

# HOW MY COMMUNITY IS PREPARING FOR DAM FAILURES



## WHAT ARE THEY?

A dam is an artificial barrier that impounds or diverts water. The most common causes of dam failures include piping, erosion, structural failure, cracking, water spilling over the top of a dam, and inadequate maintenance and upkeep.

## WHEN DO THEY OCCUR?

The most likely cause of dam failure is heavy rainfall. In the Kansas City area, May, June, July and September receive the highest average monthly rainfall. There have been 26 recorded dam failures in Missouri.

## WHERE DO THEY OCCUR?

There are about 250 dams in various locations across the Kansas City metro area.

## CORRESPONDING HAZARDS

Flood waters can create a variety of problems for communities, including preventing transportation and releasing pollutants from industry into the water supply. For more information, see the “Floods” poster.

## DAMAGE TYPE & SEVERITY

When a dam fails, a rushing torrent of water is released. Depending on the speed and magnitude of the flow, homes, businesses, bridges, roads, cars and vegetation can be demolished in minutes. People and animals may be swept away. Dam failure can also result in a significant loss of capital investment on the part of the dam owner. Loss of a reservoir due to dam failure can cause serious hardships for those who depend on it for their livelihood or water supply. Torrential flood waters resulting from a dam failure can destroy wildlife habitats and natural areas, and the loss of a reservoir can adversely impact the ecosystems of the area.

## VULNERABLE AREAS





















Areas located in the pathway of flood waters released by a dam failure.

COMMUNITIES	ACTION
Rv HL	1. Determine which dams have had inundation studies, inundation pathway maps and emergency action plans developed.
Rv HL	2. Develop maps indicating the locations, inundation pathways and hazard potential of known dams in Greater Kansas City.
Rv	3. Obtain data and population figures for areas in the vicinity of dam inundation pathways so that enhanced vulnerability assessments may be conducted.
Rv WL	4. Include maps and information from inundation studies and dam emergency action plans in local emergency operations and land-use plans.
	5. Conduct a public education campaign to inform citizens living near inundation pathways of the need to be familiar with emergency action plans.
	6. Collect and disseminate public education materials that address dam safety and preparedness.
	7. Provide property owners in or near inundation pathways with information on dam safety, preparedness and mitigation activities.

HOW MY COMMUNITY IS PREPARING FOR

# DAM FAILURES



COMMUNITIES	ACTION
 	<p>8. Conduct a public education campaign to inform dam owners and citizens living near inundation pathways about the need to properly maintain and upgrade those structures, particularly those more than 50 years old.</p>
  	<p>9. For dams not regulated by the state, encourage dam owners to inspect their dams annually and submit the results of these inspections to the Missouri Department of Natural Resources (MDNR).</p>
	<p>10. Adopt codes or ordinances requiring permits, engineering studies and safety certifications prior to constructing new dams.</p>
  	<p>11. Encourage the state to provide MDNR with funding necessary to regularly inspect all high-hazard dams in the state.</p>
	<p>12. Adopt local ordinances or state laws requiring all dam owners to develop emergency action plans for their dams and provide local public safety agencies with copies of these plans.</p>
	<p>13. Contact representatives in the state legislature to propose changes in state law, lowering the height limit for regulated dams to 25 feet on those holding back 50 acres or more of water.</p>
	<p>14. Add all high-hazard dams to the list of regulated dams until the hazard potential of these dams can be downgraded.</p>
  	<p>15. Identify and pursue funding to repair or improve dams.</p>
	<p>16. Offer financial incentive to encourage dam owners to repair or upgrade their dams, particularly older dams.</p>
  	<p>17. Budget for regular repairs and improvements to dams, particularly those that are publicly owned.</p>
	<p>18. Develop and implement codes or ordinances requiring minimum site and construction standards for dams.</p>
	<p>19. Where possible, add outdoor warning sirens to campgrounds and other recreational areas downstream from dams.</p>
  	<p>20. Work with dam owners, emergency management and other public safety agencies to conduct emergency response exercises.</p>
	<p>21. Adopt policies, codes or ordinances discouraging development in the vicinity of dam inundation zones.</p>