

Memorandum Report

After Action Report

FEBRUARY 1998 FLOODS



Department of Water Resources
July 1998

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**February 1998 Floods
After Action Memorandum Report**

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CHAPTER ONE INTRODUCTION

1.1 PURPOSE

This After Action Report covers Department of Water Resources emergency response actions, application of the Standardized Emergency Management System, modifications to plans and procedures, training needs, and recovery activities. An AAR is a valuable tool that may be used to evaluate response to emergencies and to plan improvements for responding to future emergencies. In general, an AAR serves the following functions:

- Provides a source for documentation of response activities
- Identifies problems and successes during emergency operations
- Analyzes the effectiveness of emergency plan implementation
- Describes and defines an action plan for implementing improvements
- Provides a vehicle for documenting needed system improvements, and may serve as a work plan for implementing the improvements

Specifically, this document reports a review and analysis of the DWR emergency response to the February 1998 flooding. This work culminated in a set of recommendations for improving the Department's response to a flood emergency. The following activities are detailed in this report:

- A series of After Action flood debriefings held by the various functional areas within the SEMS and DWR Incident Command Systems
- Identification of issues needing further attention, improvement or correction
- Development of an "Issues Matrix"
- Matrix evaluation by Action Teams to develop proposed solutions
- Categorization of needs into "critical", "short-term" and "long-term"
- Establishment of target completion dates for proposed solutions

Per the California Code of Regulations, Title 19, Section 2450, any State agency responding to an emergency, for which the Governor proclaims a State of Emergency, must complete and transmit an AAR to the Governor's Office of Emergency Services within 90 days of the close of the incident period. Since the Federal Emergency Management Agency closed the incident period for the El Niño '98 Storms effective April 30, 1998, the deadline for DWR to submit an AAR to OES is July 30, 1998. This report meets this requirement.

1.2 HISTORY

A strong tropical El Niño event resulted in an excessively wet winter over much of California, bringing widespread urban flooding, mudslides and coastal erosion in February 1998, with impacts continuing throughout spring and early summer. February statewide precipitation totals were 320 percent of average, and exceeded 500 percent in parts of Southern California's coastal counties from Santa Barbara to San Diego.

A wet January soaked most watersheds in the State. Beginning February 1, 1998, heavy rains in the Central Valley and parts of the north coast and Southern California caused rivers to rise which resulting in extensive localized flooding, road closures, private levee failures, increased flood system bypass flows, and numerous warning and flood stages on major river systems. DWR Director David Kennedy declared a Flood Mobilization effective February 2, 1998. Sacramento Weir gates were opened on February 3 and 4, and sixteen gates remained open until February 14. This marked the third time in the past four years that gates have been opened. The Flood Operations Center remained on 24-hour operations through February 27, 1998.

Statewide damage was estimated to exceed 550 million dollars, 17 storm-related deaths occurred, and 40 counties had been included in a presidential disaster declaration, according to the Governor's Office Of Emergency Services. None of the deaths were related to levee failure. According to a Department of Food and Agriculture press release issued July 8, 1998, farm losses alone totaled 532 million dollars.

February floods damaged 142 sites in the Sacramento and San Joaquin River systems, the Delta, and the Suisun Marsh. Flood Operations Center personnel tracked all incidents with the new California Levees application in the Resource Information Management System (RIMS). Department personnel worked around the clock to protect the lives and property of all citizens threatened by floodwaters.

At the beginning of May 1998, estimates of snowpack water content for the water year (since October 1, 1997) stood at 190 percent of average statewide. Comparatively, the 1997 May 1 snowpack was 55 percent of the statewide average. Statewide precipitation through April was approximately 160 percent of average. By mid-May, floodwaters had receded with the exception of the Tulare Lake Basin, but significant snowmelt flooding potential remained.

Unseasonable rains at the end of May caused renewed overflow into the Sacramento River bypass system with flow at Colusa, Tisdale, and Fremont Weirs continuing well into June – the latest inundation of record. Central Valley rivers continued to run at elevated levels through June.

Precipitation and cool temperatures continued into June, resulting in additional snowpack and delayed snowmelt. A contingency plan for dealing with potential excess snowmelt runoff on the San Joaquin and Kings Rivers was prepared in mid-June. Fortunately, temperatures remained moderate and runoff rates continued to decline slowly. By late June, snowmelt on all major San Joaquin and Tulare Basin streams had peaked.

1.3 FINDINGS

Post 1997 Improvements

After the disastrous floods of 1997, DWR participated in the Governor's Flood Emergency Action Team, which resulted in numerous recommendations to improve flood emergency response capabilities statewide. In response to the May 10, 1997 FEAT report, several new procedures and systems were implemented including:

- An Emergency Preparedness Manager position was established to better meet the requirements of the State's Emergency Services Act and SEMS
- Participation with OES in flood emergency workshops focusing on dissemination of flood information was increased
- New telemetry was installed at several key stream gages in the Sacramento and San Joaquin Valley and Truckee river basins, and the new data was incorporated into the California Data Exchange Center web site
- A new levee and flood incident application within the Response Information Management System was developed with OES to track flood operations incidents
- A Geographical Information System was installed at the Flood Operations Center and the Division of Flood Management assumed maintenance responsibility for a GIS levee database developed by FEMA and OES during the 1997 floods
- A Department-wide SEMS/ICS training program for flood emergency personnel was implemented
- A "Management Room" was constructed at the Flood Operations Center to better serve the SEMS Management function

Beginning with pre-season flood operation meetings, Flood Fight Methods training and El Niño preparedness in the fall of 1997, throughout the February 1998 floods, and ending with the post-flood debriefings and this After Action Report, Department of Water Resources personnel responded with dedication,

enthusiasm and increased interagency cooperation. Applying lessons learned during the floods of 1997, personnel have continuously sought to improve methods and procedures, increase overall training levels, improve communication, and seek more efficient ways to apply SEMS/ICS procedures.

1998 Performance

In the final review, DWR's response to the February 1998 floods was improved in many areas in comparison to the 1997 emergency response. For the first time, a complete implementation of the SEMS/ICS system at the Flood Operations Center and Incident Command Posts was deployed. This system helped DWR personnel to respond in an organized and efficient manner, with increased levels of coordination and communication between local, State and federal flood operations and emergency response agencies. DWR has since received much positive feedback from many of these agencies, the news media and public. This report shall become a key tool in DWR's ongoing effort to improve the overall level of flood emergency preparedness and response.

Debriefing Process

As the emergency subsided, personnel began the post-event debriefing process. After an initial feedback questionnaire was distributed, debriefing meetings were held by each of the SEMS/ICS functional areas: Management, Operations, Planning/Intelligence, Logistics, and Finance/Administration. Participants reviewed successes and began to develop issues needing further attention and improvement.

At a final debriefing attended by Section Chiefs and other key management and supervisory personnel, Section-level summary reports were presented, five Action Teams were established for each of the SEMS functions to address each issue and develop proposed recommendations, and plans were finalized to complete the AAR.

Observed Successes

While this report concentrates on recommendations to improve the Department's flood emergency preparedness and response capabilities, many successes were identified during the debriefings which deserve mention at this time. Key successes included:

- Personnel were highly motivated, better trained and more confident
- The Flood Operations Center was quickly activated under SEMS
- SEMS/ICS was consistently applied at the FOC and field locations, resulting in improved communications, coordination and enhanced overall performance

- Public Law 84-99 Emergency Assistance Coordination between DWR and the U.S. Army Corps of Engineers was improved
- Communications and coordination between DWR and OES were improved
- Coordination between the Flood Operations Center and the Central District was improved
- Use of the new GIS system and RIMS Levee Database at the Flood Operations Center, and digital field photography enhanced analytical and documentation capabilities
- The California Data Exchange Center web site was more reliable, with improved user access to data including new stream gaging data
- Field operations reports were more complete
- Incident Action Plans were used
- Consistent two-shift operations were established
- The new Flood Operations Center Management Room met needs well
- News media appreciated multi-agency participation at briefings
- Logistics and Finance/Administrations functions were improved

Recommendations for Improvement

An Issues Matrix was developed for the Action Teams to organize seventy-six debriefing issues, identify the sources of each issue, and provide a simplified format for further evaluation. The issues were sorted into the following seven categories:

- Communication and Information (15 issues)
- Logistics (16 issues)
- Field Operations (8 issues)
- Preparedness (12 issues)
- Relationships and Interagency Coordination (7 issues)
- Staffing and Support (5 issues)
- Training (13 issues)

The resulting discussion and recommendations for proposed solutions received from the Action Teams were merged into a detailed report for each issue, which are found in Chapter 4 of this report. Each issue was assigned to one or more of the following Goal Categories:

- Critical, must be solved prior to the 1998-99 flood season (20 issues)
- Short-term, can be solved by December 1, 1998 (40 issues)
- Long-term, tentative completion date of December 1, 2000 (9 issues)
- Ongoing, require continuous attention (7 issues)

It should be noted that for those issues with more than one Goal Category, the Category with the shortest timeframe was used to determine the above totals.

Workload Distribution

The following workload distribution is based on a tally of the “Responsible Parties” noted for each issue in Chapter 4:

| | |
|---|-----------|
| Division of Flood Management | |
| Flood Operations Branch | 43 issues |
| Division-level issues | 24 issues |
| Hydrology Branch | 4 issues |
| FEMA Coordinator | 3 issues |
| Administrative Office | 1 issue |
| Emergency Preparedness Manager | 13 issues |
| Division of Management Services | 8 issues |
| Office of Water Education | 7 issues |
| Executive Staff | 6 issues |
| Division of Planning & Local Assistance | 6 issues |
| Safety Officer | 5 issues |
| Division of Operations & Maintenance | 5 issues |
| Division of Fiscal Services | 1 issue |
| Equal Employment Opportunity Office | 1 issue |
| | |
| Governor’s Office of Emergency Services | 15 issues |
| U.S. Army Corps of Engineers | 3 issues |
| The Reclamation Board | 1 issue |
| National Weather Service | 1 issue |

CHAPTER TWO

DEBRIEFING

2.1 DEBRIEFING PROCESS

This chapter describes the sequence of events coordinated by the Division of Flood Management, Flood Operations Branch to debrief emergency personnel who responded to the floods.

Personnel were e-mailed a questionnaire soliciting initial comments, and were invited to attend debriefing meetings.

Standardized Emergency Management System Section Chiefs coordinated the debriefing meetings from the five functions: Management, Operations, Planning/Intelligence, Logistics and Finance/Administration. Appendix C lists debriefing rosters. The participants reviewed successes and began discussing areas of concern and issues for improvement. A professional facilitator conducted the Management, Operations, and Planning/Intelligence meetings, which proved useful in maintaining direction and allowed the Section Chiefs to fully participate. A stenographer transcribed the Planning/Intelligence meeting.

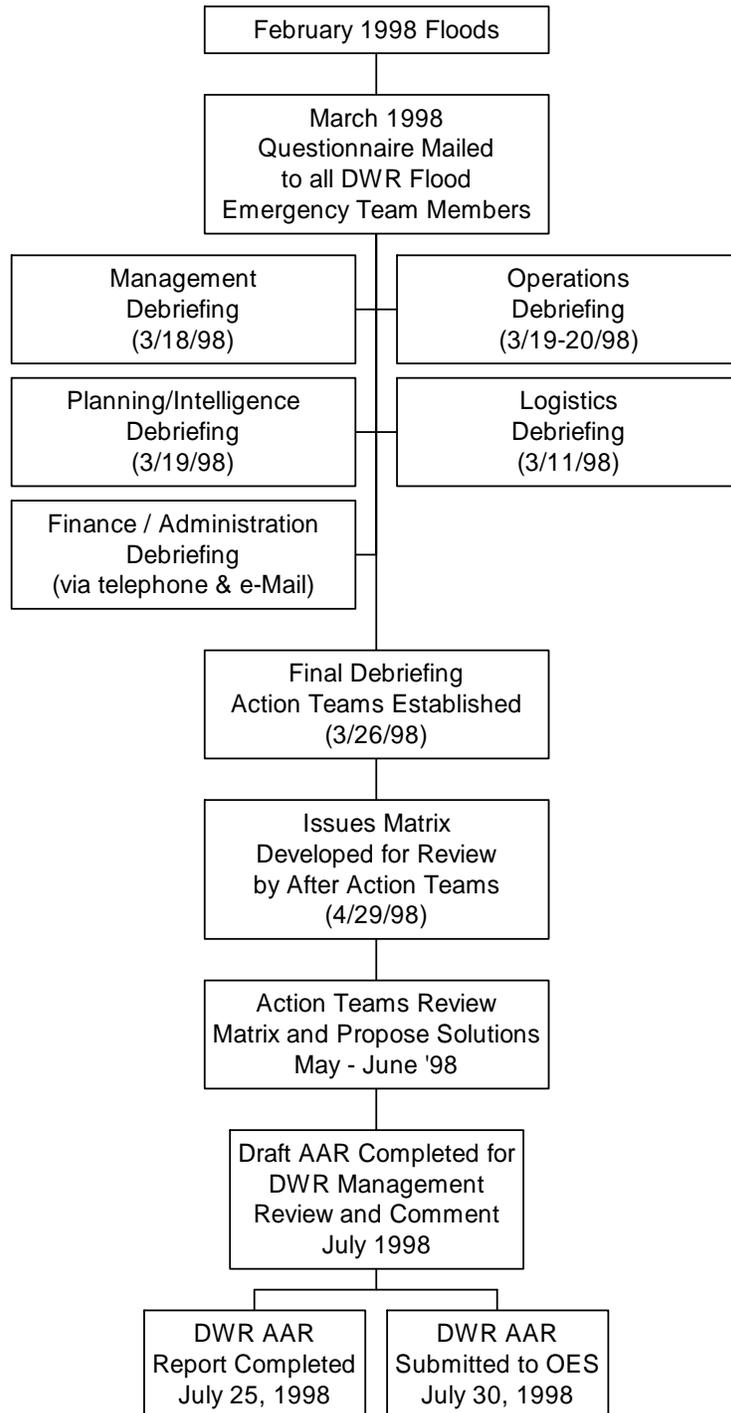
These meetings allowed Section Chiefs to refine the key issues in preparation for a final debriefing, attended by Section Chiefs and other key management and supervisory personnel. At the final debriefing held on March 26, consensus was reached on how to continue the debriefing process and develop the After Action Report. After Action Teams were established to address each issue and propose recommendations.

A matrix of issues was developed for the After Action Teams to use. The teams met in May and June to prepare recommendations. Emergency Response Section personnel merged proposals into a draft report prepared for review and comment by Department of Water Resources management.

The AAR has been finalized and is presented as a Department Memorandum Report. The report will also be submitted to the Governor's Office of Emergency Services to meet SEMS post-incident reporting requirements.

2.2 DEBRIEFING AND AFTER ACTION REPORT FLOWCHART

The following flowchart depicts the sequence of events after the February 1998 floods leading to completion of this After Action Report.



2.3 MANAGEMENT DEBRIEFING

All DWR personnel involved in the Management Section during the flood mobilization of February 1998 were asked to provide contributions to the meeting on March 18, 1998.

Fifteen department managers and two liaison representatives from the U.S. Army Corps of Engineers attended the meeting. A transcription service was hired to record the proceedings. All attendees summarized their involvement and provided comments to items discussed. Several attendees also participated in the March 26 "Final Debriefing".

A number of successes were identified, including:

- Personnel were highly motivated and more confident
- The Flood Operations Center was quickly activated under SEMS
- Coordination between DWR and the Corps worked well
- Coordination between DWR and OES was improved over 1997
- Corps PL 84-99 assistance more efficient than in 1997
- Coordination between the FOC and Central District was improved over 1997
- Management had more complete field operations reports
- New FOC GIS system, new RIMS Levee Database, and use of digital field photography provided improved documentation
- Improved distribution of Incident Action Plans
- Consistent use of two-shift operations was effective
- Management of geotechnical teams by The Operations Section was improved
- The new FOC Management Room met needs well
- Media appreciated multi-agency participation at briefings

The Debriefing resulted in 38 issues for continued work by the Management Action Team. The team met on May 21 to review the Issues Matrix and discuss proposed solutions.

Management intends to oversee all aspects of the debriefing process, while at the same time allowing flexibility for complete discussion of issues to take place – followed by formulation of recommendations by technical staff.

2.4 OPERATIONS SECTION DEBRIEFING

The Operations Section was the largest and most diverse group of all sections involved in the February 1998 flood response. Attendees represented FOC and Incident Command Post Operations Sections, and those with permanent assignments at DWR Field Divisions or District offices statewide.

Those serving in operations were involved in flood patrolling, flood system and levee reconnaissance, technical investigations, report writing, and supervisory and support functions for numerous flood fights.

The debriefing was held March 19 and 20, 1998 in Yuba City, California. A professional facilitator was hired to consult with the group to guide the debriefing. More than 60 participants attended all or part of the meeting. The session was positive, productive and enlightening. Personnel agreed that DWR has made tremendous strides in flood emergency response since 1995, but that more work is needed for continued improvement.

Prior to the debriefing, several Operations Section members compiled all of the individual debriefing comment forms that had been sent out to DWR personnel who served in any capacity during the flood event. The forms were evaluated and tabulated to better organize the direction of the two-day meeting.

As in the Management Debriefing, transcripts were recorded which were condensed into 53 items for further consideration. These were further condensed into 19 issues which Operations Section staff were asked to develop recommended solutions.

The following successes were identified:

- SEMS/ICS was consistently used at field locations and the FOC, resulting in improved communications and enhanced overall performance.
- Incident Command Posts were mobilized with higher staffing levels.
- The FOC Operations Section was better staffed.
- Pre-deployment funds provided materials and personnel (CDF, CCC) in place.
- The Arboga 1997 repair site was used to conduct a pre-flood ICS exercise.
- Logistics and Finance/Administrations support functions were improved.
- GIS provided improved mapping capabilities at the FOC.
- DWR management of the event was better defined and accepted among CDF and other local officials.
- Pre-season flood fighting instructor training.
- Implementation of RIMS applications at the FOC.

2.5 PLANNING/INTELLIGENCE SECTION DEBRIEFING

The Planning/Intelligence debriefing meeting was held on March 19, 1998 at the Joint Operations Center. All those who participated in FOC and field Planning/Intelligence Sections during the February floods were invited, and each Unit was well represented at the debriefing. Attendees were divided into the following groups to make summary presentations of key successes and areas needing improvement:

- Section Chiefs and Information Technology Support
- Flood Information Specialists
- Situation Status Leads
- Mapping Unit
- OES Liaisons

The following areas were identified as areas in which major improvements since the 1997 flood response were observed:

- SEMS Implementation
- Interagency Coordination
- Mapping Capabilities (new GIS mapping implementation)
- California Data Exchange Center (more reliable, improvements to data access, new telemetry)
- Positive attitude of emergency personnel

The following areas were identified as needing attention to improve the overall level of response under SEMS:

- Training and Preparedness
- Information Technology Support
- Communication
- Logistics Support; clarifying roles and responsibilities

The meeting was constructive for expressing opinions, raising issues, and beginning the recommendation formulation process, and provided an opportunity for Unit Chiefs and representatives to summarize their views and experiences during the February floods, and to share their recommendations with other attendees. The transcription service and meeting facilitator, which assisted at the Management and Operations debriefings, were used again.

2.6 LOGISTICS SECTION DEBRIEFING

A debriefing meeting for the Logistics Section was held on March 11, 1998 at the Resources Building. The Office of Support Services Chief and key Logistics Section personnel who worked at the FOC attended the meeting. The only field representation was from the Office Services Chief, who had staff in the field.

The meeting was productive and pointed out successes and opportunities for improvement. Comments from those who participated in the SEMS Logistics Section during the February floods were collected and forwarded to Planning/Intelligence at the FOC. SEMS recommends the following units under the Logistics Section:

- Supply
- Facilities
- Ground Support
- Communications
- Food
- Medical

The Logistics Section did not activate all of the above units in the February floods. Logistics efforts were mainly focused on meeting operational, staffing, and personnel support requirements. Logistics staff from OSS coordinated the assignment of personnel to the FOC and Incident Command Posts. A follow-up meeting was held on March 18, to bring out other issues that might have been overlooked in the March 11 meeting.

All comments received from participants were constructive in formulating the issues and proposed recommendations in this report. The debriefing provided an opportunity for all participants to present their views and experiences and share their recommendations.

2.7 FINANCE/ADMINISTRATION SECTION DEBRIEFING

The Finance/Administration Section debriefing was handled by telephone and e-mail since only a few staff worked in this Section. Staff comments were collected and forwarded to the FOC. Most Finance/Administration Section staff worked at the FOC, with a Section representative assigned in charge of timesheets at each DWR Incident Command Post. SEMS recommends the following units under this Section:

- Time
- Procurement
- Compensation/Claim
- Cost

The Finance/Administration Section did not activate these separate units because all transactions were completed through the FOC. All comments received from Section personnel were constructive in developing the issues in this report. The debriefing provided an opportunity for all participants to exchange experiences and share recommendations.

2.8 MARCH 26, 1998 FINAL DEBRIEFING

Five SEMS/ICS functional units were responsible for meeting in March to write observation summaries of the 1998 flood emergency. Staff from the five SEMS Section-level debriefings were assigned to summarize their respective debriefings to a Management and Section Chief-level group on March 26.

Because of the many issues representing diverse perspectives, a DWR consultant and professional facilitator was hired to lead the day's activities.

The objectives of the meeting were to:

- Provide a source of documentation
- Identify successes and issues requiring attention
- Analyze the effectiveness of DWR's emergency response
- Develop a documentation framework for system improvements
- Define an action plan for implementation of the improvements

Lead personnel reported on each major activity during the floods.

In order to ensure review by all SEMS functional areas and provide a common ground for resolving differences in opinion, Action Teams were established for each of the SEMS functions, with DWR's Emergency Preparedness Manager acting in an oversight role. The Action Teams members are listed in Section 2.9 of this report.

At the end of the final debriefing meeting, a consensus was reached that much had been accomplished during the day, and that many positive improvements to DWR's flood emergency response procedures were anticipated as a result of the debriefing process. It was agreed that the entire debriefing process had successfully been an open, constructive and interactive process for hundreds of DWR employees.

2.9 FORMULATION OF ACTION TEAMS

The Action Teams established at the final debriefing consisted of four to five people from key DWR Divisions and Offices which responded to the 1998 flood emergency. Makeup within each team crossed Division lines and involved personnel assigned to different locations during the emergency. The teams met from April to June to review the “Matrix” and to develop recommended solutions to the issues. After Action Teams were comprised of the following personnel:

| <u>Team</u> | <u>Members</u> | <u>Position</u> |
|----------------------------|--|---|
| Oversight | Sonny Fong | Emergency Preparedness Manager |
| Management | Jay Punia Sonny Fong George Qualley Bill Bennett Karl Winkler | Chief, DFM Flood Operations Branch Emergency Preparedness Manager Chief, Division of Flood Management Chief, Div. Planning & Local Assistance Chief, DPLA Central District |
| Planning and Intelligence | Eric Butler James Bailey Mike Mirmazaheri Scott Yomogida Linda Dutra Mike Inamine | Chief, DFM Emergency Response Section DFM Emergency Response Section DFM Emergency Response Section DPLA, Central District Information Systems and Services Office Division of Engineering |
| Operations | Keith Luster Don Yeoman Brian Smith Al Romero Ann-Marie Parkin Dick Jacobi | DFM Flood Fight Specialist DFM Flood Project Inspection Section DPLA, San Joaquin District DFM Sacramento Maintenance Yard DPLA, Central District Division of Operations & Maintenance |
| Logistics | Diana Cobleigh Glee Valine Nader Noori Dan Deese | Telecommunications Office Mobile Equipment Office Division of Engineering DPLA, San Joaquin District |
| Finance and Administration | Terry Lewis Charles Stucke Llisa Hebert Mary White | DFM, Flood Control Project Branch DFM, Administrative Office DPLA Central District ISSO |

Action Team leaders met on May 11, 1998 to review the matrix, discuss input preparation requirements, review how the report would be finalized, and establish a schedule for the report's completion. The teams met in May and June to develop proposals for issues assigned to them.

This process encouraged and enlisted participation throughout DWR, crossed organizational lines, and uncovered differing points of view. This shift from a non-emergency work environment where DWR divisions and offices tend to work separately to a team-oriented, intra-Department approach ensures that future responses to emergencies are carried out in a coordinated and cooperative approach.

CHAPTER THREE

OUTCOME

3.1 OUTCOME OF THE FLOOD DEBRIEFING PROCESS

The Debriefing Issues Matrix was developed by the Emergency Response Section to facilitate the documentation of issues coming from the debriefing process. Specifically, the matrix was developed to:

- Organize input from the previous Standardized Emergency Management System functional debriefings
- Identify which SEMS function(s) originally submitted each issue
- Provide a simplified common format to review issues and to develop proposed recommendations
- Minimize staff analysis and input time

Issues were sorted into the following seven categories to simplify the evaluation and solution suggestion processes:

- Communication and Information
- Logistics
- Field Operations
- Preparedness
- Relationships and Inter-Agency Coordination
- Staffing and Support
- Training

The Matrix was given to the Action Team leaders in a Microsoft Excel file which could be transmitted electronically, minimizing the information exchange and transfer process between team members and the Emergency Response Section.

3.2 DEBRIEFING ISSUES MATRIX

The following information is provided for each issue in the matrix, with Issue I-1 used as an example:

- Issue Number

“I-1” The issue number shows both category and number within the category. For issue I-1, the category is “Communication and Information”.

- Issue Title

“Operations – Planning/Intelligence Information Flow”

- Issue Summary by Category

“Information flow from Operations to Planning/Intelligence needs improvement. Status updates were not timely. Staff adjacencies need further evaluation, and the Operations Section needs representation in the Flood Center (Room 231)”. This summary briefly describes the issue. Refer to Chapter 4 for detailed discussions on each issue.

- Section Boxes

Columns for each of the five SEMS sections; Management, Operations, Planning/Intelligence, Logistics, and Finance/Administration, plus a column titled “Other”, are listed. An “X” indicates the Section(s) that identified the issue during the debriefing process. Shading indicates the Section Action Team(s) that was assigned the responsibility to evaluate the issue and develop a proposed recommendation. An “I” indicates the Section Action Team(s) that were asked to provide additional input to the shaded Team(s).

AFTER ACTION REPORT

DEBRIEFING ISSUES MATRIX

FEBRUARY 1998 FLOODS

| Issue Number | Issue Title | Issue Summary by Category | Management | Operations | Planning / Intelligence | Logistics | Finance / Administration | Other |
|---|---|---|------------|------------|-------------------------|-----------|--------------------------|-------|
| I. Communication and Information | | | | | | | | |
| I-1 | Operations - Planning/Intelligence Information Flow | Information flow from Operations to Planning/Intelligence needs improvement. Status updates were not timely. Staff adjacencies need further evaluation, and the Operations Section needs representation in the Flood Center (Room 231). | X | X | X | | | |
| I-2 | Media Information Dissemination | There was not always sufficient staff at field sites to address media inquiries. | X | | | | | |
| I-3 | Medical Plan and Unit | Information on emergency medical services should be available to all flood emergency personnel. The Incident Command System recommends that Operations Sections should have a Medical Plan while Logistics Sections should have a Medical Unit. | | | X | I | | |
| I-4 | Demobilization Procedures | Clear demobilization procedures were not available to staff or supervisors. | | X | X | X | X | |
| I-5 | Spanish Media Outreach | The Department may not be adequately serving California's large Spanish-speaking population during a flood emergency. | | | X | | | |
| I-6 | Operational Area Communications | Communications with county Operational Area Emergency Operations Centers and county officials should be improved. | | X | X | | | |
| I-7 | Management to Staff Information Flow | Management needs to ensure that FOC personnel receive regular updates on key high-level issues. | X | X | X | | | |
| I-8 | Personnel Contact Data | Phone numbers (land, cell, pager, FAX, etc.) for emergency personnel and locations was not uniformly available. | X | | X | X | | |
| I-9 | FOC Staff Identification | Key FOC staff must be easily identified. | I | | X | | | |
| I-10 | Incident Action Plans | The Incident Action Plans contained too much status information and not enough planning content. Plans also took too long to produce. | X | X | X | X | X | |
| I-11 | Lake Berryessa Telemetry | Water surface elevation and outflow data is not available for Lake Berryessa or Putah Creek. | | X | I | | | |
| I-12 | Field Reporting to the FOC | More timely and regular transfers of field status reports and other information is needed. | | X | X | | | |
| I-13 | CDEC Intranet Web Site | Protection of DWR special access to California Data Exchange Center during high demand period needs to be ensured. | | X | X | | | |
| I-14 | U.S. Army Corps of Engineers Lotus Notes System | Notes access between the Corps and DWR was not available in 1998. | X | | | | | X |
| I-15 | Flood Operations Web Site | Many flood operations-related documents are not available over the world wide web. | X | | | | | |

"X" indicates the Section(s) that identified the issue during debriefings.
 Shading indicates the Action Team(s) assigned to propose a solution.
 "I" indicates the Action Team(s) providing input.

AFTER ACTION REPORT

DEBRIEFING ISSUES MATRIX

FEBRUARY 1998 FLOODS

| Issue Number | Issue Title | Issue Summary by Category | Management | Operations | Planning / Intelligence | Logistics | Finance / Administration | Other |
|----------------------|--|--|------------|------------|-------------------------|-----------|--------------------------|-------|
| II. Logistics | | | | | | | | |
| II-1 | PIO Computers | Public Information Officer computers at the FOC did not always work. | X | | | | | |
| II-2 | FOC Food Services | Food services should be provided based on consistent criteria. More attention should be paid to food protection and health issues. | X | | X | | | |
| II-3 | Resource Tracking - Supplies and Equipment | Supply and equipment tracking was difficult since they were frequently distributed from one individual to another without coordination with the Logistics Section. | | | | X | | |
| II-4 | Resources Tracking - Personnel | Staff sometimes reported to a location without coordinating with Logistics, making tracking difficult. | | | | X | | |
| II-5 | Personnel Telecommunications Equipment | Section Chiefs and other key personnel at the Flood Operations Center and Incident Command Posts needed to have cellular phones and pagers assigned to them, especially for those traveling between the field and FOC. | | | X | I | | |
| II-6 | Vehicle Availability | A sufficient number of properly equipped vehicles must be available at the Flood Operations Center and Incident Command Posts during a flood event. | | I | X | | | |
| II-7 | Equipment and Supply Vendor Data | Easily accessible and widely disseminated lists of flood equipment and supply vendors were not available during the 1998 floods. | | X | | X | | |
| II-8 | Notebook Computers | Properly configured notebook computers are needed at REOC's, EOC's and ICP's. | X | X | | I | | |
| II-9 | FOC Copiers | The FOC needs increased copying capability. | X | X | | | | |
| II-10 | JOC Security | Improved security measures at the Flood Operations Center are needed, including more cardkeys and security escorts to vehicles. | | | X | | | |
| II-11 | JOC Personnel Support Services | The regularly contracted janitorial, security and other JOC support services must be increased during a flood emergency. | | | X | X | | |
| II-12 | JOC Television Media Support | Relocate TV media cables under the floor to avoid safety and security hazards. | X | X | | I | | |
| II-13 | Mobile Trailers | Mobile field trailers are needed which are equipped with all necessary telecommunication and computer equipment. | | X | | | | |
| II-14 | Resource Requests - Supplies and Equipment | Procedures are needed for issuing and coordinating resource requests between field and FOC Operations and Logistics personnel. | X | X | | X | | X |
| II-15 | Resource Requests - Personnel | Procedures for requesting, relieving and returning staff and obtaining Supervisory approval need to be developed and supported by DWR management. | X | X | X | I | | |
| II-16 | Emergency Work Orders | Work orders should be established prior to each flood season to track emergency preparedness and response expenditures. | | | | | | |

"X" indicates the Section(s) that identified the issue during debriefings.
 Shading indicates the Action Team(s) assigned to propose a solution.
 "I" indicates the Action Team(s) providing input.

AFTER ACTION REPORT

DEBRIEFING ISSUES MATRIX

FEBRUARY 1998 FLOODS

| Issue Number | Issue Title | Issue Summary by Category | Management | Operations | Planning / Intelligence | Logistics | Finance / Administration | Other |
|------------------------------|--|--|------------|------------|-------------------------|-----------|--------------------------|-------|
| III. Field Operations | | | | | | | | |
| III-1 | Incident Command Post Personnel Lodging | Incident Command Post staff should be allowed to obtain nearby lodging. | X | | X | | | |
| III-2 | Mapping Tools | Field personnel need improved maps and related support tools. | | X | | | | |
| III-3 | Inadequate Field Personnel Levels | The number of qualified field personnel was not always sufficient to meet operational objectives. | X | X | | | | |
| III-4 | Field Clothing Standards | DWR personnel should be easily recognizable when visiting or working at field sites. Additionally, clothing should meet personnel safety needs. | X | X | | | | |
| III-5 | OES Mobilization Center and Incident Command Post Coordination | Coordination between OES Mobilization Centers and DWR Incident Command Posts needs to be improved. | X | X | | | | |
| III-6 | Prerequisites for Incident Commanders | Incident Commanders must be assigned from specified job classifications under certain conditions. | X | I | | | | |
| III-7 | Field Personnel Procedures | Field personnel need an updated DWR Incident Command System Field Operations Guide. Guidelines for Flood Fight Specialists and Initial Attack Incident Commanders are also needed. | X | X | | | X | |
| III-8 | Delta Levee Emergency Response Procedures | Revise and issue the Delta Levees Water Resources Engineering Memorandum #63 and establish a better relationship between the FOC and Central District. | X | X | | | | |

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AFTER ACTION REPORT

DEBRIEFING ISSUES MATRIX

FEBRUARY 1998 FLOODS

| Issue Number | Issue Title | Issue Summary by Category | Management | Operations | Planning / Intelligence | Logistics | Finance / Administration | Other |
|-------------------------|---|--|------------|------------|-------------------------|-----------|--------------------------|-------|
| IV. Preparedness | | | | | | | | |
| IV-1 | FOC Space Requirements | JOC space use during flood emergencies needs to be reviewed. | | X | X | | | |
| IV-2 | Night Shift Workload and Staffing Level | The FOC night shift was inadequately staffed at times, resulting in work delays and a backlog of unmet objectives. | X | | X | | | |
| IV-3 | Contingency Plans - Flood Projects and Delta | Regional and local contingency plans need to be in place prior to a flood emergency. | X | | X | | | |
| IV-4 | River Forecasting Operations | The joint river forecasting operation between the Department and the National Weather Service needs to be integrated into the SEMS/ICS structure. | X | | X | | | |
| IV-5 | Shift Change Turnover | Work on critical tasks should be continuous from one shift to the next. Change of shift turnovers are necessary. | X | | X | | | |
| IV-6 | High Water Notification Calls | Criteria and call lists must be made more accessible to allow multiple personnel to make simultaneous calls. Documentation procedures need improvement. | X | | X | | | |
| IV-7 | Emergency Personnel Roster | A database of flood emergency personnel is needed to simplify the personnel acquisition and tracking during a flood emergency. | X | I | X | | | |
| IV-8 | Suisun Marsh Responsibilities | A flood contingency plan and better understanding of Department responsibilities are needed to improve the efficiency and timeliness of our response. | | | X | | | |
| IV-9 | Requests from the Public | Staff requires more guidance and training on how to respond to direct operational requests on flood control system and reservoir operations from the public. | X | | X | | | |
| IV-10 | DWR Incident Command System / Flood Emergency Operations Manual | The DWR Incident Command System, developed in 1989, and the Flood Emergency Operations Manual, last published in 1994, must be updated to Standardized Emergency Management System specifications. | X | X | | | | |
| IV-11 | PIO Role in Management Process | Information Officers need to more interaction with management to accurately prepare and disseminate information to the media and the public. | X | X | X | | | |
| IV-12 | Operations and Maintenance Emergency Support | More involvement from SWP personnel at the FOC is required with better definition of the Field Division responsibilities for operations support. | X | X/I | X | | | |

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AFTER ACTION REPORT

DEBRIEFING ISSUES MATRIX

FEBRUARY 1998 FLOODS

| Issue Number | Issue Title | Issue Summary by Category | Management | Operations | Planning / Intelligence | Logistics | Finance / Administration | Other |
|---|---|--|------------|------------|-------------------------|-----------|--------------------------|-------|
| V. Relationships and Inter-agency Coordination | | | | | | | | |
| V-1 | Legislative Interaction | Standard procedures are needed to handle inquiries from legislative offices. | X | | X | | | |
| V-2 | U.S. Army Corps of Engineers Liaison | The Corps should assign a special liaison to the Flood Operations Center with sufficient authority to approve routine Public Law 84-99 emergency requests. | X | | | | | |
| V-3 | Public Law 84-99 Coordination | More PL 84-99 emergency assistance coordination and protocols between DWR, the Corps, OES Regions and Operational Areas, and Levee Maintaining Agencies are needed. A common understanding of how the different types of assistance available under Public Law 84-99 are requested, approved, and reimbursed is necessary. | X | | | | | X |
| V-4 | Emergency Response outside Central Valley | Firm policies are needed regarding DWR's response beyond the Central Valley flood control projects and the Delta. | X | X | | | | |
| V-5 | Flood Preparedness Memorandums of Understanding | Pre-existing agreements would establish roles and guidelines for borrowing and replenishing materials, providing access to sites, requesting assistance, holding the State harmless, etc. | X | | | | | |
| V-6 | DWR Liaisons at OES REOC's | Guidelines and duty statements are needed for DWR personnel assigned as liaisons to OES Regional Emergency Operations Centers. | X | X | | | | X |
| V-7 | OES Liaison at FOC | The OES liaison at the JOC could have been better utilized, and more reliable computer support for the position is needed. | X | X | | | | X |

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AFTER ACTION REPORT

DEBRIEFING ISSUES MATRIX

FEBRUARY 1998 FLOODS

| Issue Number | Issue Title | Issue Summary by Category | Management | Operations | Planning / Intelligence | Logistics | Finance / Administration | Other |
|---------------------------------|---|--|------------|------------|-------------------------|-----------|--------------------------|-------|
| VI. Staffing and Support | | | | | | | | |
| VI-1 | Safety Officer | Safety inspections are needed at Incident Command Posts and other field locations. | X | X | | | | |
| VI-2 | Emergency Overtime | Overtime regulations and procedures, including travel and per diem, were not clear to all personnel. | | X | X | | | |
| VI-3 | Personnel Timesheets | Reporting methods for emergency personnel at the FOC and Incident Command Posts need to be established. | X | X | | X | | |
| VI-4 | Travel Advances, TEC's and Cash Purchase Vouchers | Provisions are needed to handle Requests for Travel Advances, reimbursements on Travel Expense Claims, and issuance of Cash Purchase Vouchers directly from the FOC and at field locations in an expeditious manner. | X | X | | | | |
| VI-5 | Shift Duration and Consecutive Days on Duty | Personnel work excessively long shifts and too many consecutive days without a break, resulting in risks to personnel safety and health. | X | X | X | | | |

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AFTER ACTION REPORT

DEBRIEFING ISSUES MATRIX

FEBRUARY 1998 FLOODS

| Issue Number | Issue Title | Issue Summary by Category | Management | Operations | Planning / Intelligence | Logistics | Finance / Administration | Other |
|----------------------|---|---|------------|------------|-------------------------|-----------|--------------------------|-------|
| VII. Training | | | | | | | | |
| VII-1 | SEMS/ICS | All emergency workers must receive this training, and additional staff must be trained to increase the talent pool. | X/I | X | X | | X | X |
| VII-2 | SEMS/ICS Duty Statements | Duty statements are needed for all SEMS positions. | | X | X | X | | |
| VII-3 | Flood Information Specialists | Many FIS personnel have not completed the appropriate training classes. A pool of trained FIS personnel must always be available. | | | X | | | |
| VII-4 | RIMS and FOCIS Systems | FOC and appropriate field personnel need training in the RIMS/FOCIS Lotus Notes applications. | X | | X | | X | |
| VII-5 | Flood Exercises | DWR needs to conduct annual exercises to maintain readiness and training levels for emergency response personnel. | X | X | X | X | | |
| VII-6 | California Data Exchange Center | All FOC and field personnel need a basic understanding of the information available on the California Data Exchange Center website. | | X | X | X | | |
| VII-7 | Public Information Officers | Public Information Officers need an increased understanding of California hydrology, flood control systems, the SEMS/ICS system, and decision support tools used at the FOC. | X | X | | | | |
| VII-8 | Flood Fight Methods | An increased statewide demand for Flood Fight Methods training must be met. | X | X | | | | |
| VII-9 | First Aid and CPR | Field operations require a number of staff trained in first aid and CPR. | X | | | | | |
| VII-10 | Boat Operations | On occasion, trained boat operators are required during flood emergencies. | X | | | | | |
| VII-11 | Flood Control / Delta Levee Subventions | Several emergency personnel including Section Chiefs and other key positions expressed a lack of understanding of these two subventions programs. | | | X | | | |
| VII-12 | Hydrology and Geotechnical Training | An increased level of knowledge among DWR personnel related to th hydrologic and geotechnical aspects of California's flood control systems, reservoirs, and water projects would improve our overall emergency response effectiveness. | X | X | X | | | |
| VII-13 | FEMA Guidelines | Certain legal aspects on flood fight techniques and guidance provided by DWR may be in violation of FEMA guidelines. | | X | | | | |

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CHAPTER FOUR ISSUES AND RECOMMENDATIONS

The Debriefing Issues Matrix in Chapter 3 provides a summary of all topics developed through the debriefing process. These topics were formulated to present all issues in an organized and simplified manner, and provide a tool for further analysis by the Action Teams. Since its brief format was not conducive in presenting detailed discussions and recommendations, each issue is treated in depth in this Chapter.

The issue presentation format was based on the U.S. Army Corps of Engineers', California and Nevada Flood of January 1997 AAR, South Pacific Division, June 1998. A brief explanation of the format follows.

Category: Issues were ultimately sorted into the following seven categories:

- I. Communication and Information
- II. Logistics
- III. Field Operations
- IV. Preparedness
- V. Relationships and Inter-Agency Coordination
- VI. Staffing and Support
- VII. Training

Issue Number: A two-part number which is cross-referenced directly to the Issues Matrix in Chapter 3. It includes the Category Number (I through VII) and a sequence number within each category.

Issue Title: The title of the issue as shown in the Issues Matrix.

Discussion: An expanded discussion of the Issues Matrix, "Issue Summary by Category" column. The discussion covers the main concerns raised during the debriefing process.

Recommendations: The action(s) recommended to correct deficiencies or make improvements to existing policies or procedures.

Responsible Parties: The organization(s) within the Department of Water Resources, or outside cooperating agencies, which will implement the recommendations.

Goal Category:

Critical: Issues that must be resolved prior to the 1998-99 flood season. These are shortcomings in the Department's emergency response which most limit our ability to respond to flood emergencies in a timely, efficient and complete manner, or are areas where a correction is necessary to bring DWR into compliance with standard procedures or legal requirements.

Short-Term: Issues that can be resolved by December 1, 1998.

Long-Term: Issues that require a longer period to address. A two-year period ending December 1, 2000 is initially suggested for the completion of Long-Term issues.

Ongoing: Issues that require continuous maintenance or attention from one year to the next, beginning with the 1998-99 flood season.

ISSUE TITLE: Operations – Planning/Intelligence Information Flow

Discussion: Information flow from Operations to Planning/Intelligence at the Flood Operations Center needs attention, with more frequent and timely updates. More coordination is needed on data entry and dissemination by the Response Information Management System. Additionally, the two Sections should be reviewed to determine if changes would allow improved communication.

Recommendations: The Planning/Intelligence Section will request updates from the Operations Section every two hours. The Operations Chief will brief field personnel on reporting responsibilities prior to dispatch. An overall situation briefing should be available to all FOC staff once per shift. A defined position will be created in the FOC Operations Section that will be dedicated to disseminating information to the other Sections. The two Chiefs must use span of control guidelines to allow them to interact.

The two Chiefs must decide whether Operations or Planning/Intelligence staff will update the RIMS California Levee and Flood Incident system. All Operations reports and DWR/ICS forms will be incorporated into the Flood Operations Center Information System, which will make all reports and updates available to all personnel at Lotus Notes configured workstations.

Two existing desks and workstations will be reconfigured in the Flood Center (Room 231) for the new Operations position defined above, and for a Central District Delta Liaison.

Flood Management will conduct a long-range study to determine if the Operations Section at the FOC needs additional physical space.

Responsible Parties: DFM Flood Operations Branch, Governor's Office of Emergency Services (FOCIS Development Support)

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Media Information Dissemination

Discussion: There was not always sufficient staff at field sites to address media inquiries. While field personnel were capable of interpreting the situation, they weren't always given sufficient information to discuss context and plans, or to provide statistics.

Recommendations: Public Information Officers shall disseminate information to the media as time and staff allows. If Office of Water Education personnel are unavailable or busy, trained field staff will disseminate the information, i.e., Incident Commanders, Operations Chiefs, et al.

OWE will train more people each year to be posted to field locations to meet these needs. This training must occur prior to flood season. Planning/Intelligence staff shall assist the PIO by preparing or coordinating statements for their use. OWE shall also investigate the possibility of using DWR research writers to expand the Information Officer pool.

Responsible Parties: Office of Water Education, DFM Flood Operations Branch

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Medical Plan and Unit

Discussion: Information on emergency medical services should be available to all flood emergency personnel, including the locations of the nearest hospitals, fire stations, etc. The Incident Command System recommends that Operations Sections should have a Medical Plan while Logistics Sections should have a Medical Unit.

A Geographical Information System could be used to provide demographic information. The Governor's Office of Emergency Services may have databases already developed.

Recommendations:: The Safety Officer will provide and post this information at the FOC Logistics desk and at all field locations. The format could be a list of facilities and a small map. The Safety Officer will identify, assess, and anticipate hazardous and unsafe situations, and recommend measures to ensure personnel safety. ICS Form 206 Medical Plan defining emergency medical procedures should be completed.

The Emergency Response Section will incorporate ICS forms and this data into FOCIS.

Responsible Parties: DFM Flood Operations Branch, Safety Officer, Governor's Office of Emergency Services (FOCIS Development Support)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Demobilization Procedures

Discussion: Clear demobilization procedures were not available to staff or supervisors. Many individuals returned to their regular jobs without permission or concurrence from the FOC Director.

Recommendations: A general Demobilization Plan should be developed and included in Standard Operating Procedures. It should be incorporated into FOCIS and the DWR/ICS Field Operations Guide, and placed on an Intranet web site. Personnel shall not be released without final approval from the FOC Director or delegated authority.

Responsible Parties: DFM Flood Operations Branch

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Spanish Media Outreach

Discussion: DWR may not be adequately serving California's Spanish-speaking population during a flood emergency.

Recommendations: Perform recruitment within DWR to find Spanish-fluent technical personnel with flood-related backgrounds, then train them as PIO. Also survey all county Operational Areas and OES Regions to determine those who have addressed this issue already, and establish communication lines to speed dissemination. Develop fact sheets on preventative measures to be taken prior to flooding.

Note: The U.S. Air Force's Monterey Language School is available to translate in virtually any language for a fee. FEMA may also be well-versed in this area.

Responsible Parties: Office of Water Education, EEO Office

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Operational Area Communications

Discussion: Lines of communications with county Operational Area Emergency Operations Centers and county officials should be improved.

Recommendations: Establish communications protocols with the Operational Areas so that when they activate, a link is established between the FOC Planning/Intelligence Section and each OA. These plans should be reviewed at the annual preseason flood operations and related meetings.

Responsible Parties: DFM Flood Operations Branch

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Management to Staff Information Flow

Discussion: Management needs to ensure that FOC personnel receive updates on key high-level issues.

Recommendations: The FOC Director shall conduct a special briefing for Section Chief's at least once per shift. Management shall conform to Standardized Emergency Management System protocols and chain-of-command when disseminating information and decisions.

FOCIS applications will include Incident, Situation and other reports, all ICS forms and the Incident Action Plan. These tools will contribute to a more efficient and standardized information-reporting process.

Responsible Parties: DWR Executive Staff, DFM Flood Operations Branch (FOCIS) , Governor's Office of Emergency Services (FOCIS Development Support)

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Personnel Contact Data

Discussion: Phone numbers (land, cell, pager, FAX, etc.) for emergency personnel and locations was not uniformly available.

Recommendations: A contacts / duty log database is being developed as part of the new FOCIS system to provide all FOC and field personnel with all necessary information. The Planning/Intelligence Resources Unit will maintain this database.

Responsible Parties: DFM Flood Operations Branch, Governor's Office of Emergency Services (FOCIS Development Support)

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: FOC Staff Identification

Discussion: Key FOC staff must be easily identified.

Recommendations: Key personnel shall wear colored and labeled lightweight mesh vests. DWR emergency identification cards will be issued.

Responsible Parties: DFM Flood Operations Branch (Vests), Emergency Preparedness Manager (ID's)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Incident Action Plans

Discussion: FOC Incident Action Plans contained too much status information and too little planning content. Overall content and format were inconsistent from one issue to the next, and plans took too long to produce.

Recommendations: Develop a FOCIS application to produce a consistently formatted and standardized plan. The Planning/Intelligence Section will continue to have lead responsibility for Plan preparation, but each Section, and Incident Command Posts will be able to enter their respective parts of the plan. Key personnel shall be trained in its use.

Responsible Parties: DFM Flood Operations Branch, Governor's Office of Emergency Services (FOCIS Development Support)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Lake Berryessa Telemetry

Discussion: Water surface elevation and outflow data is not available for Lake Berryessa in real time on the California Data Exchange Center. If available, this data would provide discharge data for Putah Creek, a tributary of the Yolo Bypass, which could assist in forecasts and dissemination of bypass data.

Recommendations: Evaluate the potential for acquiring this data.

Responsible Parties: DFM Hydrology Branch

Goal Category: Long-Term

Target Completion Date: December 1, 2000

ISSUE TITLE: Field Reporting to the FOC

Discussion: More timely and regular transfers of field status reports are needed.

Recommendations: Establish a policy for field units to submit reports at specified times to the FOC. Reports shall be input into FOCIS or sent by FAX to the Field Investigations Unit Leader.

Responsible Parties: Incident Command Post and field staff, DFM Flood Operations Branch (establish procedures and develop FOCIS applications) , Governor's Office of Emergency Services (FOCIS Development Support)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: CDEC Intranet Web Site

Discussion: Protection of DWR Intranet access to California Data Exchange Center (cdec4gov.water.ca.gov) during high demand needs to be ensured. Heavy demand for CDEC data during the 1997 and 1998 floods resulted in additional computer capabilities.

Recommendations: A brief report shall be prepared detailing developmental and corrective actions taken since 1997, status of CDEC systems, and plans for ongoing improvements. CDEC and Flood Operations staffs shall work together to ensure adequate performance during emergency events.

Responsible Parties: Division of Flood Management

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: U.S. Army Corps of Engineers Lotus Notes System

Discussion: Lotus Notes access between the Corps and DWR was not available in 1998. The Corps need to have a access to their daily Construction Status Reports for Public Law 84-99 assistance.

Recommendations: Establish computer communication links between the Corps and DWR Lotus Notes servers.

Responsible Parties: DFM Emergency Response Section, U.S. Army Corps of Engineers

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Flood Operations Web Site

Discussion: Many flood operations-related documents are not available over the world wide web. Intranet access, restricted to DWR or state agency computers, would provide easy access and dissemination of these documents within the flood emergency response community.

Recommendations: Modification of an existing intranet web site (DWR, California Environmental Resources Evaluation System, etc.) should be considered to provide access to key flood operations documents such as SEMS/ICS standard procedures and forms, training manuals, Directory of Flood Control Officials, Flood Emergency Operations Manual, WREM #63, etc.

Responsible Parties: DFM Flood Operations Branch, Office of Water Education

Goal Category: Long-Term

Target Completion Date: December 1, 2000

ISSUE TITLE: Public Information Officer Computers

Discussion: PIO commented that the two Macintosh systems provided for their use did not always function properly. To help OWE staff, two Macintosh systems are provided in the FOC. All other computers at the FOC are Intel-based with the Windows NT operating system. An Emergency Response Section staff member completed specialized Macintosh training required to maintain these systems.

Recommendations: The OWE shall select one of the following options. (1) Continue use of the Macintosh computers but provide detailed system and application configuration support to the Emergency Response Section. (2) Replace the Macs with Windows NT systems compatible with other FOC computers. DFM will provide training to OWE staff. Mac notebooks could be purchased by OWE for remote connectivity to office systems.

Responsible Parties: Office of Water Education, DFM Emergency Response Section

Goal Category: Long-Term

Target Completion Date: December 1, 2000

ISSUE TITLE: FOC Food Services

Discussion: Food services should be provided based on consistent criteria. More attention should be paid to food protection and health issues. Several complaints were made regarding the nutritional value and selection of food.

Recommendations: Food services will be provided whenever the FOC is activated on a 24 hour basis. The DWR Safety Officer will develop a handout on the prevention of food health hazards. Logistics shall provide preparation and cleanup personnel. DFM shall provide a feedback and request form to involve more staff in the food selection process.

Responsible Parties: DFM Flood Operations Branch, Safety Officer, Logistics Section Chief (DMS)

Goal Category: Ongoing

Target Completion Date: Beginning with 1998-99 Flood Season

ISSUE TITLE: Resource Tracking – Supplies and Equipment

Discussion: Tracking supplies and equipment was difficult since they were frequently distributed from one individual to another without coordination with the Logistics Section.

Coordination between the Logistics and Finance/Administration sections needs improvement. Logistics did not transmit several purchase orders to Finance/Administration and FEMA coordinator during 1998.

Recommendations: Establish a FOC policy that personnel receiving equipment assume all responsibility and liability to maintain and return it to the issuing authority. Failure to do so will result in appropriate action.

Finance/Administration staff will define requirements for automated input and tracking of emergency expenditures. These specifications will be used to develop appropriate tools within the FOCIS system.

Responsible Parties: Division of Flood Management

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Resources Tracking - Personnel

Discussion: Staff sometimes reported to a location without coordinating first with the Logistics Section, making tracking difficult.

Recommendations: Establish a policy that personnel must report to the Logistics Section at the assigned location each day. Develop a reporting and departing procedure checklist to be maintained by the Logistics Section. Procedures shall include appropriate protocols to include: (1) report to supervisor to receive assignment and work order number; (2) receive incident briefing from immediate supervisor, (3) acquire work materials; (4) complete required work schedule forms and reports; (5) return assigned materials to supervisor before departing.

The Emergency Response Section shall develop and maintain a FOCIS application for personnel assignment and tracking. Once the Logistics Section assign personnel, the Planning/Intelligence Section will track their whereabouts.

Responsible Parties: DFM Flood Operations Branch, Governor's Office of Emergency Services (FOCIS Development Support)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Personal Telecommunications Equipment

Discussion: Section Chiefs and other key personnel at the FOC and Incident Command Posts may need to have cellular phones and pagers assigned to them, especially for those traveling between the field and FOC.

Recommendations: Logistics should continue distribution and inventory tracking of cell phones and pagers at the request of FOC Management and Section Chiefs. All assigned phone and pager numbers will be input into the FOCIS personnel tracking system.

Responsible Parties: Logistics Section (Telecommunications Office)

Goal Category: Ongoing

Target Completion Date: Beginning with 1998-99 Flood Season

ISSUE TITLE: Vehicle Availability

Discussion: A sufficient number of properly equipped vehicles must be available at the FOC and Incident Command Posts during a flood event.

Four-wheel drive vehicles are frequently used by personnel who may not have had four-wheel drive training.

Recommendations: Vehicles should be staged at the FOC and ICP's as directed by the FOC Logistics Section with Management approval and closely coordinated with the Operations Section to ensure efficiency.

DFM will work with the Training Office to develop a four-wheel drive training course.

Responsible Parties: Mobile Equipment Office, DFM Flood Operations Branch, Training Office

Goal Category: Ongoing

Target Completion Date: December 1, 2000 (Training Course)

ISSUE TITLE: Equipment and Supply Vendor Data

Discussion: Easily accessible and widely disseminated lists of flood equipment and supply vendors were not available during the 1998 floods.

The Flood Emergency Operations Manual included this information, but since the manual was not annually revised, the data became outdated.

Recommendations: The Division of Flood Management will develop a new list with assistance from the Purchasing Office, Flood Management Maintenance Yards, Division of Planning and Local Assistance, Operations and Maintenance Field Divisions, Division of Engineering, and the Corps of Engineers. The new list will be included in the FOCIS system, and should be added to any Flood Operations Intranet site developed.

Responsible Parties: DFM Flood Operations Branch

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Notebook Computers

Discussion: Properly configured notebook computers must be assigned to DWR liaison personnel at the OES' Regional Emergency Operations Centers, Operational Area Emergency Operation Centers, and for staff working at DWR Incident Command Posts.

Recommendations: Purchase or borrow pre-configured notebook computers for use during flood season. Standard information technology support requirements and procedures will be developed for Incident Command Posts and other field locations.

Responsible Parties: Division of Flood Management

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: FOC Copiers

Discussion: DFM's regular copier at the Joint Operations Center broke down under increased load during the 1997 and 1998 flood emergencies. A copier was borrowed from the National Weather Service during 1998.

Recommendations: Purchase or lease a second copier to meet the increased needs. The existing copier should have a tune-up at the onset of each flood season.

Responsible Parties: Division of Flood Management

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Joint Operations Center Security

Discussion: Improved security measures at the FOC are needed, including more cardkeys and security escorts to vehicles.

A flood emergency depletes the allotment of temporary security access cards. Personnel have repeatedly requested escorts to their cars at night. Additional security personnel have been added, but assigned hours have been inconsistent from one event to another, and within a given event. Security guards have been inconsistent in identification checking procedures.

Recommendations: 24-hour security services shall support 24-hour FOC activation, no exceptions. Written specifications shall be developed for emergency security personnel. Standards for extended hour operations will be addressed. Both DFM and O&M at the JOC shall assess the situation and acquire a sufficient number of security access cards. Escort to vehicles will be provided at night upon request.

Responsible Parties: DFM Flood Operations Branch

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: JOC Personnel Support Services

Discussion: The regularly contracted janitorial, security and other JOC support services must be increased during a flood emergency.

Increased garbage and recycled paper pickup, bathroom cleaning, and security services are necessary whenever the FOC is activated on 24-hour operations.

Recommendations: DFM will develop written procedures to use upon FOC activation to request additional support services.

Responsible Parties: Division of Flood Management

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: JOC Television Media Support

Discussion: The Joint Operations Center was built with live television capability from the Media Room. Broadcast support vehicles are connected from the south parking lot to the Media Room. In the 1997 floods, some stations requested that we allow them to set up portable microwave relay equipment in the building. This was allowed in 1998. Since cables must be run along the floor from the media room several hundred feet to a stairwell, this creates a safety hazard and security risk.

Recommendations: The DFM Emergency Response Section will work with Division of Operations & Maintenance personnel, the Telecommunications Office and the JOC building manager to complete additional in-floor wiring for these connections and eliminate the safety and security risks.

Responsible Parties: DFM Emergency Response Section, Division of Operations and Maintenance

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Mobile Trailers

Discussion: Mobile trailers are needed at field locations which are equipped with all necessary telecommunication and computer equipment i.e., phones, radios, FAX, pagers, notebook computers, mapping tools, etc.

Recommendations: California Department of Forestry and Fire Protection communications trailers shall be used as a matter of procedure. Resource requests will be made through the OES, or to CDF for short-duration incidents. The Telecommunications Office will assist Flood Management to develop cost estimates for leasing trailers on a long-term basis.

Responsible Parties: DFM Flood Operations Branch

Goal Category: Long-Term

Target Completion Date: December 1, 2000

ISSUE TITLE: Resource Requests – Supplies and Equipment

Discussion: Procedures are needed for issuing and coordinating resource requests between field and FOC Operations Sections, and the Logistics Section.

Operations Section personnel will initiate requests for resources in the field. Requests must be made with sufficient detail to be easily understood by Logistics Section personnel.

A joint guideline between DFM and Central District for predeployment of flood fight materials is needed.

Recommendations: Field operations personnel, under direction from the FOC, will initiate resource requests to field Logistics Section personnel. These requests will be relayed to the FOC Logistics Section, which in turn will coordinate requests with the FOC Operations Section.

These procedures will be added to the DWR Incident Command System Field Operations Guide (DWR/ICS 420-1).

Key personnel from the Operations and Logistics sections will hold a preseason planning meeting to apply these recommendations.

Responsible Parties: DFM Flood Operations Branch, Logistics Staff (DMS)

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Resource Requests - Personnel

Discussion: No written procedures are available for requesting emergency personnel within DWR. Details are needed including: (1) requesting staff to temporarily leave their regular job; (2) obtaining supervisory approval; (3) releasing staff from emergency duty; (4) providing relief days off; and (5) calling staff back for additional duty.

The experience and background of personnel should be considered when making requests. Certain tasks, such as Geographical Information System support, computer skills, information dissemination, etc. require specialized training or experience.

Recommendations: DFM will draft procedures for review by Management. Once approved, they will become Standard Operating Procedures.

The FOCIS Personnel Database and Tracking application will contain the previous flood emergency and training histories of personnel to help meet this need.

Responsible Parties: DFM Flood Operations Branch, Emergency Preparedness Manager

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Emergency Work Orders

Discussion: The divisions of Flood Management, Operations and Maintenance, Planning and Local Assistance, Safety of Dams, and Engineering need assigned emergency work orders to track emergency preparedness and response expenditures.

Recommendations: Work orders should be assigned at the beginning of each fiscal year to track potential emergency preparedness and response expenditures.

Responsible Parties: DFM Administrative Office, DFM Flood Operations Branch Chief

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Incident Command Post Personnel Lodging

Discussion: Personnel assigned to Incident Command Posts frequently need to acquire lodging away from home. Trips between home and field posts hamper timely arrival to the job, and may become a safety consideration for personnel working extended hours.

Recommendations: The DWR Incident Command System Field Operations Guide (DWR/ICS 420-1) will be updated to include a new policy allowing personnel lodging. Regular travel procedures may require amendment to cover emergency requirements.

Responsible Parties: DFM Flood Operations Branch

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Mapping Tools

Discussion: Field personnel expressed a need for improved maps. Expansion of GIS capabilities in the Division of Flood Management will improve this situation with the use of notebook computers. Various hard copy maps including Levee Plates, California State Automobile Association highway maps, Thomas Bros. Maps, etc. are useful.

Recommendations: Flood Management will quantify mapping support needs. Paper maps will be purchased. GIS field access capabilities will be added to laptop computers as technology and funding allow.

Responsible Parties: Division of Flood Management

Goal Category: Short-Term (paper-based), ongoing (GIS-based)

Target Completion Date: December 1, 1998 (paper-based)

ISSUE TITLE: Inadequate Field Personnel Levels

Discussion: The number of qualified field personnel was not always sufficient to meet operational objectives.

Recommendations: Incident Commanders, with Logistics Section support, are responsible for the needs of their personnel and for articulating requests to the FOC Operations Chief. The Operations Chief is responsible for balancing the personnel needs of all Incident Command Posts and other field sites and coordinating personnel assignments with the FOC Logistics Chief. FOC Management will provide overall support and ensure personnel are released from their regular jobs to perform emergency duties.

As discussed in Issue II-15, the Division of Flood Management will draft procedures for requesting personnel. Once approved, they will become Standard Operating Procedures.

Responsible Parties: FOC Operations Chief and Field Incident Commanders

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Field Clothing Standards

Discussion: DWR personnel should be easily recognizable when visiting or working at field sites. Additionally, clothing should meet personnel safety needs.

Recommendations: At a minimum, reusable raingear and hats with the DWR logo will be temporarily issued to field personnel during check-in at the FOC, Incident Command Posts and other field sites. Sufficient gear must be available to accommodate DWR personnel temporarily visiting field sites. Personnel will return all gear at the completion of work.

Responsible Parties: Division of Flood Management

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: OES Mobilization Center and Incident Command Post Coordination

Discussion: Coordination between OES Mobilization Centers and the DWR FOC and Incident Command Posts need to be improved. Confusion about communication, coordination and responsibility issues between the Madera Mobilization Center and the San Luis Incident Command Post were symptomatic of this issue. Lines of communication and a supervisor's span of control must be considered.

Recommendations: A meeting will be scheduled with DWR and OES to develop new procedures.

Responsible Parties: Emergency Preparedness Manager, Governor's Office of Emergency Services

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Prerequisites for Incident Commanders

Discussion: Inspectors from the Division of Flood Management, Flood Project Inspection Section are frequently dispatched as the initial responder to field incidents, and initially assume the duty of Incident Commander. Their work experience is better suited for the position of Operations Chief in large-scale SEMS/ICS incidents.

Recommendations: Appropriately experienced personnel, regardless of job classification, may be dispatched as the first responder. They may serve as "Initial Attack Incident Commander (see Issue III-7) until the incident escalates where the services of support personnel outside the Division of Flood Management are required. At such time, the Incident Commander shall be a Senior Engineer, Water Resources classification or higher. These individuals must have completed SEMS/ICS training and possess supervisory or management experience.

Responsible Parties: DFM Flood Operations Branch

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Field Personnel Procedures

Discussion: All field personnel should be provided with or have access to a current version of the DWR Incident Command System Field Operations Guide (DWR/ICS 420-1). The handbook should include all SEMS/ICS field position descriptions.

Recommendations: The DWR/ICS Field Operations Guide will be updated with respect to SEMS and will include information and guidelines for Incident Command Posts. The handbook will be distributed to all Incident Commanders and appropriate Managers and Supervisors. A section on health hazards and their prevention will also be added to the Safety Officer duties.

A new document "Guidelines for DWR Flood Fight Specialist / Initial Attack Incident Commander" will be developed. All field personnel who worked the 1995, 1997, and 1998 floods need to be trained as soon as possible in SEMS/ICS.

These documents will be added to Standard Operating Procedures in FOCIS, and should be added to any Flood Operations Intranet site developed.

Responsible Parties: DFM Flood Operations Branch

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Delta Levee Emergency Response Procedures

Discussion: Many Delta region responsibilities have been historically assigned to the Central District of the Division of Planning and Local Assistance, including year-round assistance through the Delta Levee Subventions Program. There has been some debate over how to best implement emergency response procedures, under SEMS, during an escalating flood emergency.

Recommendations: Update and issue the Delta Levees Water Resources Engineering Memorandum #63. Continue cooperative efforts between Central District and the Division of Flood Management, and other related DWR units.

Responsible Parties: DPLA Central District, DFM Flood Operations Branch

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: FOC Space Requirements

Discussion: Use of JOC space during flood emergencies needs to be reviewed. During a large flood event, office space at the FOC becomes tight. The Logistics and Finance/Administration Sections have been squeezed into small spaces, and the Operations Section has expressed a desire for additional space.

Recommendations: Flood Management shall designate space for the Logistics and Finance / Administration Sections as close as possible to the Planning/Intelligence and Operations Sections in and adjacent to the Flood Center (Room 231).

When Operations Section personnel arrive, the regular Emergency Response Section staff must relinquish their six work areas and relocate to Room 231. Flood Management shall reconfigure the Library to support additional Operations Section personnel.

Flood Management will work with the Division of Operations and Maintenance and others to determine if additional space within the building can be borrowed during an emergency. If this is not possible or if more space is required, Flood Management will investigate leasing a trailer to be moved on site.

On a long-term basis, Flood Management shall investigate relocating the Flood Project Inspection Section to the Joint Operations Center, co-locating the Flood Operations Branch in one location.

Responsible Parties: Division of Flood Management

Goal Category: Finance/Administration, Logistics and Library (Short-Term), Trailer, Inspection Section (Long-Term).

Target Completion Date: December 1, 1998, December 1, 2000

ISSUE TITLE: Night Shift Workload and Staffing Level

Discussion: The FOC night shift was inadequately staffed at times, resulting in work delays and a backlog of unmet objectives. Most decisions on staffing levels are made during the day shift. Clear understanding of night shift staffing requirements is essential.

Recommendations: Increase night shift staffing levels accordingly, and establish Standard Operating Procedures to determine personnel requirements. Since night shift personnel make the greatest personal sacrifices, last minute changes to staffing levels must be avoided. Specific written procedures must be developed to address this.

The Emergency Response Section will develop and maintain a FOCIS application for personnel assignment and tracking. Once the Logistics Section has acquired personnel, the Planning/Intelligence Section will track them. This tool will include historical data on previous night shift workers.

Responsible Parties: DFM Flood Operations Branch, Governor's Office of Emergency Services (FOCIS Development Support)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Contingency Plans – Flood Projects and Delta

Discussion: The floods of 1997 and 1998 raised awareness that a timely, efficient, and well-coordinated emergency response is difficult without established regional and local contingency plans in place prior to a flood emergency.

Recommendations: A new position has been proposed in the Division of Flood Management Flood Operations Branch to provide technical guidance to local levee maintaining agencies in their development of flood fight contingency plans.

The divisions of Planning and Local Assistance and Operations and Maintenance, should work with Flood Management to perform a risk analysis of statewide flood potentials. This analysis will prioritize areas where detailed plans would be valuable.

Responsible Parties: Divisions of Flood Management, Operations and Maintenance, and Planning & Local Assistance

Goal Category: Long-Term

Target Completion Date: December 1, 2000

ISSUE TITLE: River Forecasting Operations

Discussion: The joint river forecasting operation between DWR and the National Weather Service needs to be integrated into the SEMS/ICS structure. An Automated Weather Information Processing System (AWIPS) is being installed in the Flood Center. NWS personnel must be available to operate it during flood emergencies.

Recommendations: Upon issuing a river forecast bulletin, a designated liaison to the FOC should provide a quick briefing of background information and assumptions included in the forecast analysis, and if deviations to the scheduled update are possible.

The role of the Chief Hydrologist should be integrated into the SEMS/ICS structure as a Technical Specialist. His unique experience should be used to assist with long-range planning, executive level situation reporting, and with media briefings and advisories.

Finally, the NWS Service Hydrologist and key staff from the DFM Hydrology Branch, the NWS River Forecast Center should attend SEMS/ICS training as soon as possible.

Responsible Parties: DFM Hydrology and Flood Operations Branches, National Weather Service

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Shift Change Turnover

Discussion: Work on critical tasks should be continuous from one shift to the next. FOC operations in 1998 were performed by two 13-hour shifts with an hour overlap from 7 AM to 8 AM and 7 PM to 8 PM. At some Incident Command Posts, an overview of incident status reports from Strike Team leaders was provided at the end of each shift.

Recommendations: Section Chiefs, Incident Commanders and other key duty personnel shall provide a turnover debriefing during the hour overlap between shifts to incoming counterparts.

Within each section, follow-up on planned objectives and other key tasks must still be addressed even when personnel must react to changing conditions. New FOCIS applications will help to streamline and speed the turnover process.

Responsible Parties: Section Chiefs, IC's

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: High Water Notification Calls

Discussion: More accessible criteria and call lists are required to allow multiple personnel to make calls simultaneously. Documentation procedures need to be improved.

Recommendations: Lists shall be converted from the current format to the new FOCIS System, which will provide all RIMS/FOCIS equipped workstations access to the Notification Call procedures and logs. Updates will be made whenever new contact information is received.

Long-term – The Emergency Response Section will continue to evaluate the development and use of automated call services in the emergency response community.

Responsible Parties: DFM Emergency Response Section, Governor's Office of Emergency Services (FOCIS Development Support)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Emergency Personnel Roster

Discussion: A roster or database of experienced and potential DWR flood emergency personnel would improve the personnel selection process during an emergency. Section Chiefs need to be able to review past emergency duty experience when making personnel requests. The SEMS/ICS and other flood training history of DWR personnel should also be included in the database. Experience has shown that the candidate pool of trained emergency workers should be at least three or more times than the number of positions available.

Recommendations: The FOCIS Personnel-Tracking application under development by Flood Management shall include a personnel roster. This application will be used to select personnel, and track their job assignments during an emergency. Flood Management will maintain the roster and training history year-round. Retired annuitants and key agency liaisons will also be included.

DWR's Training Office will provide flood-related training histories to DFM to develop the database. Flood emergency training should not be considered part of an employee's training allotment. Training costs are borne by the employees regular program work authority. Predeployment funds, if available, may be used to offset training costs.

Responsible Parties: Division of Flood Management and Training Office (FOCIS), DWR Management (policy-level support)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Suisun Marsh Responsibilities

Discussion: The 1998 emergency levee repairs in the Suisun Marsh required new cooperative arrangements between DWR, the Corps and the U.S. Bureau of Reclamation, with respect to Public Law 84-99. Failures of Marsh levees have potentially serious operational impacts to the State Water Project and Central Valley Project. A flood contingency plan and better understanding of DWR's responsibilities would have improved the efficiency of our response.

Recommendations: In addition to the Corps and Bureau, DWR divisions including DFM, O&M, DPLA and ESO shall work together to develop a contingency plan. A single lead agency shall be defined to coordinate flood emergency responses. Funding responsibilities shall be defined and should address CALFED, AB 360/Delta Levees Program, Corps Public Law 84-99 emergency assistance, USBR, etc.

Responsible Parties: Emergency Preparedness Manager, Divisions of Planning & Local Assistance (Central District), Operations and Maintenance, and Flood Management

Goal Category: Long-Term

Target Completion Date: December 1, 2000

ISSUE TITLE: Requests from the Public

Discussion: Staff require more training about how to better respond to operational requests on flood control and reservoir systems from the public. Commonly received requests include opening the Sacramento Weir and adjusting reservoir releases.

Recommendations: Flood Management shall develop a written procedure for handling Sacramento Weir requests. Other requests shall be referred to PIO or operations personnel at the agencies involved. Also refer to Director Kennedy's January 7, 1997 memo to Division and Office Chiefs outlining the Department's approach to informal requests for informational assistance.

Responsible Parties: DFM Flood Operations Branch

Goal Category: Short-Term

Target Completion Date: December 1, 1998

**ISSUE TITLE: DWR Incident Command System / Flood
Emergency Operations Manual**

Discussion: The DWR Incident Command System, developed in 1989, and the Flood Emergency Operations Manual, last published in 1994, has not been updated with respect to SEMS. The Manual describes the relationship between the DWR Incident Command System and the FOC, and explains the coordination of federal, State and local agency activities in the Center during a flood emergency.

Recommendations: Update the DWR/Incident Command System and the Flood Emergency Operations Manual to include procedural changes resulting from SEMS implementation, and establish other written guidelines if necessary. Flood Management shall update the manual's mailing list, and all new and revised documents shall be placed into the new FOCIS System, and added to any Flood Operations Intranet web site developed.

Responsible Parties: DFM Flood Operations Branch, Governor's Office of Emergency Services (FOCIS Development Support)

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: PIO Role in Management Process

Discussion: PIO have requested that they be included in informational briefings and allowed to observe the emergency management decision-making process, so that they are better able to prepare and disseminate information to the media and public.

Recommendations: Management shall provide regular briefings to the Public Information Officers. Technical experts within Flood Management and other Divisions and Offices should assist PIO's in the preparation of media releases and other statements. New FOCIS applications will standardize reporting formats and content to improve report preparation and dissemination activities.

Responsible Parties: Management Staff, DFM Flood Operations Branch (FOCIS), Office of Water Education

Goal Category: Ongoing

Target Completion Date: December 1, 1998 (FOCIS)

ISSUE TITLE: Operations and Maintenance Emergency Support

Discussion: The Division of Flood Management depends on support throughout the Department during a flood emergency. More direct participation from State Water Project Operations personnel would improve daily situation and media briefings at the FOC. A clear definition of Field Division responsibilities when supporting Incident Command Posts is needed.

Recommendations: Emergency responsibilities for Division of Operations and Maintenance units must be defined.

Responsible Parties: Emergency Preparedness Manager, Divisions of Flood Management and Operations and Maintenance

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Legislative Interaction

Discussion: Standard procedures are needed to handle inquiries from legislative offices.

Recommendations: DWR Management must provide clear direction on protocol and procedures required to handle these inquiries. This direction must include any existing procedures. Coordination with the Legislative Office is necessary.

Responsible Parties: Emergency Preparedness Manager, Legislative Office

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: U.S. Army Corps of Engineers Liaison

Discussion: The Corps recommended that a special Corps liaison be assigned to the FOC with sufficient authority to approve routine Public Law 84-99 emergency requests.

Recommendations: The Department will request that the Corps consider this issue.

Responsible Parties: Division of Flood Management, U.S. Army Corps of Engineers

Goal Category: Critical

Target Completion Date: December 1, 1998

**ISSUE TITLE: Public Law 84-99 Emergency Assistance
Coordination**

Discussion: More Public Law 84-99 emergency assistance coordination and protocols between DWR, the Corps, OES Regions and Operational Areas, and Levee Maintaining Agencies are needed. The understanding of the assistance available and how it is approved and reimbursed must be increased. Flood Operations personnel from DWR and other emergency response agencies have conducted numerous pre-season flood control meetings to raise awareness of Public Law 84-99.

Recommendations: Distribute "Guidelines for Coordinating Flood Emergency Operations", developed by OES and DWR, at pre-season flood operations meetings. Link the web version of this document to any Flood Operations web site developed, and add it to the new FOCIS System.

DWR, the Corps and OES should review existing written guidelines and procedures on Public Law 84-99 assistance. These materials shall be distributed to the above agencies (the mailing list for the Directory of Flood Control Officials should help to meet this need). All current and new informational documentation should be reviewed for inclusion in the new FOCIS System, and in any Flood Operations web site developed. The Public Law 84-99 presentation used at pre-season meetings shall be updated to reflect recent experience.

Responsible Parties: Division of Flood Management, U.S. Army Corps of Engineers, , Governor's Office of Emergency Services

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Emergency Response outside the Central Valley

Discussion: Policies are needed regarding DWR's response beyond the Central Valley flood control projects and the Delta.

Recommendations: Research the Department's flood response history outside of these areas and develop guidelines and policies with input from DPLA and O&M.

Responsible Parties: Emergency Preparedness Manager, Divisions of Planning & Local Assistance, and Flood Management

Goal Category: Long-Term

Target Completion Date: December 1, 2000

ISSUE TITLE: Flood Preparedness Memorandums of Understanding

Discussion: Maintaining Agencies should provide materials and the lands and rights of way to support emergency activities. Pre-existing agreements would; establish roles and guidelines for borrowing and replenishing materials, provide access to sites, define how assistance is requested, hold the State harmless, etc.

Recommendations: Develop Memorandums of Understanding between the Department and Levee Maintaining Agencies. These agreements will be reviewed at all pre-season flood operations meetings.

Distribute “Flood Preparedness Guide for Levee Maintaining Agencies”, developed by OES and DWR, at preseason flood operations meetings. Link the web version of this document to Flood Operations web site, and add it to the new FOCIS System.

Responsible Parties: Division of Flood Management, Office of Water Education

Goal Category: Long-Term

Target Completion Date: December 1, 2000

ISSUE TITLE: DWR Liaisons at OES Regional EOC's

Discussion: Guidelines and duty statements are needed for DWR personnel assigned as liaisons to the OES Regional Emergency Operations Centers for Inland (Sacramento), Coastal (Oakland) and Southern (Los Alamitos) regions.

Recommendations: Develop guidelines with checklists with OES. This information will be incorporated into FOCIS.

Responsible Parties: Emergency Preparedness Manager, DFM Emergency Response Section

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: OES Liaison at the FOC

Discussion: The OES liaison assigned to the FOC could have been better utilized.

OES liaisons provided feedback that the computer assigned to them was not sufficiently configured to perform their work. This system was reconfigured when the emergency began. As a result, some applications may not have been working correctly.

Recommendations: Cross-training of OES Liaisons should be held in conjunction with Flood Information Specialist and RIMS/FOCIS training classes.

The Emergency Response Section shall complete all FOC computer configurations prior to the flood season.

Responsible Parties: DFM Flood Operations Branch, Governor's Office of Emergency Services (RIMS/FOCIS Training Support)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Safety Officer

Discussion: Safety inspections are needed at Incident Command Posts and other field locations.

Recommendations: The Safety Officer shall visit each field location upon activation. The Safety Officer duty description in the DWR/ICS Field Operations Guide shall be updated to include this and any other new requirements.

Responsible Parties: FOC Chief and Safety Officer

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Emergency Overtime

Discussion: Emergency overtime procedures were not clear to all personnel. A single authority needs to establish procedures. This should apply to travel and per diem issues as well. Timekeeping and reporting could be easily incorporated into FOCIS.

Recommendations: Procedures for reporting overtime and shift differentials during a flood emergency should be developed by the Personnel Office and reviewed by Labor Relations. A written policy for handling overtime (hardship) pay for Managers and Supervisors shall be established.

Established procedures will be incorporated into FOCIS Standard Operating Procedures.

Responsible Parties: DFM FEMA Coordinator (procedures), DFM Emergency Response Section (FOCIS)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Personnel Timesheets

Discussion: Time reporting methods for emergency personnel at the FOC and Incident Command Posts need to be established.

Recommendations: A handout should be given to all personnel reporting for duty. The handout should be incorporated into FOC Standard Operating Procedures within FOCIS and the DWR/ICS Field Operations Guide.

Responsible Parties: DFM FEMA Coordinator (handout), DFM Emergency Response Section (FOCIS)

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Travel Advances, TEC's and Cash Purchase Vouchers

Discussion: Provisions are needed to handle Requests for Travel Advances, Travel Expense Claim reimbursements, and issuance of Cash Purchase Vouchers from the FOC and field locations in an expeditious manner. Delays would be minimized and field personnel could be dispatched more quickly. Accounting personnel would not have to come to the FOC to prepare checks.

Recommendations: Flood Management shall develop procedures for obtaining temporary authorizations to handle these items during an emergency. The Accounting Office shall assist in developing these procedures.

Responsible Parties: DFM FEMA Coordinator, Accounting Office

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Shift Duration and Consecutive Days on Duty

Discussion: Emergency personnel frequently work excessively long shifts and too many consecutive days without a break, resulting in risks to personal safety and health. Having a candidate pool of trained emergency workers at least three or more times the number of required positions could help minimize this situation. If this experience were applied, employee burnout would be minimized increasing both safety and efficiency.

Recommendations: Establish guidelines that limit personnel from working more than 10 to 14 consecutive hours and ensure adequate staffing on all shifts. This policy should limit the number of consecutive days worked, which would include time at emergency and regular job locations. Personnel must leave at the end of their shift to get adequate rest. The Planning/Intelligence Section shall track personnel time and alert Section Chiefs when personnel near these limits.

The Department shall continue to increase the number of personnel trained in flood emergency procedures so that a limited number of individuals are not always relied upon during an emergency.

Responsible Parties: Emergency Preparedness Manager, Safety Officer

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: SEMS / Incident Command System

Discussion: All emergency workers must receive SEMS/ICS training as soon as possible, and additional staff must be trained to increase the talent pool.

Recommendations: Training for key staff, FOC Managers, Section Chiefs, Incident Commanders, Information Officers and first responders must be completed prior to the 1998-99 flood season.

Flood Management, with assistance from the Emergency Preparedness Manager and the Training Office, shall refine the initial candidate list developed in 1997. The Training Office shall continue to schedule the training and coordinate classes.

The Emergency Preparedness Manager should issue a memo to all Department personnel, which explains the evolution of the SEMS/ICS training process and defines how personnel are selected to take the courses.

Flood Management will track personnel SEMS/ICS training histories with the FOCIS Personnel Tracking application under development.

Most of the SEMS/ICS training modules have been developed using Microsoft's PowerPoint application. These modules shall be added to the proposed Flood Operations Intranet site.

A training module on DWR-specific Finance/Administration Section-related issues including timesheets, overtime procedures and FEMA-required supporting documentation shall be added to the SEMS/ICS training program.

Responsible Parties: Division of Flood Management, Emergency Preparedness Manager, Training Office

Goal Category: Critical to ongoing

Target Completion Date: December 1, 1998 (Key staff)

ISSUE TITLE: SEMS/ICS Duty Statements

Discussion: Duty statements are needed for all SEMS positions.

Recommendations: The DWR Incident Command System Field Operations Guide (DWR/ICS 420-1) shall be revised to include all SEMS/ICS duty statements. Flood Management shall develop duty statements using existing OES and DWR/ICS duty statements as guidelines. Position statements will be incorporated into Standard Operating Procedures and added to the FOCIS System. They shall also be included in any Flood Operations Intranet site under consideration.

Responsible Parties: DFM Flood Operations Branch

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Flood Information Specialists

Discussion: Many FIS personnel have not completed the appropriate training classes.

Recommendations: Conduct annual training to maintain a trained specialist pool. Experience has found that in order to staff each shift with six or more specialists for an extended event, three to four dozen people must be available within DWR.

The Emergency Response Section is updating the existing FIS course. Classes will be scheduled during the fall of 1998 for experienced personnel, new recruits, and Public Information Officers. Students will also take a RIMS/FOCIS course, and a CDEC website refresher.

Responsible Parties: DFM Emergency Response Section, Governor's Office of Emergency Services (RIMS/FOCIS Training Support)

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Response Information Management and FOC Information Systems

Discussion: FOC and appropriate field personnel need training in the RIMS/FOCIS applications. RIMS is a set of Lotus Notes applications developed by OES and used at the FOC in 1998. FOCIS is a new set of Lotus Notes applications under development by DWR with OES assistance. The combined RIMS/FOCIS tools will automate, streamline and increase the efficiency of many routine event reporting and resource tracking tasks at the FOC and in the field. Emergency Response Section and OES personnel are developing a joint RIMS/FOCIS training class.

Recommendations: Complete initial FOCIS system development and hold training classes for key personnel prior to the 1998-99 flood season.

Responsible Parties: DFM Emergency Response Section, , Governor's Office of Emergency Services (RIMS/FOCIS Training Support)

Goal Category: Critical

Target Completion Date: December 1, 1998

ISSUE TITLE: Flood Exercises

Discussion: DWR needs to conduct periodic emergency response training exercises. This issue has been presented to the DWR Emergency Preparedness Coordinator for action, and a planning committee is being developed.

Recommendations: Hold an exercise prior to the 1998-99 flood season, which involves representatives from OES, the Corps, O&M, USBR, CDF, California Conservation Corps and other key flood response officials.

Responsible Parties: Emergency Preparedness Manager, DFM Flood Operations Branch

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: California Data Exchange Center

Discussion: All FOC and field personnel need an understanding of the information available on the California Data Exchange Center website. Many people from outside the Division of Flood Management do not use CDEC regularly, and have not been trained in its use.

Recommendations: The Emergency Response Section shall work with CDEC staff to develop a comprehensive flood-oriented training class. CDEC personnel provide a short orientation course that could be expanded to meet this need. A CDEC refresher will be included in Flood Information Specialist classes.

Responsible Parties: DFM Emergency Response Section and Hydrology Branch

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Public Information Officers

Discussion: To maximize job performance, PIO need an increased understanding of California hydrology, flood control systems, the SEMS/ICS system, and all decision support systems and tools used at the FOC.

Recommendations: PIO shall complete all SEMS/ICS Training detailed in Issue VII-1, and the FIS/RIMS/FOCIS/CDEC training courses detailed in Issues VII-3, VII-4 and VII-6.

A preseason coordination and planning meeting shall be held between the Division of Flood Management, the Emergency Preparedness Manager and the Office of Water Education to discuss key coordination issues.

Responsible Parties: Division of Flood Management, Emergency Preparedness Manager, Office of Water Education

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: Flood Fighting Methods

Discussion: The Department offers Flood Fighting Methods training to agencies statewide, in addition to its own personnel. Local agencies are making an increasing number of training requests with an overwhelming demand during the El Niño fall and winter of 1997-98.

More DWR staff should receive the training, and more trainers must be developed to teach it.

Recommendations: Flood Management shall begin scheduling classes in the summer to manage the increasing number of training requests and to complete training prior to mid-December, without impact to flood season.

The Emergency Preparedness Manager shall write a memo for the Deputy Director's signature to all Division, Branch, Section and Office Chiefs to support this training, and shall consider funding to cover flood fight instructor expenditures for personnel outside of DFM. DFM must budget for expenses by its trainers.

The Training Office shall assist DFM as necessary. This training shall also be tracked by the new FOCIS Personnel application.

Responsible Parties: Division of Flood Management (training), Emergency Preparedness Manager (coordination and funding issues), Training Office

Goal Category: Short-Term

Target Completion Date: December 1, 1998

ISSUE TITLE: First Aid and CPR

Discussion: Field operations would benefit from an increased number of staff trained in first aid and CPR.

Recommendations: A list of field-experienced personnel shall be developed with training to follow. The Training Office shall schedule classes and trainers.

Responsible Parties: Safety Officer, Training Office

Goal Category: Ongoing

Target Completion Date: Beginning 1998-99 Flood Season

ISSUE TITLE: Boat Operations

Discussion: On occasion, trained boat operators are required during flood emergencies.

Recommendations: Supervisors in the Divisions of Flood Management, Operations and Maintenance, and Planning and Local Assistance should recommend that appropriate personnel take this Department course.

Responsible Parties: First Line Supervisors in DFM, O&M and DPLA

Goal Category: Ongoing

Target Completion Date: Beginning 1998-99 Flood Season

ISSUE TITLE: Flood Control / Delta Levee Subventions

Discussion: Several emergency personnel including Section Chiefs expressed a lack of understanding of these two subventions programs. An increased awareness, including how these programs inter-relate to contingency plans and emergency assistance coordination, would improve DWR's ability to respond in a timely and efficient manner.

Recommendations: The Division of Flood Management, Central District, and the Reclamation Board should develop an overview course. A video should be developed to increase awareness.

Responsible Parties: Division of Flood Management, DPLA Central District, Reclamation Board

Goal Category: Long-Term

Target Completion Date: December 1, 2000

ISSUE TITLE: Hydrology and Geotechnical Training

Discussion: An increased level of knowledge among DWR personnel related to the hydrologic and geotechnical aspects of California's flood control systems, reservoirs, and water projects would improve our overall emergency response effectiveness.

Recommendations: Flood emergency workers involved in information dissemination should take DWR's Hydrology Basics course. DFM should upgrade the course to provide a broader view of California hydrology and flood control systems.

Flood emergency inspection personnel should take DWR's "Geotech Short Course".

More consideration shall be given to the background and experience of personnel when making position assignments for flood emergency duty. The new FOCIS Personnel Resource Tracking application shall be used to track personnel training and flood emergency experience histories.

Responsible Parties: DWR Management (support of training). Division of Flood Management (Hydrology Basics Course and FOCIS)

Goal Category: Ongoing

Target Completion Date: December 1, 1998 (FOCIS)

ISSUE TITLE: FEMA Guidelines

Discussion: Certain legal aspects on flood fighting techniques provided by DWR may be in violation of FEMA guidelines.

Recommendations: Flood Management shall list concerns and request the Legal Office review and provide comment.

Responsible Parties: Division of Flood Management, Legal Office

Goal Category: Short-Term

Target Completion Date: December 1, 1998

APPENDIX A

**DEBRIEFING FEEDBACK
QUESTIONNAIRE**

February 1998 Flood Debriefing
Staff Comment Form

Please complete this form and return it using inter-office mail, FAX or Email. Use the back of the form or multiple sheets if necessary. Please call (916) 574-2619 if you have any questions.

Note: Send completed forms to:

DWR, Division of Flood Management
Flood Operations Center, Suite 200
P.O. Box 219000, 3310 El Camino Ave.
Sacramento, CA 95821
Attention: Eric R. Butler

VOICE: (916) 574-2619
FAX: (916) 574-2798

Email: erbutler@water.ca.gov

Name:

Regular Job Classification:

Regular Job Division/Office/Location:

Assigned Flood Emergency Position (Incident Commander, Operations Chief, Flood Information Specialist, Mobile Equipment, etc):

Description of Emergency Duties:

Three procedures that worked well:

- 1.
- 2.
- 3.

Three procedures that need to be improved and suggestions for doing so:

- 1.
- 2.
- 3.

APPENDIX B

OES AAR REQUEST LETTER

APPENDIX C

DEBRIEFING MEETING ROSTERS

Management Section Debriefing, March 18, 1998

| | | |
|--------------------|-------|-------------------------------|
| Ray Hart | DWR | Executive Division |
| Sonny Fong | DWR | Executive Division |
| George Qualley | DWR | Flood Management |
| Rod Mayer | DWR | Flood Management |
| James Coe | DWR | Flood Management |
| Jay Punia | DWR | Flood Management |
| Bill Bennett | DWR | Planning and Local Assistance |
| Karl Winkler | DWR | Planning and Local Assistance |
| Louis Stradiotto | DWR | Engineering (Safety Officer) |
| Anita Garcia-Fante | DWR | Office of Water Education |
| Jeff Cohen | DWR | Office of Water Education |
| Ricardo Pineda | SRB | State Reclamation Board |
| Michael Deering | USACE | U.S. Army Corps of Engineers |
| Rick Johnson | USACE | U.S. Army Corps of Engineers |

Planning and Intelligence Section Debriefing, March 19, 1998

| | | |
|---------------------------|------------|---|
| Dale Flowers, Facilitator | Consultant | |
| Eric Butler | DWR | Flood Management |
| James Bailey | DWR | Flood Management |
| Mike Mirmazaheri | DWR | Flood Management |
| Jennifer Allen | DWR | Flood Management |
| Donna Glover | DWR | Flood Management |
| Ray Martin | DWR | Flood Management |
| Shawn Perkins | DWR | Flood Management |
| Don Meixner | DWR | Retired Annuitant |
| Carol White | DWR | Fiscal Services |
| Frank Farmer | DWR | Information Systems and Services Office |
| Tony Lourick | DWR | Information Systems and Services Office |
| Jennifer Ellis | DWR | Land and Right of Way |
| Joyce Perkins | DWR | Land and Right of Way |
| Dave Lane | DWR | Land and Right of Way |
| Paul Farris | DWR | Land and Right of Way |
| Tami Harris | DWR | Management Services |
| Mike Cooney | DWR | Environmental Services Office |
| Traci Woods | DWR | Environmental Services Office |
| Amir Rangchi | DWR | Office of State Water Project Planning |
| Marco Bell | DWR | CALFED |
| Jerry Colivas | OES | Governor's Office of Emergency Services |
| Gerald Kopp | OES | Governor's Office of Emergency Services |
| Lynda Pryor | OES | Governor's Office of Emergency Services |
| Brenda Dumas | OES | Governor's Office of Emergency Services |

Operations Section Debriefing, March 20, 1998

| | | |
|---------------------------|------------|------------------|
| Dale Flowers, Facilitator | Consultant | |
| Keith Luster | DWR | Flood Management |
| Don Yeoman | DWR | Flood Management |
| Jim Coe | DWR | Flood Management |
| Rick Burnett | DWR | Flood Management |
| Joe Sanchez | DWR | Flood Management |
| Garret Tam Sing | DWR | Flood Management |

| | | |
|---------------------|-----|---|
| Bob Teal | DWR | Flood Management |
| Richard Willoughby | DWR | Flood Management |
| Charles Woolsey | DWR | Flood Management |
| Jeanne Schallberger | DWR | Executive Division |
| Dan Deese | DWR | Operations and Maintenance |
| Mary White | DWR | Operations and Maintenance |
| Mark Stuart | DWR | Planning and Local Assistance, SD |
| Dave Lawson | DWR | Planning and Local Assistance, CD |
| Brian Smith | DWR | Planning and Local Assistance, SJD |
| Raul Meza | DWR | Engineering |
| Joe Royer | DWR | Engineering |
| Ted Craddock | DWR | Engineering |
| Joe Hemmer | DWR | Engineering |
| Chris Acken | DWR | Engineering |
| Pat Colson | DWR | Engineering |
| Jerry Colivas | OES | Governor's Office of Emergency Services |
| Gerald Kopp | OES | Governor's Office of Emergency Services |

Final Debriefing, March 26, 1998

| | | |
|---------------------------|------|------------------------------------|
| Dale Flowers, Facilitator | | |
| Ray Hart | DWR | Executive Division |
| Sonny Fong | DWR | Executive Division |
| Mark Meeks | DWR | Executive Division |
| George Qualley | DWR | Flood Management |
| Jim Coe | DWR | Flood Management |
| Jay Punia | DWR | Flood Management |
| Don Yeoman | DWR | Flood Management |
| Keith Luster | DWR | Flood Management |
| Eric Butler | DWR | Flood Management |
| Mike Mirmazaheri | DWR | Flood Management |
| James Bailey | DWR | Flood Management |
| Gary Hester | DWR | Flood Management |
| Leo Pereira | DWR | Flood Management |
| Anna Hegedus | DWR | Flood Management |
| Terry Lewis | DWR | Flood Management |
| Robert Teal | DWR | Flood Management |
| Rick Burnett | DWR | Flood Management |
| Herman Phillips | DWR | Flood Management |
| Joe Sanchez | DWR | Flood Management |
| Carl Worley | DWR | Flood Management |
| Al Romero | DWR | Flood Management |
| Doug Priest | DWR | Management Services |
| Brian Smith | DWR | Planning and Local Assistance, SJD |
| Jack Erickson | DWR | Planning and Local Assistance, SJD |
| Frank R. Acuna | DWR | Planning and Local Assistance, CD |
| David Gutierrez | DWR | Safety of Dams |
| Joe Royer | DWR | Engineering |
| Rob Hartman | NOAA | National Weather Service |
| Elizabeth Morse | NOAA | National Weather Service |
| Cindy Matthews | NOAA | National Weather Service |

APPENDIX D

GLOSSARY OF ACRONYMS

| | |
|----------|---|
| AAR | After Action Report |
| CALFED | California Federal Bay-Delta Program |
| CCC | California Conservation Corps |
| CDEC | California Data Exchange Center |
| CDF | California Department of Forestry and Fire Protection |
| CERES | Calif. Environmental Resources Evaluation System |
| CNRFC | California-Nevada River Forecast Center |
| Corps | U.S. Army Corps of Engineers |
| CSAA | California State Automobile Association |
| DFM | Division of Flood Management |
| DMS | Division of Management Services |
| DOE | Division of Engineering |
| DPLA | Division of Planning and Local Assistance |
| DSOD | Division of Safety of Dams |
| DWR | Department of Water Resources |
| EEO | Equal Employment Opportunity (Office) |
| EOC | Emergency Operations Center |
| ESO | Environmental Services Office |
| FEMA | Federal Emergency Management Agency |
| FIS | Flood Information Specialist |
| FOC | Flood Operations Center |
| FOCIS | Flood Operations Center Information System |
| GIS | Geographical Information System |
| IC | Incident Commander |
| ICP | Incident Command Post |
| ICS | Incident Command System |
| IO | Information Officer |
| ISSO | Information Systems and Services Office |
| JOC | Joint Operations Center |
| NWS | National Weather Service |
| OA | Operational Area |
| OES | Office of Emergency Services |
| O&M | Division of Operations and Maintenance |
| OSS | Office of Support Services |
| OWE | Office of Water Education |
| PIO | Public Information Officer |
| PL 84-99 | Public Law 84-99 |
| REOC | Regional Emergency Operations Center |
| RIMS | Response Information Management System |
| SEMS | Standardized Emergency Management System |
| SOP | Standard Operating Procedure |
| TEC | Travel Expense Claims |
| USACE | U.S. Army Corps of Engineers |
| USBR | U.S. Bureau of Reclamation |
| WREM | Water Resources Engineering Memorandum |