HOW REGIONAL COORDINATION SECURED A SUCCESSFUL RESPONSE

Elizabeth Avelar, PE, CFM
September 7, 2017
FMA Conference
OVERVIEW

1. Development Timeline
2. Flood Emergency Response Tools
3. Performance Review
4. Next Steps
• A $1.2M Statewide Emergency Response Grant is awarded to RD108 on behalf of a 6-county region to improve flood emergency response tools.
PROJECT REGION

Partnerships through Integration

Lake Tahoe
Tehama
Glenn
Butte
Colusa
Yuba
Sutter
Yolo
Solano
San Joaquin
Sacramento
Lake

Project region map showing counties including Tehama, Glenn, Butte, Colusa, Yuba, Sutter, Yolo, Solano, and San Joaquin within the Lake Tahoe area.
A $1.2M Statewide Emergency Response Grant is awarded to RD108 on behalf of a 6-county region to improve flood emergency response tools.

- The Mid-Upper Sacramento River Region completes development of a suite of emergency response tools to improve preparedness and local capacity.
FLOOD SAFETY PLANS

Emergency Operations Plan – Basic Plan

Flood Annex
Flood Contingency Map (FCM)
Regional Flood Emergency Response Project

Mid and Upper Sacramento River

April 2015

Partnerships through Integration
UNIFIED COMMAND MAP

- Bird’s-eye view of pre-planned response facilities within each county by LMA
- Addresses Area Ingress and Egress System
- Integrates Levee Maintaining Agencies with County and State Operations into the decision-making process
JUST IN TIME TRAINING PROGRAM

1. Difficult to meet training requirements due to staff turnover, limited staff

2. 2 hours to complete course;

3. Can complete training in anticipation of flood event for new staff, emergency volunteers, or a refresher course for seasoned flood fighters; and

4. Accessible via the web, mobile device, and distributed on CDs.
# Just in Time Training Course Modules

## 0100 The Emergency Levee Worker
- 0101 Basic Duties, Safety, and Workers’ Comp
- 0102 Levee Patrol Equipment and Procedures
- 0103 Helping Document Response Costs

## 0200 Levee Threat Monitoring Guidelines
- 0201 Levee Terms and Preparing Lathes
- 0202 Seepage
- 0203 Boils
- 0204 Wave Wash
- 0205 Slope Instability
- 0206 Cracking
- 0207 Sink Hole
- 0208 Erosion

## 0300 Basic Flood Fight Methods
- 0301 Basic Flood Fight Methods

## 0400 Flood Response Organization
- 0401 National Incident Management System & Standardized Emergency Management System
- 0402 Regional Multi-Agency Coordination
- 0403 Incident Command System (ICS)
- 0404 ICS for the Levee Maintaining Agency
- 0405 Understanding ICS Tactical Facilities
- 0406 The Incident Commander Position

## 0500 The Flood Safety Plan
- 0501 Purpose, Content, and Use
- 0502 Understanding Datum and Elevations

### Flood Safety Plan Lookup Module
Click on this link to look up information for your levee maintaining agency for subjects discussed in the videos.
Welcome to the Just in Time Training Program's Emergency Levee Worker Course. This course is designed to provide essential training for the emergency levee worker function where extreme time constraints apply for proper flood emergency response training. This course is composed of five modules comprised of training videos covering subjects are listed below. It is not intended as a substitute for completion of standard training courses that may be recommended by the State or county during non-emergency periods. In addition, the Find Your Flood Safety Plan searchable database allows users within the Mid-Upper Sacramento River Region to look up individual Flood Safety Plans and Maps. Please click on the video you would like to view.

The Emergency Levee Worker

- 0100 - Introduction
- 0101 - Basic Duties, Safety, and Worker's Comp
- 0102 - Levee Patrol Equipment and Procedures
- 0103 - Helping Document Response Costs
A $1.2M Statewide Emergency Response Grant is awarded to RD108 on behalf of a 6-county region to improve flood emergency response tools.

- The Mid-Upper Sacramento River Region completes development of a set of emergency response tools to improve preparedness.
- Combined ICS402 Training and Table Top Exercise are conducted at Unified Commands.
A $1.2M Statewide Emergency Response Grant is awarded to RD108 on behalf of a 6-county region to improve flood emergency response tools.

- The Mid-Upper Sacramento River Region completes development of a set of emergency response tools to improve preparedness.
- Combined ICS402 Training and Table Top Exercise are conducted at Unified Commands.
- 2017 storm events tested the region's systems and tools.
HOW DID TOOLS AND CONCEPTS PERFORM?

2,000 LF OF MUSCLE WALL DEPLOYED
TYLER ISLAND
JANUARY 2017
FLOOD SAFETY PLANS

- Critical for new staff since it provided a guide for response activation triggers
- Access to critical historical knowledge such as locations of known levee vulnerabilities
- Overview of system behavior
- Flood fight history – what has worked in the past?
- Increase LMAs’ capacity to address emergencies at the local level
RD 2075 – McMullin
Flood Contingency Map
Trahern Levee Wavewash Protection

- Where is it?
- Upstream and downstream impacts?
- Description of when materials were deployed, including guidance on gauges and dam releases
- Mentorship allowed me to make critical decisions under stressful and time sensitive situations
FLOOD CONTINGENCY MAPS

- Convey summary of damages to CalOES, FEMA, or USACE representatives
- Track and share existing, expanding, or new damage sites with internal staff or outside agency
- Share updates between patrol shifts
- Train volunteers who will assist with patrols: where patrols will start, turnarounds, what sites to monitor, etc.
**ACTIVATION OF UNIFIED COMMANDS**

- Colusa Basin Activated
- South Delta Unified Command Activated, bringing DWR, USACE, County, and Reclamation Districts to meet face to face
- Communication among all appropriate parties in single location: fire, law, and public works for road closures, traffic control, etc.
- Minimize confusion, miscommunication
- Familiarity with SEMS/NIMS was critical for assistance request
REGIONAL CONSISTENCY

• Yolo County OES assisted Sutter County OES during Oroville Evacuation

(Thank you Dana!)

• Familiarity with map format, symbology

• Relationships built through MUSR planning meetings

To evacuate West: Take HWY 20 West to Williams to I-5
JUST IN TIME TRAINING PROGRAM

- Extensively used to train volunteers
- Used by seasoned flood fighters as a refresher
- Used to understand SEMS/NIMS concepts

WWW.MUSRFLOOD.COM
RELATIONSHIPS

- Development process was critical to meet, work with, and develop trust with other agencies

- Relationships built through MUSR were also used in the Delta

- Relationships built through Delta Quarterly Working Group Meeting
WHAT LESSONS DID THIS EVENT REVEAL?
Extensive field sheets were not practical

Photos, videos, logs of field conditions should be kept and organized
**RECOVERY**

- The recovery period for every event is different,
  - Procurement policy in Emergency Ops Plan
  - What documentation will be required and what level of detail?
  - Interpretation of eligible and ineligible efforts
  - **Stronger emphasis on reaching out to federal agencies in regional discussions**
ASSISTANCE REQUEST

- LMA’s need to coordinate method of requesting CCC crews (crew, lodging, food)
- County’s to clarify how Disaster Service Workers are obtained
  - Be specific when requesting technical assistance (“experienced geotechnical engineer”)
- Continue discussions with DWR regarding ELTA (Engineer’s Levee Threat Assessment)
LOGISTICS

• Need for a quantity check sheet of flood fight materials

• Stronger emphasis on LMAs to review and confirm emergency spending authorities

• Oroville incident revealed gaps in communication (cell service is down)
Next Steps

• Engage reservoir operations in regional discussions
• Engage federal partners to make sure we understand resources, limitations, and expectations of the recovery effort
• Mentor young or new staff to be prepared for next event
• Continue regular regional coordination meetings to ensure successful future response efforts beyond project requirements
CLOSING COMMENTS

- Regional coordination helped craft practical flood response tools, allowing all parties to gain a better understanding of their role as well as others’ roles

- Regionally standardized tools facilitate mutual aid, information sharing, and response efficiency

- Document historical knowledge, and mentoring next generation, is critical for a sustainable flood response strategy

- Improvements will be made to improve coordination with DWR, USACE, and FEMA in the planning phase
Thank you

Questions?
# PED | TECH MEMO AND SYNOPSIS TABLE

## TABLE 1 ________ RELIEF CUT SYNOPSIS

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Example: Reclamation District 123</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident Commander</td>
<td>First Name, Last Name</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Critical Assumptions</th>
<th>Value</th>
<th>Units</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-yr BFE (at Relief Cut Site)</td>
<td>_____ (NAVD88)</td>
<td>feet</td>
<td>Used as a benchmark</td>
</tr>
<tr>
<td>Levee Crown Elevation (at Relief Cut Site)</td>
<td>_____ (NAVD88)</td>
<td>feet</td>
<td>Levee profile is relatively flat, no major changes in elevation.</td>
</tr>
<tr>
<td>Other</td>
<td>_____ (NAVD88)</td>
<td>feet</td>
<td>Ideal maximum ponding elevation of impounded flood waters within the Basin</td>
</tr>
</tbody>
</table>

| Relief Cut Dimensions | |
|-----------------------| |
# Preliminary Engineering Designs | Synopsis Table

<table>
<thead>
<tr>
<th>Relief Cut Dimensions</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length</strong></td>
<td>(\pm 600-1,200) (\pm ) (\pm ) (\pm ) (\pm )</td>
<td>feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*Recommended range based on previous successful cuts *To be adjusted based on actual conditions</td>
</tr>
<tr>
<td><strong>Depth</strong></td>
<td>(\pm )</td>
<td>feet</td>
</tr>
<tr>
<td></td>
<td>*Depth as prescribed by hydraulic models, site visit, and adjusted based on actual conditions.</td>
<td></td>
</tr>
<tr>
<td><strong>Width at Crown</strong></td>
<td>(\pm )</td>
<td>feet</td>
</tr>
<tr>
<td></td>
<td>*To be adjusted based on actual conditions</td>
<td></td>
</tr>
<tr>
<td><strong>Waterside Slope</strong></td>
<td>3H : 1V</td>
<td></td>
</tr>
<tr>
<td><strong>Landside Slope</strong></td>
<td>2H : 1V</td>
<td></td>
</tr>
<tr>
<td><strong>Cut Volume</strong></td>
<td>(\pm )</td>
<td>cu. yd.</td>
</tr>
<tr>
<td></td>
<td>(\pm )</td>
<td>tons</td>
</tr>
<tr>
<td></td>
<td>(\pm )</td>
<td>@ 1.6 tons/ cu. yd.</td>
</tr>
<tr>
<td><strong>Estimated Time</strong></td>
<td>(\pm )</td>
<td>hours</td>
</tr>
<tr>
<td></td>
<td>*Adjust as Required</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(assumes _excavators @ 1min/swing)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment Options to Facilitate Initial Excavation Efforts</th>
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</thead>
<tbody>
<tr>
<td><strong>Initial Actions</strong></td>
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</tbody>
</table>
NAMING CONVENTION

- Multiple counties and unified commands
- Unique designators for each tactical facility
- Numbered consecutively from South to North

YDP-02

Y  DP - 01

First letter of County (Yolo)  Facility  Number of Specific Facility
**FEMA COMPLIANCE – NIMS TRAINING PROGRAM MANUAL**

- **Current Training Requirements – 40+ Hours**

<table>
<thead>
<tr>
<th>SEMS Executive Course (SEMS-E)</th>
<th>ICS 402</th>
<th>IS 100</th>
<th>IS 200</th>
<th>IS 700</th>
<th>DWR Flood Fight Methods (DWR-1)</th>
<th>DWR Levee Threat Monitoring Course (DWR-2)</th>
<th>Review of Local Flood Safety Plan (LMA-1)</th>
</tr>
</thead>
</table>

- **Substitute Short Courses – 2 Hours**

  | Basic Emergency Levee Worker (ELW - 1) or Basic Flood Responder Course (BFR -1) | ELW/FR Incident Commander Module (ELW-IC) | Flood Fight Methods Short Course (DWR-1A) | Local FSP and Unified Flood Fight Command Review Short Course (LMA-1A) |
  | Substitutes for IS100, IS200, and DWR-2 | Substitutes for IS700 | Substitutes for DWR-1 | Substitutes for LMA-1 |
SUMMARY

• Anticipating potential issues and developing solutions ahead of time;

• A locally-driven regional coordinated approach is critical for successful flood emergency response;

• Creation process of FSPs and FCMs allow for improvements of existing plans, documentation of historical knowledge, and information sharing;

• Standardized manuals and GIS-based map products greatly facilitate decision making and information sharing across jurisdictional lines; and

• Develop practical training program.
DOCUMENTED METHODOLOGY

• Common technical approach to plan development
  - Guide to Developing Flood Safety Plans (AB156 Compliant)

• Common GIS mapping technical approach
  - GIS Flood Contingency and Evacuation Map
  - Technical Memorandum

• Standardized Regional Systems

• On-Going Integrated Planning physically occurring at the lowest local level
1. Organizations tailor their training to the level of incident complexity that their staff would manage.

2. LMAs will manage **Type 4** Incidents, as described in the NIMS Training Program Manual (pg. 16).

<table>
<thead>
<tr>
<th>Type 4</th>
</tr>
</thead>
</table>
| • Command staff and general staff functions are activated only if needed.  
• Several resources are required to mitigate the incident, including a task force or strike team.  
• The incident is usually limited to one operational period in the control phase.  
• The agency administrator may have briefings, and ensure the complexity analysis and delegation of authority is updated.  
• No written IAP is required but a documented operational briefing will be completed for all incoming resources.  
• The role of the agency administrator includes operational plans including objectives and priorities. |
1. Organizations tailor their training to the level of incident complexity that their staff would manage

2. LMAs will manage **Type 4** Incidents, as described in the NIMS Training Program Manual (pg. 16)
   - Levee patrols
   - Response to levee threats

3. The proposed training program meets NIMS Training Program requirements as described (pg. 17 and 18)
EXPANSION OF METHODS

Achieving Flood Risk Reduction

[Map showing regions of Tehama, Butte, Glenn, Colusa, Sutter, Lake (Phase I), Yolo, Solano, and San Joaquin]
The Mid-Upper Sac River Region, through the RFMP identify gaps. The MUSR Flood ER grant develops tools to improve flood preparedness.
Partnerships through Integration

- Statewide Emergency Response Grant awarded to RD108 on behalf of a 6-County Region to improve emergency response tools

DWR awards $1.2 M to 6-County Region
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Partnerships through Integration

1. DWR awards $1.2 M to 6-County Region

2. Mid-Upper Sacramento Region Develops set of Flood Response Tools