

## **CHAPTER 23. FLOOD CONTROL DISTRICT #10 ANNEX**

### **23.1. HAZARD MITIGATION PLAN POINT OF CONTACT**

#### **Primary Point of Contact**

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### **23.2. JURISDICTION PROFILE**

Boise River Flood Control District No. 10 is responsible for working to minimize flood damage and to protect and promote the health, safety and general welfare (Idaho Code Section 42-3102). The District was organized on October 13, 1970 through an Order by the Director of the State of Idaho, Department of Water Administration (Idaho Department of Water Resources). The District was formed to “provide control of the Boise River and its tributaries in the affected area to protect life and property, preserve the public health and welfare and conserve and develop natural resources of the State of Idaho” (Order Creating Flood Control District No. 10 of Idaho) as they relate to potential flooding in Ada and Canyon Counties within the District’s boundaries. State law provides the District with statutory authority and responsibility to operate and maintain structural works of improvement for the prevention of floodwater and sediment damages, and to exercise all other powers necessary, convenient or incidental to carry out the provisions of the Flood Control District Act (Idaho Code sections 42-3101—42-3128).

Flood Control District No. 10 has observed continued rapid development along the Boise River within the jurisdictional boundaries. The District believes that land use changes significantly affect flood plain conveyance and storage, affecting individual sites and reaches above and below these sites. Development in the flood plain, combined with lack of channel forming flow events, sediment erosion and deposition, and the growth of gravel bars and associated vegetation, reduces the conveyance capacity of the Boise River and increases flooding risks. The District is also concerned that gravel pits developed adjacent to the banks of the river may be captured by the river during high flows, threatening both public and private facilities. The most pressing issue facing the District in the future, minimizing flood impacts in the face of rapid growth requires river maintenance and protection of unimpeded access to the river, which will allow the District to continue normal maintenance activities, and effective planning for the Rivet corridor.

Historically, the District has had greater latitude to conduct responsibilities under the law and to maintain channel capacity. Flood Control District No. 10’s channel maintenance activities have become progressively more difficult to accomplish due to interpretations of regulations that vary over time and increasing concerns about environmental impacts. These factors combine to increase future flooding risks and damages for the residents within the boundaries of the District and impair the District’s ability to carry out responsibilities under the law.

The District is governed by a Board of three Commissioners, appointed by the Idaho Department of Water Resources. The District employs a staff of one, a Project Manager. Revenues are generated through taxation collected on assessments on real property within the District.

The geographical extents of the District generally are along the Boise River and a portion of Dry Creek. Along the Boise River, the District is bounded by Chinden Blvd (State Highway 20-26) on the South, State Street (State Highway -44) on the North. The downstream limit is River Mile 22 (approximately 1-mile upstream of I-84 river bridges in Caldwell, ID), while the upstream limit is River Mile 49 (approximately 1-½ miles upstream of the Glenwood Bridge). In addition to the Boise River, a three mile long reach of Dry Creek, from the confluence with the Boise River upstream to Beacon Light Road in Eagle is included in the District boundaries.

The following is a summary of key information about the jurisdiction:

- **Population Served**—34,000 as of January, 2010 (2010 Census)
- **Land Area Served**—approximately 25,000 acres (Original Order establishing FCD10)
- **Value of Area Served**—The estimated value of the area served by the jurisdiction is \$1,853,416,345 (Idaho State Tax Commission, 2010)
- **Land Area Owned**—0 Acres
- List of Critical Infrastructure/Equipment Owned by the Jurisdiction:
  - Water Inflatable Dam      \$20,000
- **Total Value of Critical Infrastructure/Equipment**—The total value of critical infrastructure and equipment owned by the jurisdiction is \$20,000.
- List of Critical Facilities Owned by the Jurisdiction:
  - \$0
- **Total Value of Critical Facilities**—The total value of critical facilities owned by the jurisdiction is \$0.
- **Current and Anticipated Service Trends**—Flood Control District No. 10 has observed continued rapid development along the Boise River within the jurisdictional boundaries. The District believes that land use changes significantly affect flood plain conveyance and storage, affecting individual sites and reaches above and below these sites. Development in the flood plain, combined with lack of channel forming flow events, sediment erosion and deposition, and the growth of gravel bars and associated vegetation, has reduced the conveyance capacity of the Boise River and increases flooding risks. The District is also concerned that gravel pits developed adjacent to the banks of the river may be captured by the river during high flows, threatening both public and private facilities. The most pressing issue facing the District in the future, minimizing flood impacts in the face of rapid growth, requires river maintenance and protection of unimpeded access to the river, which will allow the District to continue normal maintenance activities, and effective planning for the river corridor.

Home sites and businesses along both the Boise River and Dry Creek continue to command a premium in the marketplace. Prior to the current economic downturn, population within the District was growing at approximately 10-percent per year. As the economy recovers, population trends within the District are anticipated to return to an annualized growth rate of five to eight percent per year.

The district's boundaries are shown on the map at the end of Chapter 1.

### **23.3. JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY**

Table 23-1 lists all past occurrences of natural hazards within the jurisdiction.

### **23.4. HAZARD RISK RANKING**

Table 23-2 presents the ranking of the hazards of concern.

### **23.5. APPLICABLE REGULATIONS AND PLANS**

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- State of Idaho, Stream Channel Alteration Permit
- US EPA, Clean Water Act, Section 404, Administered by the U.S. Army Corps of Engineers
- US EPA, Clean Water Act, National Pollutant Discharge Elimination System (NPDES)
- Municipal and County Floodplain Ordinances
  - Municipal: Boise, Garden City, Eagle, Meridian, Star, Middleton, Nampa, Caldwell
  - County: Ada and Canyon
- County Highway Districts—Policy Manuals
  - Ada County Highway District
  - Canyon County Highway District #4
- County Hazard Mitigation Plans
  - Ada County
  - Canyon County
- The District Board of Commissioners have passed a number of resolutions dealing with floodplain development, including a no net adverse impact provision. These Resolutions remain in effect with this plan.

### **23.6. CLASSIFICATION IN HAZARD MITIGATION PROGRAMS**

The jurisdiction's classifications under various hazard mitigation programs are presented in Table 23-3.

### **23.7. HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES**

Table 23-4 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 23-5 identifies the priority for each initiative. Table 23-6 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

### **23.8. FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY**

The District has identified a number of areas where additional information can help supplement wise planning efforts:

- The complexity of the Boise River flood plain is influenced by urban development throughout the District. The largest population within the District that is at risk is near the head of Eagle Island. A detailed two-dimensional flood plain analysis is needed to appropriately model this area.

- The effective FIRM neglects to include flood routing below Eagle Road as modeled in the effective hydraulic model. The FEMA mapping needs to be updated.
- The District needs to develop a long-range Capital Improvement Plan extending beyond annual river maintenance.
- HAZUS training needs to be made available to District support staff, so that future capital improvement projects can be located to provide the most benefit to the District's patrons.
- District funding sources are insufficient to meet new or expected clean water mandates, such as sediment total maximum daily loads.
- No District levees are FEMA accredited, and the District lacks the resources to study and potentially improve these levees for accreditation.
- The Boise River and Dry Creek flood plains within portions of the District have undergone extensive gravel mining, potentially creating numerous pit capture (rapid avulsion causing the channel to relocate through the pond and creating extensive channel instabilities), upstream and downstream of the site. The District needs to a long-term plan to mitigate the potential threat caused by the numerous gravel mines along the River
- Flood plain risks along urbanized river reaches are sparsely documented. The District has embarked on a long-term (five year) maintenance plan that will rely on a large component of adaptive management. In addition to an appropriate monitoring program, the District anticipates the need for scholarly research in the field of urbanized flood plains. The District will need to identify additional funding to support further research and monitoring.
- The initiation of flooding has a high probability of occurring at existing, long-present irrigation diversions. The District needs to develop a strategy to mitigate the potential flood treat associated with these historic structures.
- 14 major bridges and three pedestrian bridges in the District cross regulated floodways. The District needs to identify a maintenance strategy to minimize the flood risk to these facilities, while minimizing the long-term risk to the biological community near these facilities.

### **23.9. ADDITIONAL COMMENTS**

Historically Flood Control District #10 had greater latitude to perform its responsibilities under the law and to maintain channel capacity. The District's channel maintenance activities have become more difficult to accomplish due to interpretations of regulations that vary over time and increasing concerns about environmental impacts. These factors combine to increase future flooding risks and damage for residents within the District and impair the District's ability to carry out its responsibilities under the law.

In consideration of these concerns and continued constraints on the District's ability to maintain adequate channel capacity, Boise River Flood Control District #10 has adopted Resolutions 2003-01 and 2003-02, with the intent of strongly encouraging local governments to participate in a Boise River corridor planning process and to adopt policies, ordinances and other requirements consistent with these resolutions to protect and promote the health, safety and general welfare of the citizens. The District believes that flood damage prevention can be significantly improved by policies and requirements with respect to development in the floodplain that are consistent among the numerous jurisdictions that govern activities along the Boise River.

In addition to working with the local communities, Flood Control District No. 10 will rely on future flood hazard mitigation funding to minimize flood risks to the patrons of the District.

<b>TABLE 23-1. NATURAL HAZARD EVENTS</b>		
Type of Event	Date	Preliminary Damage Assessment
Laguna Point Pit Capture	2006	\$500,000
Brookwood Breach/Capture	2006	\$200,000
Mace Breach	2006	\$60,000
Eagle Is. Levee Breach	1997	\$30,000
Linder Road Bridge Blockage	1996	\$2,000

<b>TABLE 23-2. HAZARD RISK RANKING</b>		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Flood	(3x18) = 54
2	Earthquake	(2x18) = 36
3	Severe weather	(3x6) = 18
4	Dam Failure	(1x18) = 18
5	Volcano	(1x3) = 3
6	Drought	(2x0) = 0
7	Landslide	(2x0) = 0
8	Wildfire	(3x0) = 0

<b>TABLE 23-3. COMMUNITY CLASSIFICATIONS</b>			
	Participating?	Classification	Date Classified
Public Protection	N/A	N/A	N/A
Storm Ready	N/A	N/A	N/A
Firewise	N/A	N/A	N/A

**TABLE 23-4.  
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
<b>Initiative FCD-10#1</b> —Repair bank erosion, various sites, District-wide						
Existing	Bank Failure	2,3,9	FCD10	Medium-Low	FCD10	Short-term
<b>Initiative FCD-10 #2</b> —Irrigation Diversion Headgate Flood Mitigation						
Existing	Flood	2,4,9	FCD10	Medium	FCD10, FEMA Mitigation Grants	Short-term
<b>Initiative FCD-10 #3</b> —Remove accumulated sediment from Boise River and Dry Creek channels						
Existing	Flood	2,4,9	FCD10	Medium	FCD10	Short-term
<b>Initiative FCD-10 #4</b> —Develop long-term plan to manage Boise River split at the head of Eagle Island						
Existing	Flood	2,4,9	FCD10	Medium	FCD10, FEMA Mitigation Grants	Long-term
<b>Initiative FCD-10 #5</b> —Develop short-term plan to manage Dry Creek flow along Brookwood neighborhood						
Existing	Flood	2,4,9	FCD10	Medium	FCD10	Short-term
<b>Initiative FCD-10 #6</b> —Update FEMA mapping within the District						
Existing	Flood	2,4,9	FCD10	Medium	FEMA RiskMAP	Short-term
<b>Initiative #7</b> —Develop floodplain mitigation techniques to apply to various depleted/inactive gravel pits occurring within the District						
Existing	Flood	3,10	FCD10	Medium	FCD10	Long-term
<b>Initiative FCD-10 #8</b> —Description: Remove naturally occurring vegetation blockages in the stream channels						
New and existing	Flood, Dam Failure	3,10	FCD10	Medium	District funds	Short-term
<b>Initiative FCD-10 #9</b> —Support County-wide initiatives identified in Volume 1.						
New and Existing	All Hazards	All	FCD-10, ACCEM	Low	FCD-10	Short term Ongoing
<b>Initiative FCD-10 #10</b> —Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Volume 1.						
New & Existing	All Hazards	All	ACCEM, FCD-10	Low	Garden City, FEMA Mitigation Grant Funding for 5-year update	Short-Term, Ongoing

**TABLE 23-5.  
MITIGATION STRATEGY PRIORITY SCHEDULE**

Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Priority <sup>a</sup>
FCD-1	3	Medium	Medium	Yes	Yes	Yes	High
FCD-2	3	High	Medium	Yes	Yes	Yes	High
FCD-3	3	Medium	Medium	Yes	No	Yes	High
FCD-4	3	High	High	Yes	Yes	No	Medium
FCD-5	3	Medium	Medium	Yes	Yes	No	Medium
FCD-6	3	Medium	Medium	Yes	Yes	Yes	High
FCD-7	2	High	Medium	Yes	No	No	Medium
FCD-8	2	High	Medium	Yes	No	Yes	High
FCD-9	10	High	Low	Yes	No	Yes	High
FCD-10	10	Low	Low	Yes	Yes	Yes	High

a. See Section 1.3 for definitions of high, medium and low priorities.

**TABLE 23-6.  
ANALYSIS OF MITIGATION INITIATIVES**

Initiative Addressing Hazard, by Mitigation Type						
Hazard Type	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Dam Failure	4, 5, 6, 10	8	6, 9	3	9	1, 2, 3, 4, 7
Drought	10		9		9	
Earthquake	10		9		9	
Flood	4, 5, 6, 10	8	6, 9	3	9	1, 2, 3, 4, 7
Landslide	10		9		9	
Severe Weather	4, 5, 6, 10	8	6, 9	3	9	1, 2, 3, 4, 7
Volcano	10		9		9	
Wildfire	10		9		9	

1. Prevention: Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
2. Property Protection: Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
3. Public Education and Awareness: Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
4. Natural Resource Protection: Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. Emergency Services: Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
6. Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.