441
253	PW-Storage Shed	292 West Beamer	Woodland	CA	95695	1975	1	Steel Frame	960	$82,871	$6,670	$0	$0	$0	$89,541
254	County Services Center-Woodland	170 West Beamer	Woodland	CA	95695	1944	1	Masonry - NonCombus	55,285	$9,957,509	$532,001	$0	$0	$0	$10,489,510
255	Maintenance Building	170 West Beamer	Woodland	CA	95695	1962	1	Steel Frame	1,200	$113,304	$0	$0	$0	$0	$113,304

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
256	Caretaker's House - Office	512 Gibson	Woodland	CA	95695	1920	2	Wood Frame	1,232	$158,576	$23,666	$0	$0	$0	$182,242
257	Gibson Museum	512 Gibson	Woodland	CA	95695	1870	2	Joisted Masonry	3,617	$751,359	$537,854	$0	$0	$0	$1,289,213
258	Root Cellar/Dairy	512 Gibson	Woodland	CA	95695	1930	1	Wood Frame	210	$27,170	$2,151	$0	$0	$0	$29,321
259	Exhibit Building	512 Gibson	Woodland	CA	95695	1920	1	Wood Frame	548	$70,034	$3,765	$0	$0	$0	$73,799
260	Garage/Workshop	512 Gibson	Woodland	CA	95695	1950	1	Wood Frame	829	$106,134	$16,136	$0	$0	$0	$122,270
261	Sheltered Woodshop/Office	Sixth & Cross	Woodland	CA	95695	1948	1	Steel Frame	6,054	$571,711	$0	$0	$0	$0	$571,711
262	Shed/Office	Sixth & Cross	Woodland	CA	95695	1923	1	Wood Frame	3,588	$448,500	$0	$0	$0	$0	$448,500
263	Animal Shelter	Rd 25 & Rd 102	Woodland	CA	95695	1970	1	Joisted Masonry	7,776	$748,333	$136,459	$0	$0	$0	$884,792
264	Communication Center	35 N. Cottonwood	Woodland	CA	95695	1984	1	Reinforced Concrete	10,006	$1,285,498	$4,798,929	$0	$0	$0	$6,084,427
265	Communication Center	35 N. Cottonwood	Woodland	CA	95695	1984	1	Joisted Masonry	896	$170,687	$0	$0	$0	$0	$170,687
266	Building/Grounds Warehouse	Fifth & Oak St.	Woodland	CA	95695	1923	1	Wood Frame	5,040	$181,091	$53,786	$0	$0	$0	$234,877
267	Parks shop	Fifth & Oak St.	Woodland	CA	95695	1948	1	Wood Frame	3,150	$110,630	$21,731	$0	$0	$0	$132,361

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
268	Building Department Warehouse	Fifth & Oak St.	Woodland	CA	95695	1948	1	Steel Frame	1,060	$99,672	$10,758	$0	$0	$0	$110,430
269	Yolo County Courthouse	725 Court ST.	Woodland	CA	95695	1925	3	Reinforced Concrete	48,792	$10,546,868	$329,306	$0	$0	$0	$10,876,174
270	Erwin Meier Administration Bldg.	625 Court St.	Woodland	CA	95695	1984	3	Masonry - NonCombus	70,620	$8,879,356	$2,463,008	$0	$0	$0	$11,342,364
271	PD/Court/Sheriff	814 North St.	Woodland	CA	95695	1972	1	Reinforced Concrete	26,472	$5,841,114	$301,575	$0	$0	$0	$6,142,689
272	Grand Jury Modular Unit	814 North St.	Woodland	CA	95695	1994	1	Steel Frame	720	$47,035	$10,454	$0	$0	$0	$57,489
273	Yolo Adult Day Health Center	20 N. Cottonwood	Woodland	CA	95695	1984	1	Wood Frame	3,716	$568,909	$39,297	$0	$0	$0	$608,206
274	Library	37750 Sacramento St.	Yolo	CA	95697	1920	1	Wood Frame	1,098	$161,882	$174,552	$0	$0	$0	$336,434
276	Library	315 E. 14th	Davis	CA	95616	1968	1	Joisted Masonry	33,195	$5,303,007	$5,006,173	$0	$0	$0	$10,309,180
277	Library	42351 Third St.	Knights Landing	CA	95645	1965	1	Steel Frame	2,296	$338,160	$307,639	$0	$0	$0	$645,799
278	Town Hall	29041 Main Street	Madison	CA	0	1920	1	Wood Frame	3,780	$426,097	$0	$0	$0	$0	$426,097
279	Cache Creek Park Mobile Home	1475 Hwy. 16	Rumsey	CA	95606	1984	1	Metal	1,152	$99,049	$0	$0	$0	$0	$99,049
280	Solar Information Structure	1475 Hwy 16	Rumsey	CA	0	1980	1	Steel Frame	357	$23,387	$15,881	$0	$0	$0	$39,268

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
281	Barn	1475 Hwy. 16	Rumsey	CA	0	1940	1	Wood Frame	200	$25,098	$0	$0	$0	$0	$25,098
282	Restrooms & Picnic Area	1475 Hwy. 16	Rumsey	CA	0	1976	1	Steel Frame	325	$21,476	$0	$15,743	$0	$0	$37,219
283	Barn #1	1475 Hwy. 16	Rumsey	CA	0	1950	1	Wood Frame	1,968	$246,196	$0	$0	$0	$0	$246,196
284	Shed-Prefab	1475 Hwy. 16	Rumsey	CA	0	1979	1	Wood Frame	170	$21,270	$0	$0	$0	$0	$21,270
285	Generator Building	1475 Hwy. 16	Rumsey	CA	0	1977	1	Reinforced Concrete	360	$54,196	$73,178	$0	$0	$0	$127,374
286	Cache Creek Water Treatment Plant	1475 Hwy. 16	Rumsey	CA	0	1987	1	Metal	160	$13,826	$62,724	$83,959	$0	$0	$160,509
287	Cache Creek Upper Site Restroom	1001 Hwy. 16	Rumsey	CA	0	1980	1	Steel Frame	500	$33,008	$10,454	$0	$0	$0	$43,462
288	Cache Creek Lower Site Restroom	1899 Hwy. 16	Rumsey	CA	0	1980	1	Steel Frame	500	$33,008	$10,454	$0	$0	$0	$43,462
289	County Landfill	CR 104 & 28H	Woodland	CA	95776	1975	1	Steel Frame	2,220	$147,295	$28,602	$0	$0	$0	$175,897
290	Scale House	CR 104 & 28H	Woodland	CA	95776	1986	1	Wood Frame	231	$29,329	$125,627	$0	$0	$0	$154,956
291	District Attorney Building	301 Second St.	Woodland	CA	95695	1999	3	Wood Frame	20,660	$3,215,226	$261,071	$0	$0	$0	$3,476,297
292	Public/Environment Health	10 Cottonwood	Woodland	CA	95695	1959	1	Joisted Masonry	11,976	$1,469,635	$246,217	$0	$0	$0	$1,715,852

CSAC #	LOCATION NAME	ADDRESS	CITY	ST	ZIP	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
		YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT						
293	Building/Grounds	101 Imperial	Woodland	CA	95695	$492,919	$80,677	$0	$0	$0	$573,596
		1982	1	Steel Frame	7,500						
296	Davis Office Building	600 "A" Street	Davis	CA	95616	$1,835,759	$91,436	$0	$0	$0	$1,927,195
		1989	1	Wood Frame	12,792						
297	DA/Family Support	101 W. Court #200	Woodland	CA	95695	$0	$408,178	$0	$0	$0	$408,178
			2	None	0						
298	Community Partnership	120 W. Main St.	Woodland	CA	95695	$4,699,800	$495,303	$0	$0	$0	$5,195,103
		0	1	Wood Frame	31,332						
300	Library/Archives	226 Buckeye St.	Woodland	CA	95695	$1,373,165	$809,106	$0	$0	$0	$2,182,271
		1994	1	Steel Frame	12,336						
301	Library, Clarksburg Branch	Netherlands Rd.	Clarksburg	CA		$0	$813,920	$0	$0	$0	$813,920
		0	1	Wood Frame	0						
302	Monroe Detention Center	41797 Gibson Rd.	Woodland	CA	95776	$18,818,675	$2,826,750	$0	$0	$0	$21,645,425
		1988	1	Reinforced Concrete	94,450						
303	Leinberger Center	41797 Gibson Rd.	Woodland	CA	95776	$594,725	$836,313	$0	$0	$0	$1,431,038
		1991	1	Masonry - NonCombus	4,800						
303	Leinberger Center	41797 Gibson Rd.	Woodland	CA	95776	$2,500,252	$195,349	$0	$0	$0	$2,695,601
		1991	1	Wood Frame	15,500						
304	Sheriff Administration Office	41797 Gibson Rd.	Woodland	CA	95776	$2,329,000	$332,331	$0	$0	$0	$2,661,331
		1997	1	Masonry - NonCombus	14,200						
305	Morgue	41797 Gibson Rd.	Woodland	CA	95776	$619,191	$0	$0	$0	$0	$619,191
		1997	1	Masonry - NonCombus	2,760						
306	Sheriff- Cameron Training Facility	41793 Gibson Rd.	Woodland	CA	95776	$919,660	$125,447	$0	$0	$0	$1,045,107
		1997	1	Steel Frame	8,950						

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
307	Traffic Court	601 Court St.	Woodland	CA	95695	0	1	Wood Frame	0	$0	$270,900	$0	$0	$0	$270,900
308	Public Health	825 East St.	Woodland	CA	95776	0	1	Wood Frame	0	$0	$158,097	$0	$0	$0	$158,097
309	Public Guardian	400 Court St.	Woodland	CA	95695	0	1	Wood Frame	0	$0	$57,646	$0	$0	$0	$57,646
310	Social Services	521 Community Lane	Woodland	CA	95695	0	0	None	0	$0	$323	$0	$0	$0	$323
311	Airport - Hanger Building	CR95/CR29	Woodland	CA	0	1988	1	Reinforced Concrete	8,415	$1,283,203	$14,427	$152,019	$0	$0	$1,449,649
312	Airport - Electrical Control & Storage Building	CR95/CR29	Woodland	CA	0	1985	1	Reinforced Concrete	128	$19,278	$0	$0	$0	$0	$19,278
313	Airport - Well Pumphouse	CR95/CR29	Woodland	CA	0	1985	1	Reinforced Concrete	81	$12,199	$0	$0	$0	$0	$12,199
314	Airport - Restroom	CR95/CR29	Woodland	CA	0	1985	1	Reinforced Concrete	306	$46,086	$0	$0	$0	$0	$46,086
315	Manager's Office	CR95/CR29	Woodland	CA	0	1992	1	Wood Frame	112	$14,068	$0	$0	$0	$0	$14,068
316	Veterans Service	430 Lincoln ST.	Woodland	CA	95695	0	0	None	0	$0	$11,215	$0	$0	$0	$11,215
317	County Services Center	500-B Jefferson Blvd.	West Sacramen	CA	95691	1995	1	Masonry - NonCombus	29,880	$4,578,800	$363,262	$0	$0	$0	$4,942,062
318	County Services Center	500-A Jefferson Blvd.	West Sacramen	CA	95691	1995	1	Masonry - NonCombus	27,680	$3,589,605	$301,170	$0	$0	$0	$3,890,775

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
		YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT						
319	Elkhorn Park - Restrooms	18989 Old River Rd.	Elkhorn	CA	0	$33,284	$0	$0	$0	$0	$33,284
		1980	1	Steel Frame	500						
321	Animal Barn	Gibson Rd./CR 102	Woodland	CA	95776	$73,440	$0	$0	$0	$0	$73,440
		1998	1	Metal	864						
323	Camp Haswell	Hwy 16	Rumsey	CA	0	$67,583	$0	$0	$0	$0	$67,583
		1930	1	Joisted Masonry	600						
324	Vehicles		Woodland	CA	0	$0	$0	$0	$7,674,399	$0	$7,674,399
		0	0	None	0						
324	Contractor's Equipment Vehicles		Woodland	CA	0	$0	$0	$0	$2,285,703	$0	$2,285,703
		0	0	None	0						
485	Children and Families Commission	227 Elm Street	Woodland	CA	95695	$0	$20,866	$0	$0	$0	$20,866
		0	0	None	0						
486	Children and Families Commission	403 Court Street	Woodland	CA	95695	$0	$20,866	$0	$0	$0	$20,866
		0	1	None	0						
489	Employment & Social Services Center	25 N Cottonwood St.	Woodland	CA	95695	$9,569,256	$1,032,875	$0	$0	$20,000	$10,622,131
		2001	1	Concrete	63,000						
491	Esparto Branch Library	17065 Yolo Ave.	Esparto	CA	95627	$830,223	$583,953	$0	$0	$6,500	$1,420,676
		2000	1	Wood Frame	5,590						
503	New Library Site	1271 W. Capitol	West Sacramen	CA	0	$0	$0	$600,000	$0	$0	$600,000
		0	0	None	0						
					Totals	$118,794,451	$29,784,788	$851,721	$9,960,102	$226,500	**$159,617,562**

Yolo County Critical Assets

The following assets have been designated as critical to support the mission of Yolo County in an emergency (see preceding Inventory of Assets for specific information on each listed facility).

CSAC#	Location	Address	City
237	Communications Shed	3rd & B Streets	West Sacramento
239	Probation/Storage	218 West Beamer	Woodland
240	Probation Annex	218 West Beamer	Woodland
251	Public Works/Planning	292 West Beamer	Woodland
264	Communication Center	35 N. Cottonwood	Woodland
265	Communication Center	35 N. Cottonwood	Woodland
269	Yolo County Courthouse	725 Court Street	Woodland
270	Erwin Meler Administration Building	625 Court Street	Woodland
286	Cache Creek Water Treatment Plant	1475 Hwy 16	Rumsey
289	County Landfill	CR 104 & 28H	Woodland
292	Public/Environmental Health	10 Cottonwood	Woodland
302	Monroe Detention Center	41797 Gibson Rd	Woodland
303	Leinberg Center	41797 Gibson Rd	Woodland
304	Sheriff Administration Office	41797 Gibson Rd	Woodland
305	Morgue	41797 Gibson Rd	Woodland
311	Airport – Hanger Building	CR95/CR29	Woodland
312	Airport Electrical Control & Storage Building	CR95/CR29	Woodland

Hospitals in Yolo County

These hospital facilities, even though privately owned and operated, have been determined to be critical to the County's ability to fulfill the requirements of its mission during an emergency:

There are two hospitals serving the Yolo Operational Area they are Sutter in the City of Davis and Woodland Manorial. The level 1 trauma center for the area is U. C. Davis Medical Center in Sacramento.

Sutter Davis Hospital
2000 Sutter Place
Davis, California, 95616
(530) 756-6440
Sutter Davis Hospital is a technologically advanced acute care hospital with a strong offering of outpatient services and community outreach programs. The 48-bed hospital and its programs provide care and support to the residents of Davis, Dixon, Winters, Woodland, West Sacramento, Vacaville and rural communities throughout Yolo and Eastern Solano Counties

Woodland Memorial Hospital
1325 Cottonwood Street
Woodland, CA 95695
(530) 662-3961
As the largest hospital in Yolo County, Woodland Memorial Hospital provides a full range of surgical and acute care medical services for both inpatient and outpatient visits. The hospital is a 120 bed, acute care, non-profit facility with an outstanding mix of state-of-the-art equipment and community health and wellness programs. Additionally, the hospital is recognized as the most comprehensive provider of women's and children's medical services in the county, equipped to handle high-risk pregnancies and high-risk infants, as well as the needs of children.

UC Davis Medical Center
2315 Stockton Blvd.
Sacramento, CA 95817
(916) 734-2011

UC Davis Medical Center is one of five University of California teaching hospitals. As the primary clinical education site for the UC Davis School of Medicine, and the only area provider of many medical services, the medical center is an integral part of the health and well-being of Northern Californians.

UC Davis Medical Center is located on 140 acres in central Sacramento, three miles from the state Capitol and 20 miles from the main UC Davis campus. The university established the medical center in 1973 to support the clinical and research missions of the then new UC Davis School of Medicine. Licensed for 528 beds and fully accredited, UC Davis Medical Center is the region's only Level I comprehensive adult and pediatric trauma center.

City of Woodland

Demographics & Statistics

Population (year 2000): 49,151, Est. population in July 2002: 50,850 (+3.4% change)
Males: 24,099 (49.0%), Females: 25,052 (51.0%)

Elevation: 65 feet

Land area: 10.3 square miles

Zip codes: 95695, 95776.

Median resident age: 32.4 years
Median household income: $44,449 (year 2000)
Median house value: $153,100 (year 2000)

Races in Woodland:

- White Non-Hispanic (53.0%)
- Hispanic (38.8%)
- Other race (21.5%)
- Two or more races (4.9%)
- American Indian (2.6%)
- Black (1.3%)
- Asian Indian (1.1%)
- Other Asian (1.0%)
- Filipino (0.6%)

(Total can be greater than 100% because Hispanics could be counted in other races)

Ancestries: German (13.5%), Irish (8.5%), English (8.5%), United States (4.5%), Italian (3.9%), French (2.0%).

For population 25 years and over in Woodland

- High school or higher: 73.0%
- Bachelor's degree or higher: 18.0%
- Graduate or professional degree: 5.7%
- Unemployed: 7.2%
- Mean travel time to work: 20.7 minutes

For population 15 years and over in Woodland city

- Never married: 24.8%
- Now married: 56.4%
- Separated: 2.2%
- Widowed: 6.4%
- Divorced: 10.2%

19.4% Foreign born (15.7% Latin America, 2.5% Asia).

Single-family new house construction building permits:

- 1996: 289 buildings, average cost: $103,300
- 1997: 246 buildings, average cost: $102,100
- 1998: 265 buildings, average cost: $93,400
- 1999: 129 buildings, average cost: $119,600
- 2000: 23 buildings, average cost: $116,400
- 2001: 89 buildings, average cost: $121,700
- 2002: 233 buildings, average cost: $142,200
- 2003: 277 buildings, average cost: $145,900

Area code: 530

Industries providing employment: Educational, health and social services (21.5%), Retail trade (13.4%).

Average weather in Woodland, California

Based on data reported by over 4,000 weather stations

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average temp. (°F)	45.7	50.6	54.9	59.9	66.7	73.0	76.4	75.5	72.2	64.5	53.0	45.6
High temperature (°F)	53.7	60.3	65.5	72.6	80.9	89.0	94.0	93.2	88.6	78.7	63.5	54.1
Low temperature (°F)	37.6	40.9	44.2	47.2	52.4	57.0	58.7	57.8	55.8	50.3	42.5	37.0
Precipitation (in)	4.5	4.1	3.3	1.1	0.6	0.2	0.0	0.0	0.4	1.1	2.5	3.0

Normal climate around Woodland, California

Based on data reported by main weather stations

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Days with precip.	10	9	9	5	3	1	0	0	1	3	7	9
Wind speed (mph)	7.1	7.3	8.4	8.6	9.0	9.6	8.9	8.4	7.4	6.4	6.0	6.4
Morning humidity (%)	91	89	86	83	82	78	77	78	77	79	87	88
Afternoon humidity (%)	70	61	53	44	38	32	30	29	31	37	57	67
Sunshine (%)	48	65	74	82	90	94	97	96	93	86	66	49
Days clear of clouds	7	8	10	12	17	22	27	26	24	19	10	8
Partly cloudy days	6	7	9	10	9	6	3	4	4	6	8	6
Cloudy days	19	13	12	8	5	2	1	1	2	6	12	17
Snowfall (in)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Hospitals/Medical Centers in Woodland

- WOODLAND MEMORIAL HOSPITAL (1325 COTTONWOOD STREET)
- *Other hospitals/medical centers near Woodland:*
- SUTTER DAVIS HOSPITAL (about 9 miles; DAVIS, CA)
- SUTTER GENERAL HOSPITAL (about 23 miles; SACRAMENTO, CA)
- UNIV OF CALIFORNIA DAVIS MED CENTER (about 24 miles; SACRAMENTO, CA)
- Airports certified for carrier operations nearest to Woodland:
- SACRAMENTO INTERNATIONAL (about 14 miles; SACRAMENTO, CA; ID: SMF)
- TRAVIS AFB (about 31 miles; FAIRFIELD, CA; ID: SUU)
- BEALE AFB (about 40 miles; MARYSVILLE, CA; ID: BAB)

Other public-use airports nearest to Woodland:

- WATTS-WOODLAND (about 7 miles; WOODLAND, CA; ID: O41)
- YOLO COUNTY-DAVIS/WOODLAND/WINTERS (about 10 miles; DAVIS/WOODLAND/WINTERS, CA; ID: 2Q3)
- UNIVERSITY (about 11 miles; DAVIS, CA; ID: 0O5)

Colleges/Universities in Woodland

- **CAREER COLLEGE OF COSMETOLOGY** (Location: 646 COTTONWOOD PLZ; Private, for-profit)
- *Colleges/universities with over 2000 students nearest to Woodland:*
- UNIVERSITY OF CALIFORNIA-DAVIS (about 9 miles; DAVIS, CA; Full-time enrollment: 24,405)
- SACRAMENTO CITY COLLEGE (about 23 miles; SACRAMENTO, CA; FT enrollment: 10,762)
- CALIFORNIA STATE UNIVERSITY-SACRAMENTO (about 25 miles; SACRAMENTO, CA; FT enrollment: 20,830)
- CHARLES A JONES SKILLS AND BUSINESS ED CENTER (about 26 miles; SACRAMENTO, CA; FT enrollment: 2,704)
- COSUMNES RIVER COLLEGE (about 27 miles; SACRAMENTO, CA; FT enrollment: 7,980)
- AMERICAN RIVER COLLEGE (about 30 miles; SACRAMENTO, CA; FT enrollment: 13,984)

- WOODLAND COMMUNITY COLLEGE
- SOLANO COUNTY COMMUNITY COLLEGE DISTRICT (about 37 miles; SUISUN, CA; FT enrollment: 5,598)

Public High Schools in Woodland

- **WOODLAND SENIOR HIGH** (Students: 2,170; Location: 21 N. WEST ST.; Grades: 10 - 12)
- **PIONEER HIGH SCHOOL**
- **YOLO YOUTH ACADEMY** (Students: 16; Location: 1240 HARTER AVE.; Grades: 07 - 12)
- **ALTERNATIVE/OPPORTUNITY** (Students: 2; Location: 175 WALNUT ST.; Grades: 07 - 12)

Biggest Public Primary/Middle Schools in Woodland

- **DOUGLASS JUNIOR HIGH** (Students: 1,350; Location: 525 GRANADA DR.; Grades: 07 - 09)
- **LEE JUNIOR HIGH** (Students: 1,085; Location: 520 WEST ST.; Grades: 07 - 09)
- **WOODLAND PRAIRIE ELEMENTARY** (Students: 829; Location: 1444 STETSON ST.; Grades: KG - 06)
- **TAFOYA (RAMON S.) ELEMENTARY** (Students: 798; Location: 720 HOMESTEAD WAY; Grades: KG - 06)
- **GIBSON ELEMENTARY** (Students: 610; Location: 312 GIBSON ROAD; Grades: KG - 06)
- **MAXWELL (RHODA) ELEMENTARY** (Students: 541; Location: 50 ASHLEY ST.; Grades: KG - 06)
- **BEAMER ELEMENTARY** (Students: 516; Location: 525 BEAMER ST.; Grades: KG - 06)
- **WHITEHEAD (T.L.) ELEMENTARY** (Students: 491; Location: 624 W. SOUTHWOOD DR.; Grades: KG - 06)
- **FREEMAN ELEMENTARY** (Students: 409; Location: 126 N. WEST ST.; Grades: KG - 06)
- **DINGLE ELEMENTARY** (Students: 400; Location: 625 ELM ST.; Grades: KG - 06)

Private Primary/Middle Schools In Woodland

- **WOODLAND CHRISTIAN ELEM SCHOOL** (Students: 797; Location: 1616 WEST STREET; Grades: PK - 10)
- **HOLY ROSARY PARISH SCHOOL** (Students: 297; Location: 505 CALIFORNIA STREET; Grades: PK - 8)
- **MONTESSORI CHILDREN S HOUSE** (Students: 95; Location: 1738 COTTONWOOD; Grades: PK - 7)
- **WOODLAND ADVENTIST** (Students: 20; Location: 29 ELLIOT ST PO BOX 1933; Grades: 1 - 8)
- **PHOENIX SCHOOL** (Students: 12; Location: 211-215-219 COURT STREET; Grades: KG - KG)

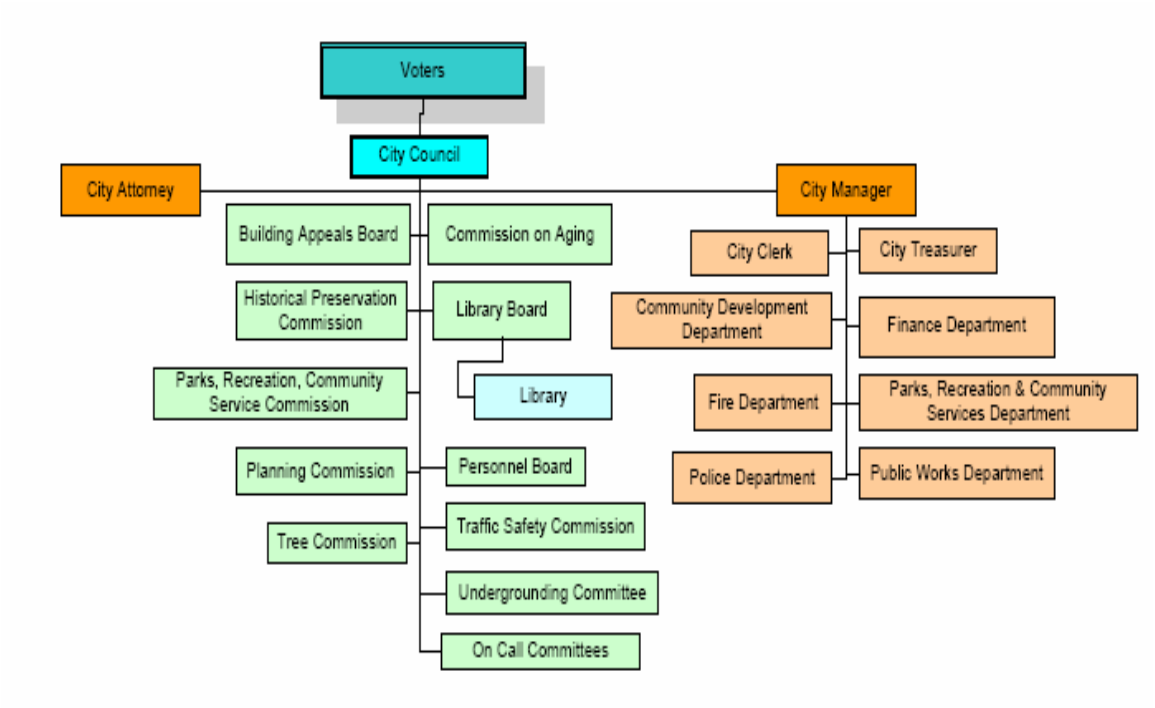
Libraries in Woodland

- **YOLO COUNTY LIBRARY** (Operating income: $3,143,894; Location: 226 BUCKEYE ST.; 358,716 books; 5,171 audio materials; 6,833 video materials; 572 serial subscriptions)
- **WOODLAND PUBLIC LIBRARY** (Operating income: $988,271; Location: 250 FIRST ST.; 92,014 books; 1,243 audio materials; 4,970 video materials; 257 serial subscriptions)

Woodland Compared To California State Average:

- Black race population percentage **significantly below** state average.
- Hispanic race population percentage **significantly above** state average.
- Median age **below** state average.
- Foreign-born population percentage **above** state average.
- Length of stay since moving in **below** state average.
- House age **below** state average.
- Percentage of population with a bachelor's degree or higher **below** state average.

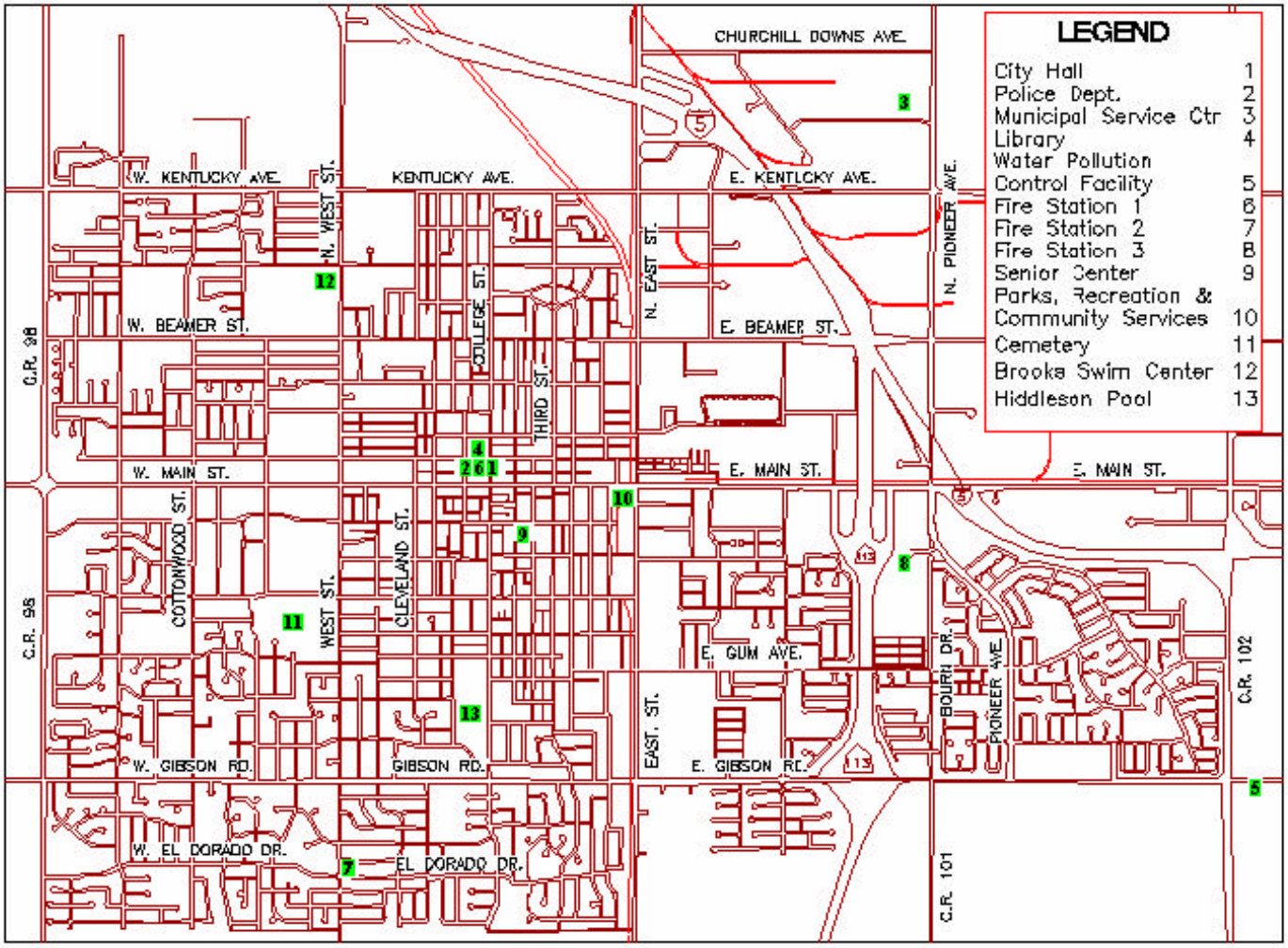
General Organization



CITY OF WOODLAND City Manager's Office

The office of Woodland's City Manager is located on the 2nd floor of City Hall, 300 First Street in downtown Woodland.

Map of City Facilities



istory

Before the settlement of the area by Europeans, the Woodland area was populated by the Poo-e-win, a dialect group of the Hill Patwin native Americans. Like most Patwin groups, the Poo-e-win occupied the major river courses and tributary drainages of their territory, such as the Sacramento River, Cache and Putah Creeks, and in some cases, springs. Only places high enough to keep them above the rising waters of seasonal floods were selected for permanent villages, or tribelets. The Poo-e-win tribelet of Yodoi at one time occupied the present site of Knights Landing. The Poo-e-win probably occupied the Woodland area in seasonal camps for hunting and seed gathering. Of special importance to the Poo-e-win and their neighbors was a main trading trail which followed the course of Cache Creek. This trade route served as an important means of cultural and social interchange in addition to a vital economic supply line for the Patwin and their neighbors, the Nomlaki to the north, the Nisenan to the east, and the Pomo to the west.

Information about the Poo-e-win is limited compared to what is known about neighboring native groups. The proselytization and enslavement of the Poo-e-win by the Spanish missionaries had rapidly and dramatically reduced their numbers through hardship and disease. A malarial epidemic in 1830-33 and a smallpox epidemic in 1837 decimated much of the surviving population. One historical document notes that the first laborers used by the earliest farmers of Woodland in the 1850's were the native Patwin peoples.

Woodland's modern historical development was the result of several factors: its rich soil and climatic conditions, good transportation systems, and its function as the county seat. These combinations of natural and man-made influences are still the critical influences in Woodland's growth and development.

The origins of Woodland as an agricultural community can be traced to the early 1850's. In the winter of 1853, Henry Wyckoff settled in a dense grove of oak trees and opened a small store. Soon other businesses located in the area, including a store owned by Major F.S. Freeman. Major Freeman offered free lots to those who would clear the land and build homes. Before long the settlement of Yolo City was established around what is now the central part of Main Street. Yolo City soon became an important agricultural center. Irrigation was a major contributor to the agricultural success of the region. The first irrigation canal was developed in 1856 by James Moore, who owned exclusive water rights to Cache Creek.

Yolo City also grew as a community. In 1861, Major Freeman gained permission to build a federal post office in the town and Yolo City was renamed Woodland. In 1862, the Yolo County seat was transferred from Washington (in what is now the city of West Sacramento) to Woodland. One year later, Major Freeman recorded the first plat of the city. The northern portion of present-day Woodland was divided into blocks, lots, and streets. Sixth Street was designated as the eastern boundary; College Street was the western boundary; North Street was the northern border, and South Street (now Main Street) was the southern boundary. By 1870, the population of Woodland was an Woodland incorporated in 1871.

Money earned in the gold fields of California financed the purchase and cultivation of much of the farmland around Woodland. A variety or crops were grown, including tobacco, peanuts, grapes, rice, sugar beets, various grains, and row crops. Wineries and livestock were also important agricultural operations. In the 1880's, citizens organized the Woodland Creamery to provide dairy products for local residents.

As with most communities in the Central Valley, railroads played an important role in the development of Woodland since they made it so much easier to transport agricultural crops to market and bring in goods needed by local residents. In 1869, the California Pacific Railroad Company constructed a line between Davisville (now Davis) and Marysville with a Woodland station in the vicinity of College Street

and Lincoln Avenue. The rail line expanded and was eventually acquired by Southern Pacific Railroad. The mainline track was relocated from College Street to East Street, then the eastern edge of the city.

Warehousing and industries requiring rail service developed along the railroad tracks, creating the industrial area that still remains in the area between East and Fifth Streets. The Sacramento Northern Railroad began direct freight and passenger service from Woodland to Sacramento in 1912.

The late 1800's ushered in the development of urban services, including construction of an electric lighting plant and a locally-run telephone system. In 1891, the City acquired the water works system, built a sewer system, and completed a city hall. The city hall building was reconstructed in 1936, enlarged in 1960 and 1975, and still serves the City today.

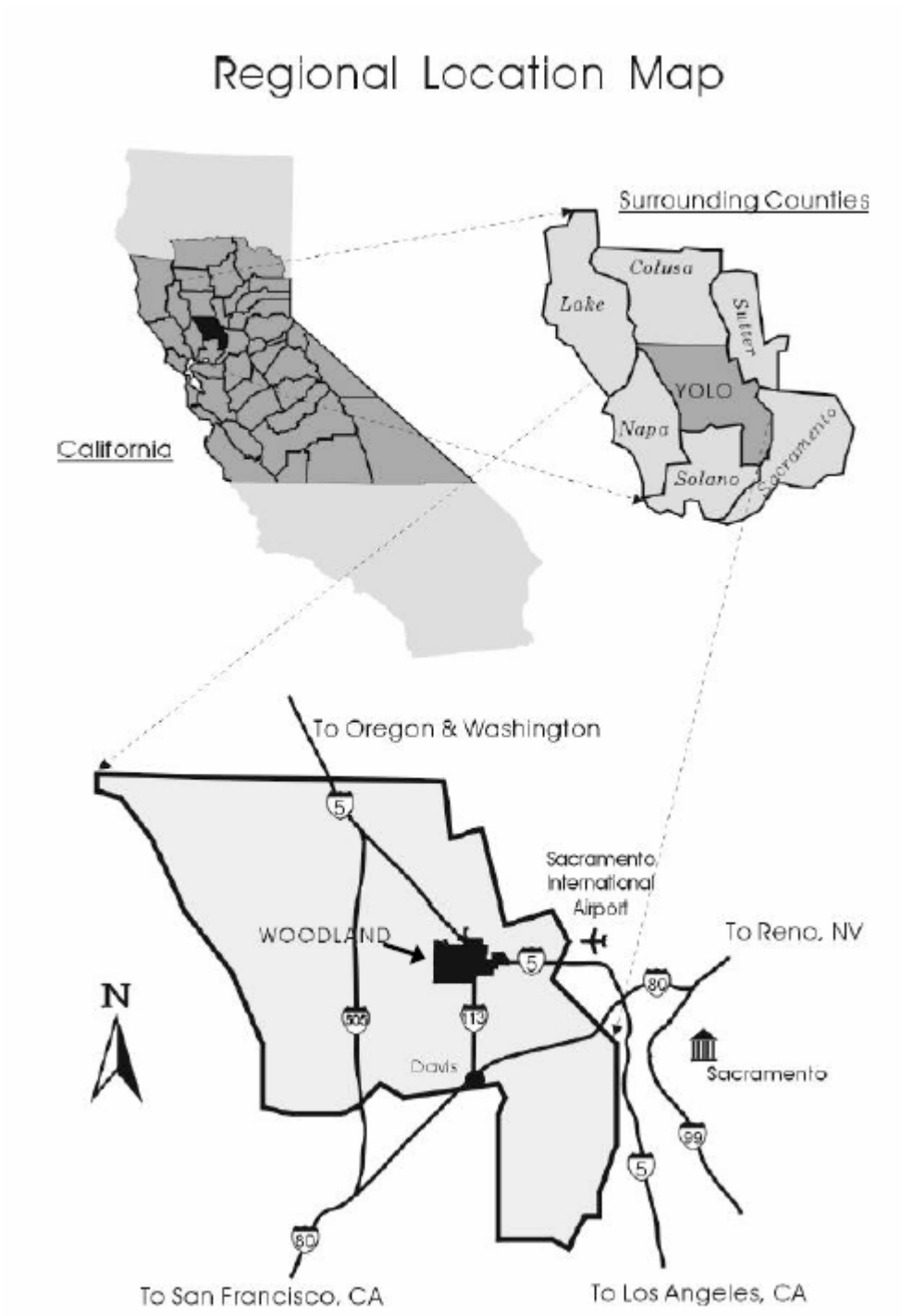
While many of Woodland's earliest buildings were destroyed by fire or demolished, Woodland still has a rich stock of historic buildings, particularly in the Downtown area. The Opera House, which was destroyed by fire in 1892 and rebuilt in 1896, was the source of great local pride and became the center for recreation and culture in the Woodland area. It closed in 1913 and remained unused until it was purchased in 1971 by the Yolo County Historical Society. It has since been restored and is now a part of the State Park System.

William H. Weeks, one of Northern California's foremost architects of the late 1800's, designed many buildings in Woodland, including the Yolo County Courthouse, Hotel Woodland, Elks Lodge, and the Bank of Woodland.

Over time, modern highways replaced the railroads as the critical transportation corridors. Alignments for State Route 113 and Interstate 5 were adopted and acquisition of the rights-of-way began in 1959. Interstate 5 opened in 1973, and construction of SR 113 connecting I-80 with I-5 was completed in 1990. The City is currently undertaking a study to complete the connection between SR 113 and I-5.

(Excerpts from the 1996 Woodland General Plan.)

Location


Regional Location Map
Surrounding Counties
Colusa
Lake
Sutter
YOLO
Napa
Solano
Sacramento
California
To Oregon & Washington
5
Sacramento International Airport
WOODLAND
To Reno, NV
80
N
505
113
Davis
Sacramento
99
5
50
To San Francisco, CA
To Los Angeles, CA

Boards and Commissions

1. Board of Building Appeals
   meets as required

2. Commission on Aging
   meets 2nd Tuesday of the month, 11:30am, Woodland Senior Center

3. Historical Preservation Commission
   meets 2nd Wednesday of the month, 7:00pm, City Council Chambers

4. Library Board
   meets 1st and 3rd Monday of the month, 7:30pm, Woodland Public Library

5. Manufactured Home Fair Practices Commission
   meetings to be determined

6. Parks, Recreation and Community Services Commission
   meets 4th Monday of the month, 7:00pm, City Council Chambers

7. Personnel Board
   meets as required

8. Planning Commission
   meets 1st and 3rd Thursday of the month, 7:00pm, City Council Chambers

9. Redevelopment Citizens Advisory Commitee
   meets 4th Wednesday of the month, 7:00pm, City Council Chambers

10. Traffic Safety Commission
    meets 1st Monday of the month, 7:30pm, City Council Chambers

11. Tree Commission
    meets 3rd Monday of the month, 7:00pm, City Council Chambers

12. Undergrounding Committee
    meets as required

Emergency Services

Woodland Fire Department Statistics

Apparatus

Engines:	3
Grass Engines:	2
100' Ladder Truck:	1
75' Qunit	1
Rescue/Haz Mat:	1
Air Truck:	1
Water Tender:	1
OES Engine (#251):	1
Fire Investigation Unit:	1
Rescue:	2
Command Vehicle:	2
Antique Apparatus:	9
Support Vehicles:	4

2002-03 Budget

Administration:	$304,021
Training:	$256,247
Operations:	$3,346,142
Prevention:	$288,102
TOTAL:	$4,194,512

Demographics

Area served (sq. mi.):	64
Population:	50,614
ISO Rating:	3
Assessed Value:	$2.84 bil

Incidents

Fire:	484
EMS:	2373
Hazardous Condition:	396
Service Call	214
Good Intent/False Call	787
Other:	41
TOTAL:	4295

Personnel

Administration	3
Fire Prevention	4
Operations	37
Reserves	25
Training	1

Woodland Police Department

The Woodland Police Department is divided into five divisions: Administration, Operations, Support Services, Special Operations and Prevention and Youth Services. A Lieutenant manages each division. These divisions work in conjunction with each other to provide the best possible service to the community.

Crime Statistics in Woodland (2001):

- 1 murder (2.0 per 100,000)
- 16 rapes (32.0 per 100,000)
- 48 robberies (95.9 per 100,000)
- 258 assaults (515.3 per 100,000)
- 274 burglaries (547.3 per 100,000)
- 657 larceny counts (1312.3 per 100,000)
- 180 auto thefts (359.5 per 100,000)
- City-data.com crime index = 271.1 (higher means more crime)

City of Woodland Inventory of Assets

Woodland

PROPERTY VALUATION

AS OF 10 / 2003

131 YEAR BUILT 1936

City Hall & Fire Station
300 First Street
Woodland *CA* *95695*

FLOORS 2 SQ. FT. 29,455
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE: 12/1/1999
Appraisal Cost (w/trend factor): $4,345,736

DESCRIPTION GAB 48603-40350-1 COMPUTERS - $240,000

BUILDING VALUE	$4,345,736
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$1,379,277
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$5,725,013
FINE ARTS	$0

132 YEAR BUILT 1973

Police Department & Modular Bldg.
520 Court Street
Woodland *CA* *95695*

FLOORS 2 SQ. FT. 12,272
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE: 3/1/1999
Appraisal Cost (w/trend factor): $1,080,889

DESCRIPTION GAB 48603-40350-2; new lab & equip., new locker room

BUILDING VALUE	$1,080,889
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$800,413
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$1,881,302
FINE ARTS	$0

133 YEAR BUILT 1973

Office - Police
520 Court Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 1,784
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48603-40350-3 COMPUTERS - $20,000

BUILDING VALUE	$203,233
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$73,061
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$276,294
FINE ARTS	$0

CSAC - Robert Driver Assoc.

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

134 — YEAR BUILT 1954

Senior Citizens Center
630 Lincoln Ave
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 5,400
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE: 3/1/1999
Appraisal Cost (w/trend factor): $601,529

DESCRIPTION GAB 48603-40350-4
yolo - Phones - $11,409

BUILDING VALUE	$601,529
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$79,562
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$681,091
FINE ARTS	$0

135 — YEAR BUILT 1974

Community Swim Center
155 N. West Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 4,960
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE: 12/1/1999
Appraisal Cost (w/trend factor): $579,932

DESCRIPTION Pool Building
yolo - Phones - $6,500

BUILDING VALUE	$579,932
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$210,175
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$790,107
FINE ARTS	$0

135.01 — YEAR BUILT 1974

Community Swim Center
155 N. West Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 2,708
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE: 12/1/1999
Appraisal Cost (w/trend factor): $366,474

DESCRIPTION Recreation Building (2,708 sq. ft. - APPRAISAL - $330,267)

BUILDING VALUE	$360,489
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$360,489
FINE ARTS	$0

CSAC - Robert Driver Assoc.

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

138 — YEAR BUILT 1997

Power House
Sutter Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 192
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Corporation Yard - Sutter Street GAB 48525-79442-95

BUILDING VALUE	$12,658
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$12,658
FINE ARTS	$0

139 — YEAR BUILT 1952

Chemical Storage
655 North Pioneer Ave
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 500
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Corporation Yard - GAB 48525-79442-52

BUILDING VALUE	$32,777
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$32,777
FINE ARTS	$0

142 — YEAR BUILT 1955

Storage Building
Fifth Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 266
CONSTRUCTION TYPE concrete

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Corporation Yard - Fifth Street - GAB 48525-79442-44

BUILDING VALUE	$40,177
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$40,177
FINE ARTS	$0

CSAC - Robert Driver Assoc.

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

143 — YEAR BUILT 1980

Garage
Fifth Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 1,000
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Corporation Yard - Fifth Street - GAB 48525-79442-46

BUILDING VALUE	$65,521
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$65,521
FINE ARTS	$0

144 — YEAR BUILT 1948

Office & Restrooms
Fifth Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 1,209
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Corporation Yard - Fifth Street - GAB 48525-79442-48

BUILDING VALUE	$137,177
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$137,177
FINE ARTS	$0

145 — YEAR BUILT 1980

Meter Shop
Fifth Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 512
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Corporation Yard - Fifth Street - GAB 48525-79442-49

BUILDING VALUE	$33,751
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$33,751
FINE ARTS	$0

CSAC - Robert Driver Assoc.

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

146

Garage
Fifth Street
Woodland *CA* *95695*

YEAR BUILT 1982

FLOORS 1 SQ. FT. 1,800
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Corporation Yard - Fifth Street - GAB 48525-79442-50

BUILDING VALUE	$117,804
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$117,804
FINE ARTS	$0

147

Garage
Fifth Street
Woodland *CA* *95695*

YEAR BUILT 1979

FLOORS 1 SQ. FT. 1,000
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Corporation Yard - Fifth Street - GAB 48525-79442-45

BUILDING VALUE	$65,488
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$65,488
FINE ARTS	$0

148

Storage
Fifth Street
Woodland *CA* *95695*

YEAR BUILT 1950

FLOORS 1 SQ. FT. 3,456
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE: 3/1/1999
Appraisal Cost (w/trend factor): $157,678

DESCRIPTION Corporation Yard - Fifth Street - GAB 48525-79442-47

BUILDING VALUE	$157,678
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$157,678
FINE ARTS	$0

CSAC - Robert Driver Assoc.

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

149 — YEAR BUILT 1981

Garage
Fifth Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 1,200
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Corporation Yard - Fifth Street - GAB 48525-79442-47

BUILDING VALUE	$78,560
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$78,560
FINE ARTS	$0

150 — YEAR BUILT 1986

Office, Shop, & Restroom
800 West Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 936
CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Woodland Cemetery - GAB 48525-79442-52

BUILDING VALUE	$118,490
PROPERTY IN THE OPEN	$88,250
EQUIPMENT VALUE	$45,501
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$252,241
FINE ARTS	$0

151 — YEAR BUILT 1925

Mausoleum
800 West Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 5,467
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Woodland Cemetery; GAB 48525-79442-53

BUILDING VALUE	$629,500
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$5,216
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$634,716
FINE ARTS	$0

CSAC - Robert Driver Assoc.

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

152 — YEAR BUILT 1966

Fire Station #2
1619 West Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 3,356
CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE: 3/1/1999
Appraisal Cost (w/trend factor): $322,347

DESCRIPTION 80 ft. Tower; GAB 48525-77428-37

BUILDING VALUE	$323,007
PROPERTY IN THE OPEN	$57,187
EQUIPMENT VALUE	$96,774
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$476,968
FINE ARTS	$0

153 — YEAR BUILT 1996

Fire Station #3
1550 Springlake Ct.
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 19,413
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE: 12/1/1999
Appraisal Cost (w/trend factor): $2,826,417

DESCRIPTION yolo - Phones - $19,288

BUILDING VALUE	$2,826,416
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$103,873
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$2,930,289
FINE ARTS	$0

154 — YEAR BUILT 1974

Dubach Park
I-5 & Hwy 113
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 1,116
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-54

BUILDING VALUE	$74,254
PROPERTY IN THE OPEN	$272,271
EQUIPMENT VALUE	$12,253
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$358,778
FINE ARTS	$0

CSAC - Robert Driver Assoc.

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

155 — YEAR BUILT 1945

Beamer Park
Hollister & Bruton
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 549
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION restroom; GAB 48525-79442-55

BUILDING VALUE	$62,566
PROPERTY IN THE OPEN	$332,889
EQUIPMENT VALUE	$5,573
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$401,028
FINE ARTS	$0

156 — YEAR BUILT 1995

Freeman Park
1017 Main Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 300
CONSTRUCTION TYPE Masonry - NonCombustibl

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Restroom; GAB 48525-79442-56

BUILDING VALUE	$45,172
PROPERTY IN THE OPEN	$125,978
EQUIPMENT VALUE	$5,227
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$176,377
FINE ARTS	$0

157 — YEAR BUILT 1920

Tool House
1017 Main Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 320
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Freeman Park; GAB 48525-79442-57

BUILDING VALUE	$36,158
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$5,378
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$41,536
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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158 — YEAR BUILT 1920

Storage
1017 Main Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 158
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Freeman Park - GAB 48525-79442-58

BUILDING VALUE	$17,899
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$1,184
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$19,083
FINE ARTS	$0

159 — YEAR BUILT 1986

Yolano Park
Lemen & Donnelly Circle
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 752
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-59

BUILDING VALUE	$85,638
PROPERTY IN THE OPEN	$83,223
EQUIPMENT VALUE	$5,378
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$174,239
FINE ARTS	$0

160 — YEAR BUILT 1950

Clark Field
Beamer Street
Woodland *CA* *95695*

FLOORS 2 SQ. FT. 991
CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Announcer Booth/Snack Bar - GAB 48525-79442-62

BUILDING VALUE	$124,979
PROPERTY IN THE OPEN	$676,386
EQUIPMENT VALUE	$5,378
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$806,743
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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161 — YEAR BUILT 1952

Locker Rooms
Beamer Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 1,242
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Clark Field - GAB 48525-79442-61

BUILDING VALUE	$140,699
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$2,151
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$142,850
FINE ARTS	$0

162 — YEAR BUILT 1950

Snack Bar
Beamer Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 250
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Clark Field - GAB 48525-79442-60

BUILDING VALUE	$28,328
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$3,135
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$31,463
FINE ARTS	$0

163 — YEAR BUILT 1950

Restroom
Beamer Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 221
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Clark Field; GAB 48525-79442-63

BUILDING VALUE	$24,752
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$24,752
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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164 — YEAR BUILT 1965

Ralph Harris Park
Pine & Imperial
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 640
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Storage; GAB 48525-79442-64

BUILDING VALUE	$72,639
PROPERTY IN THE OPEN	$133,156
EQUIPMENT VALUE	$12,545
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$218,340
FINE ARTS	$0

165 — YEAR BUILT 1965

Restrooms
Ashley Avenue
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 280
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Ralph Harris Park; GAB 48525-79442-65

BUILDING VALUE	$31,439
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$2,151
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$33,590
FINE ARTS	$0

166 — YEAR BUILT 1973

Fern Park
West Southwood
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 633
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Restroom, storage, tennis courts, park equipment; GAB 48525-79442-66

BUILDING VALUE	$72,169
PROPERTY IN THE OPEN	$249,668
EQUIPMENT VALUE	$209,078
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$530,915
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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167 YEAR BUILT 1974

Everman Park
Sixth & Cottage
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 1,640
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Restroom & storage; GAB 48525-79442-67

BUILDING VALUE	$185,566
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$44,749
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$230,315
FINE ARTS	$0

168 YEAR BUILT 1963

Tredway Park
Sixth & El Dorado
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 368
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Restroom; GAB 48525-79442-68

BUILDING VALUE	$41,933
PROPERTY IN THE OPEN	$44,385
EQUIPMENT VALUE	$11,941
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$98,259
FINE ARTS	$0

169 YEAR BUILT 1965

Campbell Park
709 Thomas
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 685
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Restroom & Storage; GAB 48525-79442-69

BUILDING VALUE	$77,982
PROPERTY IN THE OPEN	$140,107
EQUIPMENT VALUE	$11,933
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$230,022
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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170 — YEAR BUILT 1965

Picnic Area
709 Thomas
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 200
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Campbell Park

BUILDING VALUE	$22,588
PROPERTY IN THE OPEN	$5,549
EQUIPMENT VALUE	$10,454
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$38,591
FINE ARTS	$0

171 — YEAR BUILT 1950

Woodland City Park
Cleveland & Walnut
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 636
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Restroom; tennis courts; park equipment; GAB 48525-79442-70

BUILDING VALUE	$72,415
PROPERTY IN THE OPEN	$224,546
EQUIPMENT VALUE	$6,273
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$303,234
FINE ARTS	$0

172 — YEAR BUILT 1990

Storage
Cleveland & Walnut
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 492
CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Woodland City Park; GAB 48525-79442-71

BUILDING VALUE	$61,972
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$13,067
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$75,039
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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173 — YEAR BUILT 1955

Southland Park
Elm & Maedell
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 1,070
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

BUILDING VALUE	$121,829
PROPERTY IN THE OPEN	$82,665
EQUIPMENT VALUE	$13,067
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$217,561
FINE ARTS	$0

DESCRIPTION Restroom & Storage; misc. park equipment; GAB 48525-79442-72

174 — YEAR BUILT 1960

Parks & Recreation
1122 Main Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 6,912
CONSTRUCTION TYPE Reinforced Concrete

APPRAISAL DATE: 3/1/1999
Appraisal Cost (w/trend factor): $571,680

BUILDING VALUE	$571,681
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$115,858
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$687,539
FINE ARTS	$0

DESCRIPTION Main Building
yolo - Phones - $13,985

175 — YEAR BUILT 1942

Spare Building
1017 Main Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 4,714
CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

BUILDING VALUE	$594,948
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$594,948
FINE ARTS	$0

DESCRIPTION Parks & Recreation; GAB 48525-77428-19

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Woodland

PROPERTY VALUATION

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176 — YEAR BUILT 1949

Camarena Park
202 Beamer Street
Woodland *CA* *95695*

FLOORS 2 SQ. FT. 492
CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Baseball field; GAB 48525-79442-73

BUILDING VALUE	$62,521
PROPERTY IN THE OPEN	$441,775
EQUIPMENT VALUE	$26,136
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$530,432
FINE ARTS	$0

177 — YEAR BUILT 1946

Christiansen Park
Beamer & Walnut
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 384
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Maintenance Building; GAB 48525-79442-74

BUILDING VALUE	$43,722
PROPERTY IN THE OPEN	$54,964
EQUIPMENT VALUE	$6,453
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$105,139
FINE ARTS	$0

178 — YEAR BUILT 1946

Restroom
Beamer & Walnut
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 133
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Christiansen Park; GAB 48525-79442-96

BUILDING VALUE	$15,175
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$3,135
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$18,310
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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179 — YEAR BUILT 1952

Main Lodge

Tahoe National Fores *CA* *0*

FLOORS 1 SQ. FT. 2,142

CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Camp Packer Creek; GAB 48525-79442-75

BUILDING VALUE	$271,429
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$51,755
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$323,184
FINE ARTS	$0

180 — YEAR BUILT 1982

Showers

Tahoe National Fores *CA* *0*

FLOORS 1 SQ. FT. 224

CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Camp Packer Creek; GAB 48525-79442-76

BUILDING VALUE	$28,430
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$3,135
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$31,565
FINE ARTS	$0

181 — YEAR BUILT 1984

Residence

Tahoe National Fores *CA* *0*

FLOORS 1 SQ. FT. 504

CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Camp Packer Creek; GAB 48525-79442-77

BUILDING VALUE	$63,811
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$3,135
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$66,946
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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182 — YEAR BUILT 1984

Restroom

Tahoe National Fores *CA* *0*

FLOORS 1 SQ. FT. 35

CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Camp Packer Creek; GAB 48525-79442-78

BUILDING VALUE	$4,458
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$1,045
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$5,503
FINE ARTS	$0

183 — YEAR BUILT 1986

Water Well

Tahoe National Fores *CA* *0*

FLOORS 1 SQ. FT. 192

CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Camp Packer Creek; GAB 48525-79442-79

BUILDING VALUE	$24,186
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$9,036
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$33,222
FINE ARTS	$0

184 — YEAR BUILT 1985

Cabin - Right

Tahoe National Fores *CA* *0*

FLOORS 1 SQ. FT. 256

CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Camp Packer Creek; GAB 48525-79442-98

BUILDING VALUE	$32,238
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$1,045
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$33,283
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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185 — YEAR BUILT 1985

Cabin - Left

Tahoe National Fores *CA* *0*

FLOORS 1 SQ. FT. 256

CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Camp Packer Creek; GAB 48525-79442-98

BUILDING VALUE	$32,238
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$1,045
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$33,283
FINE ARTS	$0

186 — YEAR BUILT 1974

Crawford Park
College & El Dorado
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 572

CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Restroom; GAB 48525-79442-80

BUILDING VALUE	$65,127
PROPERTY IN THE OPEN	$172,568
EQUIPMENT VALUE	$10,454
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$248,149
FINE ARTS	$0

187 — YEAR BUILT 1974

Shade Structures
College & El Dorado
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 2,848

CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Crawford Park; GAB 48525-79442-100

BUILDING VALUE	$319,698
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$319,698
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

188 — YEAR BUILT 1973

Woodside Park
El Dorado & Cottonwood
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 572
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Tennis Courts; GAB 48525-79442-82

BUILDING VALUE	$65,127
PROPERTY IN THE OPEN	$124,144
EQUIPMENT VALUE	$10,454
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$199,725
FINE ARTS	$0

189 — YEAR BUILT 1960

Buchignani Field
Gum Avenue
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 360
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Restroom, bleachers; GAB 48525-79442-83

BUILDING VALUE	$40,989
PROPERTY IN THE OPEN	$132,941
EQUIPMENT VALUE	$3,135
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$177,065
FINE ARTS	$0

190 — YEAR BUILT 1960

Snack Bar
Gum Avenue
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 279
CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Buchignani Field; GAB 48525-79442-84

BUILDING VALUE	$35,186
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$3,119
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$38,305
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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191 — YEAR BUILT 1955

Water Well #5
Elm & Maedell
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 70
CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Control House

BUILDING VALUE	$8,904
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$53,786
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$62,690
FINE ARTS	$0

192 — YEAR BUILT 0

Water Well #12
Kentucky Ave. West of 101
Woodland *CA* *95776*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Pump

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$53,786
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$53,786
FINE ARTS	$0

193 — YEAR BUILT 0

Water Well #13
Cottonwood/El Dorado
Woodland *CA* *95695*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Pump

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$53,786
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$53,786
FINE ARTS	$0

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Woodland

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194 YEAR BUILT 0

Water Well #15
Thomas St/Matmor Rd.
Woodland *CA* *95695*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Pump

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$53,786
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$53,786
FINE ARTS	$0

195 YEAR BUILT 0

Water Well #16
Crawford/College
Woodland *CA* *95695*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Pump

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$53,786
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$53,786
FINE ARTS	$0

196 YEAR BUILT 0

Water Well #18
Gibson Rd.
Woodland *CA* *95695*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Pump

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$52,269
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$52,269
FINE ARTS	$0

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PROPERTY VALUATION

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197 — YEAR BUILT 1980

Water Well #19
Sutter St. Yard
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 192
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION

BUILDING VALUE	$12,671
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$75,299
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$87,970
FINE ARTS	$0

198 — YEAR BUILT 0

Water Well #20
West Court Street
Woodland *CA* *95695*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION pump

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$53,786
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$53,786
FINE ARTS	$0

199 — YEAR BUILT 0

Water Well #21
Kentucky/Cottonwood
Woodland *CA* *95695*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION pump

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$53,786
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$53,786
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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200 — YEAR BUILT 1962

Well #1
409 Fifth Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 288
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-86

BUILDING VALUE	$19,140
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$107,571
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$126,711
FINE ARTS	$0

201 — YEAR BUILT 1954

Well #4
Beamer/Walnut
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 320
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-87

BUILDING VALUE	$21,097
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$43,028
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$64,125
FINE ARTS	$0

202 — YEAR BUILT 1976

Well #6
Grand between Lincoln & Mai
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 192
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-87

BUILDING VALUE	$12,689
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$43,028
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$55,717
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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203 YEAR BUILT 1956

Well #7
California Street
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 86
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-88

BUILDING VALUE	$10,003
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$31,732
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$41,735
FINE ARTS	$0

204 YEAR BUILT 1958

Park Storage Building
Sixth & Cottage Grove
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 320
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-89

BUILDING VALUE	$21,097
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$5,227
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$26,324
FINE ARTS	$0

205 YEAR BUILT 1960

Well #9
Sixth & El Dorado
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 192
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-90

BUILDING VALUE	$12,689
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$43,028
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$55,717
FINE ARTS	$0

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PROPERTY VALUATION

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206 — YEAR BUILT 1961

Well #10
Bemmerly & Wyckoff St.
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 192
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-92

BUILDING VALUE	$12,689
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$107,571
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$120,260
FINE ARTS	$0

207 — YEAR BUILT 1971

Well #11
Cottonwood/W. Southwood
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 336
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-92

BUILDING VALUE	$22,152
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$55,937
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$78,089
FINE ARTS	$0

208 — YEAR BUILT 1972

Well #14
CR 101 & Case Place
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 384
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION GAB 48525-79442-93

BUILDING VALUE	$25,307
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$57,013
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$82,320
FINE ARTS	$0

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PROPERTY VALUATION

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209 — YEAR BUILT 1977

Well #17
RD 98 & W. El Dorado
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 192
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Generator Bldg.; GAB 48525-79442-94

BUILDING VALUE	$12,695
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$88,274
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$100,969
FINE ARTS	$0

210 — YEAR BUILT 1955

Municipal Service Center
655 Pioneer Ave.
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 86,850
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE: 12/1/1999
Appraisal Cost (w/trend factor): $5,189,591

DESCRIPTION GAB 48525-79442-101 COMPUTERS - $30,000
yolo - Phones - $21,826

BUILDING VALUE	$5,189,592
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$1,641,904
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$6,831,496
FINE ARTS	$0

211 — YEAR BUILT 0

Water Tank
Christiansen Park
Woodland *CA* *95695*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$567,338
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$567,338
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

212 — YEAR BUILT 1988

Public Library
250 First Street
Woodland *CA* *95695*

FLOORS 2 SQ. FT. 27,637
CONSTRUCTION TYPE Masonry - NonCombustibl

APPRAISAL DATE: 12/1/1999
Appraisal Cost (w/trend factor): $3,735,165

BUILDING VALUE	$3,735,164
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$4,273,171
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$8,008,335
FINE ARTS	$0

DESCRIPTION Books- $2,329,002; Historical Collection sv. $200,000 COMPUTERS - $5,000

213 — YEAR BUILT 1951

Hiddleson Pool
Elm & Maedell
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 3,915
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

BUILDING VALUE	$445,758
PROPERTY IN THE OPEN	$218,267
EQUIPMENT VALUE	$88,297
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$752,322
FINE ARTS	$0

DESCRIPTION Swimming pool; bath house; chlorination room

214 — YEAR BUILT 1988

Freeman School
West & Woodland
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 500
CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

BUILDING VALUE	$63,216
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$2,409
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$65,625
FINE ARTS	$0

DESCRIPTION Portable Building

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

215 — YEAR BUILT 1990

Shop & Maintenance
42323 CR 24
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 2,400
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

BUILDING VALUE	$272,161
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$27,180
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$299,341
FINE ARTS	$0

DESCRIPTION Wastewater Treatment Plant; partial wood studded; fire retardent wood

216 — YEAR BUILT 1990

Electrical Building
42323 CR 24
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 960
CONSTRUCTION TYPE Metal

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

BUILDING VALUE	$82,768
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$170,399
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$253,167
FINE ARTS	$0

DESCRIPTION Wastewater Treatment Plant

217 — YEAR BUILT 1990

Chlorine/Sulfur Dioxide Building
42323 CR 24
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 1,655
CONSTRUCTION TYPE Reinforced Concrete

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

BUILDING VALUE	$251,181
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$237,304
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$488,485
FINE ARTS	$0

DESCRIPTION Wastewater Treatment Plant; heat/smoke detector; gas detector system; auto exhaust system

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

218 YEAR BUILT 1979

North Building and Well
42323 CR24
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 1,018
CONSTRUCTION TYPE Steel Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Wastewater Treatment Plant; GAB 48525-79442-101

BUILDING VALUE	$67,400
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$20,908
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$88,308
FINE ARTS	$0

219 YEAR BUILT 1999

South Pump Station
42323 CR 24
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 100
CONSTRUCTION TYPE Metal

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Wastewater Treatment Plant; Auxillary generator

BUILDING VALUE	$8,910
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$41,816
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$50,726
FINE ARTS	$0

220 YEAR BUILT 1962

West Water Well
42323 CR 24
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 100
CONSTRUCTION TYPE Masonry - NonCombustibl

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Wastewater Treatment Plant

BUILDING VALUE	$15,115
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$15,681
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$30,796
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

221 — YEAR BUILT 1999

West Levee Pump Station
42323 CR 24
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 100
CONSTRUCTION TYPE Masonry - NonCombustibl

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Wastewater Treatment Plant; including electrical

BUILDING VALUE	$15,115
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$47,042
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$62,157
FINE ARTS	$0

222 — YEAR BUILT 1999

North Pump Station
42323 CR 24
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 200
CONSTRUCTION TYPE Masonry - NonCombustibl

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Wastewater Treatment Plant; excluding switch gear

BUILDING VALUE	$30,230
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$36,589
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$66,819
FINE ARTS	$0

223 — YEAR BUILT 1998

Operations & Lab Building
42323 CR 24
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 6,592
CONSTRUCTION TYPE Metal

APPRAISAL DATE: 12/1/1999
Appraisal Cost (w/trend factor): $868,762

DESCRIPTION Wastewater Treatment Plant; sprinkler, intrusion/fire alarms; Levees, dikes, improvements

BUILDING VALUE	$868,762
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$537,849
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$1,406,611
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

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224 — YEAR BUILT 0

Other Equipment & Concrete Structures
42323 CR 24
Woodland *CA* *95776*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Wastewater Treatment Plant

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$4,688,583
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$4,688,583
FINE ARTS	$0

225 — YEAR BUILT 1973

Pump Station
Beamer Street
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 800
CONSTRUCTION TYPE Reinforced Concrete

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Wastewater Treatment Plant

BUILDING VALUE	$120,820
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$31,361
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$152,181
FINE ARTS	$0

226 — YEAR BUILT 1997

Clarifier Expansion
42323 CR 24
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 1,320
CONSTRUCTION TYPE Reinforced Concrete

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

BUILDING VALUE	$198,743
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$1,402,393
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$1,601,136
FINE ARTS	$0

DESCRIPTION Wastewater Treatment Plant; equipment storage building; electrical out building

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Woodland

PROPERTY VALUATION

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227 — YEAR BUILT 1997

Dick Klenhard Youth Sports Complex
1771 E. Gum Avenue
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 1,600
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION

BUILDING VALUE	$182,175
PROPERTY IN THE OPEN	$555,316
EQUIPMENT VALUE	$26,136
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$763,627
FINE ARTS	$0

228 — YEAR BUILT 1991

Prairie School
1444 Stetson
Woodland *CA* *95695*

FLOORS 1 SQ. FT. 500
CONSTRUCTION TYPE Wood Frame

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION portable

BUILDING VALUE	$63,254
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$3,135
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$66,389
FINE ARTS	$0

229 — YEAR BUILT 0

Woodland Gymnastic Club
120 Main St. Suite L
Woodland *CA* *95695*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION yolo - Phones - $298,000

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$302,881
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$302,881
FINE ARTS	$0

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

230 YEAR BUILT 1999

Pioneer Park
1925 Branigan Avenue
Woodland *CA* *95776*

FLOORS 1 SQ. FT. 550
CONSTRUCTION TYPE Joisted Masonry

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION park shop, restrooms, equipment storage

BUILDING VALUE	$62,623
PROPERTY IN THE OPEN	$279,639
EQUIPMENT VALUE	$20,421
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$362,683
FINE ARTS	$0

231 YEAR BUILT 0

Vehicles

Woodland *CA* *0*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Only vehicles Over $10,000; Suggested Replacement Value

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$5,423,196
TOTAL:	$5,423,196
FINE ARTS	$0

231.01 YEAR BUILT 0

Contractor's Equipment Vehicles

Woodland *CA* *0*

FLOORS 0 SQ. FT. 0
CONSTRUCTION TYPE None

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION Over $10,000; Suggested Replacement Value

BUILDING VALUE	$0
PROPERTY IN THE OPEN	$0
EQUIPMENT VALUE	$0
CSACBI RENT:	$0
VEHICLES:	$2,125,763
TOTAL:	$2,125,763
FINE ARTS	$0

CSAC - Robert Driver Assoc.

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Woodland

PROPERTY VALUATION

AS OF 10 / 2003

487

Armory Building
102 Beamer St.
Woodland *CA* *95695*

YEAR BUILT 1950

FLOORS 1 SQ. FT. 9,000

CONSTRUCTION TYPE Masonry - NonCombustibl

APPRAISAL DATE:
Appraisal Cost (w/trend factor): $0

DESCRIPTION

BUILDING VALUE	$1,326,663
PROPERTY IN THE OPEN	$37,647
EQUIPMENT VALUE	$51,137
CSACBI RENT:	$0
VEHICLES:	$0
TOTAL:	$1,415,447
FINE ARTS	$0

Woodland
GRAND TOTALS

BUILDING:	$28,673,536
PROPERTY IN THE OPEN:	$5,100,859
EQUIPMENT:	$18,176,782
CSACBI RENT:	$0
VEHICLES:	$7,548,959
ENTITY TOTAL:	$59,500,136

FINE ARTS: $0

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City of Woodland Critical Facilities

The following list of facilities has been determined to be critical to the ability of the City of Woodland to fulfill the requirements of its mission during an emergency:

NOTE: The City of Woodland recently added a new Police Station located at 1000 Lincoln Avenue. The facility is 53,000 square feet and was built at a cost of $13.8 million in 2004. This item is not listed in the Inventory of Assets above, but should be added.

Item #	Facility	Address
	Police Department	1000 Lincoln Ave
131	City Hall & Fire Station	300 First Street
132	Police Department & Modular Building	520 Court Street
133	Office – Police	520 Court Street
134	Senior Citizens Center	630 Lincoln Ave
152	Fire Station #2	1619 West St
153	Fire Station #3	1550 Springlake Ct
191	Water Well #5l	Elm & Maedel
192	Water Well #12	Kentucky Ave west of Rd 101
193	Water Well #13	Cottonwood & El Dorado
194	Water Well #15	Thomas St & Matmor St
195	Water Well #16	Crawford & College
196	Water Well #18	Gibson Rd
197	Water Well #19	Sutter St Yard
198	Water Well #20	West Court Street
199	Water Well #21	Kentucky & Cottonwood
200	Well #1	409 5th St
201	Well #4	Beamer & Walnut
202	Well #6	Grand between Lincoln and Mai
203	Well #7	California St
205	Well #9	6th & El Dorado
206	Well #10	Bemmerly & Wycoff
207	Well #11	Cottonwood & W. Southwood
208	Well #14	CR101 & Case Place
209	Well #17	Rd 98 & W El Dorado
210	Municipal Service Center	655 Pioneer Ave
211	Water Tank	Christiansen Park
212	Public Library	250 First St
215	Shop & Maintenance	42323 County Road 24
216	Electrical Building	42323 County Road 24
217	Chlorine/Sulfur Dioxide Building	42323 County Road 24

Item #	Facility	Address
218	North Building and Well	42323 County Road 24
219	South Pump Station	42323 County Road 24
220	West Water Well	42323 County Road 24
221	West Levee Pump Station	42323 County Road 24
222	North Pump Station	42323 County Road 24
223	Operations & Lab Building	42323 Count Road 24
224	Other Equipment & Concrete Structures	42323 County Road 24
225	Pump Station	Beamer St
226	Clarifier Expansion	42323 County Road 24
487	Armory Building	102 Beamer St

City of Davis

History

Founded in 1868, it was originally named Davisville for Jerome C. Davis, a prominent local farmer. The Davisville post office shortened the town name in 1907 and the change was official when the city incorporated in March 1917. From its beginnings as an agricultural community, Davis is now recognized internationally for its contributions to life sciences, agriculture, veterinary medicine, biotechnology, medical technology and engineering.

Closely tied to the community's history is the University of California at Davis. UC Davis was established in 1908 as the "University Farm School". The School of Veterinary Medicine was formed in 1948, with Letters and Science added in 1951. Engineering, Law and Medicine were established in the sixties, while the Division of Biological Science and Graduate School of Management came into being in 1970 and 1981 respectively.

Location & Topography

Situated in Yolo County, in the Central Valley of northern California, Davis is located 11 miles west of Sacramento, 385 miles north of Los Angeles, and 72 miles northeast of San Francisco.

There is unparalleled scenic beauty and many recreational opportunities within a few hours drive from Davis. Sierra Nevada Mountain range lies to the east - Coastal Range to the west. The Sacramento and American Rivers lie to the east along with historic gold country and Lake Tahoe, while to the west are the San Francisco Bay area, the great coastal redwood forest, and the beaches and rugged shores of the Pacific Ocean. The Sacramento-San Joaquin Delta region lies to the south.

Davis sits in the Pacific Flyway, a major migration route for waterfowl and other North American birds. Several wildlife preserves, offering a natural environment, dot the landscape. The Yolo Bypass Wildlife Area - one of the most successful public-private partnerships for wildlife preservation – was recognized by President Clinton in 1999. It provides habitat for thousands of resident and migratory waterfowl on more than 2500 acres of seasonal and semi -permanent wetlands. Open to the public, the facility provides educational opportunities regarding wetlands and associated wildlife species.

The Central Valley is the agricultural heart of the state and provides one of the most highly developed and integrated agricultural systems in the world. Scientists conduct research in Davis because its physical location allows re-creation of nearly limitless soil and environmental conditions. The area surrounding Davis has some of the most productive agricultural land in California, sustaining hundreds of different crops – from rice to tomatoes to almonds. Thus conservation of prime agricultural land through limited urban growth is a priority as part of the city's General Plan. Other directives include resource conservation and the efficient use of energy, open space and water resources. These priorities have garnered Davis international acclaim for accomplishments in recycling; water conservation; and innovative, energy-saving design.

Davis also sits in the eastern portion of the Putah Creek Plain, a major feature of the southwestern Sacramento River Valley. The land slopes at generally less than one percent. Elevations range from 60 feet in western parts of the city to 25 feet in some eastern parts, with an official elevation level of 51 feet. The city limits cover 9.9 square miles.

Flooding

Flood hazards in Davis generally consist of shallow sheet flooding from surface water runoff in large rainstorms. To mitigate this impact, the Public Works Department maintains three main channels and three detention ponds which provide for drainage and storm water detention. Portions of Davis, primarily in the northern section of town, are subject to flooding in a 100-year flood.

Seismic Activity

No earthquake faults run through the City. Davis has suffered no quake damage from quakes occurring on the San Andreas fault system to the west or the Eastern Sierra fault system to the east. The office of Planning and Research has placed the Davis area in Seismic Activity Intensity Zone II.

Water

The city's water supply, maintained by the Public Works Department, is drawn from aquifers ranging from 180 to 1,600 feet underground. The system contains twenty-one water wells, one elevated storage tank with a 200,000 gallon capacity and over 170 miles of water distribution pipes. The supply system produces an average of 11 million gallons per day. The normal water pressure is 45 PSI. The quantity of water available has been estimated as adequate to meet the city's projected demand through 2010 (build-out of the General Plan).

Generally, Davis groundwater is very hard and high in dissolved solids. Selenium and nitrates are two primary substances found in Davis tap water. Selenium is a natural element in the soil which may dissolve into groundwater and nitrates are chemicals that may occur from agricultural irrigation and cultivation of the soil due to fertilizers or leaching of water from septic systems. Both selenium and nitrate levels at all city wells are below the maximum standards set by federal and/or state agencies. Long term development of water wells over 1,500 feet deep is planned to improve the aesthetic characteristics of Davis water.

Weather

The Central Valley climate can be described as Mediterranean. During the hot, dry, sunny summers, temperatures can exceed 100 degrees F on some days, however, more often summer temperatures are in the low 90s. The Sacramento River Delta breeze usually cools overnight temperatures into the 60s. Spring and fall has some of the most pleasant weather in the state. Winters in Davis are usually mild. Temperatures drop below freezing on only a few days. The rainy season typically runs from late fall through early spring and fog season lasts from November through March. Average annual rainfall is about 17 inches.

AVERAGE:	TEMPERATURE			RAIN	HUMIDITY		
Period	Min.	Mean	Max.	Inches	4 am	Noon	4 pm
January	37	46	54	3.69	90	73	69
April	46	60	74	1.54	86	48	46
July	57	77	97	0.00	77	37	28
October	49	64	79	0.98	78	45	39
Annual	**47**	**62**	**76**	**17.28**	**83**	**50**	**46**
Source: University of California, Davis							

Infrastructure Profile

One major advantage of the Davis region is its proximity to major markets. Virtually the entire state of California is within a one-day driving distance. Situated at the hub of several highways, and enjoying a nearby deep-water port, a major airport and transcontinental rail lines - the area enjoys considerable location advantages.

Transportation & Shipping	
Airport Access	
Sacramento International Airport	19 miles
Davis University Airport	1 mile
Yolo County Airport	5 miles
Interstate Freeways	
Interstate 80	1 mile
Interstate 5	11 miles
Highways	
U.S. Highway 50	17 miles
U.S. Highway 99	17 Miles
Highway 113	1 mile

Rail Access	Public Transportation
Amtrak	Greyhound Bus
Southern Pacific Railroad	Yolobus
	Unitrans
	Davis Community Transit

Highways

Interstate 80 and State Highway 113 run through Davis with the junction of these two major roadways sitting just outside town at UC Davis. Interstate 5 is 11 miles to the north and 13 miles to the east. The Interstate 505 junction is 14 miles west.

Public Transit

Three transit systems serve the City of Davis. Unitrans provides bus service within the city. Yolobus connects to other cities in Yolo County. Davis Community Transit provides door-to-door demand response service to the general public, seniors and the disabled.

Davis has a strong history of bicycle use and planning. An estimated 53,000 bicycles are in use in Davis and on the UCD campus. An estimated 25% of person trips in Davis are made by bicycle. City planning integrates bicycle lanes and bike paths on city streets and through community greenbelts.

Train

Davis sits at the junction of the north/south, east/west lines for both the Southern Pacific Railroad and AMTRAK. Capital corridor trains stop at Davis daily for service between Sacramento and the Bay Area. AMTRAK and the Greyhound bus company stop at the historic Southern Pacific Depot, adjacent to the downtown. The city recently renovated the circa 1910 depot building and expanded parking at this facility.

Airports

Situated 19 miles to the northeast is the Sacramento International Airport. Served by half a dozen major national and international carriers as well as several commuter airlines, it has about 135 arriving and departing flights daily with about 14,000 passengers. By the year 2005, the airport is forecasted to serve 23,000 passengers daily. Yolobus and a private airport shuttle provide service between Davis and the airport. The Yolo County Airport, five miles northwest of Davis, has a 6,000 foot runway that can accommodate medium-sized corporate jets or private planes. The UC Davis Airport, open to the public, offers general utility services for light aircraft.

Population & Housing

Davis' greatest economic and social resource is its more than 62,200 residents. Outstanding professional and technical skills, coupled with progressive and innovative thinking make the population a resource envied in surrounding communities and throughout the State. Davis residents boast the highest level of education in the state with more than 80% of Davis' adult population completing a minimum of one year of college training and more than 60% having attained at least a four-year college degree.

Davis Housing Market	
Median Home Price	
$207,200	1999
$254,000	May 2000
$319,500	June 2000
$333,000	March 2001
$173,500	Yolo County March 2001
$209,500	Sacto County Mar. 2001

Davis Housing Units			
Single Family	Multiple Family	Mobile Homes	Total
12,940	9,907	402	23,249
* as of Jan 1, 2001 Source City of Davis			

Davis is one of 86 cities in California with a population between 50,000 and 100,000. Based on population size, Davis ranked 122 out of the 474 cities in California in 2000.

Davis is situated in the Greater Sacramento Area which has a plentiful housing supply and an abundance of undeveloped land. Thus the region has some of the most affordable housing in a major metropolitan community in California and nation wide.

Housing prices in Davis are generally higher than the rest of the Greater Sacramento Area. An historical desire for slow growth in the community has contributed to higher home prices. In addition, Davis' excellent quality of life, the low crime rate and a premier local school system create high demand to move into this community.

Davis did see significant new home development during the 1990s. Averages of 496 permits were issued annually. However, by June 30, 2001 there will only be about 100 lots left in Davis. Once permits are issued for these lots, Davis will have reached build-out under the current General Plan through 2010.

The limited potential for new development will continue to affect the Davis housing market and its affordability. Further adding pressure to the housing market will be the projected increase in the UCD student population through 2010, of an additional 30,000 to 31,000 students and about 500 new faculty members, plus additional staff.

The housing inventory in Davis consists of approximately 65% single family homes and 35% multi-family units. The high quality of the city's housing stock is due to the resale/retrofit program that requires housing units be inspected and brought to code standards on resale.

The size of an average single family unit increased from 2,100 square feet in 2000 to 2,666 square feet in 2001. The average multi-family unit size decreased from1,243 in 200 to 1,045 in 2001.

The primary market area of Davis includes the City of Davis, the adjacent unincorporated golf course communities of El Macero and North Davis Meadows, and the main University of California, Davis campus.

Population and Household Trends

DAVIS AREA PRIMARY MARKET

	1990	2000	Annual Growth '90–'00
Population	48,415	61,363	2.4%
Households	17,522	23,462	3.0%
Family Households	8,967	11,920	2.9%
Avg. Household Size	2.5	2.5	
Median HH Income	$30,491	$41,299	3.1%
Median Family Income	$49,603	$65,513	2.8%
Per Capita Income	$15,694	$22,945	3.9%
Age Distribution			
Under 18	16.7%	17.6%	
18–24	35.1%	25.6%	
25–34	17.3%	15.3%	
35–44	13.1%	15.5%	
45–54	7.5%	12.6%	
55–64	4.6%	6.9%	
65 & Over	5.6%	6.7%	
Total	100.0%	100.0%	
Median Age	24.5	29.5	
Household Type			
Families	51.2%	50.8%	
Non-Families	48.8%	49.2%	
Household Tenure			
Renter	57.7%	NA	
Owner	42.3%	NA	

Note: Davis Area Primary Market is defined as Davis and El Macero

Source: State of California, Department of Finance, 2000; Claritas Inc., 2000; U.S. Census, 1990; BAE, 2000.

Labor & Employment

Davis has a highly skilled professional and technical labor force with residents represented at the highest levels of state and national policy decision making. Nearly all of the major administrative agencies for the State of California are represented by Davisites in key positions.

Community Labor Force Availability				
March 2000	Labor Force	Employed	Unemployment Number	Rate
City of Davis	33,750	32,460	1290	3.8%
Yolo County	91,400	86,800	4600	5.0%
Source: Ca. Employment Development Department - Labor market Information Division				

The work force is engaged in a broad spectrum of employment with primary representation in professional, technical, and governmental (managerial and administrative) occupations. This distribution is due mainly to the city's close relationship with the University of California campus and the professional and technical environment the university creates.

Rank	Name	Total Emp	Product or Service
1	UCDavis*	17,000	Education & Research
2	DJUSD	800	Education
3	City of Davis	423	Government
4	Sutter Davis Hospital	385	Health Services
5	Safeway	260	Groceries
6	USDA	220	Conservation/Agri. Research
7	Nugget Market	202	Groceries
8	PG&E	155	Utilities
9	Davis Ace Hardware	110	Hardware & Household
10	Z-World	105	Technology/Manufacturer
11	US Post Office	100	Postal Services
12	Sierra Health Care	100	Health Services
13	Alstom	85	Design/Manufacturer
14	Calgene/Monsanto	74	Plant Genetics Research
15	AgraQuest	53	Research and Development
	Total:	20,072	

*Not located in the city of Davis
Source: Phone Survey, April 2001

Government

Cities are "local" governments, voluntarily formed by and for their citizens, to provide for local self-determination of community issues. The City of Davis is a municipal corporation operating under the general laws of the State of California. It endeavors to create a livable community with a high quality of life through land-use policies that balance the need for housing, jobs, open space and essential services. The city is a legally separate and fiscally independent agency. It can issue debt, set and modify budgets, fees and sue or be sued

Davis operates under the Council-Manager form of government with a five-member council, elected at large by city residents. The City Manager serves as the administrative head of city government overseeing the departments of Fire, Police, Parks and Community Services, Finance, Planning and Building, and Public Works.

The primary government of the City of Davis includes the activities of the city as well as the Davis Redevelopment Agency (RDA), the Public Facilities Financing Authority, and the Davis Comstock Recreation Corporation. All of which are controlled by and dependent on the city.

The RDA was established to assist in the clearance and rehabilitation of city areas determined to be in a declining condition. The Agency has the same governing board as the city. Its activities are intended to finance capital improvements and economic development to benefit the city. All accounting and administrative functions are performed by city staff. City Council members serve as Directors of the RDA. The City Manager is the Executive Director.

The Public Facilities Financing Authority was established solely to assist in the issuance of certain bonds for a series of Community Facilities Districts for the construction of infrastructure and improvements under the State Mello-Roos Act. The authority is controlled by and financially dependent on the city. Its financial activities are included in the capital projects and fiduciary funds.

The Davis Comstock Recreation Corporation is a non-profit organization established in 1967 to finance the acquisition and improvement of the Davis Municipal Golf Course. The city leases the golf course from the corporation. City management controls and directs the affairs of the corporation and when the lease expires the city will receive title to all remaining assets of the corporation.

Dedicated to citizen participation, the city has fifteen council-appointed commissions that are devoted to various aspects of community life including such elements as planning, recreation, finance/economics, natural resources and university student relations.

As a "general-purpose" city, Davis provides essential frontline municipal services, described below. The city funds these activities through a variety of locally enacted revenues (parcel taxes, user and license fees, etc.) and with state shared revenues (property tax, sales tax, motor vehicle license fees).

Departments

City Manager's Office
Community Development Department
- Permits
- Code Enforcement
- Cultural Services

Finance Department
- Business Licenses
- Billing & Utilities (water, garbage)
- City Budget

Fire Department
- Public Education
- Fire Safety

Parks & Community Services Dept.
- Forms & Publications
- Parks & Facilities
- Recreation Programs
- Community Services
- Social Services

Police Department
Public Works Department
- Capital Improvement Projects (CIPs)
- Recycling
- Streets
- Utilities (water, garbage, wastewater)

Police

Provides a law enforcement system that uses departmental, civic and community resources to protect lives and property of its citizens.

Fire

In addition to responding to fires, environmental accidents and natural disasters, the Davis Fire Department also offers comprehensive fire safety programs and is the “first responder” in providing emergency medical services.

Parks and Recreation

The City of Davis provides swimming pools, parks, ball fields, greenbelts, bike paths and bike trails. There is one public golf course, two private golf courses and a skateboard park. The city also sponsors many recreational activities for seniors, other adults and youth of all ages and abilities.

Community Services

Provides for various programs to promote the physical and social well-being of Davis residents, including operating a Senior Center and Teen Center; child care referral services and funding.

Public Transit , Transportation and Streets

Maintains and improves a coordinated local transportation network system including senior transit, dial-a-ride programs and funding assistance for UNITRANS. Plans for the safe and convenient movement of pedestrians and vehicles on city streets, maintain and repair 155 miles of city streets, 54 signal controlled intersections and 4,983 street lights.

Planning and Development Services

Helps guide the physical and economic growth of the community. Ensures that buildings are safe and that developments improve the city environment and promote economic vitality.

Public Utilities

The city's Public Works Department provides the clean water used by citizens every time they turn on a faucet, wash clothes, or jump into a pool or hot tub. They also provide sewer and drainage services as well as garbage removal and recycling.

Major revenue sources for the overall city budget include: property tax (12.4%), sales tax (6.2%), service charges (26.6%), intergovernmental revenue (20.3%), other taxes (10.7%) and all other revenues (23.8%). Within the General Fund budget, principal revenue sources are taxes (62.6%), fees and charges (17.9%), intergovernmental (15%), and other revenues (4.5%). Major expenditures in the General Fund are: Police and Fire (48.9%, combined) and Parks & Community Services (27.4%).

The Government Finance Officers Association (GFOA) has awarded the City of Davis a Certificate of Achievement for Excellence in Financial Reporting for its comprehensive annual financial report (CAFR) for the fiscal year ending June 30, 1999. The Certificate of Achievement is the highest form of recognition in governmental accounting, and represents a significant accomplishment by the City.

Community

Davis is noted for its desirable quality of life, its seeming small town atmosphere, and an emphasis on parks and open spaces. Twenty-two miles of greenbelts wind their way through the neighborhoods of North Davis and South Davis. Davis' parks contain picnic facilities, ball fields and swimming pools. An expanded Central Park includes a Teen Center and the Davis Farmer's Market. The Davis Farmers Market is held year-round twice weekly on Wednesdays and Saturdays in Central Park. It is a unique grocery shopping experience. In addition to fresh fruits and vegetables sold by local farmers, often organic, attendees can find gourmet foods, live entertainment, specialty products, arts and crafts, and even splash fountains for children's enjoyment.

The Davis community combines the right blend of safe neighborhoods, convenient retail and service establishments, and cultural amenities for a variety of tastes and plentiful recreational activities. There are 31 parks included in the 521 acres of parks, greenbelts and open space areas owned and maintained by the city.

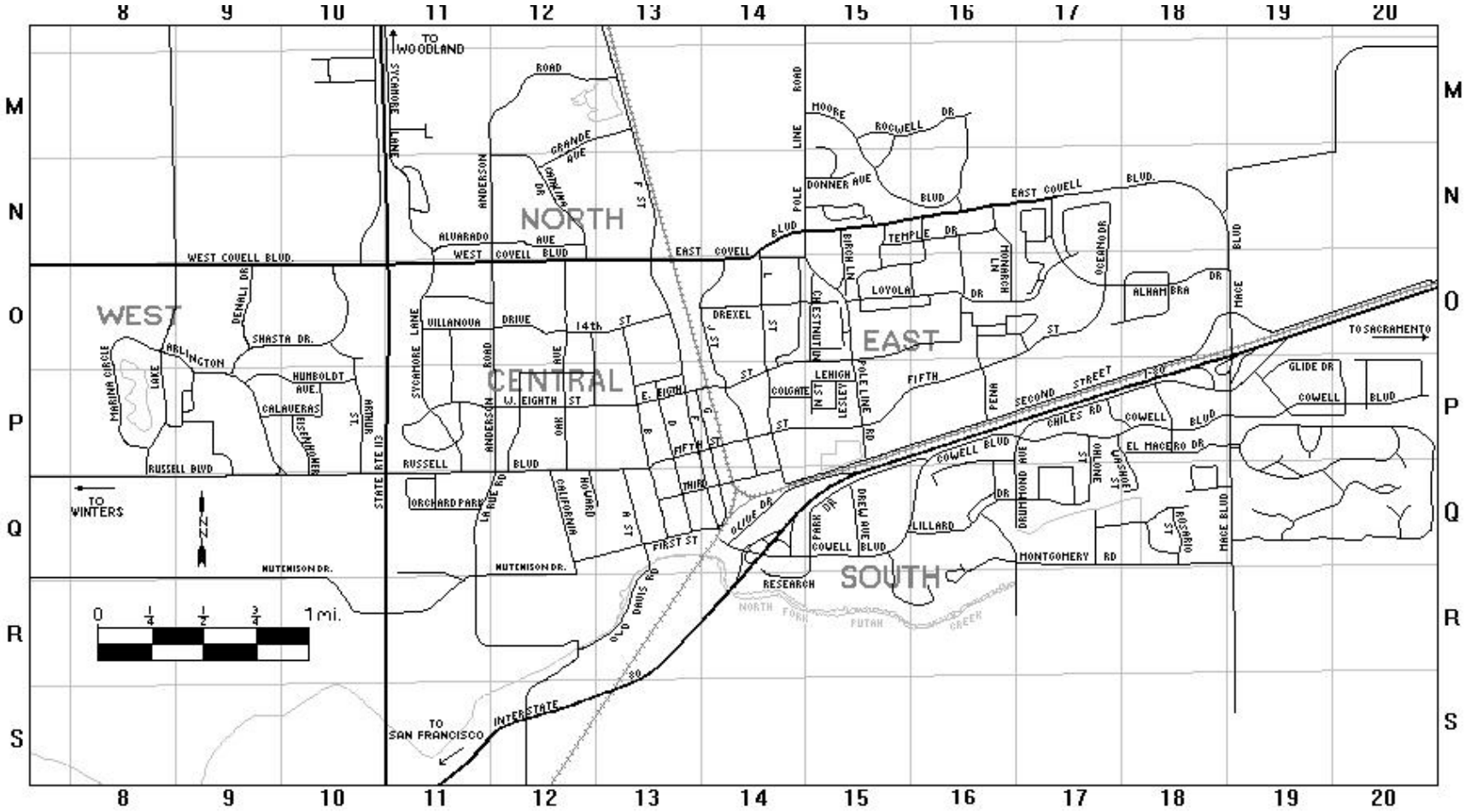
The area offers myriad cultural and entertainment attractions. A Northern California Mecca for artists of many media, Davis features a community-built Art Center, more than two dozen private and public galleries, an annual downtown Street Faire, an exciting collection of unusual public objects d'art and the restored downtown Varsity Theater performing arts and conference center. In almost any direction one turns, the stroke of the local artist is evident. Demonstrating the city's dedication to art in public places, nearly $200,000 of publicly owned art can be seen in a walk around downtown Davis.

Galleries like “The Artery”, a local artists’ cooperative, provide an opportunity for artists to show and sell their work. Longtime downtown anchor, the “Pence Gallery”, hosts exhibits year-round and the outdoor performing area is home to music concerts and theater productions. The Davis Musical Theater Company is the west’s only full time, year-round, musical theater, company, and the Davis Comic Opera Company stages classic operettas. The quaint Palms Playhouse produces intimate live music concerts with big name stars and UCD Presents brings world class entertainers to the area. More than a dozen major dance concerts are produced in town each year and the UC Davis Drama Department always has a top-notch theater season.

The International House is a haven for foreign visitors, scholars and students with facilities to welcome and serve guests from all over the world.

Sutter Davis Hospital, which was constructed as recently as 1994, and Kaiser Permanente Medical Facilities provide excellent primary and continuing health care for the residents of Davis. Private clinics and physicians’ groups are available to meet a variety of health care needs.

As a university town, Davis has the advantages of a small town coupled with the numerous intellectual, recreational and cultural activities serving a wide variety of interests. In fact, Davis has been named one of the healthiest U.S. communities in which to live and retire.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Education

Many residents choose to live here solely because of the quality of the public school system. The Davis Joint Unified School District provides for primary and secondary (K-12) public education in Davis. The student body totaled 8,264 entering fall 2000. Davis students have one of the highest scholastic achievement test scores in the region and an astounding 92% of 1999 graduates matriculated in college.

Davis schools have won numerous awards and recognition nationally and internationally including California Distinguished School Awards and American mathematics Competition Awards. The Davis High School Madrigals have performed at the White House and in Europe.

The University

Davis is home to the University of California at Davis. UC Davis is a world class university with such varied attractions as the arboretum along Putah Creek, cultural performances, galleries, and general, medical, and law libraries. The highly ranked University of California, Davis has 26,000 students. Though many students live in Davis and contribute to a low housing vacancy rate, a great number of student's commute from the surrounding communities.

UC Davis has emerged an acknowledged international leader. It is gaining similar recognition for excellence in the arts, humanities, social sciences, engineering, health sciences, law and management. The University occupies 5,200 acres and is the largest physical campus in the nine campus UC system. In addition to more than 100 undergraduate majors, 80 minors, and 70 graduate programs, the university has four professional programs: the School of Law, the Graduate School of Management, the School of Medicine, and the School of Veterinary Medicine, the latter being the only such school in California.

An acknowledged international leader in agricultural, biological, biotechnological and environmental sciences, it is also gaining similar recognition for the excellence of its teaching and research in the arts, humanities, social sciences, engineering, health sciences, law and management. A few years ago, UCD was admitted into the prestigious Association of American Universities. Membership in this group of 62 institutions of higher learning is by invitation only. In 1999, U.S. News & World Report magazine ranked UC Davis among the top 12 public universities nationwide. In addition, many of the UCD programs ranked in the top 10 nationwide.

More students receive PhD's in the biological sciences at UC Davis than at any other university in the nation. One out of every 300 Californian's is a UC Davis graduate. UC Davis undergraduates persist and graduate at amongst the highest rates of UC campuses. Law school graduates rank among the top 3 of 60 law schools in California in their passage rate of the state bar exam.

More than 150 new varieties of fruits, grains and vegetables have sprung from agricultural research at UC Davis. The strawberry varieties alone represent the majority of strawberries grown commercially around the world. The university's viticulture and enology department has influenced winemakers around the world, and its studio art program is widely regarded as one of the best in the country.

The University Arboretum is home to one of the best collections of dry lands plants in the country, and occupies about 200 acres along the north fork of Putah Creek. The Arboretum contains 2,000 trees, flowers and bushes, including more than a dozen rare or endangered species, and serves as an important teaching and research resource as well as a campus and community open space amenity.

UC Davis has a wide range of diverse offerings in music, drama, dance, the visual arts and design throughout the year. The Department of Music sponsors nearly 100 concerts each year, including those

by the University Symphony, Chorus, Chamber Singers, Early Music Ensemble, Concert Band and Electronic Music Studio. The department regularly brings to the campus distinguished professional musicians to perform in concert, and each year hosts a visiting Artist-in-Residence of international reputation.

City of Davis Inventory of Assets

Location Name	Address	Type of Construction	Use	Yr Built	Sq Ft	Acreage	Land Value	Building Value	Equipment Value	Total Current Value
Moore Blvd						10.70	658,692			1,376,892
Pelz Bike O/C						1.00				-
Planter Island (L at Covell)						0.10	6,156			15,778
Poleline Road & I-80 OX						4.50	277,020			710,002
Poleline N of 8th						0.20				-
Poleline S of 8th						0.30				-
Research Drive						0.50	30,780			78,889
Richards Undercrossing						0.60	61,560			109,669
Road 104 (west of Mace)						0.20	12,312			31,556
Russell Boulevard/Lincoln Hwy						4.00	246,240			631,113
Shasta Drive corridor						1.50	61,560			157,778
SP @ I St						0.20				-
Spruce to Cypress bikepath						0.10	6,156			15,778
Stonegate parcels						0.20				-
Stonegate pond streetscape	Lake Blvd					0.15	18,468			32,901
Summer Tree						0.75	46,170			118,355
Villanova median						0.10	6,156			15,778
Wildhorse greenstreet						10.70				-
PUBLIC PARKING LOTS										
Art Center Lot (Comm. Park)/85 sp	1919 F Street					0.25				181,746
Bank Lot/113 spaces	E/F Street					2.00	1,026,000			1,267,615
Boy Scout lot/53 spaces	616 1st Street									113,324
Davis Enterprise Lot/46 spaces	G Street					0.75	384,750			394,106
E Street Plaza Lot/65 spaces	220 E Street					0.50	256,500			448,937
G Street/37 spaces	206 G Street					1.50	769,500			848,613
Health & Justice Bldg.	600 A Street					0.75				179,279
High School Lot (Comm. Park)/34(	203 E 14th St					0.50	61,560			788,543
Intermodal Parking Lot/26 spaces	840 2nd Street					1.00				55,593
Parking Structure/193 spaces	1st & F Street	Reinforced Concrete		1990	83,882	0.75	384,750	5,391,900	82,049	5,858,699
Playfields Park/204 spaces	2500 Research Park					1.50				436,190
SP Depot (135 Spaces)	840 2nd Street					3.00				2,069,405
Wake Forest/Oxford Circle/25 spa	5050 Oxford					0.75	92,340			145,795
WELL SITES, ETC										
Anza Well Building					356			34,215	60,505	94,720
Covell Park Drainage Pump	Road 102	None							20,242	20,242
Drainage Pump Station	Evergreen Rd	Joisted Masonry			1,500			168,000	51,178	219,178
Drainage Pump Station - El	Highway 80 & Levee Bypass	Joisted Masonry			500			56,000	153,535	209,535
Drainage Pump Station No	H Street	Reinforced Concrete		1965	1,552			232,800	408,632	641,432
Drainage Pump Station No	Road 32	None							230,764	230,764
Drainage Pump Station Sut	Road 99D	None							25,590	25,590
H Street Storm Drainage					1,552	3.00		373,550	384,703	758,253
L Street Pumphouse					408			26,727		26,727

Location Name	Address	Type of Construction	Use	Yr Built	Sq Ft	Acreage	Land Value	Building Value	Equipment Value	Total Current Value
Richards Blvd Sump Pump	Richards Underpass	Joisted Masonry		1923	50			5,600	10,214	15,814
Sewage Treatment Clorination Station Bldg	Co Rd 28 H	Reinforced Concrete		1972	2,304			345,600	1,490,344	1,835,944
Sewage Treatment Complex	Co Rd 28 H	None								834,259
Sewage Treatment Complex Generator	Co Rd 28 H	Steel Frame		1983	900			58,500	307,685	366,185
Sewage Treatment Complex Office /Laboratory	Co Rd 28 H	Masonry - Non Combust		1972	4,573			663,085	784,106	1,447,191
Sewage Treatment Control/Pump/Motor Room	Co Rd 28 H	Masonry - Non Combust		1972	9,532			2,451,622	2,110,717	4,562,339
Sewage Treatment Control/Pump/Motor Room	Co Rd 28 H	Reinforced Concrete		1972	364			54,600	52,318	106,918
Sewage Treatment Control/Pump/Motor Room	Co Rd 28 H	Reinforced Concrete		1972	2,640			396,000	71,094	467,094
Sewer Lift Station	5454 Cowell	None							166,841	166,841
Sewer Lift Station	1812 Manzanita	None							81,885	81,885
Sewer Lift Station - Aggie Village	First & Richards	Joisted Masonry			500			56,000	35,825	91,825
Sewer Lift Station - Northstar	3434 Anderson Rd	Joisted Masonry			2,500			280,000	40,943	320,943
Sewer Lift Station #1	44501 So El Macero Dr	Masonry - Non Combust		1976	372			53,940	138,145	192,085
Sewer Lift Station #4	1717 Fifth Street	None							103,587	103,587
Sewer Lines		None								519,511
Sewer Treatment Maintenance	Co Rd 28 H	Joisted Masonry			13,000			1,456,000	102,357	1,558,357
Throughout City		None								1,090,127
Water Tank	Co Rd 99D					3.00				-
Water Storage Tank No 2	530 W Eighth Street	None							30,768	417,881
Waterwell #11	1405 F STreet	None							153,535	153,535
Waterwell #14	530 L Street	None							153,535	153,535
Waterwell #28	2101 Glacier Dr	None							409,427	409,427
Waterwell #29	Alhambra Dr	None							409,427	409,427
Well No 1	615 E Street	None							145,637	145,637
Well No 12	921 Sycamore Ln	Masonry - Non Combust		1961	590			85,550	123,074	208,624
Well No 13	1212 L Street	Masonry - Non Combust		1962	590			85,550	76,922	162,472
Well No 15	1812 Manzanita	None							143,587	143,587
Well No 19	2857 Catalina Dr	None							143,587	143,587
Well No 20	2300 Evenstar Ln	None							143,587	143,587
Well No 21	5050 Chiles Rd	None							143,587	143,587
Well No 22	1414 Tulip Lane	None							143,587	143,587
Well No 23	527 B Street	None							211,072	211,072
Well No 24	1600 Olive Dr	None							153,842	153,842
Well No 25	1188 Arlington Blvd	None							143,587	143,587
Well No 26	2850 Chiles Rd	None							211,072	211,072
Well No 27	3030 Sycamore Lane	None							143,587	143,587
Well No 7	810 Eleventh St	Wood Frame		1952	446			55,750	102,562	158,312
Westwood/Stonegate Drainage	Road 31	None							20,471	144,746

Location Name	Address	Type of Construction	Use	Yr Built	Sq Ft	Acreage	Land Value	Building Value	Equipment Value	Total Current Value
Senda Nueva Greenbelt	2600 Quail Street	None				9.00	1,108,080			2,024,585
Simmons						1.00				-
Southfield GB	1321 Lillard					5.10	627,912			1,131,454
Sunnyside	2604 Grambling					2.85	350,892			625,114
University Village Greenbelt	2700 Brentwood	None				0.70	86,184	866		426,080
Willowbank #9	4325 Redbud					4.50				-
Willow Creek Greenbelt	3747 Modoc	None				6.30	775,656			1,381,831
Willow Creek #4	3747 Modoc					0.40	49,248			87,735
Wildhorse Greenbelt	2500 Moore					12.22				-
Wildhorse ag buffer	3400 Pole Line Road					38.00	38,000			638,000
Woodbridge	4132 Hackberry									-
MEDIANS, CORRIDORS, STREETSCAPES, ETC										
2nd St. - G & F planter						0.10	6,156			15,778
5th St. Rndabout						0.25				-
5th Street (East of L) corridor						2.00	123,120			315,557
8th and J planter						0.10	6,156			15,778
Alhambra streetscape						5.00	307,800			788,891
Almond Lane						0.10	6,156			15,778
Alvarado Rndabout						0.25				-
Anderson Rd. corridor						2.80	172,368			442,848
Arlington Blvd. Corridor						1.60	98,496			252,445
Bikepath Northstar entry to Senda Nueva						1.00	61,560			157,778
Core area outfall ditch						1.50				248,805
Corp Yard						0.75	46,170			118,334
Covell Farm (along Covell)						0.10	6,156			15,778
Covell Streetscape						6.10	313,956			814,346
Cowell Ph2						0.50				-
Denali Drive streetscape						0.50	30,780			78,889
Dennison Drive Plant strip						2.00	123,120			315,557
Drummond streetscape						0.20	12,312			31,556
Elmwood Lane						0.50	3,078			7,889
F Street (amapola North) plant strip						1.20	73,872			191,862
F St (open space)						2.00				-
Grande Bike Path						0.25	15,390			39,445
Guaymas bikepath						0.10	6,156			15,778
Hanover Circle						0.10	6,156			15,778
Lake Boulevard streetscape						2.00	123,120			315,557
Lincoln Hwy (Olive-Mace)						1.00				-
Loyola Drive corridor						0.50	30,780			30,780
Mace Blvd. Intchg						2.00				-
Mace Park 'n Ride						2.00				-
Mace Industrial Subdivision						1.00				-
Maidu & Washoe Bike Paths						0.20	12,312			31,556

Location Name	Address	Type of Construction	Use	Yr Built	Sq Ft	Acreage	Land Value	Building Value	Equipment Value	Total Current Value
Whaleback Park	1101 Marina Circle	None				1.50	184,680		49,711	496,022
Willowcreek Park	Cowell	None				5.00	615,600			1,173,745
PONDS, PRESERVES, ETC										
Evergreen Pond	1500 W. Covell					2.00	246,240			348,840
Northstar Pond	202 Lindo					15.00	1,846,800			2,648,619
Southfork Preserve	Road 104					192.00	1,212,699			1,479,972
Stonegate Pond	3213 Oyster Bay					7.94	977,942			1,402,372
Toad Hollow Pond	1919 2nd Street				24	14.93	2,730,832		240,546	11,326,652
West Pond	1900 Lake Blvd					28.00	3,447,360			4,195,724
Wetlands	Road 28H					405.00	1,026,000			1,026,000
Wildlife/Go cart/Old landfill	Road 102				112	66.40	238,442	16,277		361,628
GREENBELTS & CONNECTORS										
Aggie Village	400 Aggie Lane					0.50	61,560			109,669
Aspen GB	2690 W. Covell	None				4.25	523,260			940,234
Covell GB	2205 Anza					38.90	4,789,368	26,727	8,553	8,668,748
El Macero Estates	5525 Rogers					5.90				-
El Macero Public I						0.80				-
El Macero Non Public I						2.30				-
El Macero Public II						1.30				-
El Macero Public II						3.70				-
Evergreen	2199 Lassen					9.11	1,121,623			1,998,172
Green Meadows GB	1924 Picasso					6.30	775,883			1,382,058
Heatherglen and Patwin						0.75	92,340			164,504
Mace Ranch GB	1171 Villaverde					10.00	1,231,200			2,225,456
Mace Ranch GB tree lane	3304 Arroyo					3.00	548,727			837,382
Mace Ranch ditch						10.30	1,231,200			1,641,600
Northstar GB	501 Mockingbird					5.30	652,536			1,162,493
Northstar Perimeter	724 Oriole					3.50	430,920			743,629
Oakshade GB						2.40	295,488			526,412
Oakshade Tunnel	1373 Danbury					0.69	84,953			151,344
Pole Line/Snyder	1313 Snyder					0.25	24,055			54,835
Putah Creek Parkway	1727 Sapphire	None				11.20	1,378,944			1,989,415
Putah Ck. Pk (East of Drummond	1111 El Campo					2.00	246,240			502,822
Putah Ck. Pk Drew/Davinci 20%						0.70				-
Putah Ck. Pk Drew/Davinci 80%						2.80				-
Putah Ck. Pk Chiles/Olive 20%						0.60				-
Putah Ck. Pk Chiles/Olive 80%						2.40				-
Putah Ck Pk Olive/RR 20%						0.20				-
Putah Ck Pk Olive/RR 80%						0.80				-
Rosecreek Greenbelt	3700 Brentwood	None				1.25	153,900			287,441
Rosecreek #8	2531 Alband					2.00				-

Location Name	Address	Type of Construction	Use	Yr Built	Sq Ft	Acreage	Land Value	Building Value	Equipment Value	Total Current Value
Community Park Restrooms	1405 F STreet	Reinforced Concrete		1964	683			102,450	10,554	113,004
Community Park Pool complex	1405 F STreet	Reinforced Concrete		1966	2,236			335,400	160,588	1,288,963
Community Park Skatepark	1405 F STreet	Reinforced Concrete		1991	150			22,500		292,112
Community Park Restrooms	1405 F STreet	Reinforced Concrete		1966	796			119,400	10,256	129,656
Covell City Park Greenbelt Restroom, Bldg Maint	300 Del Oro Avenue	Reinforced Concrete		1975	358	5.20		53,700	40,240	846,925
Covell Greenbelt Maint Shed	2205 Anza Avenue	Reinforced Concrete		1968	756			113,400	58,045	371,445
Hacienda Park	809 Hacienda Avenue	None				0.98	120,658		5,128	335,744
La Playa Park	La Playa Drive	Reinforced Concrete		1996	600	5.00	615,600	90,000		1,446,885
Little League Park	End of H Street					4.00	492,480			492,480
Little League Park -Announcers booth	End of H Street	Wood Frame		1950	392			49,000	4,308	53,308
Little League Park - Snack bar/Restroom/Office	End of H Street	Wood Frame		1987	1,530			191,250	16,781	1,113,080
Mace Ranch Park	Loyola Drive	None				24.00				1,367,787
Manor Park Equip bldg/pool complex	1520 Tulip Lane	Wood Frame		1974	1,837			229,625	202,454	1,264,432
Manor Park	1520 Tulip Lane	Wood Frame		1974	1,050	12.00		131,250	10,554	141,804
Manor Park Restrooms, pool	1520 Tulip Lane	Reinforced Concrete		1974	1,410			211,500	30,768	242,268
Municipal Golf Course-existing	Hwy 113 & Co Rd 29					85.00	879,133			5,155,501
Muni Golf Course-expansion	Hwy 113 & Co Rd 29					148.80	1,539,000			1,539,000
Muni Golf Course-maint bldg	Hwy 113 & Co Rd 29	Wood Frame		1965	4,775			596,875	51,281	1,179,925
Muni Golf Course-Pro Shop	Hwy 113 & Co Rd 29	Wood Frame		1968	998			124,750	51,281	176,031
Muni Golf Course-Snack Bar	Hwy 113 & Co Rd 29	Wood Frame		1968	1,405			175,625	51,281	226,906
Muni Golf Course-Restroom	Hwy 113 & Co Rd 29	Wood Frame		1968	355			44,375	20,513	64,888
N Street Mini Park	567 N Street	None				0.23	28,318		2,861	88,519
Northstar Park/Pocket	3434 Anderson Road					14.75	1,816,020			3,905,026
Northstar Park Restroom	3434 Anderson Road	Masonry - Non Combust		1992	960			182,462	30,768	213,230
Oakgrove Park	1900 donner Avenue	None				2.50	307,800			743,851
Oxford Circle Park	505 Oxford Circle	Wood Frame		1982	1,200	3.90	480,308	150,000	80,326	1,331,740
Park Maintenance Shed	3504 Cowell Blvd	Wood Frame		1965	577			72,125		72,125
Pioneer Park/ Restroom	5035 Hamel Street	Masonry - Non Combust		1974	291	5.80	714,096	42,195	10,554	1,666,598
Playfields Park	2500 Research Park/Cowell	Steel Frame		1996	2,132	16.50	2,565,000			6,631,009
Playfields Park-Concession Bldg/Restrooms	2500 Research Park/Cowell	Masonry - Non Combust		1996				380,991	66,665	466,556
Putah Creek Park	El Campho Blvd	None				1.80	221,616		27,692	588,338
Redwood Park	1001 Anderson Rd					3.40	418,608			418,608
Redwood Park Restroom	1001 Anderson Rd	Reinforced Concrete		1967	300			45,000	3,166	635,239
Redwood Park Alt Rec Bldg	1001 Anderson Rd	Wood Frame		1990	2,100			262,500	51,281	324,443
Sandy Motley Park	Wildhorse					5.00	615,600			1,179,900
Sycamore Park	1313 Sycamore Lane	None				5.50	677,160		15,058	1,520,714
Village Park	Arnold & Concord Street	None				0.82	100,958		26,972	509,692
Walnut Park	2250 Barony					17.00	2,093,040			2,659,847
Walnut Park-Restrooms	2250 Barony	Reinforced Concrete						10,800		10,800
West Manor Park & Bldg	Portage Bay off Lake	Masonry - Non Combust		1987	364	4.00	492,480	52,780	3,166	1,169,532
Westwood Park & Restroom	900 Barkley	Reinforced Concrete		1978	706	5.80	714,096	105,900	10,554	830,550

Location Name	Address	Type of Construction	Use	Yr Built	Sq Ft	Acreage	Land Value	Building Value	Equipment Value	Total Current Value
Davis Corp Yard - Bldg K	1818 Fifth Street	Steel Frame		1965	2,880			187,200	32,702	219,902
Davis Corp Yard - Bldg L	1717 Fifth Street	Wood Frame		1990	1,152			144,000	26,666	170,666
Davis Corp Yard - Bldg M	1717 Fifth Street	Steel Frame		1970	3,564			252,859	42,214	295,073
Davis Corp Yard - Bldg N	1717 Fifth Street	Steel Frame		1965	2,400			156,000	57,896	213,896
Davis Corp Yard - Fuel Facility	1717 Fifth Street	Joisted Masonry		1985	1,161			130,032	254,661	384,693
Municipal Serv. Facility-Bldg A	1818 Fifth Street				3,564			247,666	44,004	291,670
Municipal Serv. Facility-Bldg B	1818 Fifth Street				2,880			200,134	34,088	234,222
Municipal Serv. Facility-Bldg C	1818 Fifth Street				2,160			216,422	145,002	361,424
Municipal Serv. Facility-Bldg D	1818 Fifth Street				3,000			300,586	201,387	501,973
Municipal Serv. Facility-Bldg E	1818 Fifth Street				2,400			205,266	60,350	265,616
Municipal Serv. Facility-Bldg F	1818 Fifth Street				2,500			173,727	34,402	210,802
Municipal Serv. Facility-Bldg G	1818 Fifth Street				467			24,963	27,502	52,465
Municipal Serv. Facility-Bldg H	1818 Fifth Street				339			33,879	107,059	140,938
Municipal Serv. Facility-Bldg I	1818 Fifth Street				235			28,905	80,182	109,087
Municipal Serv. Facility-Bldg J	1818 Fifth Street				4,875			61,351	37,183	98,534
Municipal Serv. Facility-Bldg K	1818 Fifth Street				6,400			608,115	550,048	1,158,163
Municipal Serv. Facility-Bldg L	1818 Fifth Street				3,000			299,812	92,006	391,818
Municipal Serv. Facility-Bldg M	1818 Fifth Street				4,360			436,851	292,691	729,542
Municipal Serv. Facility-Bldg N	1818 Fifth Street				2,400			240,469	161,114	401,583
Public Works Trailer #2 Bldg G	1717 Fifth Street	Wood Frame		1990	720			90,000	20,749	110,749
Public Works Trailer #3 Eng/Insp	1717 Fifth Street	Wood Frame		1994	1,440			180,000	51,772	231,772
Public Works Trailer #4 Bldg C	1717 Fifth Street	Wood Frame		1995	2,160			270,000	77,996	347,996
PARKS AND OPEN SPACE										
Arroyo Park (8.5 acres done)	2000 Shasta					15.50	1,908,360			1,908,360
Arroyo Park Storage Shed	2000 Shasta	Reinforced Concrete		1993	112			16,800	618,339	1,178,087
Arroyo Pool Building complex	2000 Shasta				4,492			100,000		3,260,000
Cedar Park	626 K Street	None				0.57	70,178		6,042	227,094
Central Park	Fifth & B Street					0.58	714,096			1,151,164
Central Park Pavillion & Carousel	Fifth & B Street									160,364
Central Park Restroom	Fifth & B Street	Steel Frame		1937	10,232			424,620	5,277	525,897
Chestnut Park	1020 Chestnut Lane					6.10	751,032			1,726,044
Chestnut Park Maint. Shed	1020 Chestnut Lane	Joisted Masonry		1960	420			47,040	10,554	57,594
Chestnut Park Roundhouse/restroom	1020 Chestnut Lane	Reinforced Concrete		1967	1,661			249,150	17,097	266,247
Civic Center Park	B Street	None				9.81	1,207,807			1,861,883
College Park	17 College Park					0.90	110,808			239,099
Community Park	1405 F Street					28.00	3,447,360			3,447,360
Community Park Solar Structure	1405 F Street	Wood Frame		1981	6,768			846,000	100,260	953,760
Community Park Maint Bldg	1405 F Street	Reinforced Concrete		1961	1,009			151,350	105,536	256,886
Community Park Pool Changing Room	1405 F Street	Reinforced Concrete		1966	2,543			381,450	79,151	460,601
Community Park Snack Bar	1405 F Street	Wood Frame		1986	1,592			199,000	17,414	216,414

Location Name	Address	Type of Construction	Use	Yr Built	Sq Ft	Acreage	Land Value	Building Value	Equipment Value	Total Current Value
PUBLIC BUILDINGS										
Davis City Gymnasium	25 Russell Blvd	Joisted Masonry		1927	13,400			1,839,832	512,808	2,352,640
Davis City Hall	23 Russell Blvd	Joisted Masonry		1927	16,400			2,385,096	1,918,800	4,332,951
Davis City Pool	26 Russell Blvd	Joisted Masonry		1927	200			22,400	112,327	679,790
Davis Community Chambers	24 Russell Blvd	Joisted Masonry		1981	4,506			504,672	165,734	676,406
Fire Station Headquarters #31	530 Fifth Street	Joisted Masonry		1964	9,210	0.41	210,330	1,421,030	693,278	2,324,638
Fire Station #32	1315 Arlington	Joisted Masonry		1986	4,833	0.44	54,173	541,296	385,582	981,051
Fire Station #33	425 Mace Blvd	Joisted Masonry		1965	8,580	1.75	897,750	1,209,135	665,181	2,772,066
Hattie Weber Museum	C & Fifth Street	Wood Frame		1990	1,440			172,895	42,461	215,356
Health and Justice Office Building - office space	600 A Street	N/A							358,965	358,965
Historic City Hall	226 F Street	Concrete		1938	7,432	0.52	266,760	1,353,653	50,000	1,719,152
Hunt Boyer Mansion (main)	604 Second Street	Wood Frame			3,638	0.20	102,600	952,846	268,712	1,324,158
Hunt Boyer Mansion (pumphouse)	604 Second Street									102,071
Pence Gallery	212 D Street	Wood Frame		1948	768	0.14	71,820	96,000	8,654	187,110
Police Station	2600 Fifth Street	Wood Frame			34,000	5.00	1,000,000	4,250,000	1,500,000	6,780,369
Senior Citizens Center	646 A Street	Joisted Masonry		1983	14,100			1,905,316	511,000	2,580,995
SP Intermodal Facility	826 Second Street	Wood Frame		1987	4,525	4.04	2,072,520	1,021,649	19,487	3,148,556
SP Tower	826 Second Street	Wood Frame		1930	800			100,000		100,000
Teen Center	Corner of B & 3rd Street	Joisted Masonry		1990	5,225			1,134,592	256,404	1,400,696
Transitional Housing Site/Wayfarer	510 Fifth Street	Wood Frame		1920	1,034	0.28	143,640	129,250	16,922	290,617
Varsity Theater	616 Second Street	Reinforced Concrete		1992	8,760			1,537,317	251,808	1,793,625
Veteran's Memorial Center	203 East 14th Street	Wood Frame		1973	12,343			1,451,662	205,123	1,656,785
Veteran's Memorial Center Theater	201 East 14th Street	Wood Frame		1973	11,016			1,910,865	307,685	2,246,929
Vehicles										6,028,000
CORP YARDS										
Corporation Yard - Bldg A	1818 Fifth Street	Steel Frame		1977	4,032			396,109	27,110	703,162
Corporation Yard - Bldg B	1818 Fifth Street	Steel Frame		1983	11,600			754,000	220,000	984,059
Corporation Yard - Bldg C	1818 Fifth Street	Steel Frame		1990	8,022			521,430	100,000	696,873
Corporation Yard Pole Barn	1818 Fifth Street	Wood Frame		1985	2,500			312,500	15,000	327,500
Davis Corp Yard - Bldg B	1717 Fifth Street	Steel Frame		1986	8,000			520,000	214,468	734,468
Davis Corp Yard - Bldg D	1717 Fifth Street	Steel Frame		1978	3,000			195,000	88,531	283,531
Davis Corp Yard - Bldg E	1717 Fifth Street	Steel Frame		1976	7,776			465,965	557,317	1,023,282
Davis Corp Yard - Bldg F	1717 Fifth Street	Wood Frame		1990	1,440			180,000	30,768	210,768
Davis Corp Yard - Bldg G	1717 Fifth Street	Steel Frame		1965	467			30,355	25,383	55,738
Davis Corp Yard - Bldg H	1717 Fifth Street	Reinforced Concrete		1965	339			50,850	102,705	153,555
Davis Corp Yard - Bldg I	1717 Fifth Street	Reinforced Concrete		1965	235			35,250	76,922	112,172
Davis Corp Yard - Bldg I & J	1717 Fifth Street	Steel Frame		1965	2,500			162,500	33,003	198,162
Davis Corp Yard - Bldg J	1717 Fifth Street	Steel Frame		1978	4,875			316,875	35,671	352,546

Location Name	Address	Type of Construction	Use	Yr Built	Sq Ft	Acreage	Land Value	Building Value	Equipment Value	Total Current Value
MISC										
Davis Art Center	1919 F Street					0.25				-
Explorit	3141 5th Street					1.00	123,120	149,673		272,793
Fine Arts - Second Street	702 Second Street	None								600
Fine Arts - Plaza Fence	G Street Plaza	None								5,300
Science Center	3141 5th Street					1.00	123,120	256,500		379,620
TOTALS					456,090	1,492.26	63,364,049	51,460,872	24,640,770	212,626,675

Easements, trusts, fee title not included

Critical Facilities

The following facilities have been determined to be critical for the City of Davis to fulfill the requirements of its mission in the event of an emergency:

CITY OF DAVIS
CRITICAL FACILITIES

4/7/2004

NAME	ADDRESS
City Hall	23 Russell Blvd
City Internet Service Provider	1623 5th St
Comcast	1605 2nd St
Corp Yards	1717, 1818 & 1825 5th St
Davis Community Network	1623 5th St
Fire Stations	
31	530 5th Street
32	1350 Arlington Blvd
33	425 Mace Blvd
Hospitals	
Sutter Davis	2000 Sutter Place
Kaiser Clinic	1955 Cowell Blvd
Police Station	2600 5th Street
PGE	
Utility Transmission Substation	2nd & L Streets
Construction Yard	316 L St
Schools	
Birch Lane Elementary	1600 Birch Lane
Cesar Chavez Elementary	1221 Anderson Rd
Davis Senior High	315 W 14th St
Emerson Junior High	2121 Calaveras Ave
Fairfield Elementary	26960 CR 96
Holmes Junior High	1220 Drexel Dr
King High School	635 B Street
Montgomery Elementary	1441 Danbury St
North Davis Elementary	555 E 14th St
Patwin Elementary	2222 Shasta Dr
Pioneer Elementary	5215 Hamel St
Valley Oak Elementary	1400 E 8th St
Willett Elementary	1207 Sycamore Lane
XXXX Junior High	E Covell Blvd
Telecommunication Towers	Pending
Waste Water Treatment Facilities	Co Rd 28 H
Wells/Water System	
Drainage Pump Station	H Street
Drainage Pump Station	Road 32

CITY OF DAVIS
CRITICAL FACILITIES

4/7/2004

Covell Park Drainage Pump	Road 102
Drainage Pump Station	Road 99D
Drainage Pump Station	Evergreen Road
Drainage Pump Station	I80 & Levee Bypass
Sewer Lift Station #1	44501 So El Macero Drive
Sewer Lift Station #4	1717 Fifth Street
Sewer Lift Station - Northstar	3434 Anderson Road
Sewer Lift Station – Aggie Village	First & Richards
Sewer Lift Station	5454 Cowell Blvd
Sewer Lift Station	1812 Manzanita Blvd
Water Storage Tank #2	530 W 8th Street
Well #1	615 E Street
Well #7	810 11th Street
Well #11	1405 F Street
Well #12	921 Sycamore Lane
Well #13	1212 L Street
Well #14	530 L Street
Well #15	1812 Manzanita Lane
Well #19	2857 Catalina Drive
Well #20	2300 Evenstar Lane
Well #21	5050 Chiles Road
Well #22	1414 Tulip Lane
Well #23	527 B Street
Well #24	1600 Olive Drive
Well #25	1188 Arlington Blvd
Well #26	2850 Chiles Road
Well #27	3030 Sycamore Lane
Well #28	2101 Glacier Drive
Well #29	Alhambra Drive

CITY OF DAVIS
SUPPORT FACILITIES

4/7/2004

NAME	ADDRESS
Albertsons	1900 A Anderson Road
Circle K Food Stores	1930 Lake Blvd
Davis Food Coop	620 G Street
Ethnic Foods & Halal Meats	1760 E 8th St
Fast & Easy Mart	140 B Street
Kim's Mart	636 4th Street
Longs Drug	1550 E. Covell Blvd 1471 W. Covell Blvd
Nugget Market	409 Mace Blvd 1414 E. Covell Blvd
Quick Stop Market	1964 E. 8th
Rite Aid Pharmacies	2135 Cowell Blvd 655 Russell Blvd
Safeway Food & Drug	1431 W. Covell Blvd 2121 Cowell Blvd

City of Winters

Winters Facts and Figures

Founded: 1875

Population: 5,275

City Government: Winters has a Council-Manager form of government. Appointed commissions include a Planning Commission, Parks and Community Service Commission, and an Economic Development Commission.

City Departments: 10-member Police Department, Public Works, Community Development Department, Administrative Services Department and Finance. The Fire Department is a local district and the City Attorney is a contract private practitioner. Maintenance of the wastewater treatment facility, solid waste and street sweeping, and park maintenance are contracted to private firms.

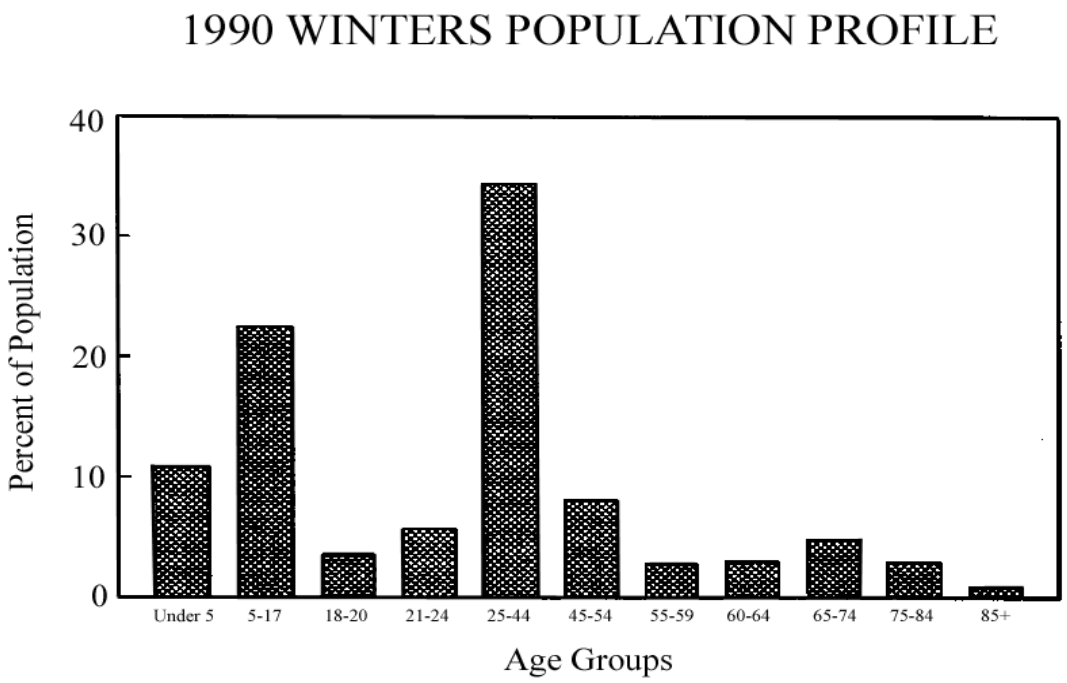
Building Permits and Fees: The Community Development Department issues building permits, collects fees, and inspects building construction. The Public Works Department reviews plans for public infrastructure and inspects such construction. An estimate for a building permit for a 1,500 square foot house with a 480 square foot garage is $3,156. Development Impact Fees are collected with the issuance of building permits and are as follows:

- County: $1,380
- School, per square foot: $1.93
- City, per unit, regardless of size: $13,092

The City of Winters is located in the southwestern corner of Yolo County, immediately north of the Solano County line and just east of the Vaca Mountain range. Winters lies approximately 34 miles west of the state capital, Sacramento, and approximately 10 miles north of Vacaville. The town is bordered on the south by Putah Creek, which has a year round flow emanating from Monticello Dam 9 miles to the west. Monticello Dam backs up Lake Berryessa and is a major recreation area, drawing tourists from the San Francisco Bay Area and elsewhere.

The principal highways near Winters are Interstate 505 and State Highway 128. I-505 forms the eastern boundary of the city limits and connects to Interstate 80 ten miles to the south and Interstate 5 twenty-three miles to the north. State Highway 128 passes directly through Winters and is a major access route from Sacramento and Davis to Lake Berryessa and the Napa Valley.

The 1990 census lists 4,639 persons in the community. Figure 1 (below) describes the age distribution of the population. The demographic vitality of Winters is evident in this figure. Fifty-five percent of the population is in the economically active age groups of 18-59. Thirty-three percent of the population is school age or younger. This is the profile of a young and growing community.



Location

The City of Winters is located in the southwestern corner of Yolo County. The southern boundary of the city is Putah Creek. The city is bordered to the west by Dry Creek and a view of the Vaca Mountain Range. The eastern city limit is now Highway 505 while the northern boundary runs to vast tracts of farm land. Winters is located approximately 10 miles west of the city of Davis and 10 miles north of the city of Vacaville.

Winters' urban limit line contains approximately 1,980 acres. Of which, 1,277 are currently within the incorporated limits.

Climate

The climate of Winters is relatively mild, although it can be hot and dry during the summer months with occasional temperatures over 100ºF. October brings cool fall days with pleasant temperatures in the 70's and 80's. Rainfall usually occurs January through March and temperatures may fall into the low 30's in the mornings, but warm up to the mid-60's during the day. Winters gets occasional fog from fall until spring.

History

The settlement of the Winters area began in 1842 with the granting of 17,750 acres of land along Putah Creek by Governor Juan Batista de Alvarado to William Wolfskill, a southern California resident and naturalized Mexican citizen. It was not William, but his brother John, who came north to settle on this land. He established a residence on the south side of Putah Creek and began his ranching career, planting vegetable crops and the area's first fruit trees and grapevine. The land was originally called Rancho Tio de Los Putos, a name derived from the Patwin Indian village name of "Puta-to."

In 1850, another Wolfskill brother, Mathus, began another ranch nearby, south of the present Winters Bridge. In 1865 Theodore Winters, a race horse breeder and entrepreneur purchased this land. Winters is credited with promoting thoroughbred horse racing in the West, and the land he purchased soon sported a ranch, stables, and a racetrack.

The first settlement in this area, and the nearest town, was Buckeye, approximately six miles to the northeast of Winters. Its post office was established in 1855, and by 1870 the town had a Masonic Hall, hotel, boarding house, blacksmith, saloon and schoolhouse. The growth of this small settlement was abruptly brought to an end. In 1875 George B. and Andrew M. Stevenson, owners of the Vaca Valley Railroad Company, extended their line to the north bank of Putah Creek. The Stevensons sought financial assistance from Theodore Winters and others to build a railroad bridge across Putah Creek. They also laid out a forty acre town site which was named for Theodore Winters, from whom the land was purchased. The settlement of Buckeye was thus bypassed by the railroad, and the new town was established, inhabited partly by relocated Buckeye residents and their buildings.

As the northern terminus of the Vaca Valley Railroad, this new settlement grew rather quickly, and by 1876 the assessed valuation of the town had risen from $1,000.00 to $160,000.00. Winters became a busy agricultural and commercial center, with three trains daily, several new businesses, new hotels and saloons, a Wells Fargo office, and a number of new residences. Produce of the area included peaches, almonds, plums, pears, cherries, figs, oranges, olives, barley and wheat. This commercial activity declined somewhat when the railroad extended its terminus to Madison, and much of the tonnage shifted to that location. Nevertheless, this era was one of growth, activity and promise for the young settlement.

Early on, the Winters Advocate was established as the town's first newspaper; but it moved to Woodland in June of 1879 to become the Woodland Standard. The Winters Express, founded in January 1884, has remained in existence through several owners, under that name until present.

Although agriculture was, and remains, Winters' primary source of commercial activity, auxiliary activities helped the town grow slowly. There were traveling businessmen and visitors, and well as the merchants and ranchers who provided the town's economic base. Salesmen for a variety of goods and equipment would come to Winters, rent rooms and buggies, and canvass the farming communities nearby. In order to service such travelers, the Hotel DeVilbiss was built in 1889. The town had a number of other establishments to serve both residents and visitors-- general merchandise stores, a restaurant, a grocery store, livery stables, a meat market, a tin store, drug store, shoemaker, blacksmith shops, wagon shops, printing office, post office, school, warehouses, silversmith, and Masonic, Odd Fellows and Grange Lodges.

The earthquake of 1892 damaged Winters heavily. Many downtown buildings and residences required major repair (all were repaired within a month) and the Army was asked to provide tent shelters for the homeless during reconstruction.

In late 1896, a meeting was held in the Opera House to seek the incorporation of the town of Winters. It was not until 1898, however, that the city was incorporated. A few months later, the Volunteer Fire Department was established.

In 1897, the Winters Dried Fruit Company, which would become a major economic force in the community, was organized.

At the turn of the century, Winters embarked upon an era of civic pride and self-awareness. During the first two decades of the 20th century, a number of city improvements were undertaken, including the construction of new water and lighting systems, street amenities like a horse trough and drinking fountain, the establishment of a Board of Trade, a women's improvement club, regular city elections, and the laying of the first telephone line. The concrete bridge across Putah Creek was constructed in

1908, the longest of its kind west of the Mississippi River. Library facilities were incorporated into the Yolo county free library system and the first sewer plant was constructed. The first concrete sidewalks were laid before 1910.

Entertainment of the time included parades, picnics, band concerts and holiday celebrations. Many enjoyed such leisure facilities as the Nickelodeon, a shooting gallery and merry-go-round. The Winters Concert Band was renowned throughout Northern California during the early 20th century.

The City Hall and a new two-story high school were constructed in 1916. Funds were raised by the Winters Improvement Club for a public park and a 100,000 gallon water tank and tower commissioned.

The town thrived on its commercial/agriculture base. New fruit sheds and warehouses were constructed. The prune and apricot growers were organized in 1916 and the Winters Dried Fruit Company, established in 1897, handled the operation for the association. It also purchased the Winters Canning Company, remodeling the building into a modern plant that packed and shipped fruit to many foreign countries as well as throughout the United States.

The growth of Winters was somewhat subdued during the years from 1920 to 1940. There was a refinement of early growth during the 1920's and some construction activity in the middle and late years of that decade. The strong agricultural base of the region sustained the town, its bank, and its industry through the ensuing Depression years, when dried apricots sold for as little as a nickel a pound. The productivity of the land and the determination of its inhabitants kept the town operating, but little construction appears to have occurred during the early 1930's. The Period Revival buildings, common to areas that thrived during those years, are largely absent from Winters. Rather than building new houses in ever more outlying areas, town residents enlarged and remolded their existing family homes, predating the current trend for recycling by many years.

More recent years have seen some gradual changes in the composition and character of the population and in the prominence of different crops. There has been a transition of migrant farm workers to Mexican families and contract labor. The predominant production of fresh fruits, particularly apricots, peaches, and cherries, has gradually been replaced by the nut industries, due to marketing trends and the difficulty of handling the ripe fruits. Fruit packing plants have been relocated to the rural areas and current trends are reviving the 1920's practice of selling fruit directly to the public at the production ranch site. Agricultural lands north and east of Winters are chiefly devoted to rotation crops of tomatoes, grains, alfalfa and rice.

The city of Winters contains numerous historical and architecturally significant buildings. In 1983, the city commissioned an inventory of historical and architecturally significant buildings and features in the Winters area, the results of which are contained in the Winters Cultural Resources Inventory Project Report. The Historic Resources Inventory surveyed 79 structures. 14 of these are potentially eligible for inclusion in the National Register of Historic Places.

In 1985, the city adopted an ordinance which created an Historical Preservation Commission and established procedures for designating and protecting historical landmarks and districts. This ordinance established only one small historical district, which encompasses the one-block area along Main Street between Railroad Avenue and First Street which *is* downtown.

The Winters General Plan

After years of study, consensus building and deliberation, the Winters City Council adopted a revised General Plan on May 19th, 1992. The adoption of the General Plan marked the end of a three-year building moratorium and the beginning of a new phase of growth and development for Winters. Revised General Plan projects a population increase from the current 5,300 (year 2000) population to 12,500 in 15 years.

The uniqueness of the Winters General Plan was evidenced by the degree of citizen involvement in the process. If one knows Winters, then one is not surprised. Winters is a community that thrives on citizen involvement, volunteer projects and "civic mindedness."

A fundamental objective of the Winters General Plan was to provide for an increased residential base and expanded commercial activity without jeopardizing the traditional small town quality and agricultural heritage of the community. This objective was achieved the careful of designation and distribution of the 16 land use categories shown in figure 1.

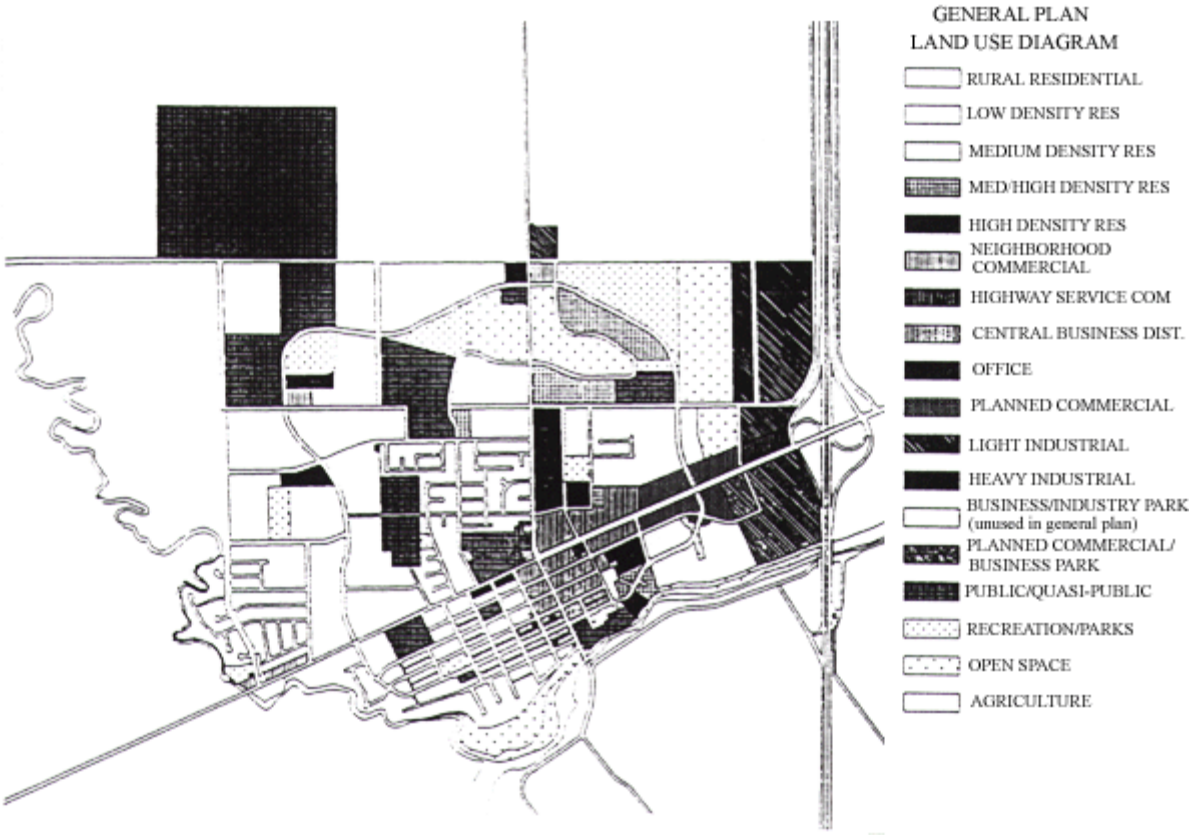


Figure 1: General Plan Land Use

The land use categories defined in the General Plan represent abundant opportunity for residential growth and commercial expansion. The following table lists each category and the approximate acreage represented in the revised General Plan.

Land use categories defined in the General Plan and approximate acreage

Rural residential (0.5 to 1.9 units/acre)	50 acres
Low density residential (1.1 to 4.0 units/acre)	223 acres
Medium density residential (4.1 to 6.0 units/acre)	545 acres
Medium/High density residential (6.1 to 10.0 units/acre)	54 acres
High density residential (10.1 to 20.0 units/acre)	41 acres
Neighborhood commercial	11 acres
Highway service commercial	7 acres
Central Business District	79 acres
Office	5 acres
Planned commercial	35 acres
Light industrial	58 acres
Heavy industrial	33 acres
Planned commercial/business park	54 acres
Public/quasi-public	468 acres
Recreation and parks	102 acres
Open space	159 acres
282 acres are designated for commercial in the General Plan. 91 acres are designated for industrial. 913 acres are set aside for residential development. 261 acres are available for use as parks and/or open space. Nearly 470 acres are designed for public or quasi public use, including schools and municipal facilities.	

Economic Data

Winters is contained in census tract 113. Unfortunately, the census tracks surrounding Winters are quite large making characterizations about the surrounding five or six mile radius " market area" difficult. However, a good deal of useful information can be obtained indeed from the last census tabulation.

The average household income in Winters is computed at $53,200. The average household size is 3.0. The primary occupations of employed persons over the age of 16 are:

Managerial	9.2%	Farming	8.9%
Professional specialty	9.6%	Crafts or repair occupations	8.9%
Technicians	3.9%	Machine operators	6.8%
Sales	8.4%	Transportation	4.2%
Administrative support	11.9%	Handlers, helpers, laborers	6.8%
Protective service	3.0%		

Furthermore, there are approximately 230,000 square feet of building presently used for the sale of retail goods and services, including eating and drinking establishments, city wide. Approximately 62% of that space is locating the central business district. (1)

Per-capita retail sales are below the country average, indicating a substantial amount of “leakage" to surrounding communities. However, this also implies that there is a significant amount the disposable income that remains to be captured in Winters. The General Plan has set aside acreage for commercial activities.

Transportation

The principal highways in or near Winters are Interstate 505 and State Highway 128. Interstate 505, located at the city limits to the east, serves as a key link between Highway 80, ten miles to the south and Interstate 5, twenty-three miles to the north. Highway 128 services Winters to the east for travel to Woodland and Davis, and to the west for travel to Lake Berryessa and Napa County. The proximity to both I-505 and I-80 makes the area a strategic location for future development.

Local transportation is provided by the Transportation District of Yolo County. The service includes trips to Davis, Woodland and Vacaville on a daily basis as well as connections to Sacramento and Solano counties. This service should expand as the population increases.

Rail service is provided by Amtrak with the closest station located 14 miles east in Davis. The "Capitol Corridor" Amtrak service between Sacramento and the San Francisco Bay Area is scheduled to stop in the Vacaville area, ten miles to the south.

Air transportation is provided by Sacramento International Airport. Sacramento International Airport is located twenty-five minutes to the east off of Interstate 5. Sacramento International Airport offers full commercial flight connections with all major US cities. Bay Area airports (SFO, Oakland, and San Jose)

are one and a half to two hours away by bus, car, or van. Adjacent communities have bus shuttle service to the major airlines in both Oakland and San Francisco.

Three general aviation airports are nearby. Yolo County airport is located six miles to the east. The current county general plan for the airport is being revised with a goal of making it a major general aviation service center for the region. University airport at Davis is located 10 miles to the east. The Solano County Airport at Vacaville is located 10 miles to the South.

Community Services

Winters Police Department
318 First Street
Winters, CA 95694
EMERGENCY: 911, or 795-4561
Business: 795-2261
http://www.winterspolice.org/

Winters Fire Department
10 Abbey Street
Winters, CA 95694
EMERGENCY: 911, or 666-8920
Business: 795-4131
http://www.wintersfire.org/

Winters Family Medical Clinic
111 E. Grant
Winters, CA 95694
795-4591

Winters Veterinary Clinic
27956 Highway 128
Winters, CA 95694
795-4459

Water Services
City of Winters
318 First Street
Winters, CA 95694
Daily: 795-2811
Emergency/After Hours: 795-4660

Sewer Service
SOCI Inc.
c/o 318 First Street
Winters, CA 95694
Daily/Emergency: 795-4660

Garbage Service

Business Licenses/Zoning
City of Winters
318 First Street
Winters, CA 95694
795-4910

Building Inspections
City of Winters
318 First Street
Winters, CA 95694
795-3586

Community Development Planning
City of Winters
318 First Street
Winters, CA 95694
795-2101

Parks & Recreation
City of Winters
Community Center
201 Railroad Avenue
Winters, CA 95694

City Administration/Engineering
City of Winters
318 First Street
Winters, CA 95694

Voter Registration available at
Winters City Hall
318 First Street
Winters, CA 95694
Contact Nanci Mills, City Clerk

Winters Chamber of Commerce

City of Winters
318 First Street
Winters, CA 95694
EMERGENCY/After Hours: 795-4660

7 East Main Street
Winters, CA 95694
795-2329

Winters Library
201 First Street
Winters, CA 95694
795-4955

Winters Cemetery District
Cemetery Drive
Winters, CA 95694
795-2475

Street Maintenance
City of Winters
318 First Street
Winters, CA 95694
Business: 795-2811
EMERGENCY/After Hours: 795-4660

Winters Joint Unified School District
710 Railroad Avenue
Winters, CA 95694
795-6100

Yolo Bus
Winters Schedules at Winters City Hall
318 First Street
Winters, CA 95694
Bus Schedules: 800-371-2877

Winters Little League
400 Abbey Street
Winters, CA 95694
795-4866

Winters Community Center
201 Railroad Avenue
Winters, CA 95694
795-4233

Merchants Service
(Contact Winters Chamber of Commerce)

Yolo County Services Provided From The Winters Area:

Yolo County Health Services (Environmental Health) 10 Cottonwood Woodland, CA 95695
Alcohol & Drug Abuse
Alcohol Detox/Residential program
Drunken Driving Program
School Outreach
Eldercare Services
Medical Services
Mental Health Services
Tobacco Education
Yolo County Animal Services Shelter 41831 Gibson Road

Woodland, CA 95694
Yolo County District Attorney's Offices:
Child Support Collections (free)
Check Program (For merchants)
Consumer/Environmental
Consumer Fraud Division
Victim/Witness Assistance Program
Yolo County Vital Statistics (Births and Deaths)
Yolo County Superior Court 725 Court Street Woodland, CA 95695
Yolo County Municipal Court 725 Court Street Woodland, CA 95695
Departments B & D
Small Claims and Civil
Traffic Division
Public Administrator & Guardian 400 Court Street Woodland, CA 95695

Schools

Winters is very proud of its schools. The district consists of five schools:

- John Clayton Kinder School
- Waggoner Elementary (grades 1-5)
- Winters Middle School (grades 6-8)
- Winters High School (grades 9-12)
- Wolfskill (Continuation)

All totaled, there are approximately 1750 students in the district. Winters has an extremely low dropout rate, due in large part to the commitment of its teachers and the availability of the Wolfskill Continuation School.

Winters students compete successfully in a variety of sport and academic activities including an Academic Decathlon in which WHS students placed second last year. The high school has a very strong agricultural program with its students frequently winning state and national honors.

Winters fosters an extremely nurturing environment for both students and teachers. There is an active PTA and parent involvement in the schools is encouraged. The Winters Police Department supplies a School Resource Officer and truancy programs. Winters attracts *and keeps* teachers from all over. One reason for this is the district's strong Teacher Mentor program, which pairs new teachers with 10 year+ veterans. Teachers stay in the district and can follow students throughout their education. Our teachers take a proactive role in their students' lives. This is a major reason for the low dropout rate and high success rate of our graduates.

Winters schools offer a full sports program, something that is missing in a great many districts around the state. The schools have a growing music program and an outstanding arts program. One or two students attend the highly competitive Cal State Summer School for Arts each year.

Winters offers its students cultural diversity, academic excellence, sports, parental involvement and a safe environment.

City of Winters Inventory of Assets

Property Valuation List

Winters

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT	Suggested Building Value	Difference Current vs. Suggested	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	Suggested TOTAL
423	Winters City Hall	318 First St.	Winters	CA	95694	1916	2	Joisted Masonry	6,392	$888,154	($14,503)	$549,275	$0	$0	$0	$1,349,682
424	Winters Police Station	318A First St.	Winters	CA	95694	1945	1	Wood Frame	2,732	$222,271	($3,629)	$83,676	$0	$0	$0	$283,987
426	Corporation Yard	19 E. Baker St.	Winters	CA	95694	1959	1	Metal	4,223	$239,920	($3,917)	$309,685	$0	$0	$0	$525,902
427	Corporation Yard Garage	19 E. Baker St.	Winters	CA	95694	1959	1	Metal	750	$14,730	($240)	$28,904	$0	$0	$0	$42,179
428	Corporation Yard Tank	19 E. Baker St.	Winters	CA	95694	0	0	None	0	$0	$0	$0	$254,622	$0	$0	$254,622
429	Community Center	201 Railroad Ave.	Winters	CA	95694	1980	1	Wood Frame	8,395	$914,952	($14,940)	$53,111	$0	$0	$0	$877,668
430	Community Center Maintena	201 Railroad Ave.	Winters	CA	95694	1987	1	Metal	624	$15,961	($261)	$2,124	$0	$0	$0	$16,508
431	Day Care Center	208 Fourth ST.	Winters	CA	95694	1945	1	Wood Frame	2,352	$212,232	($3,466)	$0	$0	$0	$0	$191,264
432	Sewer Laboratory & Utility	110 E. Main St.	Winters	CA	95694	1960	1	Wood Frame	1,392	$119,722	($1,141)	$309,685	$0	$0	$0	$417,579
433	Winters City Park	Fourth & Main St.	Winters	CA	95694	1954	1	Joisted Masonry	286	$15,261	($249)	$7,226	$0	$0	$0	$20,979
434	City Park Restrooms	Fourth & Main St.	Winters	CA	95694	1988	1	Joisted Masonry	286	$37,813	($617)	$4,130	$0	$0	$0	$38,207

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT	Suggested Building Value	Difference Current vs. Suggested	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	Suggested TOTAL
436	Water Well #3 & Tank	402 Main St.	Winters	CA	95694	1940	1	Metal	150	$12,750	$0	$92,906	$227,118	$0	$0	$332,774
437	Water Well #4	Valley Oak Dr.	Winters	CA	95694	1986	1	Metal	170	$7,838	($127)	$103,229	$0	$0	$0	$110,293
438	Well #5	W. end of Nieman St.	Winters	CA	95694	1989	1	Masonry - NonCombus	160	$9,691	($159)	$115,439	$0	$0	$0	$124,173
439	El Rio Villa Pumping Station	100 Myrtle	Winters	CA	95694	0	0	None	0	$0	$0	$154,842	$0	$0	$0	$154,842
440	Wastewater Treatment Facili	County Rd. 32A	Winters	CA	95694	1980	1	Joisted Masonry	600	$67,200	$0	$196,134	$258,089	$0	$0	$521,423
441	Well #4/Valley Oak Park	Valley Oak/Grant Ave.	Winters	CA	95694	1992	1	Wood Frame	231	$11,427	($187)	$5,161	$0	$0	$0	$15,459
442	Well #6	501 East Main	Winters	CA	95694	1995	1	Joisted Masonry	324	$17,602	($287)	$516,141	$0	$0	$0	$532,004
443	Rotary Park Park	5 E. Main St.	Winters	CA	95694	0	1	Wood Frame	480	$69,230	($1,131)	$0	$0	$0	$0	$62,390
444	Blue Oak Park	E. Main & Maple	Winters	CA	95694	0	1	None	0	$0	$0	$0	$44,752	$0	$0	$44,752
445	Vehicles		Winters	CA	0	0	0	None	0	$0	$0	$0	$0	$442,538	$0	$442,538
445	Contractor's Equipment Vehi		Winters	CA	0	0	0	None	0	$0	$0	$0	$0	$24,000	$0	$24,000
								Entity Totals		$2,600,438	$231,462	$2,531,668	$784,581	$466,538	$0	$6,383,225

City of Winters Critical Assets

The following facilities have been determined to be critical in order for the City of Winters to meet the requirements of its mission during an emergency: (See item in above list for specific data regarding the facility.)

CSAC #	Location	Address
423	Winters City Hall	318 First Street
424	Winters Police Station	318A First Street
426	Corporate Yard	19 E. Baker St
427	Corporate Yard Garage	19 E. Baker St
429	Community Center	201 Railroad Ave
430	Community Center Maintenance	201 Railroad Ave
431	Day Care Center	208 Fourth St
432	Sewer Laboratory & Utility	110 E Main St
433	Winters City Park	Fourth & Main St
434	City Park Restrooms	Fourth & Main St
435	Water Well #3 & Tank	402 Main St
437	Water Well #4	Valley Oak St
438	Water Well #5	West end of Nieman St
440	Wastewater Treatment Facility	County Road 32A
441	Well #4/Valley Oak Park	Valley Oak/Grant Ave
442	Water Well #6	501 E Main St
443	Rotary Park	5 E Main St

City of West Sacramento

California's Golden Dream is thriving in one of its newest cities. Incorporated in 1987, West Sacramento is a city designed and ready for business in the 21st Century. Yet its history dates back more than 100 years.

Like its cross-river neighbor, West Sacramento was first settled during the Gold Rush era. The early settlers soon learned that the real gold in the area was the incredibly rich delta soil deposited over the centuries by the Sacramento and the American Rivers. By the turn of the century the central valley of California was recognized as one of the premiere agricultural areas of the world. As Sacramento grew into a major city, West Sacramento, which was separated by the Sacramento River and a county line, retained its small town character and industrial base.

Today, West Sacramento is at the crossroads of California. Featuring its own deepwater port, two interstate highways, major North/South and East/West rail lines and a commercial airport nearby, West Sacramento is well connected to the Pacific Rim and the rest of the nation. And just a literal stone's throw away is downtown Sacramento, the seat of the government for the 6th largest economy in the world. Being a part of the Greater Sacramento community, we're on everyone's list as one of the fastest growing and most livable areas in the country.

Yet West Sacramento offers something that can no longer be found in many of California's cities - affordable land and housing. The average home cost is considerably less than half of what a comparable home costs in metropolitan areas as little as 80 miles away. There is a small town atmosphere in West Sacramento, with traditional values and a healthy respect for business and industry.

History

Over four thousand years ago, the Patwin Indians were the first inhabitants of the area now known as the City of West Sacramento. These Native Americans established villages on the west bank of the Sacramento River and their members often numbered in the hundreds. The Patwin Indians took advantage of the abundant natural resources offered by the land and water that surrounded them. They hunted and fished; they also crafted baskets, fishing nets, boats, and rafts from willows, tough grasses, and vines. All of their needs were provided by their environment.

The tranquil lifestyle of the Patwin Indians changed dramatically with the introduction of European settlers during the 19th century. Many hunters and trappers were attracted to the Sacramento Valley by the abundance of fur-bearing animals. Tragically, with the arrival of these European explorers came diseases which decimated the Patwin Indian population. Malaria and smallpox epidemics swept throughout the Patwin and other surrounding Native American villages in 1833 and 1837. By the time the epidemics had been contained, the Native American population in the Sacramento Valley had dropped from 60,000 to 20,000 people. Over time, more and more settlers came to the valley. The few remaining Patwin Indians either became employed or enslaved by the Euro American settlers, thus bringing to a close the Patwin cultural lifestyle.

In 1844, Jan Lows de Swart, a Flemish traveler, was the first Euro-American to permanently settle in the area of West Sacramento. Jan, who came to be known as John Schwartz, built a shack along the west bank of the Sacramento River six miles south of the confluence with the American River. In 1845, Schwartz acquired a land grant from the Mexican Governor Manuel for an area of land one mile wide and twenty miles long. He named his newly acquired property "Rancho Nueva Flandria" after his native

homeland. Shortly after settling here, John, with the help of his brother George established a salmon fishery along the river. Besides drying and pickling the salmon, they also engaged in raising livestock and cultivating potatoes and melons. Little did John and his brother realize that within a few years, the great gold rush of 1848 would begin in California. The announcement of the discovery of gold at Sutter's Mill brought thousands of miners to the area.

In 1846, an adventuresome jack-of-all-trades named James McDowell bought 600 acres of "Rancho Nueva Flandria" from John Schwartz. With his wife, Margaret, and their three daughters, McDowell settled in the area we know today as Broderick. The McDowell family was not untouched by the violence that often marked the tumultuous times of the Gold Rush. In May of 1849, James McDowell was shot and killed in a barroom brawl that he had supposedly instigated. With the loss of the sole supporter of the McDowell family, Margaret had to find the means to support herself and her children.

At first, Margaret McDowell took boarders into her home as a means of gaining some income, but she soon realized that this was not enough. It became apparent that the land she owned was her most valuable asset. In October of 1849, Margaret hired a land surveyor to map out 160 acres, which was subsequently divided into forty one blocks. She sold individual lots within this platted area which she named the Town of Washington. The first lot was sold to August W. Kaye for $500. During the ten years following its creation, the rural Town of Washington experienced a significant increase in business development and shipping activity. One of the earliest companies to be established in the town was the California Steam Navigation Company, which was attracted to the area in 1859 by the close proximity of the Sacramento River. Other economic enterprises that marked early Washington included hotels, saloons, and restaurants catering to the needs of weary travelers. Many travelers making the harsh journey through the marshlands on their way to Sacramento welcomed the rest stop at the Town of Washington.

Other enterprises that found success in the early days of West Sacramento were the fishing and farming industries. Fishermen saw the profitable potential in salmon, sturgeon, catfish, eel, crayfish, and clams. The river community was thriving, supplying fish markets not only in Sacramento, but in San Francisco as well. In addition, the rich soil of the valley produced abundant crops of com, melons, cucumbers, and sweet potatoes The dairy industry also established roots in West Sacramento around this time. One of the area's most well known dairy farmers was Mike Bryte. Bryte came to California in 1849 to try his hand at gold mining. Although he did not make a fortune in gold, he bought a dairy farm in 1853 which was very successful. When the California Steam Navigation Company came to Washington, Bryte used the steamships to carry his dairy products to regional markets. Profits from this allowed Bryte to expand his holdings. By 1879, he owned 1,500 acres of land, raised 150 cows and 100 young stock, and farmed 2,500 acres in Sacramento County. Mike Bryte's status in the community was marked by his election to the Yolo County Board of Supervisors and later as sheriff. During the 20th century, Mike Bryte's property was subdivided and became known as the community of Bryte.

With time, the area continued to grow, prosper, and develop. The Town of Washington was renamed Broderick in honor of U. S. Senator David D. Broderick. After 1900, the three communities known as Bryte, Broderick, and West Sacramento were cumulatively known as "East Yolo. " From 1900 to 1920, the population of East Yolo doubled from 1,398 to 2,638. These communities are the foundation on which the current City of West Sacramento is built. In June 1963, the Port of Sacramento was opened to deep sea traffic with the completion of the Deep Water Ship Channel. The project had been authorized by Congress in 1946 and construction commenced in 1949. Although the City continues to change and grow even today, its roots are deeply embedded in the community spirit of the past

The Current Perspective

West Sacramento has emerged from its infancy and is growing and maturing in many ways. Previous State of the City reports focused on our long-range planning activities that would establish the

framework for a vital new City. As the City prepares to enter its second decade of incorporation, its focus is on realizing the quality growth and development that is envisioned in its now adopted long-range plans.

In the first few years after incorporation, the City developed its first general plan and adopted many of the ordinances and development regulations that are necessary to carry out the day-to-day operations of a city. Several specific plans were adopted to guide the development and redevelopment of various underdeveloped areas, including the West Capitol Action Plan (1992), the Triangle Specific Plan (1993), the Riverfront Master Plan (1994), the Southport Framework Plan (1995), and the Washington Specific Plan (1995). As indicated by these plans, the City is in the unique position of simultaneously having to develop vacant lands and redevelop existing developed areas in its incorporated area. Those general and specific plans set the foundation and standards for new growth that is currently being experienced.

Meanwhile, the City has attracted high quality residential and nonresidential developments which represent the type of growth that the City seeks to encourage. Large-scale new warehouse construction was initiated in 1998.

West Sacramento has become a regional attraction with the opening of beautiful Raley Field, the riverfront home of the River Cats' Triple-A Baseball Team. With crowds of 12,000-14,000 per game, the team is smashing Pacific Coast League attendance records.

Improved access across the Deep Water Ship Channel was achieved with the completion of the four lane Daniel C. Palamidessi Bridge. Prior to this, the lone access route between Southport and the rest of the City was via the narrow Jefferson Boulevard bridge which was inadequate to accommodate the increased traffic envisioned in the City's General Plan and Southport Framework Plan. Completion of the Palamidessi Bridge provides a second link between the north and south halves of the City and has opened the door to major new development in Southport. Several subdivision projects in Southport, which had been awaiting completion of a new bridge.

The Port of Sacramento continues to play an important role in the development of the City's commercial and industrial base. The Port, also dubbed "California's Capitol Port", is a full-service international port offering geographic advantages with modem, flexible bulk cargo facilities. The Port's facilities handle a wide range of materials, including rice, wheat, logs, wood chips, pipe, housing modules, and mining equipment.

West Sacramento is experiencing a steadily increasing rate of growth and interest from the region's businesses and developers. This growth will continue into the ensuing years, allowing West Sacramento to take its place among the region's premier cities. The City's success in completing major development projects is evidence of the beginning of a new era for West Sacramento. With continued thoughtful planning and implementation, the potential for creating a unique and attractive environment for those who live, work and visit in the City of West Sacramento will be realized.

Located in the crossroads of California’s major roadways, waterways and rail lines, just about everyone and everything travels through West Sacramento. The convenience and efficiency of being located in the heart of our nation’s most populous state has major advantages.

Statistics

Size

- 23.3 square miles

Industrial Sites

- Riverside Centre: 76 acres
- Seaway International Trace Center: 274 acres
- Southport Business Park: 672 acres
- 382 Available Buildings (over 4,000 square ft)
- 1,221,005 square ft of Vacant Space
- 14,544,071 square ft of Total Space

Office Sites

- Riverside Centre: 86 acres
- Seaway International Trade Center: 73 acres Business Park

Retail Sites

- Riverpoint Plaza: 8 acres, 6 Highway Commercial Lots
- Riverpoint Retail: 92 acres

Average Temperatures

- January High 54 Low 40
- April High 72 Low 48
- July High 93 Low 60
- October High 78 Low 53

Transportation Air

- Sacramento International (12 mi)

Transportation Surface

- Interstates: I-80, I-5, Business 80
- Highways: US 99, US 50, State 84 and 275
- Rail: UP, SP Main Line, Yolo Shortline
- Shipping: Port of Sacramento
- Rivers: Sacramento River, American River

Major Shopping Areas

- Country West Center
- Harbor Central
- Jefferson Boulevard Central
- Safeway Marketplace

Population

- 1980 - 24,521
- 1990 - 28,650
- 1996 - 30,250
- 2000 - 31,615
- 2001 - 32,250
- 2020 (projected) - 78,700

Income

- Median Household 1999 - $31,718
- Per Capita 1999 - $15,245

Mortgage Status of Owner Occupied Housing Units with a Mortgage (2000)

- Median - $1,070

Number of Housing Units

- 1996 - 11,835
- 2000 - 12,133

Employed (as of March 99)

- 30,524 Jobs in West Sacramento
- 13,159 Resident Labor Force
- 625,319 Local Labor Market (Yolo/Sacramento Counties)

Top 25 Major Area Firms

- U.S. Post Office
- United Parcel Service
- Washington Unified School District
- Cal Fed Bank
- Raley's / Bel Air
- Viking Freight System, Inc.
- Dade Micro Scan
- Fleming Foods
- First Health Corporation
- City of West Sacramento
- Farmer's Rice Cooperative
- Treasure Chest Advertising Co.
- Roadway Express, Inc.

- Clark Pacific
- MTS Inc./Tower Records
- Nor-Cal Beverages
- Tony's Fine Foods
- Idexx Veterinary Services, Inc./CVD
- McKesson Drug Co.
- Flowmaster
- KOVR-13
- Rex Moore Electrical
- Crum & Crum
- River City Baseball/Sacramento River Cats
- Williams Communication

Average Home Price

- $112,132 (West Sacramento)
- $155,000 (median Sacramento County 2001)

Typical Rent For Two-Bedroom Apartment

- $500 to $800 monthly

Average Cost of Residential Water, Garbage and Sewer

- $68.02 monthly (Water $29.63, Sewer $22.99, and Refuse $15.40 a month)

Police Personnel

- 48 sworn police officers
- 8 sergeants
- 5 executive sworn officers
- 31 non-sworn personnel
- 92 Total

Fire Personnel and Paramedics

- 56 Total

Location

West Sacramento is located in California's rich Central Valley at the confluence of the American and Sacramento Rivers in eastern Yolo County. The City of Sacramento lies across the Sacramento River to the east and the Yolo and Sacramento Bypasses form the north and west borders. West Sacramento is approximately 83 miles east of San Francisco, 136 miles west of Reno, Nevada, 288 miles south of the Oregon border and 387 miles northwest of Los Angeles. The City is part of a four county metropolitan area which includes Yolo County, Sacramento County, and portions of Placer County and El Dorado County. West Sacramento's city limits extend from the Sacramento River and Tule Lake Road on the north, the Sacramento River on the east, Shangri-La Slough on the south, and the Yolo Bypass on the west.

Bounded by the Sacramento River and the Deep Water Ship Channel, West Sacramento is essentially a peninsula. Located on the natural floodplain of the Sacramento River, the area is reclaimed land protected by levees and is characterized by a pattern of open ditches and canals. The Deep Water Ship Channel and barge canal bisect the City in an east-west direction separating the Southport area from the northern areas known as Broderick, Bryte, and West Sacramento. West Sacramento is both defined and constrained by the network of highways, roads, streets, and transit services that move its residents and goods throughout the City. It has one of the most comprehensive transportation networks on the west coast, opening the door to interstate and international commerce by land and water. The extensive north-south, east-west highway access and central geographic location make the City an excellent distribution center. Major transcontinental rail lines provide rail service to all parts of the nation. In addition, the Port of Sacramento, located in the center of the City, offers both domestic and international shipping services.

West Sacramento's climate is characterized generally as Mediterranean with an average annual precipitation of 17.1 inches. Prevailing winds are from the southwest at an average wind speed of 8.5 miles per hour. The average summer temperature is a high of 95°F and a low of 60°7. The average winter temperature is a high of 53°F and a low of 37°F. Normal relative humidity is 46 percent during the day and 82 percent at night.

Government

West Sacramento has a council form of government. Citizens elect four City Council members at large who serve four year terms and a mayor who serves a two year term. The City currently holds elections on the first Tuesday of November in even numbered years.

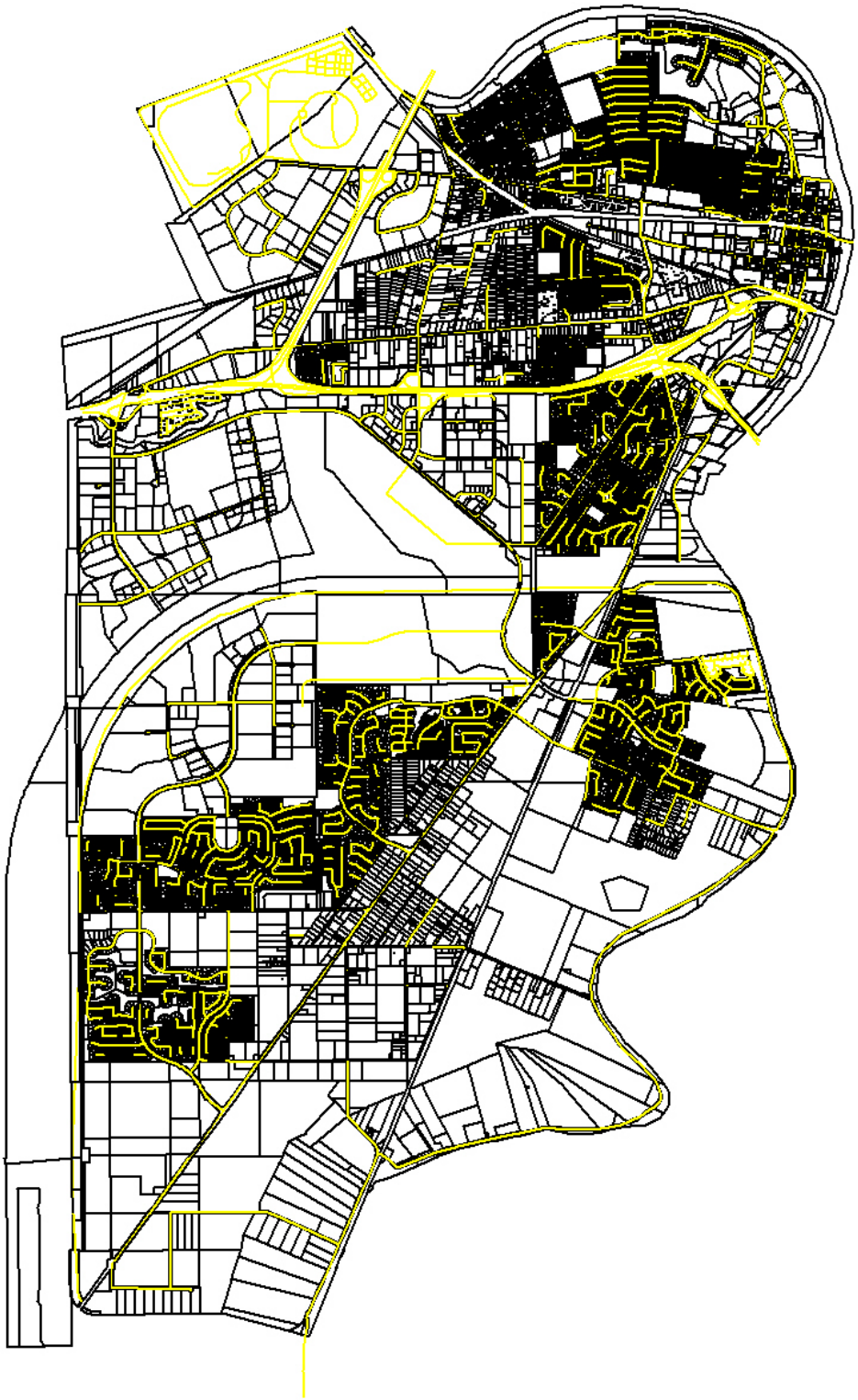
The West Sacramento City Council holds regular meetings on the 1st, 2nd, and 3rd Wednesday of every month beginning at 7:00 p.m. You can view the calendar of events to see when the next City Council meeting is scheduled. City Council meetings are held at the following location:

West Sacramento Civic Center
1110 West Capitol Avenue
West Sacramento, CA 95691

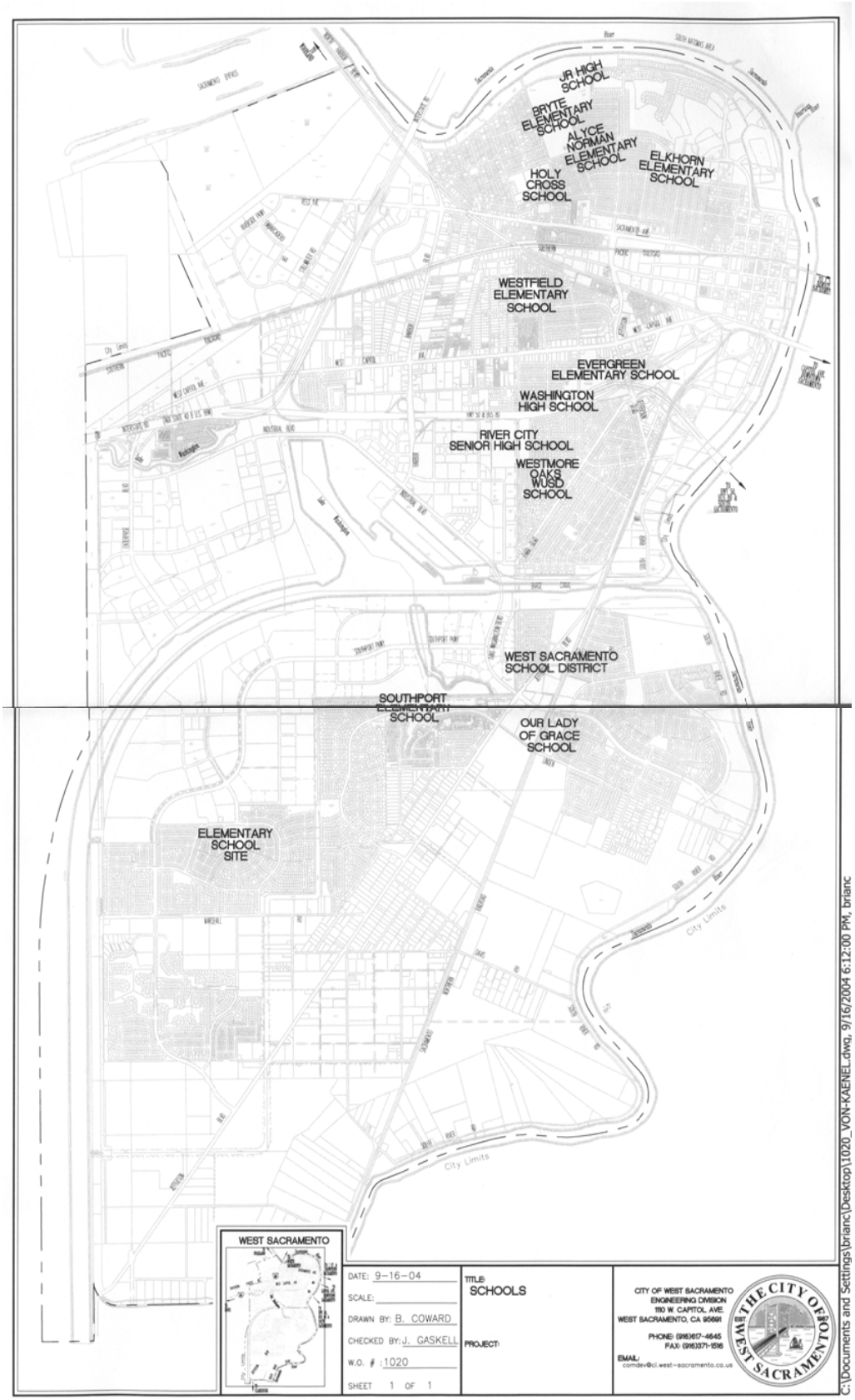
Mayor	Christopher Calbadon
Mayor Pro Tem	Oscar Villegas
Council Member	William Kristoff
Council Member	Mark Montemayor
Council Member	Carolyn Castillo Pierson

Map of West Sacramento

Base Map

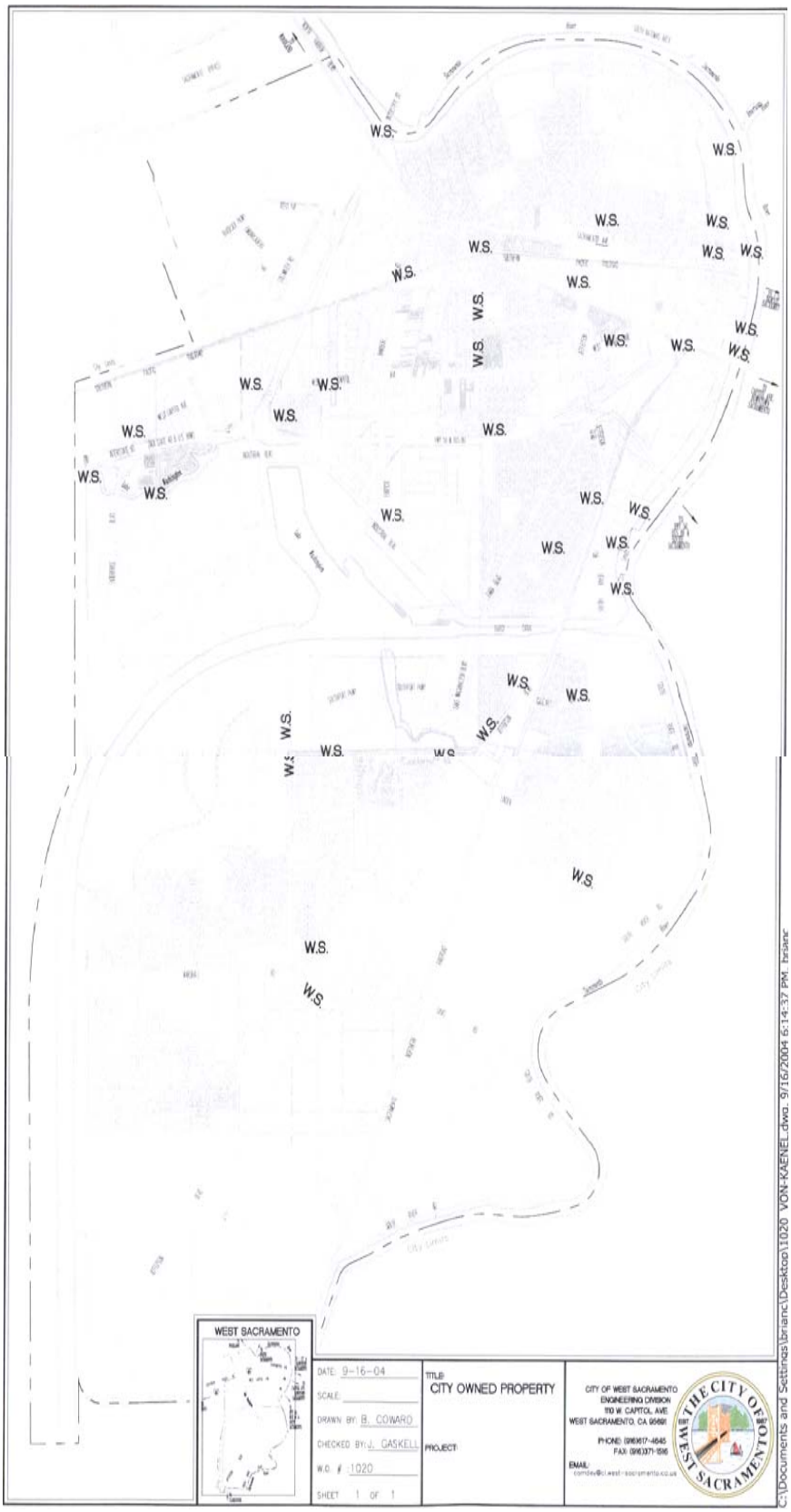


West Sacramento Schools



Large scale maps available through the West Sacramento Engineering Division

West Sacramento City-owned Property Locations



Large scale maps available through the West Sacramento Engineering Division

West Sacramento Inventory of Assets

Property Valuation List

West Sacramento

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
0	CITY-OWNED PROPERTY	1801 W. Capitol Ave.	West Sacramen	CA	95691	0	0	None	0	$0	$0	$806,400	$0	$0	$806,400
325	Fire Station #42	2410 Jefferson	West Sacramen	CA	95691	1968	1	Steel Frame	2,425	$160,396	$95,416	$0	$0	$0	$255,812
326	Fire Station #43	1561 Harbor	West Sacramen	CA	95691	1971	1	Joisted Masonry	4,734	$537,853	$148,681	$0	$0	$0	$686,534
327	Fire Station #44	905 Fremont	West Sacramen	CA	95605	1961	1	Joisted Masonry	3,200	$363,503	$110,249	$0	$0	$0	$473,752
328	West Sacramento Neighborhood Center	1515 Lisbon	West Sacramen	CA	95605	1961	1	Joisted Masonry	3,200	$363,401	$0	$0	$0	$0	$363,401
329	City Police Department	550 Jefferson Blvd.	West Sacramen	CA	95691	1988	1	Masonry - NonCombus	24,404	$3,415,780	$608,460	$0	$0	$0	$4,024,240
330	PW and Park Maint.	1951 So. River Rd.	West Sacramen	CA	95691	1950	2	Steel Frame	15,840	$1,046,463	$340,521	$0	$0	$0	$1,386,984
331	Sludge Dewatering Building	1951 So. River Rd.	West Sacramen	CA	95691	1979	2	Concrete	3,568	$543,214	$285,392	$0	$0	$0	$828,606
332	Digester & Pump Room - Primary	1991 So. River Rd.	West Sacramen	CA	95691	1964	1	Concrete	4,400	$670,956	$54,882	$443,851	$0	$0	$1,169,689
333	Caustic Feed Facility	1991 So. River Rd.	West Sacramen	CA	95691	1996	1	Reinforced Concrete	0	$0	$47,042	$11,374	$0	$0	$58,416
334	Digester Pump Room & Secondary	1991 So. River Rd.	West Sacramen	CA	95691	1950	1	Concrete	3,435	$523,803	$292,974	$388,371	$0	$0	$1,205,148

Wednesday, March 10, 2004

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CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
		YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT						
335	Laboratory & Control Building	1991 So. River Rd.	West Sacramen	CA	95691	$482,874	$569,215	$0	$0	$0	$1,052,089
		1971	1	Joisted Masonry	4,225						
336	Electric Building & Clarifier	1991 So. River Rd.	West Sacramen	CA	95691	$373,178	$268,928	$0	$0	$0	$642,106
		1979	2	Concrete	2,472						
337	Polymer Building	1991 So. River Rd.	West Sacramen	CA	95691	$89,621	$153,673	$0	$0	$0	$243,294
		1979	2	Joisted Masonry	610						
338	Blower Building	1991 So. River Rd.	West Sacramen	CA	95691	$245,500	$537,825	$0	$0	$0	$783,325
		1967	1	Reinforced Concrete	1,620						
339	Chlorine Building	1991 So. River Rd.	West Sacramen	CA	95691	$273,415	$250,894	$7,769	$0	$0	$532,078
		1979	1	Concrete	1,793						
340	Return Sludge & Pump Building	1919 So. River Rd.	West Sacramen	CA	95691	$119,594	$139,843	$0	$0	$0	$259,437
		1970	2	Reinforced Concrete	788						
341	Anoxic Selector/Aeration Basins	1991 So. River Rd.	West Sacramen	CA	95691	$0	$787,116	$1,023,632	$0	$0	$1,810,748
		0	1	Reinforced Concrete	0						
342	Secondary Clarifiers	1991 So. River Rd.	West Sacramen	CA	95691	$0	$209,078	$682,421	$0	$0	$891,499
		0	1	Reinforced Concrete	0						
343	Primary Digester Room	1991 So. River Rd.	West Sacramen	CA	95691	$609,960	$156,808	$332,889	$0	$0	$1,099,657
		1991	1	Reinforced Concrete	4,000						
344	Portable Buildings & City Office	1951 So. River Rd.	West Sacramen	CA	95691	$16,429	$15,681	$0	$0	$0	$32,110
		1989	1	Steel Frame	250						
345	Chlorine Contact Chamber & Effluent Pump Station	1991 So. River Rd.	West Sacramen	CA	95691	$1,219,920	$245,073	$133,155	$0	$0	$1,598,148
		1977	1	Reinforced Concrete	8,000						
346	Primary Clarifiers	1991 So. River Rd.	West Sacramen	CA	95691	$0	$0	$2,047,265	$0	$0	$2,047,265
		0	None		0						

Wednesday, March 10, 2004 *Page 2 of 7*

CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
		YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT						
347	WAS Gravity Belt Thickener	1991 So. River Rd.	West Sacramen	CA	95691	$270,743	$167,253	$0	$0	$0	$437,996
		1990	1	Reinforced Concrete	1,800						
348	WWTP Headwork & Septage Receiving Station	1991 So. River Rd.	West Sacramen	CA	95691	$305,943	$203,692	$0	$0	$0	$509,635
		1990	1	Reinforced Concrete	2,000						
349	Club West Teen Center	1125 Riverbank Rd	West Sacramen	CA	95605	$255,572	$66,340	$0	$0	$0	$321,912
		1993	1	Steel Frame	4,000						
350	PSIP Water Treatment Plant	Enterprise Blvd.	West Sacramen	CA	95691	$0	$0	$568,684	$0	$0	$568,684
		0	0	None	0						
351	PSIP Water Treatment Plant #2	Enterprise Blvd.	West Sacramen	CA	95691	$0	$0	$113,736	$0	$0	$113,736
		0	0	None	0						
352	Pump Building & Wells 24, 26,27	Enterprise Blvd.	West Sacramen	CA	95691	$187,479	$1,270,151	$0	$0	$0	$1,457,630
		1978	1	Steel Frame	2,852						
353	Chlorine Building	Enterprise Blvd.	West Sacramen	CA	95691	$83,107	$52,269	$0	$0	$0	$135,376
		1978	1	Steel Frame	1,250						
354	Fire Station #41	132 Fifteenth St.	West Sacramen	CA	95691	$756,101	$211,801	$0	$0	$0	$967,902
		1940	2	Joisted Masonry	8,230						
355	Bryte Bend Water Treatment Plant	400 N. Harbor Blvd.	West Sacramen	CA	95605	$493,310	$66,168	$0	$0	$0	$559,478
	LAB/OFFICE BUILDING	0	1	Wood Frame	4,700						
356	Operations Building	400 N. Harbor Blvd.	West Sacramen	CA	95605	$113,645	$1,398,421	$0	$0	$0	$1,512,066
		1987	1	Joisted Masonry	989						
357	Electric Building	400 N. Harbor Blvd.	West Sacramen	CA	95605	$22,343	$1,264,924	$0	$0	$0	$1,287,267
		1987	1	Reinforced Concrete	144						
358	Flocculation Unit	400 N. Harbor Blvd.	West Sacramen	CA	95605	$1,101,608	$1,828,704	$0	$0	$0	$2,930,312

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CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
359	Sedimentation Basin	400 N. Harbor Blvd.	West Sacramen	CA	95605	1987	1	Reinforced Concrete	7,245	$1,101,609	$2,310,316	$0	$0	$0	$3,411,925
360	Filter Basin	400 N. Harbor Blvd.	West Sacramen	CA	95605	1987	1	Reinforced Concrete	5,670	$862,592	$1,035,000	$0	$0	$0	$1,897,592
361	Backwash Thickener	400 N. Harbor Blvd.	West Sacramen	CA	95605	1988	1	Reinforced Concrete	882	$134,759	$0	$0	$0	$0	$134,759
362	Bryte Pump Station Building LAB/OFFICE BUILDING	1600 Citrus	West Sacramen	CA	95605	1986	1	Steel Frame	2,868	$189,515	$430,283	$11,096	$0	$0	$630,894
363	South Pump Station	1966 Park Blvd.	West Sacramen	CA	95691	1967	2	Joisted Masonry	272	$32,507	$261,349	$0	$0	$0	$293,856
364	Coke A Cola Lift Station	Coke St./Evergreen Ave.	West Sacramen	CA	95691	1964	1	Steel Frame	144	$9,566	$52,269	$0	$0	$0	$61,835
365	Water Well #22 & Storage Tank	964 Oak Street	West Sacramen	CA	95605	1986	1	Steel Frame	106	$7,004	$240,439	$561,393	$0	$0	$808,836
366	Deerwood Pump Station	Deerwood St./Lakewood Dr.	West Sacramen	CA	95691	1940	1	Wood Frame	144	$18,130	$15,681	$0	$0	$0	$33,811
367	Storm Drain Lift Station	Fifth Street	West Sacramen	CA	0	1996	1	Reinforced Concrete	179	$27,147	$104,540	$0	$0	$0	$131,687
368	Iron Triangle Pump Station	Triangle Ct. at Jefferson	West Sacramen	CA	95605	0	1	Steel Frame	144	$9,360	$43,907	$0	$0	$0	$53,267
369	Sewer Pump Station Control room	Industrial Blvd.	West Sacramen	CA	95691	1989	1	Masonry - NonCombus	320	$48,259	$1,045,391	$0	$0	$0	$1,093,650
370	Jefferson Pump Station - Control Room	601 Jefferson Blvd.	West Sacramen	CA	95691	1986	2	Masonry - NonCombus	320	$48,257	$1,045,391	$0	$0	$0	$1,093,648

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CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
		YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT						
371	Southport Water Reservoir & Pump Station	Linden Rd. at Touchstone	West Sacramen	CA	95691	$384,275	$1,120,046	$776,740	$0	$0	$2,281,061
		1970	1	Reinforced Concrete	2,520						
372	Northport Sewer Lift Station	West Capital Ave.	West Sacramen	CA	95691	$48,257	$1,045,391	$0	$0	$0	$1,093,648
		1989	2	Masonry - NonCombus	320						
373	Lighthouse Pump Station	213 Fourth St.	West Sacramen	CA	95605	$294,177	$1,881,705	$0	$0	$0	$2,175,882
		1992	1	Masonry - NonCombus	2,016						
375	Southport PS Wells	Linden Rd.	West Sacramen	CA	95691	$201,600	$1,300,000	$560,000	$0	$0	$2,061,600
		0	1	Joisted Masonry	1,800						
376	Washington Underpass Storm Water Pump Station	W. Capital Ave/Washington	West Sacramen	CA	95691	$25,130	$18,818	$0	$0	$0	$43,948
		1930	1	Wood Frame	200						
377	Linden Park	Linden Park	West Sacramen	CA	95691	$0	$0	$29,926	$0	$0	$29,926
		0	0	None	0						
378	Touchstone Park		West Sacramen	CA	95691	$0	$0	$3,991	$0	$0	$3,991
		0	0	None	0						
379	Elkhorn Park	Cummins Way	West Sacramen	CA	95605	$0	$0	$56,870	$0	$0	$56,870
		0	0	None	0						
380	Sam Combs Park	205 Stone Blvd.	West Sacramen	CA	95691	$103,693	$1,400	$19,973	$0	$0	$125,066
		1970	1	Metal	1,200						
381	Memorial Park	18 & Delaware ST.	West Sacramen	CA	95691	$101,857	$3,227	$0	$0	$0	$105,084
		1988	1	Wood Frame	800						
382	Summerfield Park	Linden & Diana Rd	West Sacramen	CA	95691	$0	$0	$227,474	$0	$0	$227,474
		0	0	None	0						
383	Meadowdale Park	3625 W. Capitol Ave.	West Sacramen	CA	95691	$0	$0	$22,747	$0	$0	$22,747
		0	0	None	0						

Wednesday, March 10, 2004

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CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
		YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT						
384	Bryte Park	Carrie St./Todhundter	West Sacramen	CA	95605	$3,179	$6,670	$341,190	$0	$0	$351,039
		1987	1	Wood Frame	250						
385	City Property	422 "C" St.	West Sacramen	CA	95691	$103,195	$0	$0	$0	$0	$103,195
		1988	1	Steel Frame	2,304						
386	Central Tank	Industrial & Stone Blvd.	West Sacramen	CA	95691	$0	$104,540	$853,027	$0	$0	$957,567
		0	0	None	0						
388	Northeast Water Tank	Fourth & "B" St.	West Sacramen	CA	95605	$0	$104,540	$853,027	$0	$0	$957,567
		0	0	None	0						
389	Raley's Storm Drain Pump Station	Second St.	West Sacramen	CA	95605	$98,429	$790,316	$0	$0	$0	$888,745
		1990	1	Reinforced Concrete	650						
391	Vehicles		West Sacramen	CA	0	$0	$0	$0	$5,503,917	$0	$5,503,917
		0	0	None	0						
391	Contractor's Equipment		West Sacramen	CA	0	$0	$0	$0	$824,399	$0	$824,399
		0	0	None	0						
471	Broderick Boat Ramp	100 4th St.	West Sacramen	CA	95605	$235,851	$20,866	$115,784	$0	$0	$372,501
		1998	1	Masonry - NonCombus	1,600						
472	Alyce Norman Playfields	1225 Carrie St.	West Sacramen	CA	95605	$360,000	$20,866	$0	$0	$0	$380,866
		0	1	Steel Frame	1,520						
473	Riverwalk Park	Second St.	West Sacramen	CA	95605	$0	$0	$1,070,588	$0	$0	$1,070,588
		0	0	None	0						
474	Harbor Blvd. Storm Drain Pump Station	Harbor Blvd./Rice Ave.	West Sacramen	CA	0	$60,906	$156,496	$0	$0	$0	$217,402
		0	1	Reinforced Concrete	400						
492	W.S. CITY HALL	1110 West Capitol	West Sacramen	CA	95691	$12,000,000	$2,480,400	$0	$0	$6,000	$14,486,400
		2002	1	Steel Frame	67,000						

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CSAC #	LOCATION NAME	ADDRESS	CITY	ST.	ZIP	YR. BUILT	FLOORS	CONSTRUCTION TYPE	SQ. FT	Current Reported Value	EQUIP VALUE	PROP. IN THE OPEN	VEHICLES	FINE ARTS	TOTAL
495	Bridgeway Island Sewer Lift Station	3400 Golden Gate	West Sacramen	CA	95691	2002	2	Joisted Masonry	730	$81,760	$1,565,755	$0	$0	$0	$1,647,515
496	Southport Sewer Lift Station	2500 Jefferson Blvd	West Sacramen	CA	95691	2001	2	Joisted Masonry	660	$73,920	$2,207,610	$0	$0	$0	$2,281,530
497	Carlin Water Tank	2930 Oates St.	West Sacramen	CA	95691	2002	1	Joisted Masonry	1,804	$202,048	$3,697,952	$0	$0	$0	$3,900,000
498	Caustic Facility	400 N. Harbor Blvd.	West Sacramen	CA	95691	2002	1	Reinforced Concrete	760	$115,892	$15,000	$536,618	$0	$0	$667,510
499	Washington Firehouse	317 Third Street	West Sacramen	CA	95605	1940	2	Reinforced Concrete	4,800	$720,000	$0	$0	$0	$0	$720,000
500	Southport Elementary School	Linden Road	West Sacramen	CA	95691	0	1	Steel Frame	960	$101,660	$10,127	$0	$0	$0	$111,787
502	Merkley Building	1240 Merkley	West Sacramen	CA	0	1960	1	Masonry - NonCombus	7,200	$400,000	$0	$0	$0	$0	$400,000
504	Senior Center	664 Cummins	West Sacramen	CA	95691	0	0	None	0	$0	$10,000	$0	$0	$0	$10,000
505	Bridgeway Island Park	Golden Gate Drive	West Sacramen	CA	95691	0	0	None	0	$0	$0	$108,575	$0	$0	$108,575
506	Southport Gateway Park	Jefferson & Gateway	West Sacramen	CA	95691	0	0	None	0	$0	$0	$59,468	$0	$0	$59,468
	WEST SACRAMENTO ENTITY TOTALS									$32,850,245	$34,993,765	$12,768,034	$6,328,316	$6,000	**$86,946,360**

Critical Facilities

The following list of facilities has been determined to be critical to the City of West Sacramento's ability to meet the requirements of its mission during an emergency:

1. Fire Stations
    a. Station 41 – 132 15th Street
    b. Station 42 – 3585 Jefferson Blvd.
    c. Station 43 – 1561 Harbor Blvd.
    d. Station 44 – 905 Fremont Street

2. Police Department – 550 Jefferson Blvd.

3. City Hall – 1110 West Capitol Ave.

4. Public Works
    a. 600 2nd Street – Pump Station
    b. 310 'B' Street – Pump Station
    c. 400 N. Harbor Blvd. – Bryte BWTP
    d. 1600 Citrus St. – Bryte Pump Station
    e. 1951 South River Rd. – Corp. Yard/Public Works
    f. 3930 Industrial Blvd. – Industrial Pump Station
    g. 601 Jefferson Blvd. – Jefferson Pump Station
    h. 4000 W. Capitol Ave. – Northport Pump Station
    i. 1380 Enterprise Blvd.- PSIP WTP
    j. 226 Touchstone – Southport WTP
    k. 1991 South River Rd. – Wastwater Treatment Plant
    l. 2970 Carlin Dr. – Water Treatment Plant

5. Washington Unified School District
    a. Alyce Norman Elementary – 1200 Anna St.
    b. Bryte Elementary – 637 Todhunter Ave.
    c. Elkhorn Elementary – 750 Cummins Way
    d. Evergreen Elementary – 919 Westacre Rd.
    e. Golden State middle School – 1100 Carrie St.
    f. Holy Cross Elementary – 800 Todhunter Ave.
    g. Southport elementary – 2747 Linden Rd.
    h. Our Lady of Grace – 1990 Linden Rd.
    i. River City High School – 1100 Clarendon
    j. Washington School District office – 930 Westacre R
    k. Westfield Elementary – 508 Poplar Ave.
    l. Westmore Elementary – 1504 Fallbrook St.
    m. Yolo Continuation High School – 920 Westacre Rd.

6. Yolo County Social Services – 500 Jefferson Blvd.
7. Affymetrix, Inc. – 890 Embarcadero Dr.
8. Agrim – 3961 Channel Dr.

9. Air Arc Supply, Inc. 617 Houston St.
10. BP/Arco Petroleum Products – 1700 South River Rd.
11. BP/Arco petroleum Products – 1601 South River Rd.
12. California Fuel Cell Partnership – 3300 Industrial Blvd.
13. Caltrans – West Sacramento – 1040 South River rd.
14. CHP Academy – 3500 Reed Ave.
15. Cingular Wireless – 840 Riverside Parkway, Ste. 70-80
16. City Bank – West – 820 Stillwater
17. Crum & Crum Enterprises – 2935 Ramco St.
18. Dade Behring Microscan, Inc. – 1584 enterprise Blvd.
19. Dade Behring Microscan, Inc. – 2040 Enterprise Blvd.
20. Equilon Enterprises LLC – 1509 South River Rd.
21. Farmers Rice Cooperative – 2224 Industrial Blvd.
22. FEDEX Freight West – 1820 parkway blvd.
23. CNS Wholesale Grocery – 3771 Channel Dr.
24. Jay Dee Transport Co. – 2700 Rice Avenue
25. Jones, Lang, LaSalle Americas, Inc. (CASSA) – 707 3rd S
26. KOVR-TV – 2713 KOVR Dr.
27. Level 3 – 1075 Triangle Ct., Ste. 130
28. McKesson HBOC Corp. – 3775 Seaport Blvd.
29. NOR-CAL Beverage Co. – 2286 Stone Blvd.
30. PG & E Deepwater Substation – 3000 Thorpe Rd..
31. PG & E West Sacramento Substation – 900 Oak St.
32. Port of Sacramento – 2895 Industrial Blvd.
33. Raley's Bakery – 3925 Seaport Blvd.
34. Ramos Oil co., Inc. – 1515 South River Rd.
35. Roadway Express – 4200 W. Capitol Ave.
36. S.F.P.P.L.R. (Kinder Morgan) – 1570 South River Rd.
37. Sierra Chemical co. – 788 Northport
38. Somerset Nursing Center – 2215 Oakmont Way
39. STL Sacramento – 880 Riverside Parkway
40. Tony's Fine Foods, Inc. – 3575 Reed Ave.
41. Postal Service MPC – 3775 Industrial Blvd.
42. United Parcel Services – 1380 Shore St.
43. Univar USA, Inc. – 1600 Raley Ct.
44. VSS Emultech – 3785 Channel Dr.
45. Worldcom – 2820 KOVR Dr.

SECTION FOUR: Strategies & Recommendations

Mitigation Goals and Objectives

The information in the hazard vulnerability analysis and loss estimation information was used as a basis for developing mitigation goals and objectives. Mitigation goals are defined as general guidelines explaining what each jurisdiction wants to achieve in terms of hazard and loss prevention. Goal statements are typically long-range, policy-oriented statements representing jurisdiction-wide visions. Objectives are statements that detail how each jurisdiction's goals will be achieved, and typically define strategies or implementation steps to attain identified goals. Other important inputs to the development of jurisdiction-level goals and objectives include performing reviews of existing local plans, policy documents, and regulations for consistency and complementary goals, as well as soliciting input from the public.

Identification and Prioritization of Mitigation Actions

Mitigation actions that address the goals and objectives developed in the previous step were identified, evaluated, and prioritized. These actions form the core of the mitigation plan. Jurisdictions conducted a capabilities assessment, reviewing existing local plans, policies, and regulations for any other capabilities relevant to hazard mitigation planning. An analysis of their capability to carry out these implementation measures with an eye toward hazard and loss prevention was conducted. The capabilities assessment required an inventory of each jurisdiction's legal, administrative, fiscal and technical capacities to support hazard mitigation planning. After completion of the capabilities assessment, each jurisdiction evaluated and prioritized their proposed mitigations. Each jurisdiction considered the social, technical, administrative, political, legal, economic, and environmental opportunities and constraints of implementing a particular mitigation action. This step resulted in a list of acceptable and realistic actions that address the hazards identified in each jurisdiction.

A full suite of goals, objectives and action items for each jurisdiction is presented in this Plan. Each jurisdiction then identified and prioritized actions with the highest short to medium term priorities. An implementation, schedule, funding source and coordinating individual or agency is identified for each prioritized action item.

Constraints to Strategy Implementation

The committee identified a list of issues that exist in Yolo County that can be considered ***constraints*** to mitigation planning strategy implementation: (from the perspective of the participating steering committee members).

- Legal Constraints (lawful prohibition, voter rejection)
- Economic Constraint (fee based agencies may be restrained from participating in the planning process due to lack of funds to pay for their involvement.)
- Budgetary and Funding Constraints
- Staffing Constraints
- Land Ownership Constraints
- State and Federal Influences
- Sensitivity of Information Needed to Complete The Plan.
- Building and Codes Restrictions
- Cultural Demands and Barriers
- Interpretation of Law (court decisions)

Synopsis of Strategies

HAZARD	Yolo County	Woodland	Davis	Winters	W.Sacramento
HIGH RISK PRIORITY HAZARDS					
All Hazards			DA1-1		WS1-1
Flood	YC-2-1	WO2-1	DA2-1	WI2-1	WS2-1
Levee Failure	YC3-1	WO3-1	DA3-1		WS3-1
Dam Failure	YC4-1	WO4-1	DA4-1	WI4-1	WS4-1
WMD & Terrorism	YC5-1	WO5-1	DA5-1	WI5-1	WS5-1 WS5-2 WS5-2 WS5-4 WS5-5
Fires	YC6-1	WO6-1	DA6-1	WI6-1	WS6-1
Utility Loss	YC7-1 YC7-2	WO7-1	DA7-1 DA7-2	WI7-1	WS7-1
Data – Telecommunication Loss	YC8-1	WO8-1	DA8-1		WS8-1
Transportation – Pipeline Accident	YC9-1	WO9-1	DA9-1 DA9-2		WS9-1
Biological (Plant/Animal) Emergency	YC10-1	WO10-1	DA10-1	WI10-1	
Earthquake	YC11-1	WO11-1	DA11-1	WI11-1	
MODERATE RISK PRIORITY HAZARDS					
Severe Weather	YC12-1 YC12-2		DA12-1 DA12-2		
Water/Waste Water Disruption	YC13-1		DA13-1	WI13-1	WS13-1
Biological/Health Emergency	YC14-1		DA14-1		
Economic Disruption	YC15-1		DA15-1	WI15-1	WS15-1
Special Events	YC16-1		DA16-1		
Transportation Loss	YC17-1	WO17-1	DA17-1	WI17-1	WS17-1

High Risk Priority Hazards

All Hazards

City of West Sacramento

WS1-1

Program/Project Description	Community Warning System Project: involves the procurement and installation of a community wide siren system to alert residents during severe weather conditions, industrial disasters and incidents of civil unrest
Cost	$ 1 .0 Million
Timeline/Schedule	TBD
Responsible Agency	Police and Fire Departments
Financing	Grant: Federal funding with local match
Goal Addressed	Mitigation of rapid public notification deficiency • Protect Life and Property • Public awareness • Increase Effectiveness of Emergency Services
Related Hazard	This project will support the mitigation of all incidents that involve emergency operations that impact the general public i.e. earthquakes , fire, floods, terrorism incidents, civil unrest, hazardous materials incidents etc.

City of Davis

DA1-1

Program/Project Description	Project is for a Joint Community (City of Davis) and Campus (UC Davis) alerting system design, purchase, installation and public education program
Cost	TBD
Timeline/Schedule	TBE
Responsible Agency	City of Davis Fire Department & University of California Davis Campus Emergency Planner
Financing	Seeking grant opportunities
Goal Addressed	Protect Life & Property Public Education and Awareness Increase Effectiveness of Emergency Services
Related Hazard	ALL HAZARDS that involve emergency operations that affect the general public and campus population.

Floods

Yolo County

YC2-1

Program/Project Description	Continue enforcement of County Code (Flood Damage Prevention) regarding building in flood-plains Continue enforcement of building codes(mechanical, plumbing, fire) Require new developments to mitigate displaced and increased flows. Continue drainage channel maintenance Participate in National Flood Insurance Program
Cost	Currently funded in operating budgets. Grant opportunities as they arise
Timeline/Schedule	Ongoing program
Responsible Agency	Planning and Public Works Department
Financing	Operating budget – fees, and general fund
Goal Addressed	Protect life and property Minimize property damage Increase public awareness regarding NFIP
Related Hazard	Flood

City of Woodland

WO2-1

Specific to Cache Creek Flooding

Program/Project Description	This program/project would provide permanent flood protection for the City of Woodland in a 100 year Cache Creek flood event and reduce flood damage costs. FEMA Flood study placed 50% of City in 100 year zone and the Corps of Engineer's 2003 draft Feasibility Study shows a total annual flood damage reduction benefit of about $12 million depending on the flood protection alternative selected. Two solutions have been found feasible: a flood barrier and setback levees. No other alternatives have been found feasible to date. The voters in Woodland rejected the flood barrier concept and indicated a desire for a "regional" solution.
Cost	The project costs depend on protection alternative selected. The estimated cost for the flood barrier is $43 million (non-federal cost of $16 million) and the estimated cost for the setback levees is $162 million (non-federal cost of $128 million). FTEs: TBD
Timeline/Schedule	This project was originally initiated in 2001, however, local funding rejected by voters precluding additional study and solution exploration. The project timeline is estimated to be 8-10 years from determination of viable alternative to complete real estate acquisitions, design, and construction with identified source funding for local share, assuming State and Federal support. It is unknown at this time whether a viable alternative that is supported by the community can be found.
Responsible Agency	The City of Woodland was the local sponsor of the Corps of Engineer's Feasibility Study. It is unclear at this time if a project can effectively proceed without the County's active participation, which has not been forthcoming to date. Typically the Department of Water Resources is the non-federal sponsor and the Corps of Engineers is the federal sponsor for major flood protection projects.
Financing	Major flood protection projects are typically jointly funded by Congress, the State, and the local sponsor, and project must be competitive and generally non-contentious at both the State level and at the congressional level. Local funding (estimated at approximately $8 million) for the flood barrier would be relatively easy to commit, however, State and Congressional funding for other solutions may be limited to that required for the flood barrier project (the Corps' tentatively recommended plan), potentially leaving the local cost share at $120 million for a setback levee solution. Other as yet undetermined alternatives may be more or less costly than the setback levee option. At present, voter initiative precludes local funding which eliminates state and federal funding matches.
Goal Addressed	The implementation/completion of this project will accomplish the following: • Permanent flood protection (life safety and property damage) to the community in a 100 year Cache Creek flood event. • Avert requirement for flood insurance on residential properties with federally insured loans (estimated cost over $1 million a year). • Avert requirements to comply with expensive building restrictions for building in the flood plain. • Avery requirement for a separate flood protection project for the wastewater treatment plant at a cost of $4 million (required by State if protection not otherwise provided). • Avert loss of City and County property and sales tax revenues (and related reductions in recreation and public safety programs due to decreased property values and increased vacancy rates of commercial/industrial properties in the flood plain (much of the industrial area is in the deep flood zone). • Avert need to amend General Plan to delete industrial growth areas currently in the 100 year flood plain and either forgo the net increase in revenues associated with that type of development, or shift those growth areas to the south on prime farm land. • Develop community and political consensus of best solution. • Seek funding for solution.
Related Hazard	• Flooding • Levee Failure • Dam Failure (Indian Valley Dam)

City of Davis

DA2-1

Program/Project Description	• Continue enforcement of building codes (mechanical, plumbing, fire) • Require new developments to mitigate displaced and increased flows. • Continue drainage channel maintenance • Participate in National Flood Insurance Program
Cost	• Currently funded in operating budgets. • Grant opportunities as they arise
Timeline/Schedule	• Ongoing Program
Responsible Agency	• Public Works and Community Development Departments
Financing	• Operating budget-fees, enterprise funds and general fund
Goal Addressed	• Protect life and property • Minimize Property damage • Increase public awareness regarding NFIP
Related Hazard	• Flood

City of Winters

WI2-1

Program/Project Description	Flood
Cost	
Timeline/Schedule	Ongoing
Responsible Agency	City of Winters
Financing	When funds become available
Goal Addressed	• Early warning . Public education and communication • Comply with FEMA flooding plan • Implement Army Corp of Engineers Plan • Update Storm drain master plan
Related Hazard	Public health issues. Loss of life and property. Bridge integrity Flood at pump station

City of West Sacramento

WS2-1

Program/Project Description	Flood fighting activities. This project involves the development of procedures to handle localized flooding within the city, strengthening the levees that surround the city and operation of the Emergency Operations Center during flooding conditions
Cost	200 hr. FTE/year
Timeline/Schedule	Ongoing
Responsible Agency	Fire Departments, Public Works, and the Engineering Division
Financing	General Fund
Goal Addressed	Mitigation of Flooding • Protect Life and Property • Increase Effectiveness of Emergency Services • Strengthen Partnerships • Increase Public Awareness
Related Hazard	Flooding can cause severe property damage, compromise transportation, threaten public health and result in economic devastation.

Levee Failure

Yolo County

YC3-1

Program/Project Description	• Develop relationships with reclamation districts, Department of Water Resources, Fish & Game and Corps of Engineers. • Continue drainage channel maintenance • Participate in National Flood Insurance Program • Monitor effects of weather
Cost	• Currently funded staff time • Grant opportunities as they arise
Timeline/Schedule	• Ongoing program
Responsible Agency	• Planning and Public Works Department
Financing	• Operating budget
Goal Addressed	• Protect life and property • Minimize property damage • Increase public awareness regarding NFIP
Related Hazard	• Levee Failure

City of Woodland

WO3-1

Program/Project Description	This project is for a Flood Warning System and Emergency Response/Evacuation Exercise Program to provide an early warning to the City of Woodland and unincorporated areas north of the City of a pending flood event allowing for orderly evacuation and a degree of site specific protection measures. Emergency response exercises would occur on a five year cycle to insure citizens know of the potential dangers and how to respond.
Cost	The cost for this project is estimated to be $1.2 million for the flood warning system (page K-7 of Corps 2003 draft Feasibility Report. Exercise costs would be part of normal O & M expenses and absorbed by the City at an estimated cost of $10k per cycle. FTEs: TBD
Timeline/Schedule	The timeline for this project is not known at this time. The schedule depends on funding availability for Flood Warning System. Exercises should commence in 2005 and every five years thereafter.
Responsible Agency	The City of Woodland and County of Yolo would be responsible for both the Flood Warning System and the Emergency Response/Evacuation Exercise Program.
Financing	The City of Woodland anticipates applying for a FEMA Grant for the Flood Warning System portion of the project.
Goal Addressed	The implementation/completion of this project would accomplish the following: • Life safety • Protection of property
Related Hazard	• Flooding • Levee Failure • Dam Failure

City of Davis

DA3-1

Program/Project Description	• Develop relationships with reclamation districts, Department of Water Resources, Fish & Game and Corp of Engineers • Continue drainage channel maintenance • Participate in the National Flood Insurance Program • Monitor effects of weather
Cost	• Currently funded staff time • Grant Opportunities as they arise
Timeline/Schedule	• Ongoing program
Responsible Agency	• Public Works
Financing	• Operating budget-fees, enterprise funds and general fund
Goal Addressed	• Protect life and property • Minimize property damage • Increase public awareness regarding NFIP
Related Hazard	• Levee Failure

City of West Sacramento

WS3-1

Program/Project Description	Levee Improvements: Improve the condition and capacity of the levees surrounding West Sacramento to raise the level of Protection to the 400-year level
Cost	$300 million
Timeline/Schedule	This approximately 15-year project is scheduled for completion in 2005
Responsible Agency	The City of West Sacramento United States Army Corp of Engineers Various local Reclamation districts, primarily RD 900
Financing	Federal funding with local match
Goal Addressed	Mitigation of flooding caused by overtopping or breaching of the levee system. • Protect life & property • Increase public awareness • Strengthen partnerships • Increase effectiveness of emergency services
Related Hazard	This project will support the mitigation of potential flooding caused by the overtopping or breaching of the levees surrounding the City of West Sacramento. This flooding can cause severe property damage, compromise transportation, threaten public health and result in economic devastation.

Dam Failure

Yolo County

YC4-1

Program/Project Description	• Develop relationships with reclamation districts, Department of Water Resources, Fish & Game and Corps of Engineers. • Continue drainage channel maintenance • Participate in National Flood Insurance Program • Monitor effects of weather
Cost	• Currently funded staff time • Grant opportunities as they arise
Timeline/Schedule	• Ongoing program
Responsible Agency	• Planning and Public Works Department
Financing	• Operating budget
Goal Addressed	• Protect life and property • Minimize property damage • Increase public awareness regarding NFIP
Related Hazard	• Dam Failure

City of Woodland

WO4-1

Program/Project Description	This project would prevent dam failure. • Indian Valley Reservoir only a theoretical threat to Woodland • Putah Creek Dam failure would not impact the City of Woodland
Cost	Unknown
Timeline/Schedule	Unknown
Responsible Agency	Unknown
Financing	Unknown
Goal Addressed	Unknown
Related Hazard	• Flooding see flooding

City of Davis

DA4-1

Program/Project Description	• Develop relationships with reclamation districts, Department of Water Resources, Fish & Game and Corp of Engineers. • Continue drainage channel maintenance • Participate in National flood Insurance Program • Monitor effects of weather
Cost	• Currently funded staff time • Grant opportunities as they arise
Timeline/Schedule	• Ongoing program
Responsible Agency	• Public Works
Financing	• Operating budget-fees, enterprise funds and general fund
Goal Addressed	• Protect life and property • Minimize property damage • Increase public awareness regarding NFIP
Related Hazard	• Dam Failure

City of Winters

WI4-1

Program/Project Description	Dam Failure due to terrorist treat or seismic activity (need USGS survey info)
Cost	More than $2 billion
Timeline/Schedule	Ongoing
Responsible Agency	City of Winters, Solano Irrigation District, Corp of Engineers
Financing	As funding becomes available
Goal Addressed	• Public education and early warning • Communication drills
Related Hazard	• Wide-spread flooding. Loss of income and public infrastructure .Loss of life and property

City of West Sacramento

WS4-1

Program/Project Description	Dam Failure: Because there is not a dam within close proximity to the City of West Sacramento, the City has not established a specific project for dam failure. The projects for flooding and levee will mitigate the dam failure.
Cost	N/A
Timeline/Schedule	N/A
Responsible Agency	Fire Department, Public Works, and the Engineering Division
Financing	General fund
Goal Addressed	Mitigation of Flooding • Protect life and property • Increase public awareness • Strengthen partnerships • Increase Effectiveness of Emergency Services
Related Hazard	Flooding can cause sever property damage, compromise transportation, threaten public health and result in economic devastation.

WMD/Terrorism

Yolo County

YC5-1

Program/Project Description	• Continue to communication with intelligence gathering groups and organizations regarding terrorism information at local, regional, statewide and nationwide levels. • Continue to train first responders in the latest in tactics and personal protection equipment. This would include personnel from fire, police, public works and other miscellaneous employees. • Continue to apply for grants to assist with the expense associated with ongoing training and updated equipment purchases.
Cost	• TBD • Additional grant opportunities as they arise.
Timeline/Schedule	Ongoing
Responsible Agency	Police, Fire & other miscellaneous employees
Financing	Operating budget
Goal Addressed	• Increase employee and public awareness
Related Hazard	• WMD / Terrorism

City of Woodland

WO5-1

Program/Project Description	This project would provide emergency preparedness planning and resources for emergency response due to WMD/Terrorist Threats. This is a project of national importance and Woodland is in close proximity to major airport and the state capitol.
Cost	The total costs to accomplish this project exceeds $200K to date. Additional funding will be determined by the National priorities related to homeland security. FTEs: .25
Timeline/Schedule	This project would be ongoing based on the nature of this project.
Responsible Agency	The responsible agencies for this project are Department of Homeland Security, State and Federal OES, and the City of Woodland Police and Fire Departments.
Financing	Funding for this project would be provided by Federal, State and Local governments.
Goal Addressed	The implementation/completion of this project would accomplish the following: • County-wide HAZMAT Team • Woodland incident response planning • Acquire PPE for public safety/key response staff • Intelligence • Further develop response capabilities based on emerging threats • Continue participation in operational area incident planning and management
Related Hazard	• Terrorism • Civil unrest • Hazardous materials incidents • NBC events • Health issues

City of Davis

DA5-1

Program/Project Description	• Continue to communicate with intelligence gathering groups and organizations regarding terrorism information at local, regional, statewide and nationwide levels • Continue to train first responders in the latest in tactics and personal protection equipment. This would include personnel from Fire, Police, public Works, and other misc. employees • Continue to apply for grants to assist with the expense associated with on-going training and updated equipment purchases /
Cost	• $5000 training cost currently funded within operating budget • $25,000 training for all field staff currently not funded. • Additional grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Police, Fire, public Works& other misc. employees
Financing	• Operating budget
Goal Addressed	• Increase Employees and Public awareness
Related Hazard	• Weapons of Mass Destruction/Terrorism

City of Winters

WI5-1

Program/Project Description	Data/ Tele-Communications failure due to electro-magnetic damage
Cost	
Timeline/Schedule	Ongoing
Responsible Agency	Winters Fire Department
Financing	
Goal Addressed	• 2 fire radios at fire station in case one fails, • OES back up communications available
Related Hazard	Unable to respond to emergency fires

City of West Sacramento

WS5-1

Program/Project Description	The city of West Sacramento provided input to the Office for Domestic Preparedness FY 2003 State Homeland Security Assessment and Strategy Program. We developed a risk, capabilities and needs assessment to determine the West Sacramento ability to handle the aftermath from a terrorist attack using Weapons of Mass Destruction. This was part of the City's effort to be included in the Sacramento, Urban Area Security Initiative.
Cost	120 hr. FTE
Timeline/Schedule	Completed August 2003
Responsible Agency	Fire Department
Financing	Hazardous Materials Enterprise Fund 90% and the General Fund 10%
Goal Addressed	Mitigation of WMD/Terrorism activities • Protect Life and Property • Increase Effectiveness of Emergency Services • Strengthen Partnerships • Increase Public Awareness
Related Hazard	• Terrorism • Civil unrest • Health issues

WS5-2

Program/Project Description	Hazardous materials and WMD training for the fire fighters
Cost	1200 hr. FTE per year
Timeline/Schedule	Continuing basis
Responsible Agency	Fire Department
Financing	Hazardous Materials Enterprises Fund 8% and General Fund 92%
Goal Addressed	Mitigation of WMD/Terrorism activities • Protect Life and Property • Increase Effectiveness of Emergency Services • Strengthen Partnerships
Related Hazard	• Terrorism • Civil unrest • Health issues

WS5-3

Program/Project Description	Training in Incident Command Operations when dealing with terrorist activities involving Weapons of Mass Destruction. Forty –one (41) staff members will receive 24 hours of off site training provided through the Urban Area Security Initiative (UASI) Grant.
Cost	984 hr. FTE
Timeline/Schedule	Start (08/2004) Finish (09/2004)
Responsible Agency	Fire Department- Sacramento, (UASI) Task Force
Financing	General Fund 92% and UASI Grant 8%
Goal Addressed	Mitigation of WMD/Terrorism activities • Protect life and property • Increase Effectiveness of Emergency Services • Strengthen Partnerships
Related Hazard	• Terrorism • Civil unrest • Heath issues

WS5-4

Program/Project Description	Update West Sacramento Emergency Operations for terrorist activities using Weapons of Mass Destruction
Cost	$18,311
Timeline/Schedule	Completed December 2003
Responsible Agency	Fire Department
Financing	FY 2002 FEMA Supplemental Planning Monies Grant
Goal Addressed	Mitigation of WMD/Terrorism activities • Protect Life and Property • Increase Effectiveness of Emergency Services
Related Hazard	• Terrorism • Civil unrest
	•

WS5-5

Program/Project Description	WMD/Terrorism Community Warning System Project: This project involves the procurement and installation of a community-wide warning system to alert residents during severe weather conditions, industrial disasters and incidents of civil unrest.
Cost	$1.0 million
Timeline/Schedule	TBD
Responsible Agency	Police & Fire Departments
Financing	Grant: Federal funding with local match
Goal Addressed	Mitigation of rapid public notification deficiency. • Protect life and property • Increase public awareness • Increase effectiveness of emergency services
Related Hazard	• This project will support the mitigation of all incidents that involve emergency operations that impact the general public (e.g. earthquakes, fire, floods, terrorism incidents, civil unrest, hazardous materials incidents, etc.)

Fires

Yolo County

YC6-1

Program/Project Description	• Require weed abatement– public properties and non agricultural private properties • Support League of California Cities and CSAC efforts to decrease impacts on public health and safety resulting from wildland urban interface fires
Cost	• TBD • Grant opportunities as they arise
Timeline/Schedule	• Ongoing, continuous programs
Responsible Agency	• Fire Departments, Parks Department and Planning and Public Works Department
Financing	• Existing staff
Goal Addressed	• Protect life and property • Increase public awareness • Incorporate environmental and historical preservation

City of Woodland

WO6-1

Program/Project Description	This project is for Freeway Fire Mitigation to reduce freeway fires on major arteries intersecting and traversing Woodland. On an annual basis, the City of Woodland and Caltrans would hold a joint planning and evaluation session to examine prior year freeway fire experience and to plan the strategy to control freeway fires during the upcoming year. Caltrans would implement the strategy.
Cost	The estimated annual cost for freeway fire suppression by the Woodland Fire Department exceeds $50.0K.
Timeline/Schedule	This project would be implemented on an annual basis including a joint planning session and preventive maintenance.
Responsible Agency	The responsible agencies for this project are the City of Woodland and the State of California Department of Transportation (Caltrans).
Financing	Funding for this project would be provided by the General Fund of the City of Woodland and Caltrans State funding.
Goal Addressed	The implementation/completion of this project would accomplish the following: • Reduce the number of freeway fires • Reduce the frequency of freeway fires • Reduce the severity of freeway fires • Reduce the exposure of Fire personnel to hazardous freeway fire control responses • Reduce motor vehicle accidents • Reduce private property fire damage
Related Hazard	• Freeway Fires • Motor vehicle accidents

City of Davis

DA6-1

Program/Project Description	• Continue the weed abatement program- public and private properties • Continue Open space maintenance • Continue Drainage Channel maintenance • Support League of California Cities and CSAC efforts to decrease impacts on public health and safety resulting from wild land urban interface fires
Cost	• $5000.00 in Fire Department budget for weed abatement • $??? In parks Department budget for maintenance of open space • $??? In Public Works budget for maintenance of drainage channels • Additional grant opportunities as they arise
Timeline/Schedule	• Ongoing , continuous programs
Responsible Agency	• Fire Department, Public Works, and Parks Department
Financing	• Operating budget consisting of general fund, open space fund and storm sewer-drainage fund
Goal Addressed	• Protect life and property • Increase public awareness • Incorporate environmental and historical preservation
Related Hazard	• Wildland/Urban Interface Fires

City of Winters

WI6-1

Program/Project Description	Wildland/Urban fire
Cost	
Timeline/Schedule	Ongoing
Responsible Agency	Winters Fire Department
Financing	General fund operating budget
Goal Addressed	• Prevention programs. • Pubic education and communications. • Early warning
Related Hazard	• Putah Creek risk to homes in immediate creek vicinity

City of West Sacramento

WS6-1

Program/Project Description	Wildland/Freeway Urban Interface Fire Project: This project is to cover those fires that occur along the freeways running through the City of West Sacramento and tat the interface between the urban areas of the city and the surroundings farmlands. As these fire suppression activities are apart of the general responsibilities of the West Sacramento Fire Department this effort is covered under the continuing operations of the Department. If additional support is required in this area it will be provided through mutual aid agreement with other departments in the Sacramento area.
Cost	$70,000 • Additional grant opportunities as they arise
Timeline/Schedule	Ongoing
Responsible Agency	Fire Department
Financing	General Fund
Goal Addressed	Mitigation of wild land fires • Protect Life and Property • Increase Effectiveness of Emergency Services • Strengthen Partnerships • Increase Public Awareness
Related Hazard	Wildland fires can cause severe property damage, compromise transportation, threaten public health and result in economic devastation.

Utility Loss

Yolo County

YC7-1

Program/Project Description	• Provide back up power • Provide regular equipment maintenance and replacement • Provide emergency response training for personnel • Continue vulnerability assessment and training • When appropriate, purchase new equipment • Continue partnership with utility providers • Provide public education for personnel equipment maintenance and back up and essential medication supply.
Cost	• Currently funded staff • TBD • Grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Public Works and Fire Departments
Financing	• Operating budget
Goal Addressed	• Protect infrastructure • Ensure that there are no health risks with service disruption • Increased public awareness
Related Hazard	• Utility loss

YC7-2

Program/Project Description	• Provide back up power • Provide regular equipment maintenance and replacement • Provide emergency response training for personnel • Continue vulnerability assessment and training • When appropriate, purchase new equipment • Continue partnership with utility providers • Provide public education for personnel equipment maintenance and back up and essential medication supply.
Cost	• Currently funded for staff time • TBD • Grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Central Services Division
Financing	• Operating budget
Goal Addressed	• Protect infrastructure • Ensure that there are no health risks with service disruption • Increased public awareness

City of Woodland

WO7-1

Program/Project Description	This project would protect key utility infrastructure systems by providing emergency power in the event of disruption (power loss) to utilities in order to continue essential operations. This project would provide emergency back-up power generation at key City facilities, back-up battery power at key traffic signals and back-up power at water supply wells and at WWTP
Cost	The costs for this project would be absorbed by facility construction and renovation projects.
Timeline/Schedule	This project would be ongoing based on the nature of the project.
Responsible Agency	The responsible agency would be the City of Woodland.
Financing	Funding for this project would be from the City of Woodland general and enterprise funds.
Goal Addressed	The implementation/completion of this project would accomplish the following: • Annexation by SMUD with its historically lower rates and higher reliability statistics. • All future City facilities will be constructed with emergency power generation.
Related Hazard	• Electrical power failure • Natural gas failure • Water/waste water system failure • Economic disruption

City of Davis

DA7-1

Program/Project Description	• Provide back up power • Provide regular equipment maintenance and replacement • Provide emergency response training for personnel • Continue vulnerability assessment and training • When appropriate, purchase new equipment • Continue partnership with utility provider • Provide public education for personnel equipment maintenance and back up and essential medication supply
Cost	• Currently funded for staff time • TBD • Grant opportunities as they arise
Timeline/Schedule	Ongoing
Responsible Agency	Public Works and Fire Departments
Financing	Operating budget- Enterprise funds
Goal Addressed	• Protect infrastructure • Ensure that there are no health risk with service disruption • Increased public awareness
Related Hazard	Substation

DA7-2

Program/Project Description	• Provide back up power • Provide regular equipment maintenance and replacement • Provide emergency response training for personnel • Continue vulnerability assessment and training • When appropriate, purchase new equipment • Continue partnership with utility providers • Provide public education for personnel equipment maintenance and back up and essential medication supply
Cost	• Currently funded for staff time • TBD • Grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Public Works and Fire Departments
Financing	• Operating budget-Enterprise funds
Goal Addressed	• Protect Infrastructure • Ensure that there are no health risk with service disruption • Increased public awareness
Related Hazard	• Utilities loss

City of Winters

WI7-1

Program/Project Description	Utility Loss due to: • transportation accident • 42' gas line explosion
Cost	Over 1 billion for gas line incident
Timeline/Schedule	Ongoing
Responsible Agency	• PG&E • City of Winters • Public Utilities Commission
Financing	Enterprise Funds, PG&E
Goal Addressed	• Back up generators for municipal wells. Early warning, Public education and communications
Related Hazard	Loss of life, property and natural resources, infrastructure, Temporary water loss.

City of West Sacramento

WS7-1

Program/Project Description	Utility Loss: This project involves developing working relationships with the utility companies that provide West Sacramento with electrical power, natural gass and telecommunications services. Representatives of the utility companies are members of our Disaster Councol and take part in the review of the City's Disaster Plan
Cost	No direct cost
Timeline/Schedule	Ongoing
Responsible Agency	Fire, Police and Public Works Departments
Financing	General Fund
Goal Addressed	Mitigation of major utility loss. • Protect life and property • Increase public awareness • Strengthen Partnerships • Increase effectiveness of emergency services
Related Hazard	This project will support the mitigation of all incidents that involve emergency operations that impact the general public (e.g. earthquakes, fire, floods, terrorism incidents, civil unrest, hazardous materials incidents, etc.).

Data/Telecommunications Loss

Yolo County

YC8-1

Program/Project Description	• Ensure the information/data system is adequately maintained and preserved • Continue daily back-ups • Assist private enterprise with financial/banking
Cost	• Priceless • TBD • Grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Information Technology Division (County Administrator's Office)
Financing	• Operating budget
Goal Addressed	• Protect information/data of Yolo County • Increase public awareness • Strengthen partnerships • Incorporate environmental and historical preservation
Related Hazard	• Data/Telecom Loss

City of Woodland

WO8-1

Program/Project Description	This project would protect key data and communications infrastructure systems due to disruption to local telephone service for a variety of reasons: weather and vandalism.
Cost	The total costs for this project are to be determined.
Timeline/Schedule	This project would be ongoing based on the nature of the project.
Responsible Agency	The responsible agencies for this project are the City of Woodland Police, Fire, and Public Works
Financing	Funding for this project would be from City of Woodland General and Enterprise Funds.
Goal Addressed	The implementation/completion of this project would accomplish the following: • Infrastructure security awareness • Redundant communication systems: land line, cellular, radio • Data system back-ups • Development of hardened systems • Awareness of key infrastructure components and their protection against natural and manmade threats
Related Hazard	• Data and Telecommunications losses • Utility Losses • Transportation Losses

City of Davis

DA8-1

Program/Project Description	• Ensure the information /data system is adequately maintained and preserved • Continue daily back-ups • Assist private enterprises with financial /banking
Cost	• Priceless • TBD • Additional grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Finance Department, Information Services and City Managers Office
Financing	• Operating budget
Goal Addressed	• Public awareness • Strengthen partnerships • Incorporate environmental and historical preservation
Related Hazard	• Data/Telecom Loss

City of West Sacramento

WS8-1

Program/Project Description	Data/Telecom Loss: This project involves developing working relationships with the utility companies that provide West Sacramento with electrical power, natural gass and telecommunications services. Representatives of the utility companies are members of our Disaster Councol and take part in the review of the City's Disaster Plan
Cost	No direct cost
Timeline/Schedule	Ongoing
Responsible Agency	Fire, Police and Public Works Departments
Financing	General Fund
Goal Addressed	Mitigation of major utility loss. • Protect life and property • Increase public awareness • Strengthen Partnerships • Increase effectiveness of emergency services
Related Hazard	This project will support the mitigation of all incidents that involve emergency operations that impact the general public (e.g. earthquakes, fire, floods, terrorism incidents, civil unrest, hazardous materials incidents, etc.).

Transportation/Pipeline Accident

Yolo County

YC9-1

Program/Project Description	• Continue to evaluate and monitor risks. • Continue to train first responders on hazards of transportation routes particularly on I-5, I-80, I-505, SR 16, SR 45, SR 84, SR 128, SR 113, county roads, plane, rail and pipeline
Cost	• TBD • Grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Sheriff's, Fire, Health Department, and others as appropriate
Financing	• Operating Budget

City of Woodland

WO91-

Program/Project Description	This project would provide for the protection of life and property along key transportation infrastructure systems including local interstate highways (I-5, SR-113, I-505, I-80), Sac International, and railroads by creating emergency/hazmat response plans and allocating emergency response resources for serious major accidents on highways, especially in inclement weather (fog) and/or accidents from a variety of gas, oil and electrical pipelines.
Cost	The current cost of response to these incidents exceeds $100.0K annually.
Timeline/Schedule	This project would be ongoing based on the nature of the project.
Responsible Agency	The responsible agencies for this project are the City of Woodland Police, Fire, and Public Works
Financing	Funding for this project would be from City of Woodland General and Enterprise Funds.
Goal Addressed	The implementation/completion of this project would accomplish the following: • Infrastructure security awareness • Improve traffic safety and flow with construction of I-5 and SR-113 interchange • Awareness of key infrastructure components and their protection against natural and manmade threats
Related Hazard	• Data and Telecommunications losses • Utility Losses • Transportation Losses

City of Davis

DA9-1

Program/Project Description	• Continue to evaluate and monitor risk. • Continue to train first responders on hazards of transportation routes particularly on I 80, SR113, country roads, plane, rail, and pipeline
Cost	• TBD • Grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Fire, Police, Public Works, and other as appropriate
Financing	• Operating budget
Goal Addressed	• Protect Infrastructure • Public health and safety • Protect life and property • Continues public awareness • Increase effectiveness of emergency services
Related Hazard	Transportation Accident

DA9-2

Program/Project Description	• Continue to evaluate and monitor risk. • Continue to train first responders on hazards of transportation routes particularly on I 80, SR113, country roads, plane, rail, and pipeline • Continue support of effort to relocate pipeline to unpopulated area.
Cost	• TBD • Grant Opportunities as they arise
Timeline/Schedule	Ongoing
Responsible Agency	Fire , Police, Public Works, and others as appropriate
Financing	Operating Budget
Goal Addressed	• Protect Infrastructure • Public health and safety • Protect life and property • Continues public awareness • Increase effectiveness of emergency services
Related Hazard	Transportation/Pipeline Accident

City of West Sacramento

WS9-1

Program/Project Description	Transportation/Pipeline Accident: This project involves the efforts of the Police and Fire Departments to provide emergency services during transportation accidents that occur on City streets and on the State & Federal highways that intersect West Sacramento. It also includes the requirement for emergency services necessary to handle a lead or breach of the gas and oil product pipelines that run through the City. As these efforts are a part of the ongoing programs developed by the City's Police and Fire Services, they are considered an extension of day-to-day operations. If additional support is required to mitigate transportation or pipeline accidents, it will be provided through mutual aid agreements with other departments in the Sacramento area and through requests for aid from the State Highway Patrol and the California Department of Transportation.
Cost	No direct cost
Timeline/Schedule	Ongoing
Responsible Agency	Police and Fire Departments
Financing	• General Fund
Goal Addressed	Mitigation of major transportation and pipeline incidents • Protect life and property • Increase public awareness • Strengthen partnerships • Increase effectiveness of emergency services
Related Hazard	This project will support mitigation of all incidents that involve emergency operations dealing with transportation and pipeline incidents that impact the general public. The source of these events could be earthquakes, fire, floods, terrorism incidents or civil unrest.

Biological (Animal/Plant) Emergencies

Yolo County

YC10-1

Program/Project Description	• Continue partnerships with the agricultural community and UCD to ensure the safety of plants and animals • Provide public education for value and safety for plants and animals
Cost	• Currently funded staff time • Additional grant opportunities as they arise
Timeline/Schedule	• TBD
Responsible Agency	• County Administrator's Office
Financing	• Operating budget
Goal Addressed	• Protect life, property, plants and animals • Increase public awareness • Strengthen partnerships • Incorporate environmental and historical preservation

City of Woodland

WO10-1

Program/Project Description	This project would provide protection from potential biological/health (Small Pox, SARS, Disease Clusters) terrorism threats due to Woodland's proximity to numerous agricultural activities. While there have been no epidemics in recent years there have been numerous threats to local agriculture research and development activities and UCD Research facilities targeted. (See terrorism above)
Cost	The cost of this project is to be determined.
Timeline/Schedule	This project would be ongoing based on the nature of the project.
Responsible Agency	The responsible agencies for this project are Yolo County Department of Health/Animal Control, US Department of Agriculture, and City of Woodland Fire Department
Financing	The funding for this project would be provided by Yolo County and Federal agencies.
Goal Addressed	The implementation/completion of this project would accomplish the following: • Emergency response plans • County Health Department monitoring trends
Related Hazard	• Hazardous Materials • Disease • Terrorism

City of Davis

DA10-1

Program/Project Description	• Continue partnership with the agricultural community and UCD to ensure the safety of plants and animals • Provide public education for value and safety for plants and animals
Cost	• Currently funded staff time • Additional grant opportunities as they arise
Timeline/Schedule	• TBD
Responsible Agency	• City Managers Office
Financing	• Operating budget
Goal Addressed	• Protect life, property, plants and animals • Increase public awareness • Strengthen partnerships • Incorporate environmental and historical preservation
Related Hazard	• Bio.Plant/Animal

City of Winters

WI10-1

Program/Project Description	Agriculture/Biological • Suisun Valley Fruit Growers –Industrial fire (leaving in 6 months) • Drought • Flood • Infestation (glassy winged sharp shooter) • Disease (mad cow)
Cost	When available(need more time info from Ag. Commission
Timeline/Schedule	Not Scheduled
Responsible Agency	• County Agricultural • USDA • State OES • Homeland Security
Financing	
Goal Addressed	• Public education • Protect life , property and Jobs • Environmental preservation • Economic protection of Agricultural Industry and Food supply
Related Hazard	Help protect related business i.e. Trucking processing

Earthquake

Yolo County

YC11-1

Program/Project Description	• Continue code enforcement of new and remodeled buildings and infrastructure projects/systems • Monitor latest information from USGS and OES • Provide information on earthquake preparedness • Disseminate information on Building Codes and information on proper construction/installation techniques and information pertinent to hiring licensed contractors • Continue to implement the County Code Enforcement Program • Report violating contractors to the State Contractors Licensing Board • Provide inspection services in response to incident as needed • Amend, add and up-date local codes to increase specific geographical and seismic protection for Yolo County as needed
Cost	• Current staff time • Additional grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Planning and Public Works Department, and Fire Departments
Financing	• Operating budgets
Goal Addressed	• Increase public awareness • Protect life and property • Strengthen partnerships • Increase effectiveness of emergency services • Incorporate environmental and historical preservation

City of Woodland

WO11-1

Program/Project Description	This project would protect life and property in the event of a major earthquake with awareness of earthquake preparedness, and development and exercising of Emergency Operations Plans, and Building Code monitoring and enforcement.
Cost	The cost of this project is to be determined.
Timeline/Schedule	This project would be ongoing based on the nature of the project.
Responsible Agency	The responsible agencies for this project are the City of Woodland Building Department, City of Woodland Fire Department and American Red Cross.
Financing	Funding for this project would be provided by the City of Woodland General Fund.
Goal Addressed	The implementation/completion of this project would accomplish the following: • Seismic retrofit of existing buildings. • Seismic protection of new construction. • Maintain and exercise emergency response plans for mass casualties and mass destruction.
Related Hazard	• Earthquake • Fire • Flooding • Infrastructure Disruption: utility, communications, transportation • Economic Disruption

City of Davis

DA11-1

Program/Project Description	• Continue code enforcement of new and remodeled building and infrastructure projects/system • Monitor latest information from USGS and OES • Provide information on earthquakes and preparedness • Disseminate information on Building codes and information pertinent to hiring licensed contractors • Continue to implement the City Code Enforcement Program • Report violating contractors to the State Contractors Licensing Board • Continue to implement the City Resale Inspection Program • Provide inspection services in response to incident as needed • Amend, add and up-date local codes to increase specific geographical and seismic protection for the City of Davis as needed
Cost	• Current staff time • Additional grant opportunities as they arise
Timeline/Schedule	Ongoing
Responsible Agency	• Community Development/Public Works and Fire Departments
Financing	• Operating budgets
Goal Addressed	• Increase public awareness • Protect life and property • Strengthen partnership • Increase effectiveness of emergency services • Incorporate environmental and historical preservation
Related Hazard	• Earthquake

City of Winters

WI11-1

Program/Project Description	Earthquake Building structure integrity
Cost	Above $2 billion
Timeline/Schedule	Ongoing
Responsible Agency	City of Winters, OES, SBA, Winters Fire Department
Financing	Redeveloping Funds, DCBG
Goal Addressed	Adopted UBC,UFC, UPC. City assisted funding for local business seismic retrofitting Early Warning Public education and communication.
Related Hazard	Utility disruption. Loss of life, Property. Possible looting

Moderate Risk Priority Hazards

Severe Weather

Yolo County

YC12-1

Program/Project Description	• Continue enforcement of Building Codes • Study an effective tree maintenance program to reduce vulnerability of poorly maintained trees.
Cost	• Currently funded staff • Grant opportunities as they arise • TBD
Timeline/Schedule	• TBD
Responsible Agency	• Planning and Public Works Department
Financing	• Additional staff time or contract/TBD
Goal Addressed	• Protect life and property • Increase public awareness • Incorporate environmental and historical preservation

YC12-2

Program/Project Description	• Monitor effects of weather (wet and dry); mobilization of pre-identified staff • Ensure adequate maintenance of the storm drainage system in all channels • Continue enforcement of County Codes regarding building in flood-plains • Provide public information as necessary
Cost	• Currently funded staff time • Additional grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Planning and Public Works Department
Financing	• Operating budget
Goal Addressed	• Protect life and property • Increase public awareness

City of Davis

DA12-1

Program/Project Description	• Ensure an effective tree maintenance program is funded to reduce vulnerability of poorly maintained trees
Cost	• Currently funded, but not adequately • Grant opportunities as they arise
Timeline/Schedule	• TBD
Responsible Agency	• Parks and Community Services
Financing	• Additional staff time and contract/TBD
Goal Addressed	• Protect life and property • Increase Public awareness • Incorporate environmental and historical preservation
Related Hazard	• High Winds

DA-12-2

Program/Project Description	• Monitor effects of weather (wet and dry); mobilization of pre-identified staff • Ensure adequate maintenance of the storm drainage system in all channels • Continue adequate standards for future development • Provide public information as necessary
Cost	• Currently funded staff time • Additional grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Public Works and other departments as necessary
Financing	• Operating budget
Goal Addressed	• Protect life and property • Increase public awareness
Related Hazard	• Severe Weather

Water/Waste Water Disruption

Yolo County

YC13-1

Program/Project Description	• Provide back up power • Continue regular equipment maintenance and replacement and Emergency response training for personnel • Provide vulnerability assessment and training • When appropriate, purchase new equipment
Cost	• TBD • Grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Various Service Districts
Financing	• Operating budget
Goal Addressed	• Protect infrastructure • Ensure that there is no health risks with service disruption • Continued public awareness • Continue awareness and emergency response training.

City of Davis

DA13-1

Program/Project Description	• Provide back up power • Continue regular equipment maintenance and replacement Emergency response training for personnel • Continue vulnerability assessment and training • When appropriate, purchase new equipment
Cost	• TBD • Grant opportunities as they arise
Timeline/Schedule	Ongoing
Responsible Agency	Public Works
Financing	Operating budget- Enterprise funds
Goal Addressed	• Protect infrastructure • Ensure that there is no health risk with service disruption • Continued public awareness • Continue awareness and emergence response
Related Hazard	• Water and Wastewater Disruption

City of Winters

WI13-1

Program/Project Description	Waste Water Disruption Due to Seismic activities, Terrorist threat, flooding
Cost	
Timeline/Schedule	Ongoing
Responsible Agency	• City of Winters • OES • 1 Regional Water quality Board
Financing	
Goal Addressed	Use of liquid chlorine (not health risk). Public education and communications. Early Warning adopted uniform plumbing code, AWWA,APWA, and City Construction Standards levy around main pump station Generator on site at east pump station
Related Hazard	Health risk and lack of water

City of West Sacramento

WS13-1

Program/Project Description	Water/Waste Water Disruption: The City of West Sacramento has spent the last several years upgrading its water and wastewater handling systems. Extensions of the water mains South on Jefferson Blvd have brought water service to the Southport area of the City and the expansion of the Bryte Water Treatment Plant has increased the ability of the City to supply ample fresh water to its households. These new facilities should help to prevent service disruptions under emergency conditions.
Cost	$10 million
Timeline/Schedule	Ongoing
Responsible Agency	Public Works Department & City Engineer
Financing	Capital Improvement Budget
Goal Addressed	• Mitigation of potential disruptions of the City's water/waste water treatment and distribution systems • Protect life and property • Increase effectiveness of emergency services
Related Hazard	Disruption of the water/waste water treatment and distribution systems could lead to problems with fire fighting operations and cause health issues. Therefore, mitigation of problems with the water/waste water systems should also mitigate potential problems that could come up during fire operations and prevent some health-related events.

Biological/Health Emergencies

Yolo County

YC14-1

Program/Project Description	• Continue to ensure the health and welfare of the community • Support public education efforts of the Health Department
Cost	• Currently funded staff time • Additional grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Fire Departments, and Environmental Health Department
Financing	• Operating budgets
Goal Addressed	• Protect life and property • Increase public awareness • Strengthen partnerships • Incorporate environmental and historical preservation

City of Davis

DA14-1

Program/Project Description	• Continue to interface with the County Health Department to ensure the health and welfare of the community • Support public education efforts of the Health Department
Cost	• Currently funded staff time • Additional grant opportunities as they arise
Timeline/Schedule	• Ongoing
Responsible Agency	• Fire Department, Public Works and Parks and Community Services
Financing	• Operating budgets
Goal Addressed	• Protect life and property • Increase public awareness • Strengthen partnerships • Incorporate environmental and historical preservation
Related Hazard	• Bio/Health

Economic Disruption

Yolo County

YC15-1

Program/Project Description	• Identify effects of an economic disruption
Cost	• TBD
Timeline/Schedule	• TBD
Responsible Agency	• County Administrator's Office
Financing	• Hazard Mitigation Grant • Additional grant opportunities as they arise
Goal Addressed	• Protect life and property • Increase public awareness • Strengthen partnerships • Incorporate environmental and historical preservation

City of Davis

DA15-1

Program/Project Description	• Identify effects of an economic disruption
Cost	• TBD
Timeline/Schedule	• TBD
Responsible Agency	• City Managers Office
Financing	• Hazard Mitigation Grant • Additional grant opportunities as they arise
Goal Addressed	• Protect life and property • Increase public awareness • Strengthen partnerships • Incorporate environmental and historical preservation
Related Hazard	• Economic Disruption

City of Winters

WI15-1

Program/Project Description	ECONOMIC DISRUPTION: Failure of major business
Cost	
Timeline/Schedule	
Responsible Agency	
Financing	When funds available
Goal Addressed	• City adopted Uniform Building Code and Uniform Fire Code. • Increase Public awareness • Education and communication
Related Hazard	Vandalism due to vacant bldg. Decayed sites-blight

City of West Sacramento

WS15-1

Program/Project Description	Economic Disruption: Develop a program to mitigate the economic impact of natural and man-made disasters by working with the City Chamber of Commerce to institute procedures to support the recovery of businesses located in the City after a disaster,
Cost	TBD
Timeline/Schedule	TBD
Responsible Agency	City of West Sacramento Planning Division
Financing	Staff Time
Goal Addressed	• Mitigation of economic disruptions caused by natural and man-made disasters • Increase public awareness • Strengthen partnerships
Related Hazard	N/A

Special Events

Yolo County

YC16-1

Program/Project Description	• Continue to interface with the cities as well as agencies such as UCD Police Dept. • Increase public awareness on issues such as traffic and safety related to special events. • Continue to provide updated, on-going training to all responders.
Cost	• Allocation of current staff, within existing training budget • Additional grant opportunities as they arise.
Timeline/Schedule	• Continuous, ongoing
Responsible Agency	• Sheriff's
Financing	• Current operating budget
Goal Addressed	• Increase public awareness • Public Safety – protect life and property • Strengthen partnerships • Increase effectiveness of emergency services

City of Davis

DA16-1

Program/Project Description	• Continue to interface with other city departments as well as outside agencies such as UCD Police Department • Increase public awareness on issues such as traffic and safety related to special events. • Continue to provide updated, on-going training to all responders
Cost	• Allocation of current staff, within existing training budget • Additional grant opportunities as they arise
Timeline/Schedule	• Continuous, ongoing
Responsible Agency	• Police, and other departments support as needed
Financing	• Current operating budget
Goal Addressed	• Increase public awareness • Public Safety-protect life and property • Strengthen partnerships • Increase effectiveness of emergency services
Related Hazard	• Special Events

Transportation Loss

All Jurisdictions

YC17-1, WO17-1, WI17-1, WS17-1, DA17-1

Program/Project Description	Conduct a joint analysis (likely by contracting with a consultant) of the impacts to Yolo County and its cities due to severe disruption or loss of transportation corridors and capabilities.
Cost	TBD
Timeline/Schedule	TBD
Responsible Agency	Planning Departments of the respective jurisdictions
Financing	Seeking grant opportunities
Goal Addressed	The analysis would identify specific issues such that each jurisdiction could – separately or jointly – develop specific mitigation strategies to address transportation loss.
Related Hazard	Transportation Accident, Earthquake, Flood, Dam Failure, Levee Failure, or other possible causes of disruption.

SECTION FIVE: Future Plans & Actions

Summary

The Yolo Operational Area Hazard Mitigation Plan and Identified Hazard Mitigation Program Strategies establish the framework within which the post disaster and day to day mitigation activities of the State and local governments may be carried out on a prioritized and regional basis.

The Plan is based upon the experience of the region through the input of the Hazard Mitigation Steering Committee. The Office of Emergency Services and the input of the Hazard Mitigation Planning Committee members and adjunct member contributors.

The plan recognizes the varied conditions that exist and can be found throughout the Yolo Operational Area. No single mitigation strategy will effectively meet the needs of all of the communities. However, by embracing the regional coordinated approach and objectives found in this plan, Yolo Operational Area can take significant strides toward the efficient and effective use of its resources to resolve and mitigate the community's identified hazards.

One of the most important accomplishments of the Hazard Mitigation planning project was the process itself, where the participants shared information, resources, and methodologies – community-wide, for the benefit of reducing or eliminating risk to Critical Areas.

Future Actions

The Yolo Operational Area Hazard Mitigation Steering Committee will review recommendations and strategies:

1. This Committee will support the recommendations adopted by each jurisdiction for implementation and coordination on a state and regional basis.

2. Each jurisdiction will review and adopt, as necessary, the work of the Hazard Mitigation Steering Committee on an annual basis.

3. The Planning Committee shall review the quarterly progress reports on the implementation of the adopted Hazard Mitigation Strategies brought forth by the Yolo Operational Area Hazard Mitigation Steering Committee.

4. The plan will be reviewed and updated on a five year cycle. The strategies may be updated based on changing priorities and relieved constraints as identified below.

The Yolo Operational Area Hazard Mitigation Steering Committee

The Yolo Operational Area Hazard Mitigation Steering Committee will meet on an annual basis to review the progress made on the Hazard Mitigation Strategies. It shall also seek input on future Hazard Mitigation programs and strategies.

1. Contact and work with each Hazard Mitigation Strategy's Lead Agency for an annual progress report on funding and implementation of the program recommended.

2. Receive an annual report from each jurisdiction on the status of the strategies adopted and implemented.

3. Meet annually, with each political subdivision, to identify new Hazard Mitigation strategies to be pursued on a State and Regional Basis and review the progress and implementation of those programs already identified.

4. Meet annually to review the progress of the Hazard Mitigation program and bring forth community input on new strategies.

5. Coordinate with and support the Office of Emergency Services efforts to promote and identify resources and grant money for implementation of recommended Hazard Mitigation Strategies.

Long Term Goals and Strategies

Goal 1: Eliminate or reduce the long-term risk to human life and property from identified hazards.

Goal 2: Aid both the private and public sectors in understanding the risks they may be exposed to and finding mitigation strategies to reduce those risks.

Goal 3: Avoid risk of exposure to identified hazards.

Goal 4: Minimize the impacts of those risks when they cannot be avoided.

Goal 5: Mitigate the impacts of damage as a result of identified hazards.

Goal 6: Accomplish mitigation strategies in such a way that negative environmental impacts are minimized.

Goal 7: Distill Local planning efforts and existing interagency group efforts into a comprehensive set of recommendations for Yolo Operational Area's long-term regional mitigation strategy. Mitigation is most successful when it grows from Local and regional planning activities.

Goal 8: Provide a basis for funding priorities for the Hazard Mitigation strategies developed.

Goal 9: Establish a framework and database that the State and its political subdivisions may use to apply for State and Federal Hazard Mitigation Grants.

Goal 10: Establish an ongoing process to accomplish Hazard Mitigation Strategy identification on an annual basis. To be effective, mitigation must be a continuing activity.

Goal 11: Establish a regional platform to enable the community to take advantage of shared goals and resources and the availability of outside resources for minimizing vulnerability analysis and critical area risks.

Capabilities Assessment

The Yolo Operational Hazard Mitigation Steering Committee identified current capabilities available for implementing hazard mitigation activities. The Capability Assessment portion of the Operational Area mitigation plan identifies administrative, technical, legal and fiscal capabilities. This includes a summary of departments and their responsibilities associated to hazard mitigation planning as well as codes, ordinances, and plans already in place associated to hazard mitigation planning. The second part of the Assessment provides Yolo Operational Area's fiscal capabilities that may be applicable to providing financial resources to implement identified mitigation action items.

Existing Institutions, Plans, Policies and Ordinances

The following is (1) a summary of existing positions their responsibilities related to hazard mitigation planning and implementation; and (2) a list of existing planning documents and regulations related to mitigation efforts within the Operational Area. The administrative and technical capabilities of each jurisdiction, as shown in the table below, provides an identification of the staff, personnel, and department resources available to implement the actions identified in the mitigation section of the Plan. Specific resources reviewed include those involving technical personnel such as planners/engineers with knowledge of land development and land management practices, engineers trained in construction practices related to building and infrastructure, planners and engineers with an understanding of natural or human-caused hazards, floodplain managers, surveyors, personnel with GIS skills and scientists familiar with hazards in the community.

Administrative & Technical Capacity

Position	YC	WO	DA	WI	WS	Department/Agency
Planner(s) or engineer(s) with knowledge of land development and land management practices	√	√	√	√	√	Engineering, Planning, Redevelopment
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	√	√	√	√	√	Building Department
Planners or Engineer(s) with an understanding of natural and/or human-caused hazards	√	√	√	√	√	Engineering, Planning, Fire Marshals
Floodplain manager	√					Engineering, Public Works
Surveyors	√		√	√		
Staff with education or expertise to assess the community's vulnerability to hazards	√	√	√	√	√	Building, Fire, Engineering, Public Works
Personnel skilled in GIS and/or HAZUS	√	√	√		√	GIS Staff in Planning, GIS, Public Works
Scientists familiar with the hazards of the community	√	√	√			
Emergency manager	√					City Manager (EOC Director or Designee)
Grant writers	√					Various Departments throughout City of Carlsbad.

Regulatory Tools

The legal and regulatory capabilities of each jurisdiction are shown in the table below, which presents the existing ordinances and codes that affect the physical or built environment of each jurisdiction. Examples of legal and/or regulatory capabilities can include: a City's building codes, zoning ordinances, subdivision ordnances, special purpose ordinances, growth management ordinances, site plan review, general plans, capital improvement plans, economic development plans, emergency response plans, and real estate disclosure plans.

Regulatory Tools (ordinances, codes, plans)	YC	WO	DA	WI	WS
Building code	√	√	√	√	√
Zoning ordinance	√	√	√		√
Subdivision ordinance or regulations	√	√	√		√
Special purpose ordinances (floodplain management, storm water management, hillside or steep slope ordinances, wildfire ordinances, hazard setback requirements)	√	√	√	√	√
Growth management ordinances (also called "smart growth" or anti-sprawl programs)	√	√	√	√	√
Site plan review requirements	√	√	√	√	√
General or comprehensive plan	√	√	√	√	√
A capital improvements plan	√	√	√		√
An economic development plan	√	√	√	√	√
An emergency response plan	√	√	√	√	√
A post-disaster recovery plan					
A post-disaster recovery ordinance					
Real estate disclosure requirements	√	√	√	√	√
Habitat Management Plan	√	√	√	√	√
Master Drainage, Sewer, Water, & Reclaimed Water	√	√	√	√	√
Redevelopment Master Plan	√	√	√		√

Fiscal Resources

The table below shows specific financial and budgetary tools available to the jurisdictions such as community development block grants; capital improvements project funding; authority to levy taxes for specific purposes; fees for water, sewer, gas, or electric services; impact fees for homebuyers or developers for new development; ability to incur debt through general obligations bonds; and withholding spending in hazard-prone areas.

Financial Resources	YC	WO	DA	WI	WS
Community Development Block Grants	√	√	√	√*	√
Capital improvements project funding	√	√	√	√	√
Authority to levy taxes for specific purposes	√	√	√	√**	√
Fees for water, sewer, gas, or electric service	√	√	√	√	√
Impact fees for homebuyers or developers for new developments/homes	√	√	√	√	√
Incur debt through general obligation bonds	√	√	√	√**	√
Incur debt through special tax and revenue bonds	√	√	√	√**	√
Incur debt through private activity bonds	√	√	√	√**	√
Withhold spending in hazard-prone areas	√	√	√	√	√

* Subject to grant from State
** Subject to voter approval

Reference Records and Documentation

Record #	Title
1	City of Woodland Emergency Operations Plan (EOP)
2	Cache Creek Potential Flood Damage Reduction Project
3	Monticello Dam EAP
4	West Sac. EOP
5	Indian Valley Dam Emergency Action Plan (EAP)
6	Oroville Dam EAP
7	Yolo Op. Area Energy Emergency Contingency Plan
8	City of Winters E.P.
9	County of Yolo E.P.
10	County of Yolo Animal Shelter & Rescue Disaster Plan
11	Yolo Op Area Hazardous Mat. Response Plan
12	City of Woodland EP Departmental Structure
13	Yolo Co. General Plan Agriculture Element Policy Document
14	Yolo County General Plan
15	Yolo County GP Seismic Safety Element
16	YC General Plan Open Space & Recreation Element
17	2002-2007 Yolo Housing Element
18	WMD IAP
19	City of Davis EP
20	City of Davis General Plan
21	City of Davis Y2K Plan
22	City of West Sac. General Plan Policy Document
23	Woodland General Plan Policy Doc.
24	Report on Storm Drainage and Flooding In Yolo Co.
25	Woodland General Plan Background Report
26	Woodland Prelim. Eng. Report Waste Water Trtmt. Plant Expansion Stg.2
27	Woodland General Plan Chapter 9 H & S
28	Woodland General Plan Chapter 8, H & S
29	Woodland Water Conservation Regulations
30	West Sacramento Property Valuation List
31	Winters Property Valuation List
32	Woodland Dis. Mgmt. Areas of Concern Map
33	Woodland Land Use Map
34	UCD Building List
35	Hazus MH Program
36	USGS EQ Map
37	Yolo Prop. Val. & Crit. Facil.
38	Woodland Property Value
39	Davis Critical Facilities List
40	Davis List of Assets
41	Woodland Letters of Intro.
42	State OES Maps
43	Security Vulnerability Assessment for Winters Water system

Record #	Title
44	Emergency Ops. Manual City of Winters
45	Risk Mgmt. Plan Winters Public Works
46	Winters Multi-Hazard Functional Plan
47	Davis Questionnaire totals as of 6-16-04
48	Woodland preliminary mitigation strategies.
49	West Sacramento Preliminary Mitigation Strategies
50	List of Available OES Maps
51	Winters Mitigation Strategies.
52	Davis Prelim Mitigation Strategies
54	Yolo County Draft Mitigation Strategies
55	Woodland Mitigation Strategies
56	Davis Mitigation Strategies
57	West Sacramento Mitigation Strategies.
58	Yolo Special District Lists & information
59	Yolo Co. Mitigation Strategies.
60	Fire District Lists
61	Dunnigan Water Dist. Info.
63	Woodland Public Questionnaires (465)
64	City of West Sacramento Questionnaires (15)
65	County of Yolo public questionnaires (4)
66	Winters Public Questionnaires (87)
67	Woodland 250+ more questionnaires (fed ex)

Glossary

Terms

Aerial Reconnaissance: An aerial assessment of the damaged area that includes gathering information on the level and extent of damage and identifying potential hazardous areas for on-site inspections.

Aerosol: Fine liquid or solid particles suspended in a gas, for example, fog or smoke.

All Hazards: Refers to a policy or program that is designed to deal with a variety of natural and technological hazards.

Annex: A document that supplements the Emergency Operations Plan, which provides further planning information for a specific aspect of emergency management.

Appendix: A separate portion of the Emergency Operations Plan that contains guidance and information specific to actions required in emergency management.

Biological Agents: Living organisms or the materials derived from them that cause disease in or harm to humans, animals, or plants or cause deterioration of material. Biological agents may be used as liquid droplets, aerosols, or dry powders.

Chemical Agent: A chemical substance that is intended to kill, seriously injure, or incapacitate people through physiological effects. Generally separated by severity of effect: lethal, blister, and incapacitating.

Comprehensive Emergency Management Plan: A document required by state regulation that consists of a Basic Plan, Appendices, Supplemental Annexes, and Standard Operating Procedures for the purpose of providing effective mitigation, response to and recovery from disasters.

Consequence Management: Measures to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by the consequences of terrorism. State and local governments exercise primary authority to respond to the consequences of terrorism. (Source: FRP Terrorism Incident Annex, page TI-2, April 1999). The Federal Emergency Management Agency (FEMA) has been designated the Lead Federal Agency (LFA) for consequence management to ensure that the Federal Response Plan is adequate to respond to terrorism. Additionally, FEMA supports the Federal Bureau of Investigation (FBI) in crisis management.

Continuity of Government: Includes measures to – ensure continued leadership and preservation of vital records, thereby maintaining a viable system of government supported by law; establish emergency authorities legally vested in government leaders so that they have prescribed powers to act; ensure survivability of mechanisms and systems for direction and control so that actions directed by leaders can be communicated and coordinated; sustain essential emergency services and resources so that critical response and recovery actions can achieve widest possible implementation.

Crisis Management: This is the law enforcement aspect of an incident that involves measures to identify, acquire, and plan the resources needed to anticipate, prevent, and/or resolve a threat of terrorism. The FBI is the LFA for crisis management for such an incident. (Source: FBI) During crisis management, the FBI coordinates closely with local law enforcement authorities to provide successful

law enforcement resolution to the incident. The FBI also coordinates with other Federal authorities, including FEMA. (Source: FRP Terrorism Incident Annex, April 1999)

Damage Assessment: The appraisal or determination of the actual damage resulting from a disaster.

Decontamination: The process of making people, objects, or areas safe by absorbing, destroying, neutralizing, making harmless, or removing the HazMat.

Disaster: The occurrence or imminent threat of widespread or severe damage, injury or loss of life or property resulting from any natural or manmade cause including fire, flood, earthquake, air contamination, blight, drought, infestation, explosion, riot, hostile military or paramilitary action, other public calamity requiring emergency action.

Disaster Assistance Center: A location established in a disaster area that houses all federal, state, and local agencies that deal directly with the needs of the individual victim. DACs are established only after a Presidential Declaration.

Disaster Declaration: A document executed by an elected government for the purpose of obtaining assistance from a higher level of government.

Disaster Service Workers: All public employees in California are subject to such emergency or disaster activities as may be assigned by their supervisors or by law.

Drill: A supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. A drill is often a component of an exercise.

Drop Cover, and Hold: Shelter position under tables or desks or other protected places away from overhead fixtures, windows, high cabinets, and bookcases, for immediate individual protection during an emergency.

Emergency: An event, the effects of which cause loss of life, human suffering, property damage (both public and private), and severe economic and social disruption.

Emergency Alert System: A program of the Federal Communications Commission (FCC) to coordinate the dissemination of emergency information via commercial broadcasters.

Emergency Coordinator: A position called for in the Emergency Organization to carry out emergency management functions on a day-to-day basis at the local level.

Emergency Manager: A position called for in the Emergency Organization to oversee the implementation of the City of Hayward Comprehensive Emergency Management Plan at the local level.

Emergency Operations Center: A centralized location where individuals responsible for responding to a large scale emergency can have immediate communication with each other and with City management for the purpose of enhancing coordination in exercising direction and control of emergency response and recovery efforts.

Emergency Organization: Organization to direct and control operations of the City during a period of emergency with assigned responsibilities and tasks for planning, response, and recovery in emergency situations.

Emergency Powers: Special authority granted to a chief local official during times of emergency. The State delegates emergency powers to designated local officials through an executive order.

Federal Response Plan (FRP): The FRP establishes a process and structure for the systematic, coordinated, and effective delivery of Federal assistance to address the consequences of any major disaster or emergency declared under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (42 U.S. Code [USC], et seq.). The FRP Terrorism Incident Annex defines the organizational structures used to coordinate crisis management with consequence management. (Source: FRP Terrorism Incident Annex, April 1999)

Lead Agency: The Federal department or agency assigned lead responsibility under U.S. law to manage and coordinate the Federal response in a specific functional area. The FBI is the lead agency for crisis management and FEMA is the lead agency for consequence management. Lead agencies support the overall Lead Federal Agency (LFA) during all phases of the response.

Lead Federal Agency (LFA): The agency designated by the President to lead and coordinate the overall Federal response is referred to as the LFA and is determined by the type of emergency. In general, an LFA establishes operational structures and procedures to assemble and work with agencies providing direct support to the LFA in order to provide an initial assessment of the situation, develop an action plan, monitor and update operational priorities, and ensure each agency exercises its concurrent and distinct authorities under U.S. law and supports the LFA in carrying out the President's relevant policy. Specific responsibilities of an LFA vary according to the agency's unique statutory authorities.

Level I Emergency: Minor to moderate emergency, such as major power outage, bomb threat, air pollution alert, isolated fire, or minor earthquake (no injuries or significant damage).

Level II Emergency: Moderate to severe emergency, such as major fire, moderate earthquake, bomb explosion (with injuries and/or structural damage).

Level III Emergency: Major emergency or disaster, such as a major earthquake or nuclear explosion.

Local Emergency Responder: Safety services provided by outside agencies, such as police, fire, medical or rescue services.

Mitigation: Those actions (including threat and vulnerability assessments) taken to reduce the exposure to and detrimental effects of a WMD incident.

Mitigation Phase: Phase of emergency management for site-specific action to minimize hazards and reduce the potential for injury or damage in an emergency.

Nonpersistent Agent: An agent that, upon release, loses its ability to cause casualties after 10 to 15 minutes. It has a high evaporation rate, is lighter than air, and will disperse rapidly. It is considered to be a short-term hazard; however, in small, unventilated areas, the agent will be more persistent.

Persistent Agent: An agent that, upon release, retains its casualty-producing effects for an extended period of time, usually anywhere from 30 minutes to several days. A persistent agent usually has a low evaporation rate and its vapor is heavier than air; therefore, its vapor cloud tends to hug the ground. It is considered to be a long-term hazard. Although inhalation hazards are still a concern, extreme caution should be taken to avoid skin contact as well.

Plume: Airborne material spreading from a particular source; the dispersal of particles, gases, vapors, and aerosols into the atmosphere.

Preparation (Preparedness) Phase: Phase of emergency management for employee in-service training in emergency responsibilities, such as prevention of injuries and property damage, first-aid and

other response and rescue operations, and for acquisition of adequate supplies and equipment required to respond to an emergency.

Radiation: High-energy particles or gamma rays that are emitted by an atom as the substance undergoes radioactive decay. Particles can be either charged alpha or beta particles or neutral neutron or gamma rays.

Recovery Phase: Phase of emergency management for the initiation of short-range and long-range recovery plans at each effected site to return to normal operations following an emergency.

Response Phase: Phase of emergency management in which all employees take appropriate steps in an emergency situation to put the emergency plan into action.

Terrorism: The unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives. Domestic terrorism involves groups or individuals who are based and operate entirely within the United States and U.S. territories without foreign direction and whose acts are directed at elements of the U.S. government or population.

Toxicity: A measure of the harmful effects produced by a given amount of a toxin on a living organism.

Weapons-Grade Material: Nuclear material considered most suitable for a nuclear weapon. It usually connotes uranium enriched to above 90 percent uranium-235 or plutonium with greater than about 90 percent plutonium-239.

Weapons of Mass Destruction: Any explosive, incendiary, or poison gas, bomb, grenade, rocket having a propellant charge of more than 4 ounces, or a missile having an explosive incendiary charge of more than 0.25 ounce, or mine or device similar to the above; poison gas; weapon involving a disease organism; or weapon that is designed to release radiation or radioactivity at a level dangerous to human life. (Source: 18 USC 2332a as referenced in 18 USC 921)

Yolo Operational Area: Emergency management level of support and coordination above that of local jurisdictions. The Yolo Operational Area includes all the cities within the County (Davis, West Sacramento, Winters, Woodland, the unincorporated region of the county, and all special districts within Yolo County (school districts, reclamation districts, etc.). The University of California at Davis campus is not part of the Yolo Operational Area as the University is a State level organization. Nonetheless, due to its involvement at the County level, UC Davis participates at the Operational Area.

Acronyms

AFB	Air Force Base
AMS	Aerial Measuring System
ANSIR	Awareness of National Security Issues and Response Program
ARAC	Atmospheric Release Advisory Capability
ARG	Accident Response Group
ARS	Agriculture/Research Service
ATC	Air Traffic Control
ATSD(CS)	Assistant to the Secretary of Defense for Civil Support
BDC	Bomb Data Center
CBIAC	Chemical and Biological Defense Information and Analysis Center
CBRNE	Chemical, Biological, Radiological, Nuclear Material, or High-Yield Explosive
CDC	Centers for Disease Control and Prevention
CDRG	Catastrophic Disaster Response Group
CEPPO	Chemical Emergency Preparedness and Prevention Office
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHEMTREC	Chemical Transportation Emergency Center
CHPPM	Center for Health Promotion and Preventive Medicine
CIRG	Crisis Incident Response Group
CJCS	Chairman of the Joint Chiefs of Staff
CM	Consequence Management
CMU	Crisis Management Unit (CIRG)
CRU	Crisis Response Unit

CSREES	Cooperative State Research, Education and Extension Service
CST	Civil Support Teams
CW/CBD	Chemical Warfare/Contraband Detection
DAC	Disaster Assistance Center
DEST	Domestic Emergency Support Team
DFO	Disaster Field Office
DMAT	Disaster Medical Assistance Team
DMCR	Disaster Management Central Resource
DMORT	Disaster Mortuary Operational Response Team
DoD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
DPP	Domestic Preparedness Program
DSR	Damage Survey Report
DTCTPS	Domestic Terrorism/Counter Terrorism Planning Section (FBI HQ)
DTIC	Defense Technical Information Center
EAS	Emergency Alert System
EM	Emergency Management
EMI	Emergency Management Institute
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to Know Act
ERT	Emergency Response Team (FBI)

ERT-A	Emergency Response Team – Advance Element
ERTU	Evidence Response Team Unit
ESF	Emergency Support Function
EST	Emergency Support Team
EU	Explosives Unit
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FEST	Foreign Emergency Support Team
FNS	Food and Nutrition Service
FRERP	Federal Radiological Emergency Response Plan
FRMAC	Federal Radiological Monitoring and Assessment Center
FRP	Federal Response Plan
FS	Forest Service
HazMat	Hazardous Materials
HHS	Department of Health and Human Services
HMRU	Hazardous Materials Response Unit
HQ	Headquarters
HRT	Hostage Rescue Team (CIRG)
HTIS	Hazardous Technical Information Services (DoD)
IC	Incident Commander
ICS	Incident Command System
IND	Improvised Nuclear Device
JIC	Joint Information Center
JOC	Joint Operations Center

JTF-CS	Joint Task Force for Civil Support
LEPC	Local Emergency Planning Committee
LFA	Lead Federal Agency
MEDCOM	Medical Command
MMRS	Metropolitan Medical Response System
MOA	Memorandum of Agreement
MSCA	Military Support to Civil Authorities
NAP	Nuclear Assessment Program
NBC	Nuclear, Biological, and Chemical
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDMS	National Disaster Medical System
NDPO	National Domestic Preparedness Office
NEST	Nuclear Emergency Search Team
NETC	National Emergency Training Center
NFA	National Fire Academy
NMRT	National Medical Response Team
NRC	Nuclear Regulatory Commission
NRT	National Response Team
NSC	National Security Council
NTIS	National Technical Information Service
OEP	Office of Emergency Preparedness
OFCM	Office of the Federal Coordinator for Meteorology
OIG	Office of the Inspector General (USDA)

OSC	On-Scene Commander
OSLDPS	Office for State and Local Domestic Preparedness Support
PDD	residential Decision Directive
PHS	Public Health Service
POC	Point of Contact
PT	Preparedness, Training, and Exercises Directorate (FEMA)
R&D	Research and Development
RAP	Radiological Assistance Program
RCRA	Research Conservation and Recovery Act
RDD	Radiological Dispersal Device
REAC/TS	Radiation Emergency Assistance Center/Training Site
ROC	Regional Operations Center
RRIS	Rapid Response Information System (FEMA)
RRT	Regional Response Team
SAC	Special Agent in Charge (FBI)
SARA	Superfund Amendments and Reauthorization Act
SBCCOM	Soldier and Biological Chemical Command (U.S. Army)
SCBA	Self-Contained Breathing Apparatus
SEB	State Emergency Board
SERC	State Emergency Response Commission
SIOC	Strategic Information and Operations Center (FBI HQ)
SLG	State and Local Guide
TERC	Tribal Emergency Response Commission

TIP	Terrorist Incident Plan
TRIS	Toxic Release Inventory System
UC	Unified Command
UCS	Unified Command System
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFA	U.S. Fire Administration
VA	Department of Veterans Affairs
WMD	Weapons of Mass Destruction
WMD-CST	WMD Civil Support Team

Hazard Mitigation Steering Committee Meeting Minutes

Y.C.C.E.S.A. DMA 2000
Hazard Mitigation Steering Meeting Minutes
February 27, 2004

Meeting Attendees:

Kyle Noderer	Yolo County OES
Mike Martinez	Yolo County IT (GIS)
Sarjit Dhaliwal	Yolo County Planning
Karl Diekman	City of Woodland Fire
Phil Marler	City of Woodland Asst. City Mgr.
Gary Wegner	City of Woodland Public Works
Rose Conroy	Davis Fire Chief
Karen Honer	Winters Public Works Director
Darren Pytel	City of Davis PD
Kathy Willhoff	City of Davis Fire
Sue Gedestad	City of Davis Public Works
Cherie Rita	State OES Fire Region IV OAC
Dan McCanta	Yolo Co. OES
Steve Williams	Consultant, Dimensions Unlimited
Janice Rogala	Consultant, Dimensions Unlimited

The kick off meeting of the Steering committee was started at 0810 hrs by Dan McCanta who introduced the consultants from Dimensions Unlimited Inc. Jan Rogala and Steve Williams. Introductions were made around the table from all the members present.

Jan Rogala explained the basic process that the committee would be undergoing in the next few months using a power point program.

A question was asked if there would be separate plans and would each agency involved have to get approval from their governing body the answer was yes, as the overall plan could cover concerns of the whole committee, each entity may have different priorities and these would have to be addressed.

Jan asked Mike Martinez from County GIS as to the availability for mapping from each City he stated he was aware of what the County had but could check with his committee for the other Cities.

Jan asked that each agency start gathering all of the emergency plans, general plans, current hazard mitigation plans together as much of the information in them would form the base of this plan. Also a list of agency owned facilities, their use, construction, square foot, location and value. A list of “critical facilities” should be started including schools, sub stations, telephone switching centers pumping stations etc. This is a list of these type of facilities which would be necessary for the City to function.

A question was asked as to the participation of UC Davis even though they are not a member of this group they are a major player. It was suggested that someone contact the University and see if they could have someone attend our meeting as they could be possibly a valuable information resource.

The discussion was stopped at this time to elect a chairman and set up the rules as to how the committee would operate. Dan McCanta was voted in as the chairman of the committee. Jan stated that at all of the other steering committee meeting she has sat on they used simple majority rule for voting to keep things flowing. Any action taken can be brought up at the next meeting for changes if anyone wishes. Due to the fast track we are on it was suggested that the committee meet every three weeks.

The importance of meeting attendance was discussed as non participation by one agency could slow down the process for everyone. A lengthy discussion was held as to what to do if this problem arose and the final consensus was the committee would contact a higher authority in the agency in question as all have committed to full participation.

Jan suggested a letter be drafted for each agency by the administrator of that city for distribution to the different city departments introducing the consultants and making the departments aware we might be contacting them for information from time to time. It was also asked to draft the same kind of introduction letter which the consultants could use in the community when contacting local companies for information.

Jan asked the members of any “hot button issues” the consultants should know about. The Woodland flood protection measure that was on the ballot was discussed.

Chairman McCanta asked the question on how we would vote on issues, after discussion it was decided one vote per jurisdiction it was moved and passed

It was suggested that the minutes of our meetings be posted on the YCCESA Site and have the other agencies link to it. Dan and Kyle to look into the possibility of this.

It was suggested that the City Managers or CAO’s get a copies of our agendas and meeting minutes to keep them informed on our progress, it was passed unanimously. Dan also stated that anyone some one wanted included on our mailing list should email their address to him and they would be included.

Jan asked if there were any foreign language issues we would have to deal with. It was brought up there is some Spanish and West Sacramento has a large Russian population.

Jan stated we had to be aware of our special needs population and address this issue for risk such as elderly population.

Jan asked that everyone fill out the Hazard Matrix that would be emailed to each participant and then faxed back to the Dimensions office before next meeting.

Jan informed the committee of the different way to have community involvement in the planning process, which is a requirement. The public could be invited to our meetings, hold a special community meeting, send out questionnaires to the public. The government does not state how much the community has to be involved just that there has to be community involvement and input.

A question was as to as to a timeline and milestones Jan stated that since we are compacting this project which usually take 14-16 months down to 8 to meet the November deadline that all phases of the project would be running at the same time.

Cherie Rita asked about this plan covering the fire districts in the county. A discussion was held and the consensus at this time is they fall under the County umbrella so we should be able to include them in.

Jan said we need to get an inventory of other special districts such as levee, water, and sanitation districts for the county and unincorporated areas.

Jan has contacted Marsha Renchler at State OES for a listing of monies given to the agencies in this group over the years.

The next meeting will be Thursday March 18 starting at 0830 at the Hattie Webber Building in Davis.

Meeting Adjourned

Y.C.C.E.S.A. DMA 2000
Hazard Mitigation Steering Meeting Minutes
March 18, 2004

Meeting Attendees:

Kyle Noderer	Yolo County OES
Sarjit Dhaliwal	Yolo County Planning
Karl Diekman	City of Woodland Fire
Phil Marler	City of Woodland Asst. City Mgr.
Gary Wegner	City of Woodland Public Works
Rose Conroy	Davis Fire Chief
Karen Honer	Winters Public Works Director
Kathy Willhoff	City of Davis Fire
Sue Gedestad	City of Davis Public Works
Cherie Rita	State OES Fire Region IV OAC
Dan McCanta	Yolo Co. OES
Mike Webb	City of Davis Planning
Larry von Kaenel	West Sacramento City Mgrs. Office
Bill Summers	West Sacramento Fire
Robbie Rubin	Winters Fire
Barry P. Burns	Esparto Fire
Art Mendoza	Winters Fire
Ev Profita	U. C. Davis
Steve Williams	Consultant, Dimensions Unlimited
Janice Rogala	Consultant, Dimensions Unlimited

Introductions: Chairman Dan McCanta opened the meeting and the committee members introduced themselves.

Old Business

The minutes of the previous meeting were approved.

Jan asked the committee if everyone had turned in their hazard mitigation rating forms. Those that hadn't should get them done and faxed to Steve. Rose Conroy said they used there own format in doing the rating. After review of the document Jan said it was fine. There was a discussion of earthquake hazard as the history of the county is nil except for the Winters area.

Dan reported that most of the agencies had turned in their emergency and general plans in and that he would give them to Steve after the meeting.

Ev Profita of U.C. Davis advised that their plan was on their web site.

A discussion was held as to why we needed a letter of introduction. Dan to work with Woodland to get one done jointly.

Dan to check on special districts and the airport, Jan will check with Travis AFB as their flyway is over Yolo County.

Jan asked for progress on building assets lists, a few were done. Jan asked that all keep working on them and we would check progress at the next meeting.

Jan asked Woodland about the outcome of the "flood wall vote" The vote was to make the decision a vote of the people, a simple majority. Jan asked for a short written explanation as this would be included in the plan.

Ev Profita U. C. Davis stated their level of participation in this plan was still being determined. She stated none of their facilities are considered "critical". It would be inconvenient to lose some facilities. She stated that the campus has been the target of domestic terrorism in the past. Jan asked if genetics research was performed at the facility, the answer was yes. She stated that UC Davis was basically its own "city" they have their own fire, police and Mitigation Programs.

A discussion was again held about the participation of the fire districts in this plan all fire districts are under the county control except Yolo. The fire districts can be included in this plan but they have to have representation at the meetings, their own public input and mitigation strategies included in their plan, furthermore each of the districts boards will have to formally approve the plan.

New Business

Rose Conroy brought up that Davis wanted the schools included in the plan as they are short on funds and do not have the time to complete this. Jan stated that this was not possible as the school district is a separate special district and must write a plan of their own which contains information and strategies as they relate to the school district. The district is more than welcome to attend our meetings and we will share any and all information with them but they are required to write their own plan. Jan to get guidelines for schools. The statement was made that we would be leaving ourselves out on a limb trying to cover everybody with "our" plan.

It was asked if we could make up a task matrix with check boxes for the tasks that have been and need to be completed as this would make it easier for everyone to see the progress of the plan, also a sheets with a list of documents received and documents needed would be helpful. Jan said both are doable.

A public survey questionnaire that is used in Los Angles was passed out to the members to see if we would want to use something like this. They could be put in public places, mailed out etc. Woodland said they could include it in their utility bills. It was agreed to use the form with changes made by the committee. Steve to take the changes back to the office and modify the form then email it to Dan for distribution.

There was a discussion regarding the new FEMA crosswalk that was sent out to everyone. A question was asked about the section mentioning additional State requirements Jan stated that there are no State requirements.

Dan asked about the availability of grants to pay for this process, Jan said there are none.

A review was held as to things needing to be done for the next meeting, items were, letter of intro, information on schools and special districts, and fax in to Steve all hazard matrix forms so we could compile the information as we would start to discuss survey strategies at the next meeting.

It was brought up about talking to the Tribe, Dan to contact them. Jan said past experience with the tribes has been their interest is nil to none.

The next meeting is April 8, 2004 at 8:30 AM.

There being no further business the meeting adjourned.

Y.C.C.E.S.A. DMA 2000
Hazard Mitigation Steering Meeting Minutes
April 8, 2004

Kyle Noderer	Yolo County OES
Sarjit Dhaliwal	Yolo County Planning
Karl Diekman	City of Woodland Fire
Phil Marler	City of Woodland Asst. City Mgr.
Rose Conroy	Davis Fire Chief
Kathy Willhoff	City of Davis Fire
Laurie Thornton	City of Davis Planning
Colleen Turay	City of Davis Police
Dan McCanta	Yolo Co. OES
Larry von Kaenel	West Sacramento City Mgrs. Office
Bill Summers	West Sacramento Fire
Robbie Rubin	Winters Fire
Art Mendoza	Winters Fire
Scott Dozier	Winters Fire
Steve Williams	Consultant, Dimensions Unlimited
Janice Rogala	Consultant, Dimensions Unlimited

Introductions: Chairman Dan McCanta opened the meeting and the committee members introduced themselves.

Old Business

The minutes of the previous meeting were approved.

Dan said he had talked to public health and they would attend when needed

Steve asked how the questionnaires were doing every one stated they are in the process either on their web sites of being mailed.

Special districts were mentioned some have been contacted. Dan stated it was in our best interest to work with them to help them adopt their own plan. The special districts can used the basic Yolo plan with their own strategies and have their own public input process.

It was brought up what if special districts plan did not address the same issues as our plan. Steve stated every agency is going to have their own list of vulnerabilities and have their own strategies and priorities.

Dan said he would email Nome Alaska plan to everyone is small but met the requirements.

Dan said we should set up a meeting with all the special districts; he will contact LAFCO to try to get names and addresses.

Gary asked why do we really need a plan just for mitigation funding? This money is had to get even when available. Steve said the possible legal aspect should be looked at. If we know there is vulnerability and we choose not to pay attention to it and the event happens are we liable?

Dan asked if the county had applied for any funding, it was unknown, Steve to try to get the info from the State and FEMA if possible.

New Business

Steve asked that everyone start working on the strategies as they relate to the hazard matrix we produced. Include future plans and ongoing activities. You can use the form Steve gave out at the last meeting.

Steve stated GIS should be at our meetings as we are going to need maps of special districts, fire districts etc.

Dan advised we need to change the meeting date due to a conflict. It was decided the meeting would be held June 17th.

Gary asked if Dimensions was happy with the progress and time line of the project. Steve said yes compared to the other plans we are working on this one is ahead of schedule mainly due to the volumes of information provided already. The information that is needed now is the mitigation strategies as they are the "meat and potatoes" of the plan.

Rose said we should make a list of tasks to be done for the next meeting.
Dan to contact Port for representation, also special districts, Dan to email Alaska Plan.

Dimensions to try to have a Draft Plan for the next meeting, also try to get some sample City and District Plans for Review.

Gary said we should be talking about our public meeting.

The next meeting is June 17, 2004 at 8:30 AM.

There being no further business the meeting adjourned.

Y.C.C.E.S.A. DMA 2000
Hazard Mitigation Steering Meeting Minutes
May 20, 2004

Members Present

Dan McCanta	Yolo OES
Kyle Noderer	Yolo OES
Rose Conroy	Davis Fire Department
Colleen Turay	Davis Police Department
Kathy Willhoff	Davis Fire Department
William Summers	West Sacramento Fire Department
Larry Von Kaenel	West Sacramento City Manager's Office
Karen Honer	Winters Public Works
Karl Diekman	Woodland Fire Department
Phil Marler	Woodland City Manager's Office
Sarjit Dhaliwal	Yolo Planning and Public Works
Michael Hogan	Yolo County Flood Control and Water Conservation
Rena Howell	Davis Public Works

Introductions: Chairman Dan McCanta opened the meeting and the committee members introduced themselves.

Old Business

The minutes of the previous meeting were approved.

Dan said he had talked to public health and they would attend when needed

Steve asked how the questionnaires were doing every one stated they are in the process either on their web sites of being mailed.

Special districts were mentioned some have been contacted. Dan stated it was in our best interest to work with them to help them adopt their own plan. The special districts can used the basic Yolo plan with their own strategies but have share in the public input process. It was brought up what if special districts plan did not address the same issues as our plan. Steve stated every agency is going to have their own list of vulnerabilities and have their own strategies and priorities.

Dan said he would email Nome Alaska plan to everyone is small but met the requirements.

Dan said we should set up a meeting with all the special districts; he will contact LAFCO to try to get names and addresses.

Gary asked why do we really need a plan just for mitigation funding? This money is hard to get even when available. Steve said the possible legal aspect should be looked at. If we know there is vulnerability and we choose not to pay attention to it and the event happens are we liable?

Dan asked if the county had applied for any funding, it was unknown, Steve to try to get the info from the State and FEMA if possible.

New Business

Steve asked that everyone start working on the strategies as they relate to the hazard matrix we produced. Include future plans and ongoing activities. You can use the form Steve gave out at the last meeting.

Steve stated GIS should be at our meetings as we are going to need maps of special districts, fire districts etc.

Dan advised we need to change the meeting date due to a conflict. It was decided the meeting would be held June 17th.

Gary asked if Dimensions was happy with the progress and time line of the project. Steve said yes compared to the other plans we are working on this one is ahead of schedule mainly due to the volumes of information provided already. The information that is needed now is the mitigation strategies as they are the "meat and potatoes" of the plan.

Rose said we should make a list of tasks to be done for the next meeting.
Dan to contact Port for representation, also special districts, Dan to email Alaska Plan.

Dimensions to try to have a Draft Plan for the next meeting, also try to get some sample City and District Plans for Review.

Gary said we should be talking about our public meeting.

The next meeting is June 17, 2004 at 8:30 AM.

There being no further business the meeting adjourned.

Y.C.C.E.S.A. DMA 2000
Hazard Mitigation Steering Meeting Minutes
June 17, 2004

Members Present

Dan McCanta	Yolo OES
Kyle Noderer	Yolo OES
Rose Conroy	Davis Fire
Sue Dedestad	David Public Works
Kathy Willhoff	Davis Fire
William Summers	West Sacramento Fire
Karen Honer	Winters Public Works
Mike Martinez	County GIS
Kim Severns	American Red Cross
Sarjit Dhallwal	Yolo Planning and Public Works
Donita Hendrik	Dunnigan Water
Michael Horgan	Yolo County Flood Control
Rich Buse	Woodland Joint Unified School Dist.
Karl Diekman	Woodland Fire Department
Phil Marler	Woodland City Manager's Office
Steve Williams	Consultant, Dimensions Unlimited Inc.
Terry Garrison	Consultant, Dimensions Unlimited Inc.

Introductions: Chairman Dan McCanta opened the meeting at 8:35 AM and the committee members introduced themselves.

The minutes were read and approved with two corrections from Dan.

Old Business

Information on using the information from the Yolo plan was given to the committee by Dan and Kyle who had a meeting with approx 29 special districts and State OES. OES talked about the slightly different needs for the special districts and handed out a form to those who wanted showing the extra and different requirements.

Participants were asked for progress on the mitigation strategies, Woodland advised they had developed a matrix and wanted clarification if they needed to use the matrix Steve provided. Both Steve and Dan said yes as the matrix handed out answers all of the points that FEMA is looking for. Steve said after looking over what Woodland had done so far it should be easy to adapt to the matrix format. Rose from Davis had three samples for Steve to look at before they proceeded with all of their strategies. She asked for Steve's blessing before proceeding, Steve said they were exactly what they were looking for and to proceed. Karen from Winters gave Steve her mitigation strategies and advised most of hers have no funding at this time, most other Cities said they are in the same boat. It was asked which hazards should be addressed; Steve said address them all but concentrate on the high and medium ones.

Mike Martinez Yolo County GIS is to provide the fire district maps and the Cities to provide theirs.

Steve is to make an information request form for information from the fire and special districts that he needs and will email it to Dan for distribution.

Karen Honer advised that USGS has information available for the area; Steve said he was aware of it and used it regularly.

Dan has a list of 16 maps available for the area from OES Steve said great get as many as you can. Mike Martinez County GIS advised they can supply most other maps required. Mike is to get a list of available layers to Dan and Dan to foreword to Steve.

Rose Conroy wanted to know who attended the special district meeting so she could follow up with them. Dan advised he would email the list to all that wanted it

New Business

Steve distributed CD's of a 1st draft plan to the participants and advised everyone there were other sample plans on the disk as well. Everyone is to take a look at the draft and be ready to comment at the next meeting. Steve stated there is still much data to import but this will give the members an idea where we are headed.

The public meeting issue was discussed. The discussion centered around having just a report type of meeting during a city council meeting or a full blown open meeting for everyone. It was thought each city should have one and have one for everyone which could include all of the special districts at a central location. Phil Mauler from Woodland said he thought the plan should be at least in the second draft stage with a good deal of information soothe public will have something to input on. Everyone agreed to hold of on this to maybe September and readdress it then.

Rose said they have had 32 responses to the questionnaire on the web site and gave the results so far to Steve.

Woodland School Dist advised that they had come in late on this project and would like to be brought up to speed as to where we are and how far we have progressed. Some of the other newcomers said they would also like to be brought up to speed. Dan said he will meet with them and give them all of the material handed out so far.

The next meeting is scheduled for July 1st, due to us moving up this meeting. It was decided that we would skip the July 1st meeting and meet on the next scheduled meeting date Thursday July 22nd at 8:30 AM in the Hattie Webber Museum in Davis.

Woodland asked Steve if he preferred input from them hard copy or electronic, Steve advised that likes it in electronic form preferably in Word as the plan is written in Word and would make it easy to import the data.

There being no other business the meeting was adjourned at 9:20 AM.

Y.C.C.E.S.A. DMA 2000
Hazard Mitigation Steering Meeting Minutes
July 22, 2004

Members Present

Kyle Noderer	Yolo OES
Rose Conroy	Davis Fire
Sue Dedestad	Davis Public Works
Kathy Willhoff	Davis Fire
William Summers	West Sacramento Fire
Sarjit Dhallwal	Yolo Planning and Public Works
Rich Buse	Woodland Joint Unified School Dist.
Karl Diekman	Woodland Fire Department
Steve Williams	Consultant, Dimensions Unlimited Inc.
Terry Garrison	Consultant, Dimensions Unlimited Inc.

Introductions: Kyle Noderer opened the meeting at 8:30 AM as Chairman Dan McCanta was absent and the committee members introduced themselves.

The minutes of the previous meeting were read and approved

Old Business

Steve asked the status of the maps from State OES. Kyle said that Dan had sent for them and does not know if they have come in yet. The same goes for the maps from Mike Martinez at GIS.

Rose Conroy has mitigation strategies but wants some advice about the wording in the funding section the way it looks is that all projects are funded but in reality they are only assigned people to do the projects when needed or when it is urgent, the other cities also agreed.

New Business

Steve to bring hard copies of the plan with him on the next meeting for all to look at and start making changes and suggestions. Steve said prepare to be here for a couple of hours.

Steve handed out to the committee a courtesy review crosswalk of the State of Nevada plan showing the items that need attention and the ones that were acceptable. This information can be used to give us direction with our plan.

Karl Diekman from Woodland Fire reported the first set of questionnaires had been mailed out and they had received 3 responses. (his and two others) . Bill Summers from West Sacramento said they had had some responses also. Rose said she hadn't checked their responses lately.

Steve asked to tell everyone that the next meeting would be an important one so everyone should be there.

The next meeting is August 12.

There being no other business the meeting was adjourned at 8:50 AM.

Y.C.C.E.S.A. DMA 2000
Hazard Mitigation Steering Meeting Minutes
August 12, 2004

Members Present

Dan McCanta	Yolo OES—Chairman
Kyle Noderer	Yolo OES
Mark Christison	Laugenour &Melide
Sue Dedestad	Davis Public Works
Kathy Willhoff	Davis Fire
Sarjit Dhallwal	Yolo Planning and Public Works
Rich Buse	Woodland Joint Unified School Dist.
Karl Diekman	Woodland Fire Department
Colleen Turay	Davis Police Dept.
Scott Dozier	Winters Fire Chief
Donita Hendrix	Dunnigan Water
Kim Severns	American Red Cross – Yolo
EV Profita	University of California @ Davis
Steve Williams	Consultant, Dimensions Unlimited Inc.
Terry Garrison	Consultant, Dimensions Unlimited Inc.

Introductions: Dan Mcanta opened the meeting at 8:40 AM as and the committee members introduced themselves.

The minutes of the previous meeting were read and approved with two corrections in the members present area, added were Mark Christison and EV Profita.

Old Business

Draft plan will be sent out next week to give everyone time to review and make corrections or additions before the next meeting on September 2, 2004.

Dan asked about information about special districts, Steve advised that Mark Christison had emailed him most of the information needed.

Dan advised still playing phone tag with the port of Stockton but will get the information.

Dan asked about mitigation strategies, Steve advised most had turned them in, Sarjit had given him Yolo's today for insertion into the plan.

Dan advised he is going through the "back door" with State OES to get the maps we need. Steve asked about the county's GIS which was suppose to provide us with maps for the county and various districts.. Dan said he will call Mike Martinez today and get things rolling. Steve asked if he could get them in both hard copy and electronically, Dan said he would advise Mike.

Dan asked for progress on the questionnaires , Woodland turned approx 465 to Steve, Yolo County had 4, West Sacramento had 15, and Kathy from Davis said there were about 130 on the web site. Dan brought up the subject of accountability with Yolo's low response, Sarjit stated he had give out over 150 to three different community groups. Dan advised him to document this and email a copy to Steve as this would show our effort to get public input.

Woodland School District asked Steve if they also could get a copy of the draft plan, Steve said yes no problem.

It was brought up about when we should schedule a public meeting or meetings and do we want to have them for each jurisdiction.

It was brought up that some were planning to have them along with council meetings, Dan stated that he thought a separate informational meeting was the better setting. Public meetings should be done by the end of September earlier if possible. Steve was asked if he would attend the meetings he said yes and could bring some basic DMA 2000 material with him for handouts. Dan asked that everyone try to start picking dates but keep Steve in the loop as he can not be in two places at one time, so every one check with Steve's schedule.

It was asked if each agency would have it's own section in the plan, Steve said yes they do. It was asked why all of the special districts do not have their own section, Steve said each special district is included in our plan but is not covered by it. It special district is required to create their own plan but may use most of the information developed in our plan which is why they were invited to attend our meeting to get a head start on the information and process they needed.

It was asked if Steve had a school template and a sample resolution, Steve said yes he would send it to Dan and Dan could send it out to the group.

It was asked if one City did not adopt the plan would that impact the rest of use. Steve said no only the hold out.

There being no further business the meeting was adjourned at 9:15AM

New Business

The next meeting is September 2, 2004.

There being no other business the meeting was adjourned at 9:15 AM.

Yolo Operational Area DMA 2000
Special Hazard Mitigation Steering Meeting Minutes
September 17, 2004

Members Present:

Dan McCanta	Yolo OES—Chairman
Kyle Noderer	Yolo OES
Kathy Willhoff	Davis Fire
Mark Christison	Laugenour & Meikle
Sarjit Dhaliwal	Yolo Planning & Public Works
Karl Diekman	Woodland Fire
Scott Dozier	Winters Fire Chief
Donita Hendrix	Dunnigan Water
Ev Profita	UC Davis
Bill Summers	West Sacramento Fire
Larry Von Kaenel	WS City Manager's Office
Gary Wegener	Woodland Public Works
Barry Burns	Esparto Fire
John Bencomo	Yolo Planning & Public Works
Mike Horgan	Yolo County Flood Control
Rich Rogala	Dimensions Unlimited

Correction to July 22, 2004 minutes: "Ev Profita should be added to the list of attendees.

Introductions: Dan McCanta opened the meeting at 1:35 PM and the committee members introduced themselves. All jurisdictions were represented.

Special Business

Dan announced that this was a special meeting for jurisdictions to gather all remaining data and discuss jurisdictional review of the first draft. There was a short discussion regarding the list of items that were not in this issue of the draft. The consultant reviewed each item and reported what data he had.

Dan said that he believes that the jurisdictions had submitted everything available.

UC Davis had a small amount of data regarding domestic terrorism. A discussion ensued regarding jurisdictional representation in the plan. It was noted that only specific data for Yolo County, West Sacramento, Woodland, Davis and Winters would be represented in the plan. Special districts and the university are required to submit their own plans since they have separate governing bodies, however, much of the data in the Operational Area plan could be used.

There was a discussion regarding the completion timeline. The consultant reported that the final draft plan would be available at the next scheduled meeting (Sep 23). Yolo County, Woodland and Davis will be having public meetings the following week. The plan will go to State OES for courtesy review, then revised as necessary, then submitted to FEMA for approval. Once approved, jurisdictions will submit the plan to their governing bodies for adoption by resolution.

There was a discussion on strategies vs. specifications. The purpose of the plan is to be an encyclopedia of hazard mitigation and grant application preparation for the jurisdictions represented. Strategies are entered into the plan to document the need for projects that may be eligible for funding with FEMA pre- and post-disaster hazard mitigation grants. Public Assistance and Recovery funds are not affected by this plan.

All jurisdictions submitted changes and input for the final draft.

The meeting was adjourned at 3:15 PM

Yolo Operational Area DMA 2000
Special Hazard Mitigation Steering Meeting Minutes
September 23, 2004

Members Present:

Dan McCanta	Yolo OES—Chairman
Kyle Noderer	Yolo OES
Rose Conroy	Davis Fire Chief
Kathy Willhoff	Davis Fire
Sarjit Dhaliwal	Yolo Planning & Public Works
Ev Profita	UC Davis
Bill Summers	West Sacramento Fire
Larry Von Kaenel	WS City Manager's Office
Robbie Rubio	Winters Fire
Mike Horgan	Yolo County Flood Control
Solveig Monson	Davis Joint USD
Rich Rogala	Dimensions Unlimited

Introductions: Dan McCanta opened the meeting at 8:35 AM and the committee members introduced themselves. All jurisdictions, with the exception of Woodland, were represented.

Committee Business

The consulted presented 6 hard copies and 6 CD-ROMs of the plan to the committee for jurisdictional disbursement.

Dan commented that Winters, Woodland and Davis will be billed by the County for their portion of the Hazard Mitigation Planning Project.

Sarjit asked if he could remove the Citizen Questionnaire from the website. The consultant is finished tallying and has entered the data into the plan. Dan agreed with Sarjit to remove it.

Dan reviewed the Community Meeting schedule with the membership.

Dan commented on the intent of the Hazard Mitigation Plan and where the Operational Area can go with it from here. The review process and future (5 year) submission was recapped.

A discussion took place regarding the Capabilities Assessment in the back of the plan. There are 3 tables that refer to tools available to implement the plan. The consultant asked the committee to please review the tables, especially the one that shows financial ability tools.

A request was made to the consultant if there were any examples of the language used in an adoption resolution for the HM Plan. The consultant said he would research.

A discussion took place regarding the Transportation Loss risk and the need to strengthen it as a risk. A determination was made, that in order to have better data, the risk would need to be studied. It was recommended and accepted to draft a strategy for a transportation loss feasibility study to be submitted by the County.

The section on Constraints was reviewed by the committee. Also, it was recommended that for each new strategy added to the plan, if a constraint applies, it should be specified in the text of the strategy.

A discussion took place regarding adding jurisdictions to the plan to make it all-encompassing. Jurisdictions within the County can use the Operational Area Plan as a basis for them to use to build their own plans. A jurisdiction's plan must contain their own specified and prioritized risks, their demographic and statistical data, their vulnerability issues with regard to the risks and their own strategies and implementation actions.

The meeting was adjourned at 10:45 AM