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Office of Inspector General
Southeast Region

Audit Report

Rehabilitation of Flood Control Dams

Report No. 10601-1-At
July 2009



UNITED STATES DEPARTMENT OF AGRICULTURE

OFFICE OF INSPECTOR GENERAL

Washington, D.C. 20250



July 15, 2009

REPLY TO

ATTN OF: 10601-1-At

TO: David White
Chief
Natural Resources Conservation Service

ATTN: Letitia Toomer
Acting Director
Operations Management and Oversight Division

FROM: Robert W. Young */s/*
Assistant Inspector General
for Audit

SUBJECT: Rehabilitation of Flood Control Dams

This report presents the results of our audit of the Natural Resources Conservation Service's (NRCS) program for rehabilitation of flood control dams. Your May 20, 2009, written response to the official draft report is included as exhibit G, with excerpts and the Office of Inspector General (OIG) position incorporated into the Findings and Recommendations section of the report.

Based on the information contained in the response, we have accepted your management decisions for 11 of the 13 recommendations in the report. For Recommendations 9 and 10, we were not able to accept management decisions based on the information contained in the response. Management decisions can be reached when NRCS provides the additional information outlined in the OIG Position sections of the report.

Please furnish a reply within 60 days describing corrective actions taken or planned and the timeframes for implementing those recommendations where management decisions have not been reached. Please note that Departmental Regulation 1720-1 requires a management decision to be reached on all findings and recommendations within a maximum of 6 months from report issuance, and final action on the recommendations that have reached management decision should be completed within 1 year. Please follow your internal agency procedures in forwarding final action correspondence to the Office of Chief Financial Officer for the 11 recommendations where management decisions have been reached.

We appreciate the courtesies and cooperation extended to our staff during the review.

Executive Summary

Rehabilitation of Flood Control Dams (Audit Report 10601-1-At)

Results in Brief

Since the 1940s, the Natural Resources Conservation Service (NRCS) has assisted in the construction of more than 11,000 dams, many of which have reached, or will soon reach, the end of their planned design lives and may be in need of rehabilitation.¹ Some of these dams—which are owned, not by NRCS, but by State and local governments, and public utilities—are classified as high hazard dams, as their deterioration could endanger the lives of people living in the dams’ zone of inundation. Recognizing the seriousness of this problem, Congress mandated that NRCS operate a dam rehabilitation program, and, from fiscal years (FY) 2002 to 2007, appropriated \$159.6 million to assist dam owners in rehabilitating “structures determined to be of high priority need in order to protect property and ensure public safety.”² Rehabilitating these dams is a two phase process. In the first phase, NRCS assesses the dam to determine its eligibility and the potential scope of the project; in the second, NRCS develops, and the dam owner implements, a plan for rehabilitating the dam.^{3,4}

The Office of Inspector General (OIG) initiated this audit to review the adequacy of NRCS’ controls for rehabilitating dams to mitigate potential threats to life and property. Recently, NRCS has had a positive safety record—none of the dams listed in its inventory of high hazard structures has failed and resulted in loss of life and property. Nevertheless, as these dams age and, in some cases, exceed their planned design lives, the likelihood of a dangerous dam failure increases.

We found that NRCS faces an impediment to accomplishing Congress’ mandate for rehabilitating these dams because it lacks regulatory authority and thus cannot compel owners to take any particular action, even in the case of a dangerous high hazard dam. State dam agencies do have such regulatory authority, and Congress specifically required NRCS to work with the State agencies to assess high hazard dams for rehabilitation (see exhibit B). Such Federal-State cooperation is especially vital since 98 percent of the 1,711 high hazard dams are owned by State and local governments, or public utilities. However, NRCS did not always work with the relevant State agencies to assess and rehabilitate high hazard dams. Without this

¹ A dam’s planned design life is “the intended period of time that the [dam] will function successfully with only routine maintenance” (*NRCS National Operation and Maintenance Manual* 500.02).

² Senate Report 107-223, “Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Bill,” dated July 25, 2002.

³ The purpose of assessment is to provide a dam owner information on whether a dam needs rehabilitation and the estimated cost, and whether the rehabilitation would be eligible for technical and financial assistance from NRCS (*NRCS National Watershed Manual* 508.42).

⁴ Rehabilitation is defined as “all work necessary to extend the service life of a dam and meet applicable safety and performance standards.” This may include correcting damage from a catastrophic event, correcting deterioration of structural components deteriorating abnormally, or upgrading the dam to meet changed land use conditions or safety criteria (*NRCS National Watershed Manual* 508.40).

cooperation with the regulatory agencies, NRCS implemented a voluntary program—it selected dams for assessment as they were volunteered by their owners, regardless of the dam’s hazard class or its proximity to the end of its planned design life.⁵

Given that NRCS did not establish cooperative relationships with all State regulatory authorities for assessing and rehabilitating dams, its ability to fully implement the program was limited. However, we also found problems with NRCS’ internal processes for administering the program. For example, NRCS did not prioritize the assessment and rehabilitation of high hazard dams, which posed the greatest risk to public safety. Instead, 6 years after the program was initiated, NRCS has not assessed 1,345 of 1,711 high hazard dams (79 percent), and has spent \$10.1 million to assess and rehabilitate low or significant hazard dams, which are dams where failures would not likely result in loss of human life.⁶ OIG maintains that this allocation of resources does not conform to Congress’ mandate, nor is it in the public’s best interest.

NRCS officials explained that they have not assessed all high hazard dams because Congress did not appropriate sufficient funds for this purpose. However, according to NRCS’ estimate, the cost to assess a dam should average about \$10,000. The agency could have assessed all 1,711 high hazard dams for \$17.1 million, which is significantly less than the \$159.6 million Congress has appropriated for the program since FY 2002. Instead, because it assessed dams as they were volunteered by their owners, regardless of hazard class, NRCS spent funds to assess and rehabilitate less hazardous structures. Of the 843 dams assessed under the dam rehabilitation program, 477 were not classified as high hazard.⁷ Of the 147 dams NRCS has started to rehabilitate, 29 were not classified as high hazard (see exhibit D).⁸

Four other problems impacted NRCS’ success in assessing and rehabilitating high hazard dams whose failure would represent the greatest danger to public safety.

- NRCS did not have a complete and accurate inventory of the dams Congress had directed it to assess and rehabilitate. Of the 46 NRCS State offices with dam rehabilitation programs, 23 State inventories differed from the national inventory—9 States listed fewer high hazard dams than the national office reported, while 14 listed more. The agency thus could not accurately state how many high hazard dams there were in the country, or whether its hazard classifications were reliable. For example,

⁵ Congress established the program so that dam owners may voluntarily seek aid from NRCS. The State regulatory agencies, however, can compel owners to maintain and repair their dams.

⁶ See Background for definitions of these different dam hazard categories.

⁷ See Finding 3.

⁸ See Finding 7.

the NRCS State office in Georgia stated that there were 133 high hazard dams in Georgia, but the NRCS national office listed 185. Although a prior OIG report had noted similar problems, NRCS had not yet corrected them.^{9, 10}

- NRCS did not set reasonable outcome-based performance goals for the dam rehabilitation program. The 1,711 high hazard dams built with NRCS' assistance could threaten a total of 1.3 million people, but NRCS only aimed to reduce the risk of dam failure for 6,000 people by 2010—just 0.5 percent of the total population at risk.¹¹
- NRCS performed 843 assessments from FYs 2002 to 2007, but it did not sufficiently define the scope of the activities performed during these assessments, and exercised little control over how much NRCS State offices were spending per assessment. Consequently, expenditures varied between States, with some States spending on average less than \$10,000 per assessment, and others on average more than \$40,000. Without a standard approach for assessment, some States were performing work during the assessment that should be reserved for rehabilitation planning, which increased assessment costs. Thus, NRCS was spending more of its limited resources per dam during the assessment phase, and completing fewer assessments.¹²
- NRCS developed 21 rehabilitation plans for high and low hazard dams that the owners of the dams later decided not to implement, even though the agency had spent an estimated \$5.1 million to develop these plans (see exhibit E). This occurred mainly because dam owners were unable to pay for 35 percent of their dam's rehabilitation, as required by law. Since these funds were spent on rehabilitations that were not carried out, NRCS had fewer resources available to assess and rehabilitate other high hazard dams posing a risk to public safety.¹³

We identified two additional problems that NRCS needs to address. When NRCS provided information to the U.S. Army Corps of Engineers for publication in the *National Inventory of Dams*, it was making information publicly available that could, in the wrong hands, be used to harm the American public. This sensitive information includes the hazard classification of each dam, its exact location by angular distance coordinates, and whether an emergency action plan exists to protect lives if the dam failed. We concluded that NRCS needs to identify such information and take appropriate steps to restrict public access.¹⁴

⁹ Audit Report 10099-10-KC, "NRCS Protection of Federal Assets," dated September 2003.

¹⁰ See Finding 2.

¹¹ See Finding 4.

¹² See Finding 5.

¹³ See Finding 6.

¹⁴ See Finding 8.

NRCS has also made limited progress in ensuring that all high hazard dams have emergency action plans in place so that, in case of a breach or other malfunction, the surrounding population could be protected. A prior OIG report pointed to this deficiency, but 869 of NRCS' 1,711 high hazard dams (or 51 percent) remain without emergency action plans.¹⁵ NRCS officials explained that they have made little progress because they cannot compel dam owners to develop such plans, and have instead required owners to develop emergency plans as part of their dam's rehabilitation. OIG notes that by cooperating more fully with the State regulatory agencies, NRCS may potentially help increase the number of high hazard dams with emergency action plans.¹⁶

We concluded that NRCS should take the following steps to improve the dam rehabilitation program. Above all, it must develop cooperative relationships with the State agencies responsible for regulating dams so that, together, the Federal-State partnership has the authority to require the rehabilitation of dams that threaten public safety. In addition, it should report to Congress regarding any high hazard dams that it determines are in need of rehabilitation but are not rehabilitated due to limitations in the program. Based on this information, Congress may consider taking additional action.

Recommendations in Brief

We recommend that NRCS:

Develop an overall strategy for the dam rehabilitation program, including plans to work with State regulatory agencies to assess and rehabilitate high hazard dams.

Report annually to Congress concerning any high hazard dams that are determined to need rehabilitation, but are not rehabilitated, and why the program goals cannot be accomplished.

Develop, as part of the overall strategy for the dam rehabilitation program, plans to assess all high hazard dams nationwide, prior to assessing low or significant hazard dams.

Develop and implement policy and procedures for maintaining national and State dam inventories, including routinely updating and reconciling information.

Issue guidance clarifying the scope of the work NRCS State offices should perform when they assess dams for rehabilitation.

¹⁵ Audit Report 10099-10-KC, "NRCS Protection of Federal Assets," dated September 2003.

¹⁶ See Finding 9.

Determine what actions can be taken if dam owners are unable to meet their obligation to provide 35 percent of the funds needed for rehabilitation, including seeking Congressional authorization to fund a greater portion of dam rehabilitation costs.

Establish policy and procedures for designating sensitive dam information in NRCS' dam inventory databases, securing that information, and limiting access.

Work with State regulatory agencies to require owners to develop emergency action plans for high hazard dams.

Agency Response

In its written response, dated May 20, 2009, NRCS concurred with the findings and recommendations. NRCS' response is included in exhibit G of this report.

OIG Position

We accept NRCS' management decisions for all recommendations, except for Recommendations 9 and 10. The actions needed to reach management decisions on these recommendations are provided in the OIG Position section after the applicable recommendation.

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Background and Objectives

Background

Within the U.S. Department of Agriculture (USDA), the Natural Resources Conservation Service (NRCS) is responsible for the Department's cooperative programs of watershed protection and flood prevention. Since the 1940s, NRCS has provided financial assistance to construct over 11,000 dams across the United States.¹⁷ These dams have served many useful functions—including controlling floods in rural and agricultural areas; improving municipal and industrial water supplies; conserving water, fish, and wildlife habitats; and creating recreational opportunities.

Many of these structures are aging and have reached, or will soon reach, the end of their planned design life. By 2008, 133 high hazard dams had reached the end of their design life. Also, many of these dams were constructed in areas that were initially predominately agricultural, but urban growth and residential development has resulted in people living in much closer proximity, sometimes within the dam's zone of inundation. As a result, these dams may not meet design and safety standards necessary to protect the human population. Because dams have aged and the surrounding population has grown, the risk to human life from dam failure has tended to increase.

These dams are not directly owned by the Federal Government—92 percent are owned by local governments and public utilities, 6 percent are owned by State governments, and 2 percent are owned by other entities. NRCS lacks the authority to require owners to rehabilitate their dams when necessary to protect surrounding populations—it must rely on State regulators to take such action. An NRCS State office may notify a State regulatory agency that a dam needs repair, but working relationships between NRCS and State agencies vary from State to State.

In the Fiscal Year (FY) 2000 Agricultural Appropriations Bill, Congress expressed its concern for “the threats to public safety posed by the aging system of flood control structures and the hardships placed on local conservation and flood control districts due to the Department's policy that rehabilitation of such facilities is considered part of the district's operation and maintenance responsibilities.” The Department was therefore “to provide the committee a detailed analysis of this problem and a strategy to provide comprehensive rehabilitation of endangered structures.” The Department responded by proposing a strategy to address the problem of deteriorating dam infrastructure.¹⁸ After a 1-month rapid survey of rehabilitation needs in 22 States, the Department concluded that about 650 dams built with NRCS'

¹⁷ Exhibit B describes the distribution of these dams among the States.

¹⁸ “A Report to Congress on Aging Watershed Infrastructure” (NRCS, June 2000).

assistance posed a threat to public health and safety. The cost of rehabilitating these dams was estimated at \$400 million.

Recognizing the need to rehabilitate aging dams and ensure the safety of the public, Congress established the dam rehabilitation program in November 2000. The law provided that USDA, working in concert with the responsible State agencies, shall conduct an assessment of the rehabilitation needs of dams in all States where such projects are located.¹⁹ It also authorized the appropriation of Federal funds to aid owners in rehabilitating their dams. One Congressman described the public safety interest this legislation was meant to serve: “If the Federal Government takes no action to rehabilitate, we will be forced to witness a serious threat to human life and property as these dams continue to age.”²⁰

The law authorized NRCS to provide rehabilitation aid in the form of technical and financial assistance. The purpose of rehabilitating dams is to extend their service life and bring them into compliance with current safety and performance standards, or to decommission them so they no longer pose a threat to life and property. NRCS was directed, first, to conduct onsite assessments of dams to identify their rehabilitation needs, and then to provide assistance to rehabilitate the dam if necessary, up to 65 percent of total dam rehabilitation cost and not to exceed 100 percent of total construction cost. The law prohibits assistance, however, if a need for rehabilitation results from the owner’s failure to adequately maintain the dam.

To quantify the potential harm associated with a dam’s failure, the *Federal Guidelines on Dam Safety: Hazard Potential Classification System for Dams* (Federal Emergency Management Agency, April 2004) provides a hazard classification system. This system classifies dams’ potential hazard as low, significant, or high based on the economic, environmental, and population risk associated with their failure. If a low hazard dam fails, according to this system, no loss of life is expected and other losses are expected to be low and generally limited to the dam’s owner. If a significant hazard dam fails, no loss of human life is expected, but economic and environment losses are likely. A high hazard dam is defined as one whose failure is expected to cause loss of human life. Such a failure may also cause economic and environmental damage, but such damage is not necessary for the dam in question to be classified as high hazard.

As of FY 2007, Congress has appropriated a total of \$159.6 million for the dam rehabilitation program: \$10 million in FY 2002; \$29.8 million in FY 2003; \$29.6 million in FY 2004; \$27.3 million in FY 2005; \$31.6 million in FY 2006; and \$31.3 million in FY 2007.

¹⁹ Public Law 106-472, Section 313, “Grain Standards and Warehouse Improvement Act of 2000.”

²⁰ Press Release April 15, 1999, Congressman Frank Lucas.

In a prior audit, OIG conducted a review of homeland security issues affecting protection of assets, which included reviewing NRCS' inventory of dams and emergency action plans for high hazard dams.²¹ That review noted inaccuracies in NRCS' national inventory of dams, as well as high hazard dams lacking emergency action plans to put into effect in case of a dam failure. Our review discusses the progress NRCS has made in addressing these concerns in Findings 2 and 9.

Objective

The objective of this audit was to review the adequacy of NRCS' controls for rehabilitating flood control dams to mitigate potential threats or risk to life and property.

²¹ USDA Office of Inspector General (OIG) Audit Report 10099-10-KC, "NRCS Protection of Federal Assets" (September 2003).

Findings and Recommendations

Section 1. NRCS Needs to Accomplish Congress' Direction to Assess and Rehabilitate High Hazard Dams

Finding 1

NRCS Needs to Assess and Rehabilitate High Hazard Dams

Of the 1,711 high hazard dams built with NRCS' assistance, NRCS has not determined the rehabilitation needs of 1,345 dams, although the program had been operating for 6 years. Two obstacles prevented NRCS from operating the program effectively. First, NRCS does not have the regulatory authority to compel dam owners to rehabilitate deteriorating structures. Since State regulatory agencies do have that authority, NRCS should have developed a strategy that includes developing cooperative relationships with the States. Congress, in fact, required NRCS to do so, but agency officials did not issue guidance emphasizing the need to cooperate with the States when assessing dams. Instead, NRCS implemented a voluntary rehabilitation program, assessing dams as they were volunteered by their owners.²² However, the dams that were volunteered were not always high hazard dams—some owners with lower hazard dams volunteered their dams first. Second, as required by law, NRCS can pay only up to 65 percent of a dam's rehabilitation cost. If an entity owning a dam cannot pay its share of the dam's rehabilitation cost, then the dam will not be rehabilitated, even if it is nearing the end of its planned design life and is in need of repairs. Due to these problems, the dam rehabilitation program is not serving the public's overriding safety interest, which is to rehabilitate high hazard dams that will potentially threaten nearby populations if they fail. Table 1 illustrates the 10 unassessed high hazard dams with the largest population at risk.²³

Table 1: Unassessed High Hazard Dams with the Largest Population at Risk²⁴

	Dam Name	Population at Risk
1	[]	66,116
2	[]	65,000
3	[]	63,000
4	[]	57,500

²² Congress established the program so that dam owners may voluntarily seek aid from NRCS. The State regulatory agencies, however, can compel owners to maintain and repair their dams.

²³ Population at risk is all persons exposed to flood waters if they took no action to evacuate "NRCS Data Dictionary for Inventory of Dams," dated January 20, 2004.

²⁴ Based on data provided to OIG by NRCS State offices.

	Dam Name	Population at Risk
5	[]	54,793
6	[]	33,724
7	[]	25,303
8	[]	19,785
9,10	[] ²⁵	15,961

In the FY 2000 Agricultural Appropriations Bill, Congress expressed its concern for “the threats to public safety posed by the aging system of flood control structures and the hardships placed on local conservation and flood control districts due to the Department’s policy that rehabilitation of such facilities is considered part of the district’s operation and maintenance responsibilities. The Committee directs the Department to provide . . . a detailed analysis of this problem and a strategy to provide comprehensive rehabilitation of endangered structures.”

NRCS responded to this directive by conducting a rapid survey of dams in 22 States, and estimating that more than 2,200 of the flood control structures would need to be rehabilitated at a cost of more than \$540 million. NRCS further estimated that 650 of these dams posed “a threat to public health and safety”—these dams would require almost \$400 million “to protect the existing population.”²⁶ Afterwards, over the next 6 years, Congress appropriated \$159.6 million, directing that the funds were intended to rehabilitate structures that the agency “determined to be of high priority need in order to protect property and ensure public safety.”

In implementing the dam rehabilitation program, NRCS should have developed a strategy that included inter-agency coordination and cooperation with State regulatory agencies, since it lacks the authority to require dam owners to rehabilitate structures that are in need of repair. Without a strategy for resolving this issue of authority, NRCS cannot accomplish Congress’ mandate to rehabilitate high hazard dams to protect public safety.

Recognizing the importance of a Federal-State partnership, Congress directed NRCS to collaborate with State agencies in the legislation establishing the program.²⁷

We found, however, that NRCS developed no strategy to work with State regulatory authorities, and NRCS State offices did not always have cooperative relationships with their respective State agencies for the purpose

²⁵ These dams threaten the same population at risk if either dam failed.

²⁶ These amounts were preliminary estimates.

²⁷ Public Law 106-472, Section 313, “Grain Standards and Warehouse Improvements Act of 2000.”

of assessing and rehabilitating dams. Of the 51 NRCS State offices, 46 participated in the dam rehabilitation program.²⁸ However, NRCS State officials were working in concert with only 23 State agencies to conduct assessments of the rehabilitation needs of dams. NRCS permitted its State conservationists broad discretion in determining the scope of their relationship with the States. As a result, in some States where such collaborative relationships were not in place, State resources that could have provided assistance in assessing and rehabilitating high hazard dams were not used. For example, one official from the Kansas State agency told us that his State was more than willing to work with NRCS to assess dams, if asked.²⁹ Since 1,345 high hazard dams nationwide have not yet been assessed, NRCS should mobilize and deploy all available resources to assess all high hazard dams.

NRCS officials informed us that the agency lacks the resources it needs to assess all high hazard dams. In those States where a collaborative relationship exists, States have provided useful assistance and enabled NRCS to assess more dams than it would have been able to assess alone. For example, in Arkansas, where the State agency assisted NRCS in assessing dams, 25 of its 47 high hazard dams (53 percent) were assessed. In West Virginia, where there was no collaborative relationship with the State agency, only 9 of 138 of its high hazard dams (7 percent) were assessed. Developing a cooperative Federal-State partnership is also vital because the overwhelming majority (98 percent) of these dams are owned by State and local governments, or public utilities.

In the law establishing the program, Congress provided that NRCS cannot pay for more than 65 percent of dams' rehabilitation costs. OIG noted that this requirement acted as a barrier for owners who, while their dam may need rehabilitation, may not be able to pay 35 percent of the dam's rehabilitation costs. We found that 10 owners of 12 high hazard dams did not implement rehabilitation plans developed by NRCS because they could not pay 35 percent of the estimated rehabilitation costs. NRCS officials told us that they were unaware that this many rehabilitation plans were being declined due to their owners' inability to pay their share.

To some degree, the 35 percent requirement has acted as an impediment to accomplishing Congress' mandate. NRCS needs to develop an overall strategy for the dam rehabilitation program that includes plans for cooperating with State regulatory agencies to assess and rehabilitate high hazard dams and for providing additional funding to high hazard dam owners whose dams need rehabilitation. Further, if these impediments to the dam rehabilitation program's full implementation prevent any high hazard dams

²⁸ The 51 NRCS State offices include the office for Puerto Rico and the Caribbean.

²⁹ Eighty-nine high hazard dams in Kansas were not assessed.

from being rehabilitated, NRCS should track that information and report it to Congress so that it may determine what actions can be taken to provide additional funding for high risk dams.

Recommendation 1

Develop an overall strategy for the dam rehabilitation program, including plans to work with State regulatory agencies to assess and rehabilitate high hazard dams.

Agency Response.

NRCS' written response, dated May 20, 2009, provided several actions it would perform as part of an overall strategy for the dam rehabilitation program, including partnering with States to assess and rehabilitate high hazard dams. The agency will propose to work with the American Association of State Dam Safety officials, for the purpose of developing national guidance on working jointly with State dam regulatory agencies. NRCS State conservationists will also meet with State dam regulatory officials to discuss coordinating NRCS and State agencies' efforts to assess and rehabilitate dams. Memorandums of Understanding between NRCS and State agencies would be established to identify appropriate responsibilities and actions that could include use of State funds for dam assessments, rehabilitation planning, or plan implementation. NRCS also plans to annually identify and prioritize for funding all high hazard dams that have not had assessments (before any low or significant hazards dams are assessed using Federal funds), and initiate in FY 2009 the assessment of over 600 dams that pose the most critical risks to public safety. The agency would also continue to base its annual funding methodology on prioritizing dams having the highest risk to public safety, with the Chief determining the allocation of funds for assessments of high hazard dams. NRCS stated that some of the corrective actions will be completed by October 2009; others by April 2010. Some of the actions will be implemented annually.

OIG Position.

We accept NRCS' management decision for this recommendation.

Recommendation 2

Report annually to Congress concerning any high hazard dams that are determined to need rehabilitation, but are not rehabilitated, and why the program's goals cannot be accomplished.

Agency Response.

In its May 20, 2009, response, NRCS stated it will develop a decision support tool displaying the locations of all high hazard dams, with an overlay of socially and economically disadvantaged geographic areas. These displays would be provided in reports to Congress as needed, illustrating where higher Federal cost-share rates may be necessary to equitably implement the dam rehabilitation program. The agency also stated that it would work through the Department's legislative change process to propose a statutory change to account for the unique needs of socially and economically disadvantaged communities, including higher cost-share rates. NRCS provided an estimated completion date of October 2010.

OIG Position.

We accept NRCS' management decision for this recommendation.

Section 2. NRCS Needs to Improve its Administration of the Dam Rehabilitation Program

Congress, when it established the dam rehabilitation program, directed NRCS to use appropriated funds to rehabilitate structures that the agency “determined to be of high priority need in order to protect property and ensure public safety.”³⁰ As Finding 1 describes, however, NRCS does not have the regulatory authority to require owners of potentially dangerous high hazard dams to rehabilitate them. It has also not developed cooperative relationships with all State regulatory agencies, which do have that authority. Instead, NRCS disseminated information about the program to dam owners and assessed dams as the owners volunteered them, without regard to hazard classification. From the dams that were assessed, the agency then chose dams for rehabilitation, after the owners applied for aid.

In addition to this fundamental problem in ensuring that high hazard dams are, in fact, the ones that are rehabilitated, NRCS’ internal processes for the program can be improved to better accomplish the program’s goals:

- NRCS’ national dam inventory did not accurately list the number of dams it was responsible for, nor their hazard class—23 of the 51 NRCS State offices listed discrepancies with the national database (see Finding 2).³¹
- NRCS did not assess 1,345 of 1,711 high hazard dams (79 percent); \$3.8 million in program funds was spent to assess 477 low or significant hazard dams (see Finding 3).
- NRCS did not set reasonable outcome-based performance goals for the program. Of the 1,711 dams whose deterioration might threaten a total of 1.3 million people, NRCS aimed to reduce the risk to 6,000 people by 2010, only 0.5 percent (see Finding 4).
- NRCS State offices varied widely in the scope of their dam assessments, which resulted in widely varying costs. Some State offices spent on average less than \$10,000 to assess a dam, while others spent on average more than \$40,000. This occurred because NRCS officials had not clearly defined the scope of these assessments (see Finding 5).
- NRCS incurred an estimated \$5.1 million in costs to develop rehabilitation plans that owners decided not to implement because many could not afford to pay 35 percent of their dam’s rehabilitation cost, as required for participation in the dam rehabilitation program (see Finding 6).

³⁰ Senate Report 107-223, “Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Bill,” dated July 25, 2002.

³¹ Puerto Rico and the Caribbean is the 51st NRCS State office. Forty-six of 51 State offices participated in the dam rehabilitation program.

- NRCS funded 29 low or significant hazard dams for rehabilitation at a total cost of \$6.3 million while high hazard dams did not receive funding (see Finding 7).

Finding 2

NRCS Needs to Update its Dam Inventory for Accuracy

NRCS' national database of dams is updated biennially when the national office calls for data from the State offices. We found, however, that this approach produced significant discrepancies between State and national databases. The information in the States' databases changed as new dams were built and engineers altered the hazard classifications of dams, but the national database was not updated to reflect these changes. Of the 51 NRCS State offices' dam inventory databases, 23 differed from the national inventory—8 States had fewer dams than the national office reported, while 15 had more.³² A prior OIG audit identified problems with this national inventory, including inaccuracies in the number of dams and lack of review of their hazard classifications.³³ These problems have continued because NRCS does not have policy and procedures for reconciling its national inventory with the States' inventories on an ongoing basis. Due to these problems, NRCS lacked the inventory information it needed to prioritize high hazard dams for the rehabilitation program.

Agency management is responsible for developing and maintaining effective internal controls to ensure that the agency can meet its objectives.³⁴ Such internal controls apply to all information systems to ensure that data are valid and complete. In order for NRCS to implement Congress' vision for the dam rehabilitation program, the agency needs an accurate inventory of the dams it is responsible for, including information on the hazard classification of each dam. The *National Engineering Manual* requires that NRCS maintain an inventory of dams, including all high hazard dams.³⁵

Prior to 1996, NRCS maintained its dam inventory database on a mainframe computer in Fort Collins, Colorado, and policy and procedures existed for maintaining this inventory. However, when this mainframe database was phased out, NRCS cancelled these procedures and did not replace them. Due to the lack of policy and procedures for ensuring that the national office's data were routinely updated and reconciled with the State databases, NRCS' national inventory of dams did not contain accurate information regarding dams it might consider for assessment and rehabilitation.

³² The conclusions in this finding are based on data NRCS provided. We did not validate this data, but instead compared data in the national database with data in the State databases.

³³ Audit Report 10099-10-KC, "NRCS Protection of Federal Assets," dated September 2003.

³⁴ OMB Circular A-123, "Management's Responsibility for Internal Control" (December 2004).

³⁵ *National Engineering Manual* 503.52 (NRCS, September 1997).

NRCS Did Not Maintain Accurate Information on the Number of Dams in Each State

We compared NRCS’ national list of dams with those maintained in the NRCS State offices, and found that 23 of the 51 offices reported differences from the national list—8 States had fewer dams than the national office reported, while 15 had more. For example, Texas had 37 fewer dams than the national listing, while Mississippi had 46 more.

Similarly, we found differences in the number of high hazard dams listed in 23 of the 51 NRCS State databases when we compared them with the national list—9 States had fewer high hazard dams than the national office listed, while 14 had more. For example, Georgia had 52 fewer high hazard dams than the national listing, and Oklahoma had 23 more (see Table 2).

Table 2: Ten Largest Differences in the Number of High Hazard Dams—NRCS State and National Databases

State	Number Per NRCS State Database ³⁶	Number Per NRCS National Database ³⁷	Difference
Georgia	133	185	-52
New York	47	51	-4
Kentucky	32	34	-2
Montana	12	14	-2
Wyoming	1	3	-2
Arkansas	47	42	+5
Nebraska	43	36	+7
Wisconsin	33	26	+7
North Carolina	45	33	+12
Oklahoma	188	165	+23

NRCS national officials explained that these differences are due to the time difference between when States update their data and the national office’s biennial call for that data. There are no procedures to routinely update the national list. Instead, the national list is compared to State dam inventories only once every 2 years, when NRCS must provide a copy of its national inventory of dams to the U.S. Army Corps of Engineers for publication in the *National Inventory of Dams*.

³⁶ Data are from State office databases. OIG initially requested this data from 25 States on August 2007, and made additional requests from the other States in November 2007 and January 2008.

³⁷ Data are as of May 19, 2006, which is the last biennial update of NRCS’ national database.

In response to our prior audit, NRCS agreed that it would update its inventory by October 2004. Since 2004, NRCS' national office has continued to call for data biennially. However, it does not regularly reconcile or update its national list to NRCS State offices' lists for planning purposes. The significant differences between national and State dam listings, and the absence of routine reconciliation, led us to conclude that NRCS needs to improve how it maintains its national inventory so that it has a complete and accurate listing for prioritizing high hazard dams for rehabilitation.

NRCS Does Not Maintain Accurate Hazard Classifications for the Dams in its Inventory

NRCS was not, on an ongoing basis, updating the hazard classifications of dams in its inventory, even though in its response to our prior audit the agency agreed to update all dams' hazard classifications by 2005. We found, however, that NRCS had not yet corrected this deficiency.

In September 2006, NRCS' Oversight and Evaluation staff published a study disclosing that updating hazard classifications continued to be a problem. That study noted that NRCS' inspection report form for both the annual and formal inspection does not require the inspector to address the dam's hazard classification.³⁸ On October 3, 2007, the NRCS Regional Assistant Chiefs wrote to the NRCS State conservationists and noted continuing problems with dam hazard classifications. In this memo, NRCS emphasized that the State conservationists are responsible for verifying dam hazard classifications. The memo also stated that, beginning in 2008, State conservationists will be evaluated, in part, on how well they verify and certify that dam hazard classifications are accurate.

Based on this memo, OIG concluded that NRCS is beginning to take positive steps to update dam hazard classifications. However, we note two areas that NRCS needs to emphasize in its review of hazard classifications.

a. Demographic Trends Indicate the Risks Associated with Some Dams Are Increasing

When many of NRCS' dams were built, they were located in areas that were predominately agricultural, and they, therefore, tended to receive low hazard classifications. Many of these areas have since been developed for urban and, especially, suburban housing, which means that houses have been built in the dams' zones of inundation. Such dams have thus tended to become high hazard dams.

³⁸ The purpose of annual inspection is to determine whether a dam's components are functioning as designed (*NRCS National Operation and Maintenance Manual* 508.41, April 24, 2007). NRCS generally requires dams to be inspected annually, but does not require an owner to have its dam assessed for potential rehabilitation.

For example, the [] was built in 1964 in an area that was once rural and agricultural. Now there are 99 residential, 4 public, and 3 commercial properties located in the dam's downstream inundation area. About 500 persons are endangered if the dam fails. Consequently, this dam's hazard classification was upgraded from low to high hazard.

NRCS is not routinely revising dam hazard classifications to account for such urban development and population growth.³⁹ The annual inspection of each dam is supposed to "identify any changed conditions that may affect hazard classification," but the agency's inspection form does not include space to note changing conditions that should prompt a re-evaluation of the dam's hazard classification.

b. Many High Hazard Dams List Zero Population at Risk

We found that NRCS' national dam database listed 1,347 high hazard dams with zero population at risk or with the data field blank. For example, in Wisconsin, eight dams were listed high hazard, yet the NRCS State office told us no human life was endangered by these dams. Officials at the Wisconsin NRCS State office stated that they classified these dams high hazard because potential development below the dam is not prohibited by zoning laws. One of these misclassified high hazard dams was assessed in 2006 at a cost of \$30,000. NRCS found that the dam did not need rehabilitation.

State officials offered a number of explanations concerning why dams might have zero population at risk and yet still be classified as high hazard. We maintain that, if the failure of these dams would not likely result in loss of human life, then the dam should not be classified as high hazard. If these dams do involve some population at risk, it is vital that NRCS be able to state how many people might be harmed by the dam's deterioration, as this information directly affects the level of risk associated with the dam and the dam's priority for rehabilitation.

Resolving this longstanding problem is also important because misclassifying dams results in the agency reporting inaccurate and possibly misleading information to the U.S. Army Corps of Engineers, which uses that data to assemble the *National Inventory of Dams*, policymakers' and dam safety officers' chief source of information relating to all dams in the United States.

³⁹ Oversight and Evaluation Study, "Watershed Structures Operation and Maintenance/Hazard Classification Management Action Plan Follow-up" (NRCS, September 2006).

NRCS' Dam Hazard Definitions Do Not Correspond to Federal Guidelines

In 1994, the Federal Government published a new dam hazard classification system intended to provide straightforward definitions that all Federal and State agencies could apply uniformly.⁴⁰ This system classified dams' potential hazard as low, significant, or high based on the economic, environmental, and population risks associated with them. If a low hazard dam fails, according to this system, no loss of life is expected and other losses are expected to be low and generally limited to the dam's owner. If a significant hazard dam fails, no loss of human life is expected, but economic and environment losses are likely. A high hazard dam is defined as one whose failure is expected to cause loss of human life in the area inundated by floodwater. Such a failure may also cause economic and environmental damage, but such damage is not necessary for the dam in question to be classified as high hazard.

We found that NRCS' hazard classification system does not correspond to the Federal guidelines. Instead, NRCS defines a high hazard dam as one whose failure may cause loss of life *or* serious damage to property such as "homes, industrial and commercial buildings, important public utilities, main highways, or railroads."⁴¹ NRCS' definition of high hazard essentially combines the Federal guidelines' definition of high hazard *and* significant hazard, which could mean that dams whose failure would result only in property damage are being treated similarly to dams whose failure would result in loss of human life. Misclassifying dams in this way could thus cause problems when the agency prioritizes projects for assessment and rehabilitation. In addition, we noted that, when NRCS reports data concerning its dams to the U.S. Army Corps of Engineers, it is reporting information that may be viewed as inaccurate and possibly misleading, as the U.S. Army Corps of Engineers uses the Federal guidelines' definitions of hazard classes established in 1994 to classify its dams.

We asked NRCS officials why the agency's definition of high hazard dams differed from Federal guidelines. They explained that they have a more capacious definition of high hazard because people's lives could be at risk outside a dam's zone of inundation. They further explained that NRCS' definition classifies more dams as high hazard than the Federal guidelines, which means that more dams are compelled to meet higher safety and performance standards. They also explained that they have always used their own definition, that many agencies have different definitions, and that adoption of one set of definitions was not mandatory.

⁴⁰ "Federal Guidelines for Dam Safety: Hazard Potential Classification System for Dams" (Federal Emergency Management Agency, April 2004).

⁴¹ *NRCS National Engineering Manual* 520.21, September 1997.

While adoption of the Federal guidelines' definition is not mandatory, we believe that adopting this standard set of terms would best serve the interests of both the Government and the public, as it would facilitate communication between agencies and with citizens who may be affected by a dam's failure. For NRCS, specifically, it will also help the agency adequately prioritize dams for assessment and rehabilitation based on their risk to human life.

Before NRCS can develop an effective strategy for prioritizing high hazard dams, it must maintain an accurate and up-to-date inventory of dams, including the number of dams nationwide and updated hazard classifications that conform to Federal guidelines. Inaccuracies in this inventory could compromise the agency's ability to assess and rehabilitate those high hazard dams whose deterioration might negatively affect public safety.

Recommendation 3

Develop and implement policy and procedures for maintaining national and State dam inventories, including routinely updating and reconciling information.

Agency Response.

NRCS' written response, dated May 20, 2009, stated that NRCS will review its policy and procedures and institute revised policy to ensure that the inventory of dams is accurate and that the national list is updated more frequently. NRCS provided an estimated completion date of September 2010.

OIG Position.

We accept NRCS' management decision for this recommendation.

Recommendation 4

Revise the dam hazard classification definitions to correspond to those of the Federal Guidelines for Dam Safety.

Agency Response.

NRCS' written response, dated May 20, 2009, stated that NRCS will consult with other members of the Federal agencies represented on the Interagency Committee on Dam Safety to develop a uniform Federal strategy for adoption of the guide standard.

NRCS will review its policy on hazard classification and align the *National Engineering Manual* with the Federal guidelines if all Federal agencies agree

and adopt the guidelines as the standard. NRCS provided an estimated completion date of September 2010.

OIG Position.

We accept NRCS' management decision for this recommendation.

Recommendation 5

Update hazard classifications for all dams as changes in risk occur.

Agency Response.

NRCS' written response, dated May 20, 2009, stated that NRCS will ensure States and national hazard classifications for the dams in the inventory are accurate and account for the urban development and population growth that occurred after a dam was built. [State conservationists] STCs will be required to verify and certify that hazard classifications are accurate and up-to-date, as specified in the *National Operation and Maintenance Manual* (O&M).

NRCS will revise its O&M policy, as needed, to emphasize the need to note land use changes during routine inspections and initiate follow up to assess impact on hazard class. NRCS also stated that it will revise its *National Engineering Manual* policy, as needed, to emphasize assessment of potential hazard class changes. NRCS provided an estimated completion date of September 2010.

OIG Position.

We accept NRCS' management decision for this recommendation.

Finding 3

NRCS Did Not Prioritize the Assessment of High Hazard Dams

Of 1,711 high hazard dams, NRCS has not assessed 1,345, or 79 percent.⁴² This occurred because NRCS has not developed a strategy for the program that includes assessing dams with relevant State regulatory agencies, which possess the necessary authority to compel owners to repair deteriorating dams. Once this Federal-State partnership is established, NRCS should assess only high hazard dams, especially those high hazard dams that are at the end of their planned design life. Instead, NRCS notifies dam owners of the opportunity for assessment, and then assesses volunteered dams without regard to the dams' hazard class. As a result, NRCS spent \$3.8 million to

⁴² See exhibit C for the location of these 1,345 high hazard dams.

assess 477 low or significant hazard dams—dams whose deterioration would not necessarily pose a threat to public safety.

Congress appropriated funding for NRCS to rehabilitate “structures determined to be of high priority need in order to protect property and ensure the public safety.”⁴³

NRCS developed a strategy for this program in its “Strategy for the Future,” which was presented to Congress in 2000. In that document, NRCS proposed that it would, as its first strategic principle:

Conduct a detailed field assessment of the condition of *all* watershed dams, as well as population at risk, hazard classification, and risk of failure across the Nation. This assessment is needed to identify the condition of dams and *prioritize* the rehabilitation needs that threaten public health and safety and/or result in adverse environmental impacts.⁴⁴

However, NRCS did not include a strategy for working with State regulatory agencies, which is essential if the agency is to prioritize high hazard dams since the State agencies have the authority to compel owners to repair dangerous dams. Once NRCS develops a strategy to work with the State regulatory agencies, it should then plan to allocate its resources so that it could focus on those high hazard dams reaching the end of their planned design life. The majority of dams were designed with a 50-year lifespan, and many have already reached the end of their design lives without being assessed, as illustrated by the following table.

Table 3: High Hazard Dams Reaching the End of their Planned Design Life (EOL), 2003 through 2007⁴⁵

EOL Year	Number of High Hazard Dams	Number of Assessments of High Hazard Dams Completed	Population at Risk High Hazard Dams Reaching EOL and Not Assessed
2003	8	4	40
2004	14	7	356
2005	22	5	2,846
2006	20	2	66,225
2007	21	7	1,951
TOTAL	85	25	71,418

⁴³ Senate Report 107-223, “Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Bill,” dated July 25, 2002.

⁴⁴ Emphasis added.

⁴⁵ Considers high hazard dams in NRCS’ national list of dams, whose service life had expired or that were at least 50 years old but had no service life recorded in the national list.

A total of 71,418 people would be threatened by the deterioration of these dams, yet NRCS did not make their assessment and potential rehabilitation a priority. NRCS' approach to assessment and rehabilitation has also resulted in a backlog of unassessed, high hazard dams past the end of their planned design life, as more dams have reached the end of their design life than have been assessed.

Instead of prioritizing such dams, NRCS assesses and rehabilitates low and significant hazard dams. The agency does this because it accepts dams for assessment on a voluntary basis, and some dam owners with low hazard dams volunteered before those with high hazard dams. Of the 843 assessments NRCS performed from FYs 2002 through 2007, only 366 were of high hazard dams (see Table 4).

Table 4: Dam Assessments and Cost by Hazard Class (FYs 2002-2007)⁴⁶

Dam Hazard Class	Dam Assessments Performed	Total Cost of Dam Assessments
Low	323	\$2,676,487
Significant	154	\$1,104,066
High	366	\$7,140,289
TOTAL	843	\$10,920,842

Further, of the 147 rehabilitations NRCS began, 29 were dams that were not classified high hazard, and whose deterioration would not pose a risk of loss of human life. Again, this occurred because NRCS assesses dams on a voluntary basis—once low and significant hazard dams are assessed, the agency considers them for the funds available for rehabilitation.

Table 5: Dams Rehabilitated, by Class⁴⁷

Dam Hazard Class	Number of Dam Rehabilitation Projects	Cost To Rehabilitate⁴⁸
Low	19	\$3,065,795
Significant	10	\$3,258,930
High	118	\$98,896,944
TOTAL	147	\$105,221,669

⁴⁶ Based on data provided to OIG by NRCS State offices.

⁴⁷ Based on data provided to OIG by NRCS State offices.

⁴⁸ Cost to date. Many of these projects are ongoing and the final cost has yet to be determined.

We note that Congress, over 6 years, has appropriated sufficient funding to assess all high hazard dams. According to NRCS' latest estimates, the cost of assessing all high hazard dams is relatively low—only approximately \$17.1 million total. The program has received an average of about \$26.6 million each year since FY 2002, for a total of \$159.6 million.⁴⁹

OIG maintains that the funds used on low or significant hazard dams could have been more effectively allocated to emphasize completing the assessments of all high hazard dams. NRCS should plan to provide the maximum public safety benefit with the available funds, which will involve assessing and rehabilitating high hazard dams as a priority.

Recommendation 6

Develop, as part of the overall strategy for the dam rehabilitation program, plans to assess all high hazard dams nationwide, prior to assessing low or significant hazard dams.

Agency Response.

NRCS' written response, dated May 20, 2009, stated that implementation of the overall strategy for the dam rehabilitation program includes this recommendation, as referenced in its "Planned Corrective Action" for Recommendation 1. In response to Recommendation 1 relating to an overall strategy, NRCS stated that it will identify all high hazard dams that are eligible for Watershed Rehabilitation Program assistance that have not had assessments completed and prioritize them for funding before any low or significant hazard dam assessments using Federal funds. NRCS stated that a final list will be prepared at the national office for funding priority on an annual basis, and that it will update the list annually using the same process. NRCS provided an estimated completion date of October 2009.

OIG Position.

We accept NRCS' management decision for this recommendation.

Finding 4

NRCS Did Not Establish Reasonable Performance Goals for the Dam Rehabilitation Program

NRCS established outcome-based performance measures for the dam rehabilitation program that emphasized public safety and the protection of property, but did not establish reasonable milestones for the agency to gauge

⁴⁹ This sum was used for program overhead and to assess and rehabilitate dams.

the program's success. NRCS set a target for reducing, by 2010, risks from dam deterioration for at least 6,000 people. This is not a reasonable goal. The 1,711 high hazard dams built with NRCS' assistance could threaten a total of 1.3 million people—6,000 is only 0.5 percent of that population at risk. NRCS set this low performance target because it estimated that Congress would appropriate less funding than it, in fact, did. NRCS received just \$10 million in the first year of the program, but Congress has appropriated approximately \$30 million a year since 2003. As a result, the agency lacks a gauge for evaluating how well the program is meeting Congress' goal of promoting public safety.

According to the Government Performance Results Act of 1993, Federal agencies are required to develop performance measures indicating how effectively their programs are achieving their stated aims. Instead of simply reporting their program's *output* (i.e., how many roads were built), Federal agencies must report on how that output resulted in an *outcome* relevant to the agency's strategic goals (i.e., how traffic congestion was alleviated due to the construction of roads).⁵⁰

In 2004, working with the Office of Management and Budget (OMB), NRCS developed three outcome-based performance measures that were relevant to the program's aims—protecting public safety and property. However, NRCS' performance measure relating to protecting public safety, "By 2010, rehabilitate or remove unsafe dams in order to reduce risks to 6,000 people downstream," sets an unreasonably low accomplishment threshold. Our analysis shows that 49 of NRCS' 1,711 high hazard dams have—individually—populations at risk of at least 6,000 people. By rehabilitating just one of these 49 dams in the 6 years the program will have been operating, NRCS can meet this performance measure.

NRCS should set a performance measure that is more indicative, both of the numbers of people at risk overall and what the agency is capable of performing over several years.

Recommendation 7

Revise the agency's performance goals to more reasonably measure the program's accomplishments to ensure public safety.

Agency Response.

NRCS' written response, dated May 20, 2009, stated that the three performance goals will be updated for the new long-term performance period through FY 2014.

⁵⁰ Government Performance Results Act of 1993, Section 4.

The baseline to establish the performance goal will be increased from zero to what exists at the completion of FY 2008. Estimates will be established in consideration of planned efforts to target the highest priority high hazard dams for rehabilitation. NRCS provided an estimated completion date of July 2009.

OIG Position.

We accept NRCS' management decision for this recommendation.

Finding 5

NRCS Needs to Better Define the Scope of Dam Assessments

For the 843 assessments it performed from FYs 2002 to 2007, some NRCS State offices spent on average less than \$10,000 to perform an assessment, while others were spending on average more than \$40,000. While assessments may reasonably vary in scope based on the hazard class of the dam and other factors, NRCS officials have not provided sufficient guidance defining the scope of assessments or clarifying the difference between assessments and rehabilitation planning. NRCS national officials also do not monitor these assessments, so they were unaware that some States were bearing higher costs. These assessments included activities that would more properly belong to rehabilitation planning. Due to this lack of guidance, NRCS is spending more of its limited resources per dam, and is completing fewer assessments than it could have.

Costs to assess dams can vary based on a number of factors, including the dam's size, its hazard classification, and the number of conditions needing rehabilitation. The purpose of an assessment, however, is to describe the potential scope of a rehabilitation project and to determine if a dam is eligible for rehabilitation.

We found that NRCS has not adequately defined the scope of the work to be performed during assessments. Some States were including work in their assessments that is generally performed when the agency develops a rehabilitation plan. This decision increased costs significantly in some States, as illustrated in Table 6.

Table 6: Range of Average Dam Assessment Costs Among NRCS State Offices⁵¹

Average Cost Range	Number of NRCS State Offices	Number of Dams Assessed
\$0 - \$10,000	14	461
\$10,001 - \$20,000	9	215
\$20,001 - \$30,000	6	80
\$30,001 - \$40,000	2	16
\$40,001 - \$50,000	3	68
\$50,001 - \$60,000	0	0
\$60,001 - \$70,000	1	1
\$70,001 - \$80,000	1	2

In Georgia, for example, NRCS assessed 19 high hazard dams at a total cost of \$855,411, or an average of \$45,021 per dam. In contrast, Indiana assessed 26 high hazard dams at a total cost of \$209,248, or an average of \$8,048 per dam—a difference of approximately \$37,000. In Wyoming, we found that NRCS assessed eight low hazard dams at a total cost of \$194,400, or \$24,300 per dam.

When we asked NRCS officials about the apparent disparity in assessment costs, they explained that they were sometimes performing work during the assessment that could also be performed while developing the rehabilitation plan. For instance, Colorado officials were using an expensive inundation study technique that involved aircraft-based laser-beam technology. A Georgia official told us that Georgia’s assessments were more expensive because they were performed by contractors, and because they performed breach inundation studies.⁵² We concluded that NRCS needs to better define the scope of the work State offices should perform during the assessment process.

Additionally, we found that the NRCS national office did not have written procedures for monitoring the amount of funds State offices spent on dam assessments. The national program manager informed us that the rehabilitation program had an informal cap of \$20,000 to fund an assessment in FYs 2003 to 2006. We found, in fact, that the cost to assess a high hazard dam averaged \$19,509. However, the national office had no information explaining why average costs for an assessment exceeded this average in 13 States (see Table 6).

⁵¹ Based on the total cost of dam assessments in FYs 2002 to 2007.

⁵² A breach inundation study includes detailed mapping of the flood zone and population at risk.

National officials agreed that some of the costs for dam assessments were excessive, and established a cost cap of \$10,000 for future assessments.⁵³

Recommendation 8

Issue guidance clarifying the scope of the work NRCS State offices should perform when assessing dams for rehabilitation.

Agency Response.

NRCS' written response, dated May 20, 2009, stated that NRCS previously improved policy for assessments which was provided by letter to STCs in 2008. The policy was also incorporated into the draft revision of the *National Watershed Manual*. This action was completed as a result of concerns raised at that time by OIG audit staff. The policy specifies technical level of input for assessments in order to hold costs within practical limits and obtain the necessary information to allow dam owners to make a decision to request Watershed Rehabilitation Program planning assistance. NRCS stated that the action has already been completed.

OIG Position.

We accept NRCS' management decision for this recommendation (NRCS subsequently provided verbal assurance that any draft revision to the *National Watershed Manual* provided by letter to STCs is automatically incorporated to the manual at the next update).

Recommendation 9

Monitor the cost of dam assessments performed by NRCS State offices to ensure they are appropriate.

Agency Response.

NRCS' written response, dated May 20, 2009, stated that NRCS will develop a Program Operations Information Tracking System (POINTS) database application or separate spreadsheet to monitor the cost of assessments and to collect significant data from each assessment. Key items to track will be project name, Federal cost of the assessment, designed dam hazard classification and actual dam hazard classification, adequacy of O&M, eligibility of the dam for rehabilitation, and estimates for Failure Index, Risk Index, and Population at Risk. NRCS provided an estimated completion date of October 2010.

⁵³ NRCS National Memorandum, "Watershed Rehabilitation Program: FY 2009 Funding Requests for Dam Assessments," dated February 1, 2008.

OIG Position.

We are unable to accept management decision for this recommendation. In order to accept management decision, NRCS will need to specify who or what unit will be responsible for monitoring the cost of assessment and then following up with the NRCS State offices.

Finding 6

NRCS Incurred Costs to Develop Rehabilitation Plans That Dam Owners Did Not Implement

From FYs 2003 to 2007, NRCS incurred an estimated \$5.1 million in costs to develop 21 rehabilitation plans for dams whose owners subsequently decided they would not rehabilitate (see exhibit E).⁵⁴ Of these 21 plans, 10 owners of 12 high hazard dams did not implement rehabilitation plans developed by NRCS because they could not pay 35 percent of the estimated rehabilitation costs. In other cases, owners chose not to rehabilitate due to the dam's low hazard class, or they were unwilling to enter into a long-term agreement to maintain the rehabilitated dam. Since these funds were spent for rehabilitations that were not carried out, NRCS had fewer resources available to assess and rehabilitate other high hazard dams posing a risk to public safety.

To be considered for rehabilitation aid, a dam owner must complete an application for Federal assistance, which requires a written pledge from the owner to obtain needed land rights and permits; provide funds or services to meet its cost share for the rehabilitation; and sign a new agreement to operate and maintain the rehabilitated dam.⁵⁵ However, prior to spending its funds to develop the rehabilitation plan, NRCS does not require that the owner provide evidence of its commitment to rehabilitate by signing a dam maintenance agreement, or obtaining a letter of credit or comparable evidence, indicating that it can contribute its share of the dam's rehabilitation.

After NRCS assesses a dam and determines that it needs to be rehabilitated, it may, at the dam owner's request, develop a rehabilitation plan for the work that needs to be accomplished. A rehabilitation plan includes information such as the economic and environmental impacts of rehabilitating the dam, estimated rehabilitation costs, the owner's required contributions, and alternatives to rehabilitation such as decommissioning the dam or removal of downstream structures. Rehabilitation plans can often be expensive to develop, with costs ranging from \$9,500 to \$562,000 according to the size of the dam, seriousness of any deficiencies, and various other factors.

⁵⁴ Owners of 147 other dams were also given rehabilitation aid from 2002 to 2007. Twenty-eight dams completed rehabilitation and 119 were in the planning, design, or construction phase of rehabilitation (See Finding 1 and exhibit F).

⁵⁵ *National Watershed Manual* 508.42, NRCS, dated October 2001.

We found that some owners decided not to participate in the rehabilitation program for reasons other than an inability to meet their share of the cost. For example, a plan costing [] was developed for the [] but the owner subsequently declined to sign the operation and maintenance agreement. In May 2008, NRCS officials informed us that the dam's structure must be upgraded in order to provide adequate flood protection due to a change in the dam's risk classification to high hazard. If the dam fails, up to eight people living in the flood zone are at risk and travelers on State Highway [] could be washed downstream. The image below depicts slope erosion along the front of this dam's embankment, which is the likely point of failure if the dam was subject to long durations of flooding.

Photo

Source: NRCS [] State Office
[]



When we spoke to NRCS national officials about owners choosing not to rehabilitate their dams after a rehabilitation plan had been developed, they stated that, since they do not track this data, they were unaware that so many rehabilitation plans were not implemented. NRCS State officials stated that they did not regard the development of an unused rehabilitation plan as a waste of funds since a plan could always be used later if a sponsor becomes able to fully meet the requirements.

Because the 35 percent requirement has acted as an impediment preventing the agency from meeting Congress' mandate to protect public safety, NRCS should determine what additional action can be taken if owners are unable to

provide their share of the funds necessary for rehabilitation. NRCS officials stated that the agency is bound to implement the program subject to the cost-share limitations provided for by statute and they would consider the development of a decision support tool to analyze social, economic, and programmatic participation data, and to geospatially display areas where additional Federal cost-share may be necessary to equitably implement the program nation-wide. Also, NRCS officials stated that they would explore the possibility of a legislative change to increase the Federal cost-share rate in economically disadvantaged communities, and prepare recommendations to Congress.

In addition, NRCS officials stated that they would ensure that dam owners' applications include the required commitments per NRCS policy.⁵⁶ This policy requires the sponsor to commit to provide local cost-share funds and/or in-kind services to provide its required 35 percent of the total project costs.

Recommendation 10

Determine what actions can be taken if dam owners are unable to meet their obligation to provide 35 percent of the funds needed for rehabilitation, including advising State agencies of dam owners who are unwilling or unable to complete rehabilitation, and seeking Congressional authorization to fund a greater portion of dam rehabilitation costs for economically disadvantaged communities.

Agency Response.

NRCS' written response, dated May 20, 2009, stated that it will provide awareness training to STCs and program managers on existing policy regarding applications for Watershed Rehabilitation Program assistance. NRCS will also provide official correspondence that directs STCs to ensure that the sponsor application letters include all of their commitments, including the local share of project implementation funds, as required in national policy. NRCS provided an estimated completion date for these corrective actions by January 2010.

NRCS also stated that it tracks rehabilitation projects that have been locally implemented. These would include projects that are implemented to State dam hazard design criteria, but not Federal. Applicable dam inventories will be updated to include dams that are rehabilitated without program assistance.

In response to Recommendation 2, NRCS stated that it will develop a decision support tool to display where all high hazard dams are located, with

⁵⁶ NRCS National Watershed Manual 508.42.

an overlay of socially and economically disadvantaged geographic areas. It will use such displays to report to Congress where higher Federal cost-shares may be necessary to equitably implement the program. NRCS expects to implement this corrective action by October 2010.

OIG Position.

We are unable to accept the management decision for this recommendation because the agency's response does not address situations where the dam owners may be unwilling to complete rehabilitation. We acknowledge that NRCS does not have the authority to require owners of high hazard dams to assess and rehabilitate such dams. However, State dam regulatory agencies may have greater enforcement authority to require such rehabilitation. Therefore, we believe that NRCS needs to work closely and coordinate with State dam regulatory agencies in such situations. Since the proposed Memorandums of Understanding will be formally documenting the duties and responsibilities between NRCS and State dam regulatory agencies, we believe that this document should also include provisions to redress situations where dam owners may be unwilling to complete rehabilitation. Such actions could include notifying the State dam regulatory agencies of such situations and the use of State funds for rehabilitating these dams.

We can accept management decision for this recommendation if NRCS clarifies whether the Memorandums of Understanding will include such provisions or provide other actions that NRCS intends to take to address dam owners unwilling to rehabilitate high hazard dams.

Finding 7

NRCS Funded the Rehabilitation of Low and Significant Hazard Dams

Of the 147 dams NRCS rehabilitated, 29 were low or significant hazard dams where loss of human life is unlikely should a failure occur. These dams were rehabilitated because NRCS assessed low or significant dams as their owners volunteered them, regardless of the dams' hazard class. Low or significant hazard dams thus became eligible for rehabilitation before some high hazard dams. As a result, NRCS spent \$6.3 million (6 percent of the total funds used to rehabilitate aging dams) to rehabilitate these dams. These funds could have been better used to assess the rehabilitation needs of those high hazard dams that had not yet been assessed, or allocated to high hazard dams already assessed and awaiting funding for rehabilitation.

After an owner's dam is assessed, the owner can apply for the dam to be rehabilitated. The NRCS State office would then determine the dam's risk, and ask the national office for funds to plan the rehabilitation. Each year the national office allocates money to dams based on the requests for

rehabilitation received from State offices.⁵⁷

From 2002 to 2007, NRCS provided about \$105.2 million to fund the rehabilitation of 147 dams. However, we found that this process has not been designed to prioritize the rehabilitation of high hazard dams where failure could result in the loss of human life. While 29 low or significant hazard dams received funding, it was not until 2007 that [

]—with the largest populations at risk of any dams that were funded for rehabilitation—received the [] they needed to begin the rehabilitation planning process. For example:

- [] was one of these two high hazard dams in []. This structure is more than [] long and protects Interstate [] and the town of [] from storm runoff from []. NRCS and the State of [] identified deficiencies including cracks in the embankment and a dam height that is too low to control a severe flood. These deficiencies resulted in [] declaring the structure unsafe in []. The owner applied for rehabilitation assistance the same month.⁵⁸ NRCS estimates that 200,000 people would be at risk if the dam failed.
- [] was the second of these [] dams. It protects agricultural land, country roads, and public utilities in [] County. In [], the State declared the dam unsafe, due to cracks in the embankment. In 1996 NRCS funded repair work, but new cracks were found in the embankment and the emergency spillway capacity was found to be inadequate. [] was assessed by NRCS in 2006. The owner then applied for rehabilitation assistance, which NRCS provided in 2007. NRCS determined that 122,000 people would be at risk if the dam failed.

Overall, we concluded that the public has a compelling interest—especially for dams like [] whose failure might affect thousands of people—in assessing and providing rehabilitation assistance to high hazard dams before less hazardous structures.

Recommendation 11

Develop, as part of the overall strategy for the dam rehabilitation program, plans to rehabilitate all high hazard dams throughout the nation that are in need of rehabilitation, prior to rehabilitating low or significant hazard dams.

⁵⁷ Exhibit D identifies the dams rehabilitated or in rehabilitation resulting from this funding process.

⁵⁸ Dams already in the national rehabilitation program continued to be given priority until funds became available by 2007 to begin the rehabilitation of [].

Agency Response.

NRCS' written response, dated May 20, 2009, stated that NRCS will limit program funding requests annually to high hazard dams in need of rehabilitation until that list is exhausted as a result of rehabilitation, decommissioning, or lack of adequate sponsor commitment, support, or funding to proceed with a program application. NRCS stated that the corrective action will be completed annually.

In response to Recommendation 1 relating to an overall strategy, NRCS stated that it will identify all high hazard dams that are eligible for Watershed Rehabilitation Program assistance that have not had assessments completed and prioritize them for funding before any low or significant hazard dam assessments using Federal funds. Also, a final list will be prepared at the national office for funding priority on an annual basis. For these corrective actions, NRCS estimated a completion date of October 2009

OIG Position.

We accept NRCS' management decision for this recommendation.

Section 3. Security Over Sensitive Information

Finding 8

NRCS Needs to Safeguard Sensitive Information Relating to Dams

NRCS did not determine what information in its national dam inventory is sensitive, and should therefore not be released to the public. Such information includes the precise location of dams and whether there is an emergency action plan in place. This occurred because NRCS does not have a policy for designating sensitive information in its national dam inventory database. In addition, the agency lacks procedures concerning how sensitive dam information should be provided to outside parties, such as the U.S. Army Corps of Engineers. As a result, NRCS has not taken appropriate steps to secure information that ill-intentioned individuals might use to harm citizens living near these dams.

After September 11, 2001, the United States Government made a concerted effort to identify and restrict access to information that could be used to harm its citizens. The President required departments and agencies to protect information which terrorists could use to attack critical infrastructure and key resources, including dams.⁵⁹ USDA requires its agencies to develop a policy for reviewing information to identify and secure any sensitive information.⁶⁰

NRCS' national inventory of dams contains information such as a dam's longitude and latitude, hazard class, and the population at risk if the dam should fail. Our query of the database showed that 150 high hazard dams would each endanger populations of 1,000 or more if a breach or dam failure should occur. Of these 150 dams, failures at 11 dams would each endanger 50,000 or more people. Since an individual could use this information to precisely locate a dam whose failure would cause catastrophic loss of life, securing this information is of the utmost importance.

We found that NRCS needs to take a number of steps to better safeguard any sensitive information in its inventory. At present, when NRCS provides its information to the U.S. Army Corps of Engineers for publication in the *National Inventory of Dams*, NRCS does not screen this information to identify which fields in the database should be considered sensitive. Anyone with access to the Internet has access to a dam's precise location by longitude and latitude, its hazard classification, and whether or not the dam has an emergency action plan. NRCS needs to take appropriate steps to secure database fields that contain such sensitive information.

⁵⁹ "Homeland Security Presidential Directive/HSPD-7," Part 7, dated December 17, 2003.

⁶⁰ "USDA Departmental Regulation 3440-2, (Section 8 (b) (6)), dated January 30, 2003.

NRCS also needs a policy to limit access to dam inventory data in its offices. Relatively few NRCS employees—conservation engineers in the State offices, three conservation engineers in the national office, and the national dam rehabilitation program manager—should have access to the database, but currently many other employees also have access. NRCS needs a policy to identify authorized users and restrict others from accessing the database.

When we discussed these security problems with NRCS officials, they agreed that the agency needs to take steps to strengthen controls over sensitive information in the agency's national dam inventory.

Recommendation 12

Establish policy and procedures for designating sensitive dam information in NRCS' dam inventory databases, securing that information, and limiting access.

Agency Response.

NRCS' written response, dated May 20, 2009, stated that NRCS will review the information in the national dam inventory and determine what information is sensitive and should not be released. In addition, NRCS will develop policy and procedures to better safeguard sensitive information in the NRCS dam inventory database. NRCS provided an estimated completion date of September 2010.

OIG Position.

We accept NRCS' management decision for this recommendation.

Section 4. Emergency Action Plans

Finding 9

NRCS Needs Emergency Action Plans for All High Hazard Dams

Of NRCS’ 1,711 high hazard dams, 869 (51 percent) do not have emergency action plans in place. A prior OIG audit report also noted the lack of emergency planning, but NRCS officials explained that their progress in resolving this issue was limited because it is the dam owners who are responsible for developing emergency action plans for their dams, and NRCS cannot require them to do so.⁶¹ To place this problem in perspective, 42,785 people were living in the zones of inundation of 13 of the highest hazard dams. If one of these dams should fail, there will be no emergency action plan to put into effect.⁶² See table below.

Table 7: Top 13 High Hazard Dams without Emergency Plans, by Population at Risk⁶³

Top 13	Dam Name	Population at Risk
1	[]	25,303
2	[]	4,267
3,4	[] ⁶⁴	3,686
5,6,7	[] ⁶⁵	2,000
8	[]	1,759
9	[]	1,600
10	[]	1,170
11	[]	1,000
12	[]	1,000
13	[]	1,000
TOTAL		42,785

Emergency action plans establish procedures for protecting lives when a dam failure may be imminent. NRCS does not itself have the authority to require dam owners to develop emergency action plans, but many State regulatory agencies do. For existing dams that have not been rehabilitated, NRCS

⁶¹ Specifically, in response to the prior report’s recommendation, NRCS agreed that it would “continue working with State dam safety agencies and the Association of State Dam Safety Officials to encourage sponsors to develop emergency action plans for high hazard dams and contact every sponsor by December 2004.”

⁶² Based on data provided OIG by NRCS State offices.

⁶³ Based on data provided OIG by NRCS State offices.

⁶⁴ These dams threaten the same populations at risk, if either dam failed.

⁶⁵ These dams threaten the same, as well as different population at risk associated with each dam, if either dam failed.

encourages dam owners to develop such plans.⁶⁶ For new or newly rehabilitated high hazard dams, NRCS does require that emergency action plans be in place to reduce the risk of loss of life should the dams fail. Since the agency and the dam owner are entering into a new agreement when the dam owner receives Federal rehabilitation assistance, NRCS is able to include this important safety requirement, which will help mitigate risks to life and property.

OIG believes that these emergency action plans are important to the public's safety, and that NRCS should partner with State regulatory agencies to require owners to develop emergency action plans for high hazard dams.

Recommendation 13

Develop, as part of its overall strategy for the dam rehabilitation program, plans to work with State regulatory agencies to require owners to develop emergency action plans for high hazard dams.

Agency Response.

NRCS' written response, dated May 20, 2009, stated that State requirements for emergency action plans (EAP) on all high hazard dams will help to achieve public safety below NRCS-assisted dams. STCs will meet with the State dam safety agency and discuss the benefits for EAP requirements. NRCS provided an estimated completion date of April 2010.

In response to Recommendation 1 on an overall strategy, NRCS stated that its STCs will meet with the State dam safety agency and discuss program coordination opportunities. STCs will be requested to prepare a Memorandum of Understanding with the State dam safety agency to identify the appropriate roles, responsibilities, and actions. NRCS provided an estimated completion date of April 2010.

OIG Position.

We accept NRCS' management decision for this recommendation.

⁶⁶NRCS eDirectives - M.180.500.F, Emergency Action Plan, dated March 5, 2008.

Scope and Methodology

Our audit covered dam rehabilitation beginning with the program's initial authorization in the Grain Standards and Warehouse Improvements Act of 2000 through FY 2007. We performed audit fieldwork at the NRCS national office in Washington, D.C., and the NRCS State offices in Texas and Oklahoma. We conducted audit fieldwork between January 2007 and February 2009.

We judgmentally selected the Texas and Oklahoma NRCS State offices because these States received the largest fund allocations for assessing and rehabilitating flood control dams according to allocation information provided by the National Watershed Rehabilitation Program Manager—Texas received \$22 million for 19 dams and Oklahoma \$35.6 million for 37 dams.⁶⁷

Additionally, we distributed a questionnaire to the 51 NRCS State offices to obtain other information, including the number of project dams in their State, the number of assessments performed, the number of dams rehabilitated, and the costs associated with the rehabilitation program. NRCS State offices reported to us that (1) a total of 11,487 dams were built with NRCS assistance, (2) 843 dams were assessed to determine whether they needed rehabilitation, and (3) NRCS allocated \$105 million to rehabilitate 147 dams during 2002 to 2007 (see exhibits B, D, and F for details). Our audit was not designed to validate the accuracy of data provided by NRCS.

To accomplish our audit objectives, we performed the following audit steps and procedures:

- Reviewed all laws, regulations, policies, and procedures pertaining to the Watershed Rehabilitation Program.
- Interviewed key NRCS national office and State office personnel to solicit comments or concerns about the program and to identify the process for overseeing and monitoring NRCS State offices.
- Examined prior audits and reports on dam maintenance and rehabilitation under Federal responsibility.
- Reviewed data from POINTS, an NRCS database designed to track dam assessments and rehabilitation projects.

⁶⁷ Allocation information provided by the National Program Manager was not based on data from the Financial Management Division. Allocations to all States totaled \$130.8 million for FYs 2002 to 2007.

- Reviewed documentation to determine whether appropriated dollars were properly used.
- Interviewed dam owners of high hazard dams for whom NRCS prepared a dam rehabilitation plan to determine why they subsequently chose not to proceed with the plan.
- Interviewed States' dam regulatory agency officials to determine whether they cooperated with NRCS State officials to assess dams.
- Interviewed the owners of high hazard dams whose dams had reached the end of their planned design life to determine why they did not participate in the dam rehabilitation program.

We conducted this performance audit in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. Also, we conducted the audit in accordance with policies and procedures set by OIG.

Exhibit A – Summary of Monetary Results

Finding No.	Recommendation No.	Description	Amount	Category
3	6	Assessment of Low and Significant Hazard Dams	\$3,780,553	Funds to be Put to Better Use
6	10	Dam Rehabilitation Plans Not Implemented	\$5,102,723	Funds to be Put to Better Use
7	11	Rehabilitation of Low and Significant Hazard Dams	\$6,324,725	Funds to be Put to Better Use
TOTAL			\$15,208,001	

Exhibit B – Data on Project Dams by State, Hazard Class and Population at Risk

Exhibit B – Page 1 of 6

State	Total Project Dams Per NRCS State Offices' Databases /3	High Hazard	Significant Hazard	Low Hazard	Population at Risk	State Dam Regulatory Agency
Alabama	107	26	30	51	499	No dam safety law/no dam safety regulatory agency
Alaska	0	0	0	0	0	Alaska Department of Natural Resources, Division of Mining, Land and Water
Arizona	25	24	1	0	341,400	Arizona Department of Water Resources, Office of Water Engineering
Arkansas	209	47	57	111	0	Arkansas Natural Resources Commission
California	16	12	4	0	1/	California Department of Water Resources, Division of Safety of Dams
Caribbean Area/Puerto Rico	2	2	0	0	1/	Puerto Rico Electric Power Authority, Dams & Reservoirs Division
Colorado	145	20	10	115	0	Colorado Department of Natural Resources, Division of Water Resources
Connecticut	30	28	1	1	9,700	Connecticut Department of Environmental Protection, Bureau of Water Protection and Land Reuse
Delaware 2/	0	0	0	0	0	Delaware Department of Natural Resources and Environmental Control, Division of Soil & Water Conservation
Florida 2/	0	0	0	0	0	Florida Department of Environmental Protection, Bureau of Mine Reclamation
Georgia	357	133	45	179	1/	Georgia Department of Natural Resources, Environmental Protection Division
Hawaii/Pacific Basin	9	6	3	0	1,920	Hawaii Department of Land and Natural Resources, Engineering Division
Idaho	3	2	0	1	1/	Idaho Department of Water Resources, Water Management Division

Exhibit B – Data on Project Dams by State, Hazard Class and Population at Risk

Exhibit B – Page 2 of 6

State	Total Project Dams Per NRCS State Offices' Databases /3	High Hazard	Significant Hazard	Low Hazard	Population at Risk	State Dam Regulatory Agency
Illinois	66	15	21	30	1/	Illinois Department of Natural Resources, Office of Water Resources
Indiana	132	37	47	48	7300	Indiana Department of Natural Resources, Division of Water
Iowa	1,388	23	34	1,331	0	Iowa Department of Natural Resources, Environmental Services Division, Water Quality Bureau
Kansas	829	115	56	658	240,526	Kansas Department of Agriculture, Division of Water Resources
Kentucky	197	32	35	130	1/	Kentucky Department for Environmental Protection, Division of Water
Louisiana	35	4	11	20	10,832	Louisiana Department of Transportation & Development, Public Works and Water Resources Division
Maine	16	11	1	4	1,585	Maine Department of Defense, Veterans, and Emergency Management, Emergency Management Agency
Maryland	16	12	4	0	1/	Maryland Department of the Environment, Water Management Administration, Office of Dam Safety
Massachusetts	30	26	4	0	14320	Massachusetts Department of Conservation & Recreation, Office of Dam Safety
Michigan	13	5	6	2	480	Michigan Department of Environmental Quality, Land and Water Management Division

Exhibit B – Data on Project Dams by State, Hazard Class and Population at Risk

Exhibit B – Page 3 of 6

State	Total Project Dams Per NRCS State Offices' Databases /3	High Hazard	Significant Hazard	Low Hazard	Population at Risk	State Dam Regulatory Agency
Minnesota	47	10	12	25	685	Minnesota Department of Natural Resources, Division of Waters
Mississippi	588	77	28	483	5157	Mississippi Department of Environmental Quality, Office of Land and Water Resources
Missouri	1,092	27	44	1,021	3733	Missouri Department of Natural Resources
Montana	12	12	0	0	1/	Montana Department of Natural Resources and Conservation, Water Resources Division
Nebraska	729	43	106	580	30992	Nebraska Department of Natural Resources, Floodplain, Dam Safety and Surveys Division
Nevada	8	7	0	1	1/	Nevada Department of Conservation & Natural Resources, Division of Water Resources
New Hampshire	28	18	7	3	1/	New Hampshire Department of Environmental Services, Water Division
New Jersey	20	7	7	6	330	New Jersey Department of Environmental Protection, Office of Engineering and Construction
New Mexico	101	35	22	44	1/	New Mexico Office of the State Engineer, Dam Safety Bureau
New York	55	47	8	0	378,380	New York State Department of Environmental Conservation, Division of Water, Bureau of Flood Protection and Dam Safety

Exhibit B – Data on Project Dams by State, Hazard Class and Population at Risk

Exhibit B – Page 4 of 6

State	Total Project Dams Per NRCS State Offices' Databases /3	High Hazard	Significant Hazard	Low Hazard	Population at Risk	State Dam Regulatory Agency
North Carolina	93	45	28	20	1/	North Carolina Department of Environment & Natural Resources, The Division of Land Resources
North Dakota	49	9	27	13	450	North Dakota State Water Commission
Ohio	62	20	33	9	0	Ohio Department of Natural Resources, Division of Water
Oklahoma	2,102	188	131	1,783	9,235	Oklahoma Water Resources Board
Oregon 2/	6	4	2	0	1/	Oregon Water Resources Department
Pennsylvania	86	73	13	0	1/	Pennsylvania Department of Environmental Protection, Bureau of Waterways Engineering
Rhode Island 2/	0	0	0	0	0	Rhode Island Department of Environmental Management, Bureau of Environmental Protection, Office of Compliance and Inspection
South Carolina	112	2	40	70	1/	South Carolina Department of Health and Environmental Control, Bureau of Water
South Dakota	58	0	2	56	1/	South Dakota Department of Environment and Natural Resources, Division of Environmental Services, Water Rights

Exhibit B – Data on Project Dams by State, Hazard Class and Population at Risk

Exhibit B – Page 5 of 6

State	Total Project Dams Per NRCS State Offices' Databases /3	High Hazard	Significant Hazard	Low Hazard	Population at Risk	State Dam Regulatory Agency
Tennessee	145	41	43	61	568	Tennessee Department of Environment and Conservation, Division of Water Supply
Texas	1,997	216	96	1,685	4,550	Texas Commission on Environmental Quality
Utah	45	26	12	7	149,200	Utah Department of Natural Resources, Division of Water Rights
Vermont	4	4	0	0	1/	Vermont Agency of Natural Resources, Department of Environmental Conservation, Facilities Engineering Division
Virginia	150	48	29	73	0	Virginia Department of Conservation and Recreation, Division of Dam Safety and Floodplain Management
Washington	3	0	3	0	6	Washington State Department of Ecology
West Virginia	168	138	28	2	68,288	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Wisconsin	88	33	14	41	657	Wisconsin Department of Natural Resources, Division of Water, Bureau of Watershed Management

Exhibit B – Data on Project Dams by State, Hazard Class and Population at Risk

Exhibit B – Page 6 of 6

State	Total Project Dams Per NRCS State Offices' Databases /3	High Hazard	Significant Hazard	Low Hazard	Population at Risk	State Dam Regulatory Agency
Wyoming	14	1	1	12	60	Wyoming State Engineer's Office, Surface Water and Engineering Division
TOTALS	11,487	1,711	1,100	8,676	1,280,853	

1/ Information was not provided by the NRCS State office.

2/ NRCS State office did not participate in the dam rehabilitation program.

3/ A structure is designated a project dam if constructed with NRCS assistance under one of four authorities: "Flood Control Act of 1944," "Watershed Protection and Flood Prevention Act of 1954," "Department of Agriculture Appropriation Act of 1954," or Subtitle H of Title XV of the "Agriculture and Food Act of 1981."

Exhibit C – Number of High Hazard Dams by State – Assessed and Not Assessed as of FY 2007

Exhibit C – Page 1 of 2

State	Number of High Hazard Dams	Number of High Hazard Dams Assessed	Percent of High Hazard Dams Assessed	Number of High Hazard Dams Not Assessed	Percent of High Hazard Dams Not Assessed
Texas	216	23	11%	193	89%
Oklahoma	188	36	19%	152	81%
West Virginia	138	9	7%	129	93%
Georgia	133	19	14%	114	86%
Kansas	115	26	23%	89	77%
Mississippi	77	5	6%	72	94%
Pennsylvania	73	3	4%	70	96%
Virginia	48	13	27%	35	73%
Arkansas	47	25	53%	22	47%
New York	47	20	43%	27	57%
North Carolina	45	0	0%	45	100%
Nebraska	43	14	33%	29	67%
Tennessee	41	7	17%	34	83%
Indiana	37	26	70%	11	30%
New Mexico	35	11	31%	24	69%
Wisconsin	33	8	24%	25	76%
Kentucky	32	13	41%	19	59%
Connecticut	28	0	0%	28	100%
Missouri	27	4	15%	23	85%
Massachusetts	26	6	23%	20	77%
Alabama	26	4	15%	22	85%
Utah	26	16	62%	10	38%
Arizona	24	21	88%	3	13%
Iowa	23	0	0%	23	100%
Ohio	20	4	20%	16	80%
Colorado	20	17	85%	3	15%
New Hampshire	18	3	17%	15	83%
Illinois	15	5	33%	10	67%
California	12	1	8%	11	92%

Exhibit C – Number of High Hazard Dams by State – Assessed and Not Assessed as of FY 2007

State	Number of High Hazard Dams	Number of High Hazard Dams Assessed	Percent of High Hazard Dams Assessed	Number of High Hazard Dams Not Assessed	Percent of High Hazard Dams Not Assessed
Montana	12	0	0%	12	100%
Maryland	12	12	100%	0	0%
Maine	11	0	0%	11	100%
Minnesota	10	0	0%	10	100%
North Dakota	9	3	33%	6	67%
Nevada	7	0	0%	7	100%
New Jersey	7	3	43%	4	57%
Hawaii	6	0	0%	6	100%
Michigan	5	1	20%	4	80%
Oregon	4	0	0%	4	100%
Louisiana	4	0	0%	4	100%
Vermont	4	4	100%	0	0%
Idaho	2	0	0%	2	100%
South Carolina	2	1	50%	1	50%
Caribbean Area/Puerto Rico	2	2	100%	0	0%
Wyoming	1	1	100%	0	0%
Delaware	0	0	0%	0	0%
South Dakota	0	0	0%	0	0%
Alaska	0	0	0%	0	0%
Florida	0	0	0%	0	0%
Rhode Island	0	0	0%	0	0%
Washington	0	0	0%	0	0%
TOTAL	1,711	366	21%	1345	79%

Exhibit D – Status of Dams Funded for Rehabilitation FYs 2002 to 2007

	State	Dam Name / Number	Hazard Class	Amount Allocated FYs 2002-2007	Rehabilitation Status			
					Planning	Design	Construction	Completed
1	AL	[]	High	\$ 1,184,900			X	
2	AZ	[]	High	13,320,000			X	
3	AZ	[]	High	750,000		X		
4	AZ	[]	High	30,000	X			
5	AZ	[]	High	115,000	X			
6	AZ	[]	High	112,000	X			
7	AZ	[]	High	380,000	X			
8	CA	[]	High	63,224	X			
9	GA	[]	High	14,000	X			
10	GA	[]	High	5,000	X			
11	GA	[]	High	20,000	X			
12	GA	[]	High	20,000	X			
13	GA	[]	High	12,000	X			
14	GA	[]	High	14,000	X			
15	GA	[]	High	14,000	X			
16	GA	[]	High	14,000	X			
17	GA	[]	High	14,000	X			
18	GA	[]	High	14,000	X			
19	GA	[]	High	14,000	X			
20	GA	[]	High	14,000	X			
21	GA	[]	High	14,000	X			
22	GA	[]	High	450,000		X		
23	GA	[]	High	325,000		X		
24	GA	[]	High	3,864,456			X	
25	GA	[]	High	1,910,544				X
26	GA	[]	High	180,000			X	
27	GA	[]	High	5,000	X			
28	IA	[]	High	409,407				X
29	IA	[]	High	682,191			X	
30	KY	[]	High	240,000	X			
31	KY	[]	High	190,000	X			
32	KY	[]	High	372,945			X	
33	MA	[]	High	90,667	X			

Exhibit D – Status of Dams Funded for Rehabilitation FYs 2002 to 2007

	State	Dam Name / Number	Hazard Class	Amount Allocated FYs 2002-2007	Rehabilitation Status			
					Planning	Design	Construction	Completed
34	MO	[]	High	\$ 1,079,921				X
35	MO	[]	High	320,000	X			
36	MS	[]	High	125,000		X		
37	MS	[]	High	125,000		X		
38	MS	[]	High	125,000		X		
39	MT	[]	High	40,000	X			
40	MT	[]	High	40,000	X			
41	ND	[]	High	825,440			X	
42	ND	[]	High	55,200	X			
43	ND	[]	High	32,700	X			
44	NE	[]	High	200,000		X		
45	NE	[]	High	1,096,000			X	
46	NE	[]	High	556,333				X
47	NE	[]	High	556,333			X	
48	NE	[]	High	631,333				X
49	NE	[]	High	961,758			X	
50	NE	[]	High	280,550		X		
51	NE	[]	High	100,000	X			
52	NE	[]	High	250,000		X		
53	NE	[]	High	167,000	X			
54	NE	[]	High	100,000	X			
55	NM	[]	High	2,360,000				X
56	NM	[]	High	70,000		X		
57	NM	[]	High	300,000	X			
58	NM	[]	High	630,000		X		
59	NY	[]	High	50,000	X			
60	NY	[]	High	35,000	X			
61	NY	[]	High	35,000	X			
62	OH	[]	High	385,000		X		
63	OK	[]	High	1,532,460			X	

Exhibit D – Status of Dams Funded for Rehabilitation FYs 2002 to 2007

	State	Dam Name / Number	Hazard Class	Amount Allocated FYs 2002-2007	Rehabilitation Status			
					Planning	Design	Construction	Completed
64	OK	[]	High	\$ 4,036,466		X		
65	OK	[]	High	4,150,190			X	
66	OK	[]	High	3,146,772			X	
67	OK	[]	High	2,179,301			X	
68	OK	[]	High	1,034,457			X	
69	OK	[]	High	744,243				X
70	OK	[]	High	1,604,730			X	
71	OK	[]	High	951,327		X		
72	OK	[]	High	1,027,072		X		
73	OK	[]	High	1,392,608		X		
74	OK	[]	High	1,392,608		X		
75	OK	[]	High	756,243			X	
76	OK	[]	High	814,951			X	
77	OK	[]	High	1,321,901			X	
78	OK	[]	High	963,436				X
79	OK	[]	High	751,314				X
80	OK	[]	High	1,767,378			X	
81	OK	[]	High	885,658				X
82	OK	[]	High	685,536				X
83	OK	[]	High	332,000		X		
84	OK	[]	High	332,000		X		
85	OK	[]	High	616,849		X		
86	OK	[]	High	1,160,496	X			
87	OK	[]	High	1,305,613		X		
88	OK	[(Note 1)]	High	1,380,608				X
89	OK	[]	High	1,086,489		X		
90	OK	[]	High	648,572		X		
91	OK	[]	High	625,460	X			
92	TN	[]	High	350,962				X
93	TN	[]	High	150,000	X			
94	TX	[]	High	1,930,912				X
95	TX	[]	High	2,586,316			X	
96	TX	[]	High	1,318,751				X

Exhibit D – Status of Dams Funded for Rehabilitation FYs 2002 to 2007

	State	Dam Name / Number	Hazard Class	Amount Allocated FYs 2002-2007	Rehabilitation Status			
					Planning	Design	Construction	Completed
97	TX	[]	High	\$ 1,255,075			X	
98	TX	[]	High	1,994,227			X	
99	TX	[]	High	1,652,128				X
100	TX	[]	High	792,847				X
101	TX	[]	High	515,329				X
102	TX	[]	High	3,466,405				X
103	TX	[]	High	853,200 (Note 2)		X		
104	TX	[]	High			X		
105	TX	[]	High			X		
106	TX	[]	High			X		
107	TX	[]	High	326,600	X			
108	UT	[]	High	465,000	X			
109	VA	[]	High	2,612,425				X
110	VA	[]	High	280,000		X		
111	VA	[]	High	749,961			X	
112	VA	[]	High	1,504,166			X	
113	VA	[]	High	150,000		X		
114	VA	[]	High	175,000	X			
115	VA	[]	High	25,000	X			
116	VA	[]	High	175,000	X			
117	WI	[]	High	150,000	X			
118	WV	[]	High	400,000	X			
HIGH TOTAL				98,896,944	44	29	25	20
119	GA	[]	Significant	305,000	X			
120	GA	[]	Significant	12,000	X			
121	GA	[]	Significant	4,500				X
122	GA	[]	Significant	4,500				X
123	GA	[]	Significant	175,000				X
124	GA	[]	Significant	1,564,692				X
125	NM	[]	Significant	250,000	X			

Exhibit D – Status of Dams Funded for Rehabilitation FYs 2002 to 2007

	State	Dam Name / Number	Hazard Class	Amount Allocated FYs 2002-2007	Rehabilitation Status			
					Planning	Design	Construction	Completed
126	NM	[]	Significant	\$ 200,000	X			
127	OK	[]	Significant	443,238		X		
128	PA	[]	Significant	300,000		X		
SIGNIFICANT TOTAL				\$ 3,258,930	4	2	0	4
129	GA	COOSA LITTLE RIVER 38	Low	14,000	X			
130	GA	COOSA LITTLE RIVER 40	Low	14,000	X			
131	GA	COOSA LITTLE RIVER 24	Low	12,000	X			
132	GA	COOSA LITTLE RIVER 25	Low	12,000	X			
133	GA	COOSA LITTLE RIVER 27	Low	12,000	X			
134	GA	COOSA LITTLE RIVER 30	Low	12,000	X			
135	GA	COOSA LITTLE RIVER 34	Low	12,000	X			
136	GA	COOSA LITTLE RIVER 35	Low	12,000	X			
137	GA	COOSA LITTLE RIVER 36	Low	12,000	X			
138	GA	COOSA PUMPKINVINE 2	Low	12,000	X			
139	GA	MIDDLE OCONEE-WALNUT CREEK 15	Low	20,000	X			
140	GA	SOQUE 36	Low	14,000	X			
141	GA	SOUTH RIVER 51	Low	14,000	X			
142	IA	LITTLE SIOUX-GLEN ELLEN SUB W/S 2-2	Low	277,353				X
143	IA	LITTLE SIOUX GLEN ELLEN SUB W/S 3-1	Low	445,011				X
144	OK	SANDSTONE CREEK 12	Low	673,536				X
145	OK	SANDSTONE CREEK 17-A	Low	659,395				X
146	OK	UPPER CLEAR BOGGY CREEK 35	Low	320,000		X		
147	OK	UPPER CLEAR BOGGY CREEK 36	Low	518,500		X		
LOW TOTAL				\$ 3,065,795	13	2	0	4
GRAND TOTAL				\$ 105,221,669	61	33	25	28

Note 1 - Dam was decommissioned.

Note 2 - Amount allocated was \$853,200 to rehabilitate [] in one project.

Exhibit E – Dam Rehabilitation Plans Developed But Not Implemented

Location of Dam (State)	Dam Name	Dam Hazard Class	NRCS Cost to Develop Dam Rehabilitation Plan ⁶⁸	Fiscal Year Rehabilitation Plan Developed (FYs 2003-2007)	Reason(s) Dam Needs Rehabilitation	Reason(s) Rehabilitation Plan Not Implemented
Mississippi	[]	High	\$50,000	2005	Due to downstream development the dam hazard class was changed to high and thus the dams need upgrading to meet current safety and performance standards to provide needed flood protection.	Owner unable to provide 35% cost-share.
	[]	High	50,000	2005		Owner unable to provide land-rights.
	[]	High	50,000	2004		
Arkansas	[]	High	329,658	2006	Dams do not meet current safety criteria because they would overtop in severe storms.	Owners unable to provide 35% cost-share.
	[]	High	417,887	2007		
	[]	High	415,297	2007		
	[]	High	373,239	2007		
	[]	High	453,959	2007		
	[]	High	402,148	2007		
Wisconsin	[]	High	75,000	2003	Due to sediment in the flood pool, which needs to be cleaned out, the dam no longer meets current safety and performance standards.	Owner unable to provide 35% cost-share.
	[]	High	75,000	2004	Sediment in flood pool has degraded the trout stream habitat.	Opposition to rehabilitate voiced in public meetings with the owner, resulting in decision by owner to not rehabilitate.
	[]	High	30,000	2004	Dam's stilling basin needs repair, and a drain fill outlet structure should be replaced.	Owners unable to provide 35% cost-share.
	[]	High	30,000	2004	Sediment build-up, toe drains need repair, and one home should be flood-proofed.	
Minnesota	[]	Low	9,536	2007	Concrete outlet structure is in poor condition.	Owners unable to provide 35% cost-share.

⁶⁸ Based on data provided to OIG by NRCS State offices.

Exhibit E – Dam Rehabilitation Plans Developed But Not Implemented

Location of Dam (State)	Dam Name	Dam Hazard Class	NRCS Cost to Develop Dam Rehabilitation Plan ⁶⁹	Fiscal Year Rehabilitation Plan Developed (FYs 2003-2007)	Reason(s) Dam Needs Rehabilitation	Reason(s) Rehabilitation Plan Not Implemented
Texas	[]	High	\$337,800	2006	Due to downstream development the dam hazard class was changed to high and thus the dams need upgrading to meet current safety and performance standards to provide needed flood protection.	Owner unable to provide 35% cost-share.
	[]	High	562,300	2004		Owner wants to rehabilitate dam without federal aid.
	[]	High	282,800	2006		Owner wants to rehabilitate dam without federal aid.
	[]	High	328,100	2005	Owner refused to commit to operation and maintenance of the dam.	
	[]	Low	300,000	2005	Brush growth exists in the auxiliary spillway and near the outlet pipe.	Owner chose not to rehabilitate due to the dam's low hazard class.
Oklahoma	[]	Low	530,000	2003	Corrugated metal pipe conduits and water inlet structure are deteriorating.	Owner asked NRCS to provide aid to rehabilitate a high hazard dam in the same watershed, rather than Sandstone dams 1 & 13 due to their low hazard class.
TOTAL	21 Dams		\$5,102,724			

⁶⁹NRCS State offices manually prepared data provided OIG.

Exhibit F – Number and Cost of Dam Assessments by State and Hazard Class Performed in FYs 2002 to 2007

Exhibit F – Page 1 of 2

State or Area	No. of Dams Assessed	Total Cost Incurred by NRCS for Dam Assessments	No. of High Hazard Dams Assessed	Cost to Assess High Hazard Dams	No. of Significant Hazard Dams Assessed	Cost to Assess Significant Hazard Dams	No. of Low Hazard Dams Assessed	Cost to Assess Low Hazard Dams
Alabama	5	\$26,700	4	\$21,400	0	\$0	1	\$5,300
Alaska 1/	0	0	0	0	0	0	0	0
Arizona	22	1,027,000	21	1,017,000	1	10,000	0	0
Arkansas	27	324,000	25	300,000	1	12,000	1	12,000
California	1	67,980	1	67,980	0	0	0	0
Caribbean Area/Puerto Rico	2	152,780	2	152,780	0	0	0	0
Colorado	32	690,286	17	579,574	7	27,888	8	82,824
Connecticut	0	0	0	0	0	0	0	0
Delaware 1/	0	0	0	0	0	0	0	0
Florida 1/	0	0	0	0	0	0	0	0
Georgia	38	1,605,615	19	855,411	5	46,486	14	703,718
Hawaii/Pacific Basin	0	0	0	0	0	0	0	0
Idaho	0	0	0	0	0	0	0	0
Illinois	18	137,604	5	43,133	3	30,253	10	64,218
Indiana	65	523,120	26	209,248	23	185,104	16	128,768
Iowa	0	0	0	0	0	0	0	0
Kansas	48	867,167	26	475,710	3	49,095	19	342,362
Kentucky	25	449,840	13	288,160	5	35,840	7	125,840
Louisiana	0	0	0	0	0	0	0	0
Maine	0	0	0	0	0	0	0	0
Maryland 2/	16	0	12	0	4	0	0	0
Massachusetts	8	384,000	6	288,000	2	96,000	0	0
Michigan	7	13,500	1	1,000	5	10,000	1	2,500
Minnesota	5	50,174	0	0	0	0	5	50,174
Mississippi	7	70,000	5	50,000	0	0	2	20,000
Missouri	36	180,000	4	20,000	7	35,000	25	125,000
Montana	0	0	0	0	0	\$0	0	0
Nebraska	92	178,515	14	22,095	9	18,540	69	137,880
Nevada	0	0	0	0	0	0	0	0
New Hampshire	5	160,000	3	95,770	1	32,360	1	31,870
New Jersey	8	190,000	3	75,000	2	45,000	3	70,000
New Mexico	43	185,000	11	40,000	12	43,000	20	102,000
New York	22	440,000	20	400,000	2	40,000	0	0
North Carolina	3	5,000	0	0	3	5,000	0	0

Exhibit F – Number and Cost of Dam Assessments by State and Hazard Class Performed in FYs 2002 to 2007

Exhibit F – Page 2 of 2

State or Area	No. of Dams Assessed	Total Cost Incurred by NRCS for Dam Assessments	No. of High Hazard Dams Assessed	Cost to Assess High Hazard Dams	No. of Significant Hazard Dams Assessed	Cost to Assess Significant Hazard Dams	No. of Low Hazard Dams Assessed	Cost to Assess Low Hazard Dams
North Dakota	10	\$148,000	3	\$78,000	5	\$50,000	2	\$20,000
Ohio	11	22,000	4	8,000	6	12,000	1	2,000
Oklahoma	57	684,000	36	432,000	4	48,000	17	204,000
Oregon 1/	0	0	0	0	0	0	0	0
Pennsylvania	15	55,300	3	24,900	12	30,400	0	0
Rhode Island 1/	0	0	0	0	0	0	0	0
South Carolina	50	169,299	1	3,386	21	71,106	28	94,807
South Dakota	52	85,250	0	0	2	3,000	50	82,250
Tennessee	8	240,000	7	220,000	1	20,000	0	0
Texas	41	197,974	23	108,704	3	14,694	15	74,576
Utah	17	268,238	16	248,238	1	20,000	0	0
Vermont	4	78,000	4	78,000	0	0	0	0
Virginia	13	325,000	13	325,000	0	0	0	0
Washington	0	0	0	0	0	0	0	0
West Virginia	11	425,000	9	375,000	2	50,000	0	0
Wisconsin	9	216,500	8	195,000	1	21,500	0	0
Wyoming	10	278,000	1	41,800	1	41,800	8	194,400
TOTALS	843	\$10,920,842	366	\$7,140,289	154	\$1,104,066	323	\$2,676,487

1/ NRCS unit did not have a dam rehabilitation program during the OIG's review period.

2/ Maryland reported performing dam assessments during the annual dam operation and maintenance inspections at no additional cost.

Exhibit G – Agency Response

United States Department of Agriculture



Natural Resources Conservation Service
P.O. Box 2890
Washington, D.C. 20013

MAY 20 2009

SUBJECT: Natural Resources Conservation Services Response (NRCS)
for the Office of Inspector General (OIG) Audit Report: 10601-1-At
Flood Control Dam Rehabilitation

TO: Robert W. Young
Assistant Inspector General for Audit
Office of Inspector General

THROUGH: Jon Holladay
Acting Chief Financial Officer
Office of the Chief Financial Officer

Attached are the NRCS responses to OIG recommendations 1 through 13, contained in Audit Report 10601-1-At Rehabilitation of Flood Control Dams.

If you have questions, please contact Letitia Toomer, Acting Director, Operations Management and Oversight Division, at (202) 720-9135.

A handwritten signature in black ink that reads "Dave White".

Dave White
Chief

Attachment

cc:

Virginia (Ginger) L. Murphy, Acting Associate Chief, NRCS, Washington, D.C.
Lesia A. Reed, Acting Deputy Chief for Strategic Planning and Accountability, NRCS,
Washington, D.C.
Thomas W. Christensen, Deputy Chief for Programs, NRCS, Washington, D.C.
Tony Puga, Program Specialist, Deputy Chief for Programs, NRCS, Washington, D.C.
Letitia Toomer, Acting Director, Operations Management and Oversight Division, NRCS,
Washington, D.C.
Leroy Hall, Acting Compliance Team Leader, Operations Management and Oversight Division,
NRCS, Washington, D.C.

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Agency Response - OIG-Audit 10601-1-At- Flood Control Dam Rehabilitation

Recommendation 1

Develop an overall strategy for the dam rehabilitation program, including plans to work with State regulatory agencies to assess and rehabilitate high hazard dams.

NRCS Response

NRCS will propose to work with the American Association of State Dam Safety Officials (ASDSO) to prepare national guidance to improve joint NRCS/State regulatory agency participation in assessing, prioritizing, and rehabilitating high hazard dams that meet eligibility requirements for the Watershed Rehabilitation Program.

Estimated Completion Date: October 2009

NRCS State Conservationists (STCs) will meet with the State dam safety agency and discuss program coordination opportunities. STCs will be requested to prepare a Memorandum of Understanding with the State dam safety agency to identify the appropriate roles, responsibilities, and actions that could include use of State funds for assessments, planning, or implementation to leverage Watershed Rehabilitation Program funds.

Estimated Completion Date: April 2010

Identify all high hazard dams that are eligible for Watershed Rehabilitation Program assistance that have not had assessments completed and prioritize them for funding (before any low or significant hazard dams assessments using Federal funds). Adjustments and concurrence will be completed at the State level with final lists returned back to the national office. A final list will be prepared at the national office for funding priority on an annual basis. Update the list annually using the same process. In order to initiate rehabilitation processes for the dams that pose the most critical risks to public safety, initiate the assessment of over 600 dams in fiscal year 2009. Use all sources of technical services, including public and private sector expertise available at the local, State, and national level.

Estimated Completion Date: October 2009

Continue to implement annual funding methodology based on prioritizing for funding those dams with the highest risk to public safety. The methodology includes the Chief determining annually the number and amount of funds to be allocated off-the-top for assessments of high hazard dams.

Estimated Completion Date: Annually

Recommendation 2

Report annually to Congress concerning any high hazard dams that are determined to need rehabilitation, but are not rehabilitated, and why the program's goals cannot be accomplished.

NRCS Response

Develop a decision support tool to display where all high hazard program dams (approximately 1,700 dams) are located, with an overlay of socially and economically disadvantaged geographic areas. Include similar displays showing Watershed Rehabilitation Program dam status (in planning, implementation, rehabilitation complete). Use these displays in reports to Congress, as needed, where higher Federal cost-share rates may be necessary to equitably implement the program. Work through USDA's legislative change process to propose a change to the statute to account for the unique needs of socially and economically disadvantaged communities including higher cost-share rates.

Estimated Completion Date: October 2010

Recommendation 3

Develop and implement policy and procedures for maintaining national and State dam inventories, including routinely updating and reconciling information.

NRCS Response

NRCS will review its policy and procedures and institute revised policy to ensure that the inventory of dams is accurate and that the national list is updated more frequently.

Estimated Completion Date: September 2010

Recommendation 4

Revise the dam hazard classification definitions to correspond to those of the Federal Guidelines for Dam Safety.

NRCS Response

NRCS will consult with other members of the Federal agencies represented on the Interagency Committee on Dam Safety to develop a uniform Federal strategy for adoption of the guide standard.

NRCS will review its policy on hazard classification and align the National Engineering Manual with the Federal guidelines if all Federal agencies agree and adopt the guidelines as the standard.

Estimated Completion Date: September 2010

Recommendation 5

Update hazard classifications for all dams as changes in risk occur.

NRCS Response

NRCS will ensure that States and national hazard classifications for the dams in the inventory are accurate and account for the urban development and population growth that occurred after a dam was built. STCs will be required to verify and certify that hazard classifications are accurate and up-to-date, as specified in the National Operation and Maintenance (O&M) Manual.

NRCS will revise its O&M policy, as needed, to emphasize the need to note land use changes during routine inspections and initiate follow up to assess impact on hazard class.

NRCS will revise its National Engineering Manual policy, as needed, to emphasize assessment of potential hazard class changes.

Estimated Completion Date: September 2010

Recommendation 6

Develop, as part of the overall strategy for the dam rehabilitation program, plans to assess all high hazard dams nationwide, prior to assessing low or significant hazard dams.

NRCS Response

Implementation of the overall strategy for the dam rehabilitation program includes this recommendation. See "Planned Corrective Action" for Recommendation 1.

Estimated Completion Date: October 2009

Recommendation 7

Revise the Agency's performance goals to more reasonably measure the program's accomplishments to ensure public safety.

NRCS Response

The three performance goals will be updated for the new long-term performance period through fiscal year (FY) 2014.

The baseline to establish the performance goal will be increased from zero to what exists at the completion of FY 2008. Estimates will be established in consideration of planned efforts to target the highest priority high hazard dams for rehabilitation.

Estimated Completion Date: July 2009

Recommendation 8

Issue guidance clarifying the scope of the work NRCS State offices should perform when assessing dams for rehabilitation.

NRCS Response

NRCS previously improved policy for assessments which was provided by letter to STCs in 2008. The policy was also incorporated into the draft revision of the National Watershed Manual. This action was completed as a result of concerns raised at that time by OIG audit staff. The policy specifies technical level of input for assessments in order to hold costs within practical limits and obtain the necessary information to allow dam owners to make a decision to request Watershed Rehabilitation Program planning assistance.

Estimated Completion Date: Completed

Recommendation 9

Monitor the cost of dam assessments performed by NRCS State offices to ensure they are appropriate.

NRCS Response

NRCS will develop a POINTS database application or separate spreadsheet to monitor the cost of assessments and to collect significant data from each assessment. Key items to track will be project name, Federal cost of the assessment, designed dam hazard classification and actual dam hazard classification, adequacy of O&M, eligibility of the dam for rehabilitation, and estimates for Failure Index, Risk Index, and Population at Risk.

Estimated Completion Date: October 2010

Recommendation 10

Determine the actions can be taken if dam owners are unable to meet their obligation to provide 35 percent of the funds needed for rehabilitation, including seeking congressional authorization to fund a greater portion of dam rehabilitation costs.

NRCS Response

Provide awareness training to STCs and program managers on existing policy regarding applications for Watershed Rehabilitation Program assistance.

Provide official correspondence that directs STCs to ensure that the sponsor application letters include all of their commitments, including the local share of project implementation funds, as required in national policy.

Estimated Completion Date: January 2010

Track rehabilitation projects that have been locally implemented. These would include projects that are implemented to State dam hazard design criteria, but not Federal. Applicable dam inventories will be updated to include dams that are rehabilitated without program assistance. NRCS modified the program database (POINTS) to track dam rehabilitation projects that are “in planning,” “in implementation,” “completed,” and “implemented locally” (without Federal assistance).

Estimated Completion Date: Completed

Recommendation 11

Develop, as part of the overall strategy for the dam rehabilitation program, plans to rehabilitate all high hazard dams throughout the Nation that are in need of rehabilitation, prior to rehabilitating low or significant hazard dams.

NRCS Response

NRCS will limit program funding requests annually to high hazard dams in need of rehabilitation until that list is exhausted as a result of rehabilitation, decommissioning, or lack of adequate sponsor commitment, support, or funding to proceed with a program application.

Estimated Completion Date: Annually

Recommendation 12

Establish policy and procedures for designating sensitive dam information in NRCS’ dam inventory databases to secure that information and limit access to it.

NRCS Response

NRCS will review the information in the national dam inventory and determine what information is sensitive and should not be released. In addition, NRCS will develop policy and procedures to better safeguard sensitive information in the NRCS dam inventory database.

Estimated Completion Date: September 2010

Exhibit G – Agency Response

Recommendation 13

Develop, as part of its overall strategy for the dam rehabilitation program, plans to work with State regulatory agencies to require owners to develop emergency action plans (EAP) for high hazard dams.

NRCS Response

State requirements for EAPs on all high hazard dams will help to achieve public safety below NRCS assisted dams. STCs will meet with the State dam safety agency and discuss the benefits for EAP requirements.

Estimated Completion Date: April 2010