



Development Downstream From Flood Control Dams - A Growing Concern for Watershed Project Sponsors

July 2008

Development downstream of flood control dams is a growing concern for watershed project sponsors across the country. Many of the dams constructed under the USDA Watershed Program (Flood Control Act of 1944, Public Law 78-534, and the Watershed Protection and Flood Prevention Act of 1954, Public Law 83-566) were constructed as low-hazard dams to protect rural agricultural land.

Many traditional project sponsors don't have the authority or power to keep homes and businesses from being constructed downstream in the breach area. If a dam failed, lives and property would be at risk.

Affects on Watershed Project Sponsors

Some of the effects that uncontrolled or unplanned development downstream from flood control dams have on project sponsors are:

- May increase sponsor liability if the affected dam failed.
- May trigger the requirements that sponsors develop and maintain a current emergency action plan.
- May change hazard classification of the dam and trigger the need to rehabilitate dams to bring them up to current dam safety standards.
- Can make rehabilitation more difficult.

The Challenge:

Many watershed project sponsors, especially those like conservation districts, do not have the authority or power to control development downstream from their dams.

But, because downstream development in the breach area of the dam does have a very real impact on project sponsors, they must take a proactive role in addressing this issue.

What Sponsors Can Do:

Collaboration is the Key

Be proactive on the issue. Sitting back and doing nothing is neither a solution, nor a good defense. Sponsors should determine who has the authority to limit development in breach areas of a dam and work to educate them on the issue.

Form working partnerships with those who have authority (municipalities, flood plain management boards, local, county and state government).

Conduct active and timely dam safety inspection activities.

Develop Emergency Action Plans for high hazard dams.

Review language in SCS/NRCS watershed work plan that might encourage restricting downstream development.

Determine if there are breach analysis studies and maps available.

The Natural Resources Conservation Service has completed studies on some dams and other city, state or federal agencies may also have breach studies. These studies better identify areas that would be inundated if a dam breached.

Provide breach information to bankers, realtors, mortgage companies, and city and county government agencies.

Provide Information That a Lay Person Can Understand

Good visuals can usually get a message across better than just words. Consider developing aerial maps that show flood control dams with areas marked in red showing the breach area below the dam and the area upstream that will be flooded when the lake is at flood stage.

Examples of Watershed Project Sponsors Addressing the Issue:

Kansas

Breach maps have been prepared for all the dams in the Wet Walnut Creek Watershed in Kansas. Two counties in the watershed have zoning regulations that prevent downstream development. In one county where there aren't zoning regulations, watershed sponsors have recorded with the Register of deeds a spread sheet that identifies the breach area of each dam.

Texas

In Wise County, Texas the Commissioners Court adopted a policy in which they can deny 911 addressing in breach areas to discourage development downstream from dams.

The City of McKinney controls development both downstream and upstream from NRCS-assisted watershed dams through a section in their Storm Water Ordinance. There are 18 of these dams within city limits. The ordinance states that "Planning for future development which impacts on, or is impacted by, NRCS lakes shall require that a detailed engineering study be performed to provide a technical basis for development and that the dam be upgraded as follows:

(1) provide principal spillway capacity adequate to discharge the 100-year flood event based on fully developed watershed conditions,

(2) Provide total capacity of the dam structure, including principal and emergency spillways to accommodate the probable maximum flood,

(3) Maintain existing flood storage capacity,

(4) Provide upstream development within the contour line determined by the emergency spillway crest elevation plus two feet, or the routed 100-year flood elevation (based upon fully developed watershed conditions) plus two feet, whichever is greater,

(5) Restrict development and improvements within the floodplain established by a breach flow analysis from the dam downstream limit of the dam breach impact. A reduced breach flow area may be allowed below NRCS dams that have been rehabilitated to safely pass the PMF if conditions warrant and with the approval of the Director of Engineering.

Oklahoma

Flood plain management boards in some counties require permits for building in rural areas that might be in the floodplain, including those areas downstream from dams. Watershed project sponsors have also worked to educate the State Bankers Association as well as Real Estate and Energy Companies in rapidly developing areas.



Development downstream from dams may be one or two homes or in a case such as this photo shows in the Yellow River Watershed in Georgia, it might be hundreds of homes and businesses.