

Peak Spillway Flow – 66, 800 cfs

- 30 River Outfitters between the Dam and New Braunfels
- 43 total recreation businesses on River Road
- 155 recreation businesses in Comal County



Normal Operations Can Quickly Turn into Emergency Operations

Debris Field from 28 Foot
Pool Rise at Stillhouse
Hollow Lake on Memorial
Day Weekend 2007

29/05/2007

Flood Damage Reduction (FDR) Dam Safety (DS)

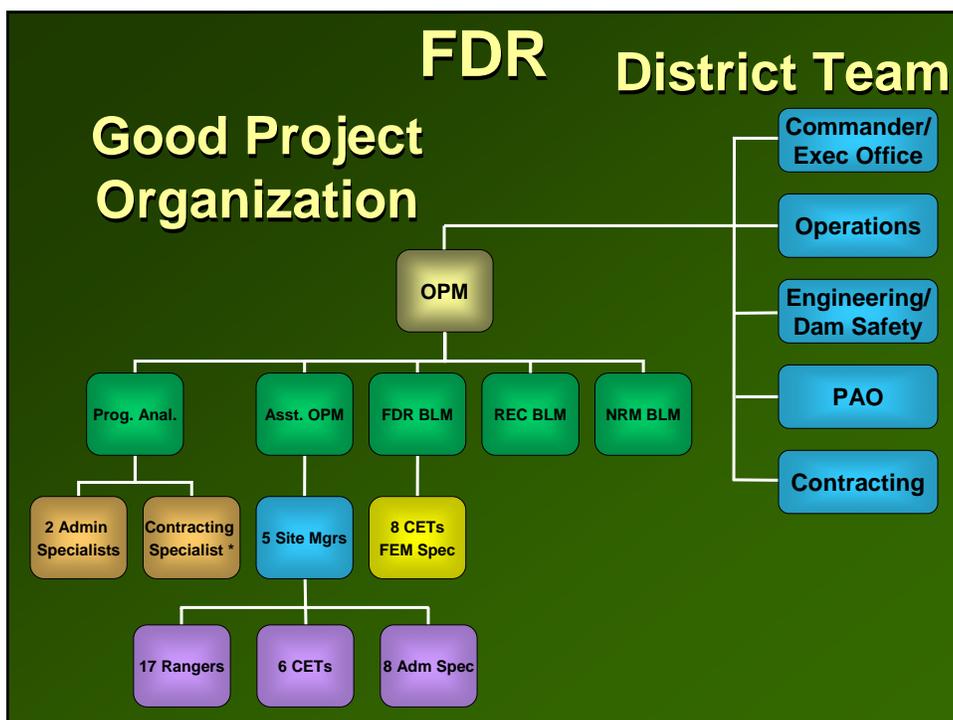
- **FDR Activities: Maintain Readiness**
 - Normal Day to Day, Scheduled Activities
- **Dam Safety Activities: Events Include:**
 - Natural Disasters
 - Structural Problems
 - Security Events.



FDR – Maintain Readiness

You Need:

- ✓ Organization in Place
- ✓ Personnel in Place
- ✓ Funding
- ✓ Budget Execution
- ✓ Information Management.



FDR

Good Organization Attributes:

- **Efficient/Effective**
- **Responsive**
- **Adaptive/Creative**
- **Reliable.**

FDR

Organization - Challenges

- **FTE'S**
- **Resistance to Change/New Ideas**
- **Lack of Exposure to New Ideas.**

FDR Personnel



FDR Personnel – OPM's Responsibilities

- **Recruitment/Selection**
 - Permanent
 - Co-Op/Interns/S.T.E.P.
 - Re-Hire Of Annuitants
- **Motivate/Train/Retain Staff**
- **Transfer of Knowledge and Skills by...**

FDR Personnel Training and Development

- **Formal**
 - Training Program
 - » In-House
 - » Web-Based
 - » Developmental Assignments
 - » PROSPECT, USDA, Etc.
 - PDT'S
- **Informal**
 - OJT
 - Workshops
 - Mentoring.



FDR Personnel Challenges

- Aging Workforce
- Transfer Knowledge to Next Generation
- Recruit Next Generation
- Hiring Process
- Retain Trained and Knowledgeable People
- Career Path
- Competitive Sourcing
- RIFs.



FDR Funding



FDR Funding Process

Budget Submittal:

- Routine Operations & Maintenance
- Non-Routine Maintenance

Packages

Identify Non-Routine Packages From:

- Annual & Periodic
Inspection Reports and
Recommended Actions
- OMP
- Daily Observations
- Automated Information
System PMI Program.



FDR Funding Challenges

- Not Funded
- Under Funded
- CRA'S
- Budget Process
- Political Climate.

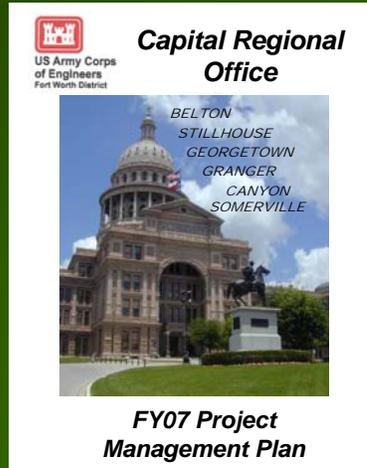


FDR Budget Execution



FDR Budget Execution

- PgDT
 - PgMP- Overall Guidance for PMP Development
- PDT
 - PMP – Project Specific Plan
 - Deliverables
 - » Identify Work to be Accomplished
 - Timeline
 - Acquisition Plan
 - » On-Site Labor
 - » Contracts
 - Purchase Orders
 - IDIQ
 - MATOC
 - RFP, RFB
 - Design-Build
 - Trickle Down Packages
- Funds Received, Implement PMP.



FDR Budget Execution

**Little River Project Office
Appendix C - Timeline for the Execution of Deliverables - FY07**

* Budget Execution may be constrained by CRA's

	FY06 4th Quarter			FY07 1st Quarter				FY07 2nd Quarter				FY07 3rd Quarter			FY07 4th Quarter			
	Jul 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06	Jan 07	Feb 07	Mar 07	Apr 07	May 07	Jun 07	Jul 07	Aug 07	Sep 07			
Planning and Quantifying for FY07 Funded Non-Routine Maintenance Packages																		
Deliverable 1 Routine Project Operations at all LRPO Lakes																		
Deliverable 2 Routine Project Maintenance at all LRPO Lakes																		
Deliverable 3 Repair spillway head-cutting, Canyon FY06 carry over, 240 Days, 1.9 million, MATOC																		
Deliverable 4 De-water stilling basin/repair concrete Canyon FY06 carry over, 120 Days, 500K, MATOC																		
Deliverable 5 Repair Friendship Park Road, Granger FY06 carry over, 60 Days, 100K, RA Contract																		
Deliverable 6 Repair outlet works roof, Belton 300K, 90 Days, RA Contract																		
Deliverable 7 Replace photometers, Belton 150K, 120 Days, Corps Core Drill team																		
Deliverable 8 Repair air vents/service gates in tower, Stillhouse 225K, 120 Days, IDIQ-Task Order																		
Deliverable 9 Repair/Replace emergency and service gate seals, Georgetown, 300K, 120 Days, IDIQ-Task Order																		
Deliverable 10 De-water stilling basin/Periodic Insp, Georgetown 103K, 45 Days, IDIQ-Task Order																		
Deliverable 11 De-water stilling basin/Periodic Insp, Granger 103K, 45 Days, IDIQ-Task Order																		

FDR Budget Execution

Challenges:

- CRA'S
- Software (P2)
- Re-Programming Limits
- Lack of Repetitive Contracts (IDIQ, Consolidated Services Contract)
- Lack of Authority
 - KO Warrant
 - Ordering Officer Authority.

FDR Information Management



FDR Information Management

Automated Information System

- Routine/Scheduled PMI
 - Documents PMI Results
- Imagery
 - Photos
 - GIS
 - Scanned As-Builts
- Annual/Periodic Inspection Results/Recommendations
- Historical Information
 - Dates
 - Costs
 - Vendors
 - Supplies/Materials
 - Lessons Learned
 - Archived Information.



Equipment Master List - Little River Project - Belton Lake

ID	Item Name	Code	Location	Acquired	Last Price	Prob Price
1	PERIODIC MAINTENANCE	100	OUTLET HORNS	LFPO MAINTENANCE	500000	700000
2	EMERGENCY GENERATOR	100	OUTLET HORNS	LFPO MAINTENANCE	500000	700000
3	SERVICE DATE NO. 1	300	OUTLET HORNS	LFPO MAINTENANCE	500000	500000
4	SERVICE DATE NO. 2	300	OUTLET HORNS	LFPO MAINTENANCE	500000	500000
5	SERVICE DATE NO. 3	300	OUTLET HORNS	LFPO MAINTENANCE	400000	700000
6	VISUAL INSPECTION	100	EMERGENCY AND RELATED STRUCTURES	LFPO MAINTENANCE	500000	700000
7	Fiber Inspection	100	Belton Office	LFPO MAINTENANCE	500000	700000
8	Peripherals	300	BELTON CAMP	LFPO MAINTENANCE	500000	600000
9	Printing system	100	Belton office	LFPO MAINTENANCE	1100000	1100000
10	Network equipment	100	Belton office	LFPO MAINTENANCE	500000	700000
11	Network equipment	100	Belton Office	LFPO MAINTENANCE	500000	600000
12	FILE OFFICE GENERATOR	100	GENERO OFFICE	LFPO MAINTENANCE	600000	700000

FDR Information Management Challenges

FEED ME!

- Software
 - "On"
- Pro...
- Too...
- Bene...



FDR – Summary

You Need:

- ✓ Organization in Place
- ✓ Personnel in Place
- ✓ Funding
- ✓ Budget Execution
- ✓ Information Management.



Dam Safety



Dam Safety Type of Events:

- **Natural Events**



Dam Safety Type of Events:

- **Natural Events**
- **Structural Events**



Dam Safety Type of Events:

- Natural Events
- Structural Events
- Physical Security Events



Managing Dam Safety Events

OPM Responsibilities Related to Natural, Structural or Physical Security Events



Managing Dam Safety Events - OPM's Responsibilities

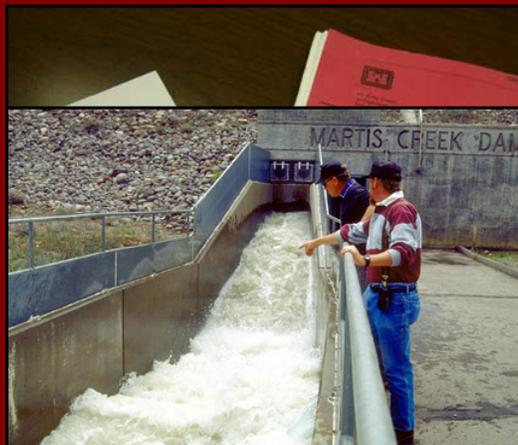
✓ **Plan/Prepare (Pre-Event)**

✓ **Respond (During Event)**

✓ **Recover (After the Event)**

Managing Dam Safety Events **Plan /Prepare**

- **Plans: Flood Emergency/Physical Security**
 - Update Annually
 - Readily Available
 - Understood by Staff
- **Training**
 - OJT
 - Workshops.



Managing Dam Safety Events Plan /Prepare

- **Communication Equipment**
 - Satellite Phones
- **Specialized Equipment**
 - Emergency Generators
 - Fuel Storage.



Managing Dam Safety Events Plan/Prepare

- **Sustainability**
 - Utilities
 - Food
 - Drinking Water
 - Shelter



Use Lessons Learned From Other
Events in Your Planning Efforts

Managing Dam Safety Events **Plan/Prepare**

- Upgrade Physical Security Features
 - Cameras
 - Hardened Gates
 - Access Control.



Managing Dam Safety Events **Plan/Prepare**

“FIELD IS FIRST LINE OF DEFENSE”

- Stay Alert & Be Observant – Do Daily Dam Checks
- Do Scheduled Instrumentation Readings
- Know What is Normal
- Know What to Do And DO IT!
- Report What You See.



Managing Dam Safety Events Respond

You May be Responder or
Victim of a Natural Disaster



Managing Dam Safety Events Respond

- Employee Accountability & Visitor Safety
- Initial Notifications, Request Outside Assistance – “IT TAKES A TEAM”
- Imp
- Acc
- Insp
- Clo

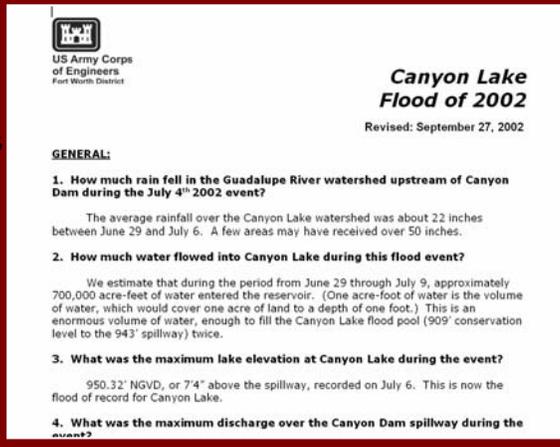


Managing Dam Safety Events

Respond

- Information Management is Critical
 - Communication

- In-House
 - Inter-Agency
 - Political Contacts
 - Media
 - Public
 - FAQ Sheet
- Updated Daily.



US Army Corps of Engineers
Fort Worth District

Canyon Lake Flood of 2002
Revised: September 27, 2002

GENERAL:

1. How much rain fell in the Guadalupe River watershed upstream of Canyon Dam during the July 4th 2002 event?

The average rainfall over the Canyon Lake watershed was about 22 inches between June 29 and July 6. A few areas may have received over 50 inches.

2. How much water flowed into Canyon Lake during this flood event?

We estimate that during the period from June 29 through July 9, approximately 700,000 acre-feet of water entered the reservoir. (One acre-foot of water is the volume of water, which would cover one acre of land to a depth of one foot.) This is an enormous volume of water, enough to fill the Canyon Lake flood pool (909' conservation level to the 943' spillway) twice.

3. What was the maximum lake elevation at Canyon Lake during the event?

950.32' NGVD, or 7'4" above the spillway, recorded on July 6. This is now the flood of record for Canyon Lake.

4. What was the maximum discharge over the Canyon Dam spillway during the event?

Managing Dam Safety Events

Respond

Document the Event Well:

- Data
- Photos
- GIS.



Managing Dam Safety Events **Respond**

Working with Local & State Agencies:

- **Important to have good working relationships with local leaders BEFORE an event.**
- **Hopefully they will see you as a COE rep they know and trust.**

Managing Dam Safety Events **Respond**

Watch out for signs of stress:

- **Take care of your staff and yourself**
- **Watch for signs of stress and over-fatigue**
- **Critical Incident Stress Management Teams (CISM) available**
- **Over-tired people have accidents and make poor decisions.**

Managing Dam Safety Events



Larry W. Smith / EPA
A grain elevator is seen on the other side of town across the remains of houses struck by a mile-wide tornado in Greensburg, Kan., on Tuesday, May 5.

Be compassionate and patient. People's emotions run high when emergencies affect them personally.

Managing Dam Safety Events Recover

“Recovery is a Long Road”

- **Assess/Report Damage**
- **Prioritize**
- **Obtain Funds**



Managing Dam Safety Events Recover

“Recovery is a Long Road”

- **Assess/Report Damage**
- **Prioritize**
- **Obtain Funds**
- **Perform Work**
- **Assist Others**
- **May Take Years.**



Managing Dam Safety Events Recover

Document Lessons Learned:

- **Project Review Report**
- **Presentations**
- **Update Your Flood Emergency Plan of things that need changing**
- **Implement changes and SOPS from lesson learned, i.e. barricades, generators, communications, etc.**

Dam Safety - Summary

- Natural Events
- Structural Events
- Physical Security Events

Responsibilities as an OPM

- ✓ Plan/Prepare (Pre-Event)
- ✓ Respond (During Event)
- ✓ Recover (After the Event)

FDR/DS – Final Thought

Reality – Not a Perfect World

There will never be enough:

- Time
- Money
- Manpower to accomplish everything

An OPM's responsibility is to realize this and to use all available resources effectively in order to maintain readiness of FDR Facilities and meet the challenges of the Dam Safety Program.

Questions?

