



# Ensuring Public Safety by Investing in Our Nation's Critical Dams and Levees

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# Introduction and summary

Seven years ago, Hurricane Katrina pushed ashore in Louisiana, devastating the city of New Orleans and crippling an entire region. Massive storm surges overtook the city's levees and washed away entire neighborhoods, leaving more than 1,800 dead and displacing more than 1 million more. The sum of property damages alone was more than \$200 billion, with the overall damage to the regional economy totaling billions more.<sup>1</sup> Making Katrina all the more tragic was the disaster's preventability—if only those responsible for the region's storm defenses and levees had taken action in the decades leading up to August 29, 2005.

The costs of this failure to act continue to mount. Since Katrina, repairing and upgrading the levee and flood-protection systems around New Orleans has cost the federal government \$14 billion, and expenditures by the Federal Emergency Management Agency for displaced residents have run upwards of \$30 billion.<sup>2</sup>

But for those familiar with the condition of America's water infrastructure, Hurricane Katrina was just the most devastating example of the kinds of failures that are now neither rare nor unexpected. Every year flooding alone kills an average of 94 people and causes roughly \$7.2 billion in damages nationwide, and these figures exclude the devastation inflicted by storm surges similar to those that overtook New Orleans in 2005.<sup>3</sup> Over the past century we have increasingly relied on manmade structures such as dams and levees to protect us from natural disasters, and since the early 1900s we have built these structures by the thousands in almost every state.

There are currently more than 84,000 dams and approximately 100,000 total miles of levees in the United States. In addition to helping prevent floods and enabling the movement of freight up and down inland waterways, these structures are also relied upon to provide water for drinking and irrigation, to generate electricity, to help combat forest fires, and to provide recreational opportunities. They are critical components of our national economy and improve our quality of life in underappreciated ways every day.

But despite their tremendous importance to thousands of communities across our country, a frightening number of dams and levees have been allowed to fall into disrepair. A combination of aging and government neglect means many of these structures struggle to remain operational or even structurally sound. More alarming still is that changing settlement patterns have resulted in hundreds of dams and levees never designed to protect human life now being expected to safeguard the thousands who have moved into nearby flood zones.

Meanwhile, federal, state, and local efforts to monitor and repair levees and dams are piecemeal and drastically underfunded, characterized by a lack of clear leadership and a dearth of critical information. Hundreds of dams across the country whose failure would put lives in danger are years overdue for inspection, while we have almost no information at all on the condition of the vast majority of American levees.

Additionally, advances in scientific research and in our understanding of aquatic habitats and hydrological processes shed light on the negative environmental consequences of building and maintaining some kinds of dams. On hundreds of rivers throughout the United States, thousands of aging dams—many of which are no longer serving the purpose for which they were built—contribute to water quality degradation, biodiversity damage, and fisheries harm. While some efforts are being made to assess these damages and remove dams when environmentally and economically appropriate, the pace of dam removal in these instances remains slow.

Despite these risks, funding authorization for the National Dam Safety Program, which helps states formulate plans for inspecting and repairing dams under their jurisdiction, expired a year ago, and Congress has been slow and miserly in its efforts to reauthorize the program. The Senate proposes to maintain the current inadequate level of funding for the program—in fiscal year 2011, the National Dam Safety Program received just \$11 million—while the House has proposed a funding cut. Neither proposal has moved forward since being introduced earlier this year.

In this report we will detail the following:

- The conditions of our nation's dam and levee infrastructure and exactly how we have arrived at this point
- The relative responsibilities of local, state, and federal agencies for maintaining dam and levee safety
- The steps needed to bring these structures into a state of good repair or, where appropriate, to breach them

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- Policy recommendations, including immediately reauthorizing the National Dam Safety Program, creating a National Levee Safety Program, and increasing federal spending on both infrastructure types by at least a combined \$1 billion annually

If we do not make changes soon to the way we monitor and maintain our nation's dams and levees, catastrophes such as Hurricane Katrina striking an ill-prepared New Orleans or the failure of the Kaloko Reservoir Dam in Hawaii that killed seven people in 2006, will continue to occur—likely with greater frequency. The combination of extreme weather and flooding resulting from global warming and our aging dam and levee infrastructure means that without action, thousands of lives and communities are at risk and avoidable public costs will rise. It is time that policymakers stop simply hoping that the worst will not occur and finally devote the resources and political will required to ensure the safety and prosperity of the American public.

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