

**REPORT OF THE DEPARTMENT OF CONSERVATION AND  
RECREATION**

**COSTS, FUNDING AND PRIORITIZATION OF  
VIRGINIA DAMS TO MEET MINIMUM PUBLIC  
SAFETY STANDARDS**

**TO THE GOVERNOR AND THE CHAIRMEN OF THE SENATE  
FINANCE COMMITTEE AND THE HOUSE APPROPRIATIONS  
COMMITTEE**



**COMMONWEALTH OF VIRGINIA  
RICHMOND  
DECEMBER 2011 (Revised 12/12/2011)**

Douglas W. Domenech  
Secretary of Natural Resources



David A. Johnson  
Director

**COMMONWEALTH of VIRGINIA**  
**DEPARTMENT OF CONSERVATION AND RECREATION**

203 Governor Street  
Richmond, Virginia 23219-2010  
(804) 786-1712

December 23, 2011

The Honorable Robert F. McDonnell  
Governor, Commonwealth of Virginia  
Office of the Governor  
Patrick Henry Building, 3rd Floor  
1111 East Broad Street  
Richmond, Virginia 23219

The Honorable Charles J. Colgan  
Chair, Senate Finance Committee  
10660 Aviation Lane  
Manassas, Virginia 20110

The Honorable Lacey E. Putney  
Chair, House Appropriations Committee  
Post Office Box 127  
Bedford, Virginia 24523

Re: Report on the costs to repair regulated dams owned by the state, soil and water conservation districts, local governments, and the private sector as required in Chapter 890 of the 2011 Acts of Assembly, Item 351 N.

Dear Governor McDonnell, Senator Colgan and Delegate Putney:

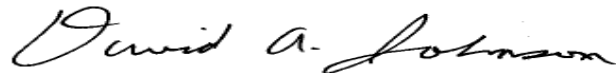
I am pleased to submit the attached report in accordance with Chapter 890 of the 2011 Acts of Assembly, Item 351 N. Item 351 N requires

*“the Department of Conservation and Recreation, with cooperating agencies, shall evaluate the costs to repair regulated dams owned by the state, soil and water conservation districts, local governments, and the private sector in order to upgrade them to state safety standards. A prioritization of known high hazard dams in need of repairs to meet minimum safety standards based on hazard to life and property from a dam failure shall be considered. The results of the evaluation shall be submitted to the Governor and the Chairmen of the House Appropriations and Senate Finance Committees by September 30, 2011”.*

The Honorable Robert F. McDonnell  
The Honorable Charles J. Colgan  
The Honorable Lacey E. Putney  
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I encourage you to contact me directly should you have any questions or needs for additional information with regards to the content of this report. As always, I look forward to continuing to work with you as we address these important matters.

Respectfully submitted,

A handwritten signature in black ink that reads "David A. Johnson". The signature is written in a cursive, flowing style.

David A. Johnson

cc: Mr. Clyde Cristman  
Mr. Paul Van Lenten

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## Introduction

The purpose of this analysis was to identify dams in need of repair and estimate the costs to meet the public safety standards established by the Dam Safety Act § 10.1-604. The report includes estimated costs for high and significant hazard potential dams. Given that the availability of funding for dam improvements varies depending on ownership, dams were classified by owner group into dams owned by the state, by Soil and Water Conservation Districts, by local governments, private entities, and utilities. Preparation of the Report was directed by Item 351N of Chapter 890 of the 2011 Virginia Acts of Assembly.<sup>1</sup>

The Department of Conservation and Recreation is responsible for assisting dam owners to maintain their dams to prevent failures, and to protect lives and property as authorized by the Dam Safety Act § 10.1-604. The Department assists owners and engineers with more than 1600 dams in Virginia. In addition, the Department assists 285 localities with management of their floodplains.

In order to improve dam safety and assist dam owners, the Department of Conservation and Recreation (DCR) is implementing a series of initiatives. In 2012, DCR will execute a contract to provide a Dam Break Early Warning System. The warning system will collect data from live sources such as the National Weather Service (NWS), National Oceanic and Atmospheric Administration (NOAA), Natural Resources Conservation Service (NRCS), and the U.S. Geological Survey (USGS). Alerts and notifications will be distributed immediately to dam

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<sup>1</sup> By an amendment to the budget (Item 351 N.), DCR was directed as follows: "It is the intent of the General Assembly that based on the Commonwealth's commitment to safe dams in Virginia, the Department of Conservation and Recreation, with cooperating agencies, shall evaluate the costs to repair regulated dams owned by the state, Soil and Water Conservation Districts, local governments, and the private sector in order to upgrade them to state safety standards. A prioritization of known high hazard dams in need of repairs to meet minimum safety standards based on hazard to life and property from a dam failure shall be considered. The results of the evaluation shall be submitted to the Governor and the Chairmen of the House Appropriations and Senate Finance Committees by September 30, 2011."

owners and emergency responders through electronic media according to DCR defined specifications or plans of action. There are actions that can be taken to prevent a dam failure. For example, lowering the water level behind the dam prior to a heavy storm increases the capacity and may prevent a failure. Another initiative, the dam first aid initiative, will allow DCR to equip trailers with siphons and pumps to provide emergency repairs to dams. The trailers will be equipped and located throughout the state to provide equipment to dam owners to make emergency repairs and prevent a potential dam failure.

To assist dam owners in operating and maintaining their dams and complying with the Dam Safety Act and Impounding Structure Regulations, a *Dam Owner's Handbook* was published in December 2010. To date, 750 copies have been mailed to dam owners throughout Virginia and distributed in-person, to dam owners and consultants, at training sessions, the 2011 Virginia Water Conference, and 2011 Environment Virginia.

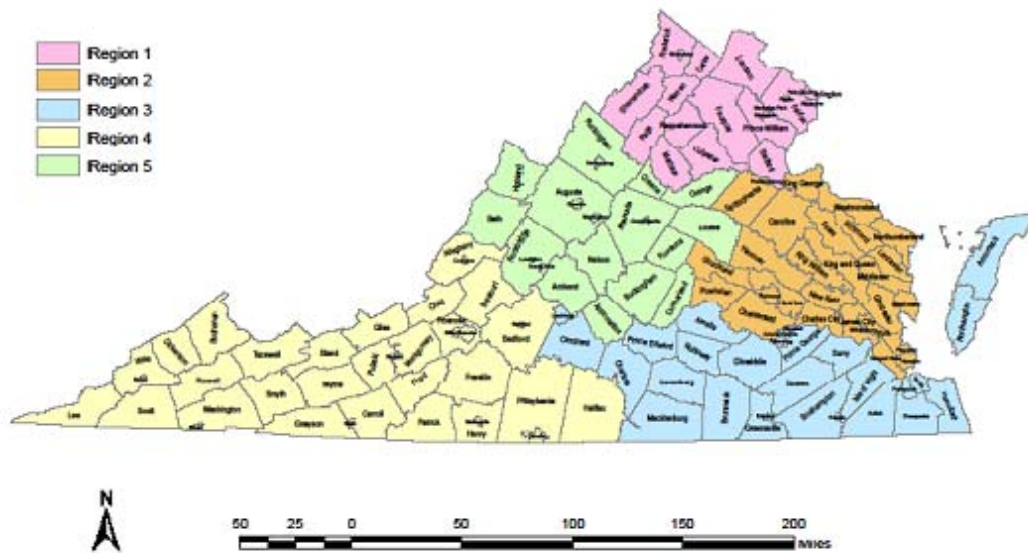
A new E-Newsletter will provide an inexpensive means to communicate regularly with all DCR Dam Safety and Floodplain Management stakeholders. Updates to the law, regulations and guidance, grant announcements, training programs, and success stories can be shared with stakeholders. The first E-Newsletter was distributed in April, 2011. The second E-Newsletter informing dam owners what to do after the earthquake and to prepare for a hurricane was sent on August 25, 2011.

On May 24, 2011, the Soil and Water Conservation Board approved three fast track actions directed by the General Assembly to assist dam owners and improve the Impounding Structure Regulations:

- i. Incorporate the consideration of low traffic volume roads into the hazard classification. Existing guidance on roadways on or below impounding structures will be the basis of this revision to the regulations;
- ii. Develop a simplified methodology for dam break inundation zone studies and mapping to provide a low cost alternative for dam owners for determination of low hazard potential classification and eligibility for the general permit;
- iii. Develop a general permit for owners of low hazard potential dams.

Dams provide water supply, flood control, hydro-electric power, agricultural resource, irrigation, recreation, fish and wildlife habitats, and contribute to water quality. Virginia is

divided into five dam safety regions. Each region is assigned a dam safety engineer. A common goal shared by all is maintaining dams to meet minimum public safety standards for the prevention of dam failures. Dam owners are responsible for lives and property, including the dam itself, in the event of a dam failure. The biggest challenge for dam owners in Virginia is the costs of maintaining dams in a safe condition.



**Figure 1.** The regional dam safety engineer’s map depicts the Department of Conservation and Recreation’s Dam Safety regions. Revised: October 1, 2011

### Stakeholder Involvement and Data Collection

Upon receiving direction to conduct this analysis, DCR contacted stakeholders, including dam owners, localities, Soil and Water Conservation Districts, engineers, contractors, other state agencies and federal agencies, by mail and email to explain the purpose of the report and to request cost data on dams (Table 1). 1264 surveys were delivered by mail to dam owners requesting cost estimates for planned dam rehabilitations and cost data for previous rehabilitations. 79 of the 1264 surveys were returned, for a 6% response rate from dam owners. 732 reminders were sent by email to dam owners with known email addresses and additional interested stakeholders. Information was received for about 10% of the known regulated dams throughout Virginia’s dam safety regions (Figure 1). Present and past cost information for the repair of dams was obtained from state agencies including DCR, DGIF, and UVA, and federal agencies including NRCS and FEMA.



## 2.1 Methodologies for Estimating Costs

Accurate estimates of repair costs for dams require detailed engineering analyses and design, construction drawings, specifications, and construction cost estimates. In order to obtain the cost estimates for this analysis, returned surveys and cost data from past and planned rehabilitations were analyzed. The estimated costs received from responding owners or their engineers were included in this examination for the specific dam provided for.

Cost benefit equations were developed to relate additional spillway capacity required to cost. This relationship offered a way to estimate the costs of dams for which no owner estimates are available. In addition, average costs for dam repair for each potential hazard classification were extrapolated from known costs of past and planned repairs of state owned dams and owner estimates. The equations were used to estimate the cost of repairs for dams without owner estimates or accurate information on the required spillway capacity. In addition, Regional Dam Safety Engineers checked and adjusted the resulting cost estimates based on their knowledge of the dams from inspections, review of information provided by dam owners and their engineers, and data on each dam recorded in the dam safety database.

The estimated cost to repair each dam was determined for each hazard classification and for dams owned by the state, Soil and Water Conservation Districts, local government, private entities, and utilities. The highest priorities for repair are high hazard dams, followed by the second priority, significant hazard dams, and last, low hazard. It has been determined that, as to low hazard dams, DCR needs only to know they exist in order that they are not inadvertently converted to significant or high hazard dams by development.

## 2.2 Methodology for Prioritization of High Hazard Dams

High hazard dams put the greatest amount of property and lives at risk, while at the same time yielding the most protection, in dollars spent. The prioritization and the identification of these dams in need of repair are critical in the protection of life and property. The prioritization methodology considered the number of people at risk should a dam fail, cost to repair, and the change in probability before and after the fix for overtopping and piping failure modes. The methodology is expressed through cost benefit equations. These equations will be provided upon

request.

High hazard dams were prioritized by owner group because funding sources may be different for each. The owner groups are: dams owned by the state; Soil and Water Conservation Districts; local governments; private entities; and utilities. Available sources of funds for dam repair include state bond money to repair park and district dams. Dams were selected for repair by a prioritization process based on high hazard classification and number of people at risk in the event of dam failure.

## Discussion of Prioritization & Cost Estimates

### A. High Hazard Dams

The prioritization for high hazard dams was determined by an analysis of failure modes, estimated cost of rehabilitation, number of people downstream, and cost benefit analysis. The lowest number calculated for the prioritization factor indicates the highest priority dam for repair and is listed first in Tables A1-B5 in the appendix.

The total number of high hazard dams was 221 and of those 104 dams either meet minimum public safety standards or money is already allocated for their repair. Virginia has 117 high hazard dams in need of repairs to meet minimum public safety standards. Of those twenty-one are owned by the state, 37 by the SWD, 23 by the local government, 33 are privately owned, and three are utility owned. The total estimated cost for each owner group is:

- |                         |              |
|-------------------------|--------------|
| • State Owned (21)      | \$21,399,619 |
| • SWCD (37)             | \$62,590,242 |
| • Local Government (23) | \$36,713,402 |
| • Privately Owned (33)  | \$41,789,763 |
| • Utility (3)           | \$5,174,208  |

### B. Significant Hazard Dams

The total number of significant hazard dams was 398, and of those, 75 meet minimum public safety standards or money is already allocated for their repair. Of the 399 significant hazard dams, 323 are in need of repairs. Of those, ten are owned by the state, fourteen by the SWCDs, 28 by the local government, 267 are privately owned, and four are utility owned. The total estimated cost for each owner group is:

• State Owned (10)	\$17,374,976
• SWCD (11)	\$14,920,953
• Local Government (28)	\$58,435,535
• Privately Owned (266)	\$323,612,385
• Utility (4)	\$9,602,094

The prioritization of high hazard dams for repair was determined by an analysis of failure modes, number of people downstream, and estimated cost of rehabilitation. The two failure modes analyzed are: i) dam overtopping; and ii) seepage through the dam. The number of people downstream from a dam was estimated from existing dam break inundation analysis, maps, and emergency action plans. Estimated cost of repair was obtained from the owner or, if not available, was determined using the formulas described earlier in this report. Because the cost of dam repair depends on the difference between the existing spillway capacity and required spillway capacity, a formula was developed from costs for past dam repairs that relates cost to repair dams and additional spillway capacity. For each high hazard dam the estimated cost of repair is calculated from the formula based on the known spillway capacity. The lowest number calculated for the prioritization factor indicates the highest priority dam for repair and is listed first in the following tables for high hazard dams. Although there is no way to know the actual risk of dam failure, engineering estimates of the probability of dam failure based on condition are used in the prioritization analysis.

Several assumptions were made when conducting the foregoing analysis. The prioritization analysis focuses on evaluating the impact on people downstream but does not include the impact on property downstream. Although numerous dam failure modes are possible, only the two most probable failure modes, overtopping and piping were analyzed.<sup>2</sup> This

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<sup>2</sup> The impact on people downstream in piping failure is estimated to be 1/3 of the impact in PMF failure. Probable Maximum Flood (PMF) is the flood that might be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in a region. The PMF is derived from the current probable maximum precipitation (PMP) available from the National Weather Service, NOAA. The annual piping failure probability is based on dam condition. If the dam condition includes several seepage or wet locations that may cause a probable piping failure, the probability for piping failure is 0.01/year. The return period under these conditions is 100 years. If the dam condition has no seepage or wet locations, the probability for piping failure is 0.00001/year. The return period for condition is 100,000 years. A 100-year flood represents the flood magnitude expected to be equaled or exceeded on the average of once in 100 years or a return period of 100 years.

estimated cost to repair dams in Virginia is based on analytical methods to obtain the best estimates possible. With increased efforts and experience with the repair and improvement of the safety of dams, greater accuracy in estimated costs will be possible.

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## Appendix A: Prioritization and Cost Estimates of all High Hazard Dams

**Table A1. Prioritization & Cost Estimates of all High Hazard Dams**

Inventory Number	Dam Name	Owner Name	Owner Group	County/City	Certificate	People Downstream	Prioritization Factor	Cost to fix (\$)	Estimate Basis	Running Total (\$)
80001	Lake Cohoon Dam	City of Portsmouth, Dept. of Utilities	Local GOV	SUFFOLK CITY	Conditional	7,959	72,176	\$ 1,560,000	Owner	\$ 1,560,000
05902	Burke Lake Dam	DGIF	State	FAIRFAX COUNTY	Conditional	2,833	108,210	\$ 1,700,000	Owner	\$ 3,260,000
06913	Lake Frederick Dam	DGIF	State	FREDERICK COUNTY	Conditional	266	135,474	\$ 120,000	Owner	\$ 3,380,000
16303	Robertson Dam	DGIF	State	ROCKBRIDGE COUNTY	Conditional	195	231,000	\$ 150,000	Owner	\$ 3,530,000
70001	Lee Hall Reservoir Dam	City of Newport News Waterworks	Utility	NEWPORT NEWS CITY	Conditional	3,000	247,515	\$ 3,038,815	cfs-\$ formula & DCR Engineer	\$ 6,568,815
80002	Lake Kilby Dam	City of Portsmouth, Dept. of Utilities	Local GOV	SUFFOLK CITY	Conditional	3,745	312,753	\$ 893,000	Owner	\$ 7,461,815
04702	Mountain Run Dam #11	Town of Culpeper	Local GOV	CULPEPER COUNTY	Regular	4,437	373,215	\$ 696,688	cfs-\$ formula	\$ 8,158,503
68002	College Lake Dam	City of Lynchburg	Local GOV	LYNCHBURG CITY	Conditional	1,010	747,348	\$ 4,556,955	cfs-\$ formula	\$ 12,715,457
00304	Lower Ragged Mountain Dam	Rivanna Water and Sewer Authority	Utility	ALBEMARLE COUNTY	Conditional	480	875,179	\$ 1,200,000	Owner	\$ 13,915,457
80010	Speight's Run	City of Portsmouth, Dept. of Utilities	Local GOV	SUFFOLK CITY	Conditional	988	1,099,310	\$ 1,430,000	Owner	\$ 15,345,457
00908	Graham Creek Res. Dam #1	County of Amherst	Local GOV	AMHERST COUNTY	Regular	2,520	1,164,688	\$ 1,578,984	cfs-\$ formula	\$ 16,924,442
04703	Mountain Run Dam #50	Town of Culpeper	Local GOV	CULPEPER COUNTY	Regular	5,637	1,364,608	\$ 1,157,147	cfs-\$ formula	\$ 18,081,589
16505	Lake Shenandoah Dam	DGIF	State	ROCKINGHAM COUNTY	Conditional	63	1,683,997	\$ 500,000	Owner	\$ 18,581,589
06107	Thompson Dam	DGIF	State	FAUQUIER COUNTY	Conditional	74	2,308,245	\$ 1,600,000	Owner	\$ 20,181,589
16701	Laurel Bed Dam	DGIF	State	RUSSELL COUNTY	Conditional	414	2,376,092	\$ 750,000	Owner	\$ 20,931,589
19517	UVA Wise #1	UVA - College at Wise	State	WISE COUNTY	Conditional	51	2,538,715	\$ 1,000,000	Owner	\$ 21,931,589
00356	Upper Ragged Mountain	Rivanna Water and Sewer Authority	Utility	ALBEMARLE COUNTY	Conditional	480	2,555,967	\$ 935,393	cfs-\$ formula	\$ 22,866,982
05315	Commerce Park Dam	Dinwiddie County	Private	DINWIDDIE COUNTY	Conditional	155	2,602,390	\$ 534,154	cfs-\$ formula	\$ 23,401,136
08712	Wilde Lake Dam	Wilde Lake Association	Private	HENRICO COUNTY	Conditional	108	3,005,536	\$ 1,367,636	cfs-\$ formula	\$ 24,768,772

02303	Rainbow Forest Dam	Rainbow Forest Recreational Assoc Inc	Private	BOTETOURT COUNTY	Conditional	270	3,592,390	\$ 1,277,044	cfs-\$ formula	\$ 26,045,816
17923	Bridle Lake Dam	Worman Development, LC	Private	STAFFORD COUNTY	Conditional	33	3,670,376	\$ 1,023,713	cfs-\$ formula	\$ 27,069,529
04504	Johns Creek Dam #4	Mountain Castles SWCD	SWCD	CRAIG COUNTY	Conditional	90	3,944,872	\$ 1,539,513	cfs-\$ formula & DCR Engineer	\$ 28,609,041
03111	Lakeland Dam	Lakeland Club, Inc	Private	CAMPBELL COUNTY	Conditional	41	3,954,538	\$ 60,000	Owner	\$ 28,669,041
08902	Leatherwood Creek Dam #5	Blue Ridge SWCD	SWCD	HENRY COUNTY	Conditional	267	4,128,623	\$ 2,442,134	cfs-\$ formula	\$ 31,111,175
19104	Hidden Valley Lake Dam	DGIF	State	WASHINGTON COUNTY	Conditional	48	4,276,192	\$ 840,000	Owner	\$ 31,951,175
06911	Cove Dam #2	Alexander W. K. McDowell	Private	FREDERICK COUNTY	Conditional	27	4,525,071	\$ 500,000	DCR Engineer	\$ 32,451,175
08713	Wellesley Dam	Henrico County/Wellesley HOA	Private	HENRICO COUNTY	Regular	248	5,131,069	\$ 726,622	cfs-\$ formula	\$ 33,177,797
07908	Deer Lake Dam	The Glenn at Deer Lake Estates HOA, Inc.	Private	GREENE COUNTY	Regular	29	5,177,591	\$ 500,000	DCR Engineer	\$ 33,677,797
19518	UVA Wise #2	UVA - College at Wise	State	WISE COUNTY	Conditional	51	5,338,272	\$ 1,000,000	Owner	\$ 34,677,797
06122	Lake Brittle Dam	DGIF	State	FAUQUIER COUNTY	Conditional	33	5,553,496	\$ 750,000	Owner	\$ 35,427,797
19511	Bear Creek Dam	Town of Wise	Local GOV	WISE COUNTY	Conditional	102	5,952,734	\$ 1,152,946	cfs-\$ formula	\$ 36,580,744
77002	Spring Valley Lake Dam	Spring Valley Lake, LLC	Private	ROANOKE CITY CITY	Conditional	24	6,140,266	\$ 1,031,521	cfs-\$ formula	\$ 37,612,265
16301	Goshen Dam	B.S.A., National Capital Area Council	Private	ROCKBRIDGE COUNTY	Conditional	896	6,587,290	\$ 4,500,000	Owner	\$ 42,112,265
04156	Jessup Road Dam	Lake Farms Assoc.	Private	CHESTERFIELD COUNTY	None	34	6,724,064	\$ 1,523,331	cfs-\$ formula	\$ 43,635,596
04503	Johns Creek Dam #3	Mountain Castles SWCD	SWCD	CRAIG COUNTY	Conditional	84	6,862,365	\$ 1,277,044	cfs-\$ formula	\$ 44,912,641
02304	Blue Ridge Estates Dam	Lake Forest HOA	Private	BOTETOURT COUNTY	Regular	108	7,022,870	\$ 578,277	cfs-\$ formula	\$ 45,490,918
04163	Upper Spring Creek	Old Gun Acres Assoc. Inc	Private	CHESTERFIELD COUNTY	None	30	7,276,772	\$ 1,454,600	cfs-\$ formula	\$ 46,945,518
00352	Mink Creek Dam	Town of Scottsville	Local GOV	ALBEMARLE COUNTY	Conditional	156	7,414,255	\$ 881,840	cfs-\$ formula	\$ 47,827,358
05906	Lake Accotink Dam	Fairfax County Park Authority	Local GOV	FAIRFAX COUNTY	Conditional	756	8,189,008	\$ 4,720,096	cfs-\$ formula	\$ 52,547,453
04502	Johns Creek Dam #1	Mountain Castles SWCD	SWCD	CRAIG COUNTY	Conditional	168	8,480,039	\$ 2,848,316	cfs-\$ formula	\$ 55,395,769
00305	Albemarle Dam	DGIF	State	ALBEMARLE COUNTY	Conditional	9	9,430,384	\$ 400,000	Owner	\$ 55,795,769
06901	Lake Serene Dam	Lake Serene, Inc.	Private	FREDERICK COUNTY	Conditional	52	9,608,388	\$ 1,264,804	cfs-\$ formula	\$ 57,060,573

13714	Spring Vale Dam	J.E. Taylor Trust DTD	Private	ORANGE COUNTY	Conditional	15	10,112,926	\$ 1,116,006	cfs-\$ formula	\$ 58,176,580
07913	Twin Lakes Dam #1	Twin Lakes Owners Association	Private	GREENE COUNTY	Conditional	90	10,546,691	\$ 850,389	cfs-\$ formula	\$ 59,026,969
16304	Moore's Creek Dam	City of Lexington	Local GOV	ROCKBRIDGE COUNTY	Conditional	195	11,167,845	\$ 916,206	cfs-\$ formula	\$ 59,943,174
02102	Crab Orchard Creek Dam	Estate of John Taylor, MD	SWCD	BLAND COUNTY	Conditional	36	11,424,249	\$ 2,140,480	cfs-\$ formula	\$ 62,083,655
17102	Stony Creek Dam #10	Lord Fairfax SWCD	SWCD	SHENANDOAH COUNTY	Conditional	735	11,729,743	\$ 690,611	cfs-\$ formula	\$ 62,774,266
06702	Upper Blackwater River Dam #4	Blue Ridge SWCD	SWCD	FRANKLIN COUNTY	Conditional	48	12,125,838	\$ 1,289,454	cfs-\$ formula	\$ 64,063,720
08904	Leatherwood Creek Dam #3	Blue Ridge SWCD	SWCD	HENRY COUNTY	Conditional	84	12,322,896	\$ 2,293,216	cfs-\$ formula	\$ 66,356,936
01504	South River Dam #10A	Augusta County	Local GOV	AUGUSTA COUNTY	Conditional	171	14,337,811	\$ 1,400,000	Owner	\$ 67,756,936
00312	Ellersie Dam	Ronald Bannister	Private	ALBEMARLE COUNTY	None	20	14,625,701	\$ 1,949,083	cfs-\$ formula	\$ 69,706,019
66001	Newman Lake Dam	James Madison University	State	HARRISONBURG CITY	Conditional	27	15,425,447	\$ 1,442,181	cfs-\$ formula	\$ 71,148,199
17709	Fawn Lake Dam	NTS Virginia Development Co.	Private	SPOTSYLVANIA COUNTY	Conditional	272	15,553,938	\$ 888,522	cfs-\$ formula	\$ 72,036,722
04501	Johns Creek Dam #2	Mountain Castles SWCD	SWCD	CRAIG COUNTY	Conditional	96	15,727,984	\$ 1,519,226	cfs-\$ formula	\$ 73,555,948
12509	Stevens Lake Dam	Russel A. Stevens	Private	NELSON COUNTY	None	30	16,131,286	\$ 1,187,312	cfs-\$ formula	\$ 74,743,260
08506	Gaines Mill Dam	Gaines Mill HOA and the Matthews	Private	HANOVER COUNTY	None	17	17,815,508	\$ 2,119,956	cfs-\$ formula	\$ 76,863,216
05913	Lake Thoreau Dam	Reston Association	Private	FAIRFAX COUNTY	Regular	324	17,888,784	\$ 587,243	cfs-\$ formula	\$ 77,450,459
18503	Falls Mill Dam	Falls Mill Lake, Inc.	Private	TAZEWELL COUNTY	None	60	20,355,389	\$ 2,090,841	cfs-\$ formula	\$ 79,541,300
05907	Pohick Creek Dam #8	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Conditional	113	20,892,787	\$ 1,800,000	cfs-\$ formula	\$ 81,341,300
02902	Willis River Dam #1B	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	13	23,906,040	\$ 1,261,484	cfs-\$ formula	\$ 82,602,784
04104	Swift Creek Dam	DCR	State	CHESTERFIELD COUNTY	Conditional	111	24,977,792	\$ 6,977,438	cfs-\$ formula	\$ 89,580,223
03710	Roanoke Creek Dam # 4A	Southside SWCD	SWCD	CHARLOTTE COUNTY	Conditional	15	26,078,425	\$ 1,235,997	cfs-\$ formula	\$ 90,816,219
01514	South River Dam #19	Headwaters SWCD	SWCD	AUGUSTA COUNTY	Conditional	69	27,469,573	\$ 1,082,306	cfs-\$ formula	\$ 91,898,525
03317	Broaddus Dam	Charles N. Broaddus	Private	CAROLINE COUNTY	None	16	27,970,372	\$ 2,981,960	cfs-\$ formula	\$ 94,880,485
14304	Burton Dam	DGIF	State	PITTSYLVANIA COUNTY	Conditional	6	28,291,152	\$ 800,000	Owner	\$ 95,680,485
80011	Western Branch Dam	City of Norfolk, Dept. of Utilities	Local GOV	SUFFOLK CITY	Conditional	202	30,559,067	\$ 4,199,266	cfs-\$ formula	\$ 99,879,751
01509	South River Dam #6	Headwaters SWCD	SWCD	AUGUSTA COUNTY	Conditional	81	31,689,648	\$ 1,079,920	cfs-\$	\$ 100,959,671

									formula	
02501	Brunswick County Dam	DGIF	State	BRUNSWICK COUNTY	Conditional	6	31,827,546	\$ 900,000	Owner	\$ 101,859,671
11704	Gordons Dam	DGIF	State	MECKLENBURG COUNTY	Conditional	3	35,227,763	\$ 850,000	Owner	\$ 102,709,671
08518	Forest Lake Hills Dam	Forest Lake Civic Assoc.	Private	HANOVER COUNTY	Conditional	5	40,053,471	\$ 868,762	cfs-\$ formula	\$ 103,578,433
03705	Roanoke Creek Dam #5B	Southside SWCD	SWCD	CHARLOTTE COUNTY	Conditional	17	42,263,815	\$ 1,854,673	cfs-\$ formula	\$ 105,433,106
03706	Roanoke Creek Dam #6A	Southside SWCD	SWCD	CHARLOTTE COUNTY	Conditional	12	43,195,307	\$ 2,104,014	cfs-\$ formula	\$ 107,537,120
15332	Innovation at Prince William - Pond 3	Prince William County	Local GOV	PRINCE WILLIAM COUNTY	None	42	44,570,957	\$ 692,744	cfs-\$ formula	\$ 108,229,864
14343	Ferrell Edmunds Dam	Ferrell Edmunds	Private	PITTSYLVANIA COUNTY	None	3	45,062,375	\$ 1,044,122	cfs-\$ formula	\$ 109,273,986
14104	Squall Creek Dam	Larry Stanley	Private	PATRICK COUNTY	Conditional	3	46,788,518	\$ 730,536	cfs-\$ formula	\$ 110,004,522
08912	Horse Pasture Creek Dam #1C	Blue Ridge SWCD	SWCD	HENRY COUNTY	Conditional	15	54,128,078	\$ 1,798,733	cfs-\$ formula	\$ 111,803,255
14303	Cherrystone Creek Dam #2A	Town of Chatham	Local GOV	PITTSYLVANIA COUNTY	Conditional	81	56,186,603	\$ 955,822	cfs-\$ formula	\$ 112,759,077
02905	Willis River #5E	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	16	60,120,365	\$ 2,747,797	cfs-\$ formula	\$ 115,506,873
10503	Ewells Dam	Ewell & Dianna Smith	Private	LEE COUNTY	None	3	60,682,753	\$ 857,975	cfs-\$ formula	\$ 116,364,848
15307	Omisol Dam	Omisol Home Owners Association	Private	PRINCE WILLIAM COUNTY	Conditional	6	64,686,750	\$ 2,343,132	cfs-\$ formula	\$ 118,707,980
14108	Braswell's Dam	Herman Braswell	Private	PATRICK COUNTY	None	6	73,546,706	\$ 837,928	cfs-\$ formula	\$ 119,545,909
06501	Lake Monticello Dam	Lake Monticello Owners Assoc. Inc.	Private	FLUVANNA COUNTY	Conditional	45	73,559,111	\$ 2,523,752	cfs-\$ formula	\$ 122,069,661
01512	South River Dam #11	Headwaters SWCD	SWCD	AUGUSTA COUNTY	Regular	27	73,849,691	\$ 838,883	cfs-\$ formula	\$ 122,908,544
16511	Shoemaker River #3B	Shenandoah Valley SWCD	SWCD	ROCKINGHAM COUNTY	Conditional	61	76,951,561	\$ 771,064	cfs-\$ formula	\$ 123,679,608
02901	Willis River Dam #1A	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	17	79,325,816	\$ 2,696,153	cfs-\$ formula	\$ 126,375,761
01921	Lake Vista Dam #1	Lake Vista Homeowners Association	Private	BEDFORD COUNTY	Regular	6	79,855,183	\$ 1,591,967	cfs-\$ formula	\$ 127,967,728
14311	Gretna Dam	Town of Gretna	Local GOV	PITTSYLVANIA COUNTY	None	3	80,667,735	\$ 1,140,537	cfs-\$ formula	\$ 129,108,264
02903	Willis River Dam #3	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	9	81,887,704	\$ 2,001,395	cfs-\$ formula	\$ 131,109,659
10501	Middleton Dam	Steve Middleton	Private	LEE COUNTY	None	3	82,003,944	\$ 603,574	cfs-\$ formula	\$ 131,713,233
02919	Willis River Dam #2	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	13	84,713,027	\$ 2,990,647	cfs-\$ formula	\$ 134,703,880
08909	Horse Pasture Creek	Blue Ridge SWCD	SWCD	HENRY COUNTY	Conditional	15	86,623,875	\$ 990,664	cfs-\$	\$ 135,694,545



	Dam #2								formula	
02906	Willis River #5F	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	10	87,166,502	\$ 2,754,192	cfs-\$ formula	\$ 138,448,737
02908	Willis River Dam #6A	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	13	89,174,984	\$ 1,300,050	cfs-\$ formula	\$ 139,748,787
08905	Leatherwood Creek Dam #2A	Blue Ridge SWCD	SWCD	HENRY COUNTY	Conditional	21	90,611,862	\$ 1,450,782	cfs-\$ formula	\$ 141,199,569
77001	Windsor Lake Dam	Windsor Lake Corporation	Private	ROANOKE CITY CITY	Regular	24	91,896,107	\$ 275,000	Owner	\$ 141,474,569
02907	Willis River 6	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	16	95,451,735	\$ 2,753,811	cfs-\$ formula	\$ 144,228,380
06701	Upper Blackwater River Dam #6	Blue Ridge SWCD	SWCD	FRANKLIN COUNTY	Conditional	15	97,141,145	\$ 1,110,944	cfs-\$ formula	\$ 145,339,324
08907	Leatherwood Creek Dam #6	Blue Ridge SWCD	SWCD	HENRY COUNTY	Conditional	6	100,058,859	\$ 1,330,025	cfs-\$ formula	\$ 146,669,348
78001	Powell Dam	Town of South Boston	Local GOV	SOUTH BOSTON CITY	None	6	114,809,274	\$ 525,201	cfs-\$ formula	\$ 147,194,550
14302	Cherrystone Creek Dam #1	Town of Chatham	Local GOV	PITTSYLVANIA COUNTY	Conditional	81	133,481,102	\$ 866,089	cfs-\$ formula	\$ 148,060,639
14736	Bush River #7	Piedmont SWCD	SWCD	PRINCE EDWARD COUNTY	Conditional	20	133,660,323	\$ 2,410,059	cfs-\$ formula	\$ 150,470,698
02904	Willis River Dam #4	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	5	134,365,106	\$ 1,919,108	cfs-\$ formula	\$ 152,389,806
05942	Reston Northern Sector Pond 1 Dam	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Regular	32	134,721,515	\$ 591,686	cfs-\$ formula	\$ 152,981,493
02935	Slate River Dam #8	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	9	173,046,990	\$ 2,162,054	cfs-\$ formula	\$ 155,143,547
02910	Willis River Dam #9	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	2	242,636,203	\$ 1,695,350	cfs-\$ formula	\$ 156,838,897
02911	Muddy Creek Dam #1	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	4	291,327,519	\$ 1,110,085	cfs-\$ formula	\$ 157,948,982
14703	Buffalo Creek #4	Piedmont SWCD	SWCD	PRINCE EDWARD COUNTY	Conditional	19	317,288,643	\$ 2,088,932	cfs-\$ formula	\$ 160,037,913
14117	Ararat River Dam #28	Patrick County	Local GOV	PATRICK COUNTY	Conditional	3	327,111,972	\$ 748,196	cfs-\$ formula	\$ 160,786,109
02912	Muddy Creek Dam #2	Peter Francisco SWCD	SWCD	BUCKINGHAM COUNTY	Conditional	4	396,860,106	\$ 861,125	cfs-\$ formula	\$ 161,647,235
12501	Nelson Dam	DGIF	State	NELSON COUNTY	Conditional	6	638,830,479	\$ 805,000	Owner	\$ 162,452,235
01519	Coles Run Dam	Augusta County Service Authority	Local GOV	AUGUSTA COUNTY	Regular	90	856,472,147	\$ 4,000,000	Owner	\$ 166,452,235
10502	Keokee Dam	DGIF	State	LEE COUNTY	Conditional	51	N/A	\$ 20,000	Owner	\$ 166,472,235
17912	Lake Curtis Dam	DGIF	State	STAFFORD COUNTY	Conditional	3	N/A	\$ 30,000	Owner	\$ 166,502,235
14737	Briery Creek Lake	DGIF	State	PRINCE EDWARD COUNTY	Regular	87	N/A	\$ 115,000	Owner	\$ 166,617,235
01522	South River Dam #7	Headwaters SWCD	SWCD	AUGUSTA COUNTY	Conditional	6	N/A	\$ 150,000	DCR Engineer	\$ 166,767,235
18501	Upper Clinch River	Town of Tazewell	Local	TAZEWELL COUNTY	Conditional	753	N/A	\$ 250,000	DCR	\$ 167,017,235

	Dam #8		GOV						Engineer	
19701	Rural Retreat Dam	DGIF	State	WYTHE COUNTY	Regular	114	N/A	\$ 650,000	Owner	\$ 167,667,235

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"cfs-\$ formula" means that the dam only has spillway cost and the spillway cost was estimated by the cfs-\$ formula.

"Owner & DCR Engineer" means that the owner estimated the spillway cost and DCR engineer estimated seepage cost and/or non-spillway non-seepage cost.

"cfs-\$ formula & DCR Engineer" means that the spillway cost was estimated using the cfs-\$ formula and DCR engineer estimated seepage cost and/or non-spillway non-seepage cost.

"DCR Engineer" means that DCR Engineer estimated the cost and the cost includes spillway cost, seepage cost, and/or non-spillway non-seepage cost.

## Appendix B: Prioritization and Cost Estimates

### Table B1. Prioritization & Cost Estimates of State Owned High Hazard Dams

Inventory Number	Dam Name	Owner Name	County/City	Certificate	People Downstream	Prioritization Factor	Cost to fix (\$)	Estimate Basis	Running Total (\$)	Comments
05902	Burke Lake Dam	DGIF	FAIRFAX COUNTY	Conditional	2,833	108,210	\$ 1,700,000	Owner	\$ 1,700,000	
06913	Lake Frederick Dam	DGIF	FREDERICK COUNTY	Conditional	266	135,474	\$ 120,000	Owner	\$ 1,820,000	
16303	Robertson Dam	DGIF	ROCKBRIDGE COUNTY	Conditional	195	231,000	\$ 150,000	Owner	\$ 1,970,000	
16505	Lake Shenandoah Dam	DGIF	ROCKINGHAM COUNTY	Conditional	63	1,683,997	\$ 500,000	Owner	\$ 2,470,000	
06107	Thompson Dam	DGIF	FAUQUIER COUNTY	Conditional	74	2,308,245	\$ 1,600,000	Owner	\$ 4,070,000	
16701	Laurel Bed Dam	DGIF	RUSSELL COUNTY	Conditional	414	2,376,092	\$ 750,000	Owner	\$ 4,820,000	
19517	UVA Wise #1	UVA - College at Wise	WISE COUNTY	Conditional	51	2,538,715	\$ 1,000,000	Owner	\$ 5,820,000	
19104	Hidden Valley Lake Dam	DGIF	WASHINGTON COUNTY	Conditional	48	4,276,192	\$ 840,000	Owner	\$ 6,660,000	
19518	UVA Wise #2	UVA - College at Wise	WISE COUNTY	Conditional	51	5,338,272	\$ 1,000,000	Owner	\$ 7,660,000	
06122	Lake Brittle Dam	DGIF	FAUQUIER COUNTY	Conditional	33	5,553,496	\$ 750,000	Owner	\$ 8,410,000	
00305	Albemarle Dam	DGIF	ALBEMARLE COUNTY	Conditional	9	9,430,384	\$ 400,000	Owner	\$ 8,810,000	
66001	Newman Lake Dam	James Madison Univ.	HARRISONBURG CITY	Conditional	27	15,425,447	\$ 1,442,181	cfs-\$ formula	\$ 10,252,181	
04104	Swift Creek Dam	DCR	CHESTERFIELD COUNTY	Conditional	111	24,977,792	\$ 6,977,438	cfs-\$ formula	\$ 17,229,619	
14304	Burton Dam	DGIF	PITTSYLVANIA COUNTY	Conditional	6	28,291,152	\$ 800,000	Owner	\$ 18,029,619	
02501	Brunswick County Dam	DGIF	BRUNSWICK COUNTY	Conditional	6	31,827,546	\$ 900,000	Owner	\$ 18,929,619	
11704	Gordons Dam	DGIF	MECKLENBURG COUNTY	Conditional	3	35,227,763	\$ 850,000	Owner	\$ 19,779,619	
12501	Nelson Dam	DGIF	NELSON COUNTY	Conditional	6	638,830,479	\$ 805,000	Owner	\$ 20,584,619	
10502	Keokee Dam	DGIF	LEE COUNTY	Conditional	51	N/A	\$ 20,000	Owner	\$ 20,604,619	Remove trees
17912	Lake Curtis Dam	DGIF	STAFFORD COUNTY	Conditional	3	N/A	\$ 30,000	Owner	\$ 20,634,619	Remove trees
14737	Briery Creek Lake	DGIF	PRINCE EDWARD COUNTY	Regular	87	N/A	\$ 115,000	Owner	\$ 20,749,619	Filter drain
19701	Rural Retreat Dam	DGIF	WYTHE COUNTY	Regular	114	N/A	\$ 650,000	Owner	\$ 21,399,619	Remove trees,

										investigate & repair blocked toe drains
05901	Barcroft Dam	Lake Barcroft Watershed Improv. Dist.	FAIRFAX COUNTY	Regular						Meets State's minimum standards
00344	Birdwood GC Hole #2 Dam	UVA Foundation	ALBEMARLE COUNTY	Regular						Meets State's minimum standards
01701	Douthat Lake Dam	DCR	BATH COUNTY	Regular						Meets State's minimum standards
17301	Hungry Mother Dam	DCR	SMYTH COUNTY	Regular						Meets State's minimum standards

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"DCR Engineer" means that DCR Engineer estimated the cost and the cost includes spillway cost, seepage cost, and/or non-spillway non-seepage cost.

**Table B2. Prioritization & Cost Estimates of SWCD High Hazard Dams**

Inventory Number	Dam Name	County/City	Certificate	People Downstream	Prioritization Factor	Cost to fix (\$)	Estimate Basis	Comments
04504	Johns Creek Dam #4	CRAIG COUNTY	Conditional	90	3,944,872	\$ 1,539,513	cfs-\$ formula & DCR Engineer	
08902	Leatherwood Creek Dam #5	HENRY COUNTY	Conditional	267	4,128,623	\$ 2,442,134	cfs-\$ formula	
04503	Johns Creek Dam #3	CRAIG COUNTY	Conditional	84	6,862,365	\$ 1,277,044	cfs-\$ formula	
04502	Johns Creek Dam #1	CRAIG COUNTY	Conditional	168	8,480,039	\$ 2,848,316	cfs-\$ formula	
02102	Crab Orchard Creek Dam	BLAND COUNTY	Conditional	36	11,424,249	\$ 2,140,480	cfs-\$ formula	
17102	Stony Creek Dam #10	SHENANDOAH COUNTY	Conditional	735	11,729,743	\$ 690,611	cfs-\$ formula	
06702	Upper Blackwater River Dam #4	FRANKLIN COUNTY	Conditional	48	12,125,838	\$ 1,289,454	cfs-\$ formula	
08904	Leatherwood Creek Dam #3	HENRY COUNTY	Conditional	84	12,322,896	\$ 2,293,216	cfs-\$ formula	
04501	Johns Creek Dam #2	CRAIG COUNTY	Conditional	96	15,727,984	\$ 1,519,226	cfs-\$ formula	
02902	Willis River Dam #1B	BUCKINGHAM COUNTY	Conditional	13	23,906,040	\$ 1,261,484	cfs-\$ formula	
03710	Roanoke Creek Dam #4A	CHARLOTTE COUNTY	Conditional	15	26,078,425	\$ 1,235,997	cfs-\$ formula	
01514	South River Dam #19	AUGUSTA COUNTY	Conditional	69	27,469,573	\$ 1,082,306	cfs-\$ formula	
01509	South River Dam #6	AUGUSTA COUNTY	Conditional	81	31,689,648	\$ 1,079,920	cfs-\$ formula	
03705	Roanoke Creek Dam #5B	CHARLOTTE COUNTY	Conditional	17	42,263,815	\$ 1,854,673	cfs-\$ formula	
03706	Roanoke Creek Dam #6A	CHARLOTTE COUNTY	Conditional	12	43,195,307	\$ 2,104,014	cfs-\$ formula	
08912	Horse Pasture Creek Dam #1C	HENRY COUNTY	Conditional	15	54,128,078	\$ 1,798,733	cfs-\$ formula	
02905	Willis River #5E	BUCKINGHAM COUNTY	Conditional	16	60,120,365	\$ 2,747,797	cfs-\$ formula	
01512	South River Dam #11	AUGUSTA COUNTY	Regular	27	73,849,691	\$ 838,883	cfs-\$ formula	
16511	Shoemaker River #3B	ROCKINGHAM COUNTY	Conditional	61	76,951,561	\$ 771,064	cfs-\$ formula	
02901	Willis River Dam #1A	BUCKINGHAM COUNTY	Conditional	17	79,325,816	\$ 2,696,153	cfs-\$ formula	
02903	Willis River Dam #3	BUCKINGHAM COUNTY	Conditional	9	81,887,704	\$ 2,001,395	cfs-\$ formula	
02919	Willis River Dam #2	BUCKINGHAM COUNTY	Conditional	13	84,713,027	\$ 2,990,647	cfs-\$ formula	
08909	Horse Pasture Creek Dam #2	HENRY COUNTY	Conditional	15	86,623,875	\$ 990,664	cfs-\$ formula	
02906	Willis River #5F	BUCKINGHAM COUNTY	Conditional	10	87,166,502	\$ 2,754,192	cfs-\$ formula	
02908	Willis River Dam #6A	BUCKINGHAM COUNTY	Conditional	13	89,174,984	\$ 1,300,050	cfs-\$ formula	

08905	Leatherwood Creek Dam #2A	HENRY COUNTY	Conditional	21	90,611,862	\$ 1,450,782	cfs-\$ formula	
02907	Willis River 6	BUCKINGHAM COUNTY	Conditional	16	95,451,735	\$ 2,753,811	cfs-\$ formula	
06701	Upper Blackwater River Dam #6	FRANKLIN COUNTY	Conditional	15	97,141,145	\$ 1,110,944	cfs-\$ formula	
08907	Leatherwood Creek Dam #6	HENRY COUNTY	Conditional	6	100,058,859	\$ 1,330,025	cfs-\$ formula	
14736	Bush River #7	PRINCE EDWARD COUNTY	Conditional	20	133,660,323	\$ 2,410,059	cfs-\$ formula	
02904	Willis River Dam #4	BUCKINGHAM COUNTY	Conditional	5	134,365,106	\$ 1,919,108	cfs-\$ formula	
02935	Slate River Dam #8	BUCKINGHAM COUNTY	Conditional	9	173,046,990	\$ 2,162,054	cfs-\$ formula	
02910	Willis River Dam #9	BUCKINGHAM COUNTY	Conditional	2	242,636,203	\$ 1,695,350	cfs-\$ formula	
02911	Muddy Creek Dam #1	BUCKINGHAM COUNTY	Conditional	4	291,327,519	\$ 1,110,085	cfs-\$ formula	
14703	Buffalo Creek #4	PRINCE EDWARD COUNTY	Conditional	19	317,288,643	\$ 2,088,932	cfs-\$ formula	
02912	Muddy Creek Dam #2	BUCKINGHAM COUNTY	Conditional	4	396,860,106	\$ 861,125	cfs-\$ formula	
01522	South River Dam #7	AUGUSTA COUNTY	Conditional	6	N/A	\$ 150,000	DCR Engineer	Train dikes
01507	Upper North River #77	AUGUSTA COUNTY	Regular					Meets minimum safety standards
01508	South River Dam #23	AUGUSTA COUNTY	Regular					Meets minimum safety standards
01511	South River Dam #4	AUGUSTA COUNTY	Regular					Meets minimum safety standards
04706	Mountain Run Dam #18	CULPEPER COUNTY	Regular					Meets minimum safety standards
16503	Lower North River #83	ROCKINGHAM COUNTY	Regular					Meets minimum safety standards
16507	Lower North River #82	ROCKINGHAM COUNTY	Regular					Meets minimum safety standards
01501	South River Dam #26	AUGUSTA COUNTY	Conditional					Meets minimum safety standards
01502	South River Dam #25	AUGUSTA COUNTY	Conditional					Meets minimum safety standards
03708	Roanoke Creek Dam # 62	CHARLOTTE COUNTY	Conditional					Meets minimum safety standards
03711	Roanoke Creek Dam # 61A	CHARLOTTE COUNTY	Conditional					Meets minimum safety standards
03712	Roanoke Creek Dam # 31B	CHARLOTTE COUNTY	Conditional					Meets minimum safety standards
14734	Bush River Dam #2	PRINCE EDWARD COUNTY	Conditional					Meets minimum safety standards
16501	Lower North River #80	ROCKINGHAM COUNTY	Conditional					Meets minimum safety standards
16502	Lower North River #78	ROCKINGHAM COUNTY	Conditional					Meets minimum safety standards
16509	Shoemaker River #1A	ROCKINGHAM COUNTY	Conditional					Meets minimum safety standards
16510	Shoemaker River #4C	ROCKINGHAM COUNTY	Conditional					Meets minimum safety standards

17101	Stony Creek Dam #9	SHENANDOAH COUNTY	Conditional						Money allocated
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High hazard dams are prioritized for each owner group with the first dam having the highest priority for repair.

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"DCR Engineer" means that DCR Engineer estimated the cost and the cost includes spillway cost, seepage cost, and/or non-spillway non-seepage cost.

**Table B3. Prioritization & Cost Estimates of Local Government High Hazard Dams**

Inventory Number	Dam Name	County/City	Certificate	People Downstream	Prioritization Factor	Cost to fix (\$)	Estimate Basis	Comments
80001	Lake Cohoon Dam	SUFFOLK CITY	Conditional	7,959	72,176	\$ 1,560,000	Owner	
80002	Lake Kilby Dam	SUFFOLK CITY	Conditional	3,745	312,753	\$ 893,000	Owner	
04702	Mountain Run Dam #11	CULPEPER COUNTY	Regular	4,437	373,215	\$ 696,688	cfs-\$ formula	
68002	College Lake Dam	LYNCHBURG CITY	Conditional	1,010	747,348	\$ 4,556,955	cfs-\$ formula	
80010	Speight's Run	SUFFOLK CITY	Conditional	988	1,099,310	\$ 1,430,000	Owner	
00908	Graham Creek Res. Dam #1	AMHERST COUNTY	Regular	2,520	1,164,688	\$ 1,578,984	cfs-\$ formula	
04703	Mountain Run Dam #50	CULPEPER COUNTY	Regular	5,637	1,364,608	\$ 1,157,147	cfs-\$ formula	
19511	Bear Creek Dam	WISE COUNTY	Conditional	102	5,952,734	\$ 1,152,946	cfs-\$ formula	
00352	Mink Creek Dam	ALBEMARLE COUNTY	Conditional	156	7,414,255	\$ 881,840	cfs-\$ formula	
05906	Lake Accotink Dam	FAIRFAX COUNTY	Conditional	756	8,189,008	\$ 4,720,096	cfs-\$ formula	
16304	Moore's Creek Dam	ROCKBRIDGE COUNTY	Conditional	195	11,167,845	\$ 916,206	cfs-\$ formula	
01504	South River Dam #10A	AUGUSTA COUNTY	Conditional	171	14,337,811	\$ 1,400,000	Owner	
05907	Pohick Creek Dam #8	FAIRFAX COUNTY	Conditional	113	20,892,787	\$ 1,800,000	cfs-\$ formula	
80011	Western Branch Dam	SUFFOLK CITY	Conditional	202	30,559,067	\$ 4,199,266	cfs-\$ formula	
15332	Innovation at Prince William - Pond 3	PRINCE WILLIAM COUNTY	None	42	44,570,957	\$ 692,744	cfs-\$ formula	
14303	Cherrystone Creek Dam #2A	PITTSYLVANIA COUNTY	Conditional	81	56,186,603	\$ 955,822	cfs-\$ formula	
14311	Gretna Dam	PITTSYLVANIA COUNTY	None	3	80,667,735	\$ 1,140,537	cfs-\$ formula	
78001	Powell Dam	SOUTH BOSTON CITY	None	6	114,809,274	\$ 525,201	cfs-\$ formula	
14302	Cherrystone Creek Dam #1	PITTSYLVANIA COUNTY	Conditional	81	133,481,102	\$ 866,089	cfs-\$ formula	
05942	Reston Northern Sector Pond 1 Dam	FAIRFAX COUNTY	Regular	32	134,721,515	\$ 591,686	cfs-\$ formula	
14117	Ararat River Dam #28	PATRICK COUNTY	Conditional	3	327,111,972	\$ 748,196	cfs-\$ formula	
01519	Coles Run Dam	AUGUSTA COUNTY	Regular	90	856,472,147	\$ 4,000,000	Owner	
18501	Upper Clinch River Dam #8	TAZEWELL COUNTY	Conditional	753	N/A	\$ 250,000	DCR Engineer	Stabilize E. Spill.
00503	Clifton Forge Dam	ALLEGHANY COUNTY	Regular					Meets minimum safety standards
00905	Pedlar River Dam	AMHERST COUNTY	Regular					Meets minimum safety standards



00911	Buffalo River Dam #3	AMHERST COUNTY	Regular					Meets minimum safety standards
00912	Buffalo River Dam #2	AMHERST COUNTY	Regular					Meets minimum safety standards
01506	Upper North River #76	AUGUSTA COUNTY	Regular					Meets minimum safety standards
02301	Carvin Cove Dam	BOTETOURT COUNTY	Regular					Meets minimum safety standards
02507	Great Creek Dam #6A	BRUNSWICK COUNTY	Regular					Meets minimum safety standards
03125	Otter River Raw Water Terminal Reservoir	CAMPBELL COUNTY	Regular					Meets minimum safety standards
03507	Stewarts Creek - Lovills Creek Dam #9	CARROLL COUNTY	Regular					Meets minimum safety standards
04112	Swift Creek Reservoir Dam	CHESTERFIELD COUNTY	Regular					Meets minimum safety standards
04115	Falling Creek Reservoir Dam	CHESTERFIELD COUNTY	Regular					Meets minimum safety standards
05905	Pohick Creek Dam #7	FAIRFAX COUNTY	Regular					Meets minimum safety standards
05922	Pohick Creek Dam #4	FAIRFAX COUNTY	Regular					Meets minimum safety standards
05929	Pohick Creek Dam #1	FAIRFAX COUNTY	Regular					Meets minimum safety standards
05931	Fairview Lake Dam	FAIRFAX COUNTY	Regular					Meets minimum safety standards
05938	West Ox Road BMP Dam	FAIRFAX COUNTY	Regular					Meets minimum safety standards
05946	Pulte McLean SWM Pond Dam	FAIRFAX COUNTY	Regular					Meets minimum safety standards
05948	Dulles Corner Lake Dam	FAIRFAX COUNTY	Regular					Meets minimum safety standards
06145	Cedar Run Dam #3	FAUQUIER COUNTY	Regular					Meets minimum safety standards
07309	Beaverdam Reservoir Dam	GLOUCESTER COUNTY	Regular					Meets minimum safety standards
08903	Beaver Creek Dam	HENRY COUNTY	Regular					Meets minimum safety standards
08913	Smith River Dam	HENRY COUNTY	Regular					Meets minimum safety standards
09506	Little Creek Dam	JAMES CITY COUNTY	Regular					Meets minimum safety standards
13901	Dry Run Dam #102	PAGE COUNTY	Regular					Meets minimum safety standards
15322	Prince William Parkway Regional SWM	PRINCE WILLIAM COUNTY	Regular					Meets minimum safety standards
16105	Woods End Dam	ROANOKE CO COUNTY	Regular					Meets minimum safety standards
16506	Lower North River #81C	ROCKINGHAM COUNTY	Regular					Meets minimum safety standards
17104	Woodstock Dam	SHENANDOAH COUNTY	Regular					Meets minimum safety standards
17719	Hunting Run Dam	SPOTSYLVANIA COUNTY	Regular					Meets minimum safety standards

17911	Aquia Creek Dam	STAFFORD COUNTY	Regular					Meets minimum safety standards
19516	Big Cherry RCC Dam	WISE COUNTY	Regular					Meets minimum safety standards
80013	Lake Meade Dam	SUFFOLK CITY	Regular					Meets minimum safety standards
01518	Staunton Dam	AUGUSTA COUNTY	Conditional					Meets minimum safety standards
01528	South River Dam #8A	AUGUSTA COUNTY	Conditional					Meets minimum safety standards
01910	Falling Creek Reservoir Dam	BEDFORD COUNTY	Conditional					Meets minimum safety standards
05940	Burke Centre Section 11B Dam	FAIRFAX COUNTY	Conditional					Meets minimum safety standards
14735	Bush River Dam #12	PRINCE EDWARD COUNTY	Conditional					Meets minimum safety standards
15509	Gatewood Dam	PULASKI COUNTY	Conditional					Meets minimum safety standards
17704	Motts Run Reservoir Dam	SPOTSYLVANIA COUNTY	Conditional					Meets minimum safety standards
18505	Upper Clinch Valley Dam #1B	TAZEWELL COUNTY	Conditional					Meets minimum safety standards
72001	Lower Norton Reservoir Dam	NORTON CITY	Conditional					Meets minimum safety standards
80003	Lake Burnt Mills Dam	SUFFOLK CITY	Conditional					Meets minimum safety standards
15323	Fashion Place Mall	PRINCE WILLIAM COUNTY	None					Meets minimum safety standards
06144	Licking Run Dam	FAUQUIER COUNTY	Regular					Money allocated
01904	Stoney Creek Reservoir Dam (Bedford)	BEDFORD COUNTY	Conditional					Money allocated
05923	Pohick Creek Dam #2	FAIRFAX COUNTY	Conditional					Money allocated
05928	Pohick Creek Dam #3	FAIRFAX COUNTY	Conditional					Money allocated
13902	Dry Run Dam #101	PAGE COUNTY	Conditional					Money allocated
15302	T. Nelson Elliott Dam	PRINCE WILLIAM COUNTY	Conditional					Money allocated
16104	Clifford D. Craig Memorial Dam	ROANOKE CO COUNTY	Conditional					Money allocated
72002	Upper Norton Reservoir Dam	NORTON CITY	Conditional					Money allocated
81005	Lake Smith	VIRGINIA BEACH CITY	Conditional					Money allocated
10127	King William Reservoir	KING WILLIAM COUNTY	None					Dam was designed but never built
05936	Regional Pond S-7 Dam	FAIRFAX COUNTY	None					Dam was designed but never built
17926	Rocky Pen Run Reservoir Dam	STAFFORD COUNTY	None					Dam doesn't exist

Definition of terms as used in column "Estimate Basis":

"Owner" means that the owner estimated the cost and the cost includes spillway cost and/or all other cost.

"cfs-\$ formula" means that the dam only has spillway cost and the spillway cost was estimated by the cfs-\$ formula.

"Owner & DCR Engineer" means that the owner estimated the spillway cost and DCR engineer estimated seepage cost and/or non-spillway non-seepage cost.

"DCR Engineer" means that DCR Engineer estimated the cost and the cost includes spillway cost, seepage cost, and/or non-spillway non-seepage cost.

**Table B4. Prioritization & Cost Estimates of Privately Owned High Hazard Dam**

Inventory Number	Dam Name	County/City	Certificate	People Downstream	Prioritization Factor	Cost to fix (\$)	Estimate Basis	Comments
05315	Commerce Park Dam	DINWIDDIE COUNTY	Conditional	155	2,602,390	\$ 534,154	cfs-\$ formula	
08712	Wilde Lake Dam	HENRICO COUNTY	Conditional	108	3,005,536	\$ 1,367,636	cfs-\$ formula	
02303	Rainbow Forest Dam	BOTETOURT COUNTY	Conditional	270	3,592,390	\$ 1,277,044	cfs-\$ formula	
17923	Bridle Lake Dam	STAFFORD COUNTY	Conditional	33	3,670,376	\$ 1,023,713	cfs-\$ formula	
03111	Lakeland Dam	CAMPBELL COUNTY	Conditional	41	3,954,538	\$ 60,000	Owner	
06911	Cove Dam #2	FREDERICK COUNTY	Conditional	27	4,525,071	\$ 500,000	DCR Engineer	
08713	Wellesley Dam	HENRICO COUNTY	Regular	248	5,131,069	\$ 726,622	cfs-\$ formula	
07908	Deer Lake Dam	GREENE COUNTY	Regular	29	5,177,591	\$ 500,000	DCR Engineer	
77002	Spring Valley Lake Dam	ROANOKE CITY	Conditional	24	6,140,266	\$ 1,031,521	cfs-\$ formula	
16301	Goshen Dam	ROCKBRIDGE COUNTY	Conditional	896	6,587,290	\$ 4,500,000	Owner	
04156	Jessup Road Dam	CHESTERFIELD COUNTY	None	34	6,724,064	\$ 1,523,331	cfs-\$ formula	
02304	Blue Ridge Estates Dam	BOTETOURT COUNTY	Regular	108	7,022,870	\$ 578,277	cfs-\$ formula	
04163	Upper Spring Creek	CHESTERFIELD COUNTY	None	30	7,276,772	\$ 1,454,600	cfs-\$ formula	
06901	Lake Serene Dam	FREDERICK COUNTY	Conditional	52	9,608,388	\$ 1,264,804	cfs-\$ formula	
13714	Spring Vale Dam	ORANGE COUNTY	Conditional	15	10,112,926	\$ 1,116,006	cfs-\$ formula	
07913	Twin Lakes Dam #1	GREENE COUNTY	Conditional	90	10,546,691	\$ 850,389	cfs-\$ formula	
00312	Ellersie Dam	ALBEMARLE COUNTY	None	20	14,625,701	\$ 1,949,083	cfs-\$ formula	
17709	Fawn Lake Dam	SPOTSYLVANIA COUNTY	Conditional	272	15,553,938	\$ 888,522	cfs-\$ formula	
12509	Stevens Lake Dam	NELSON COUNTY	None	30	16,131,286	\$ 1,187,312	cfs-\$ formula	
08506	Gaines Mill Dam	HANOVER COUNTY	None	17	17,815,508	\$ 2,119,956	cfs-\$ formula	
05913	Lake Thoreau Dam	FAIRFAX COUNTY	Regular	324	17,888,784	\$ 587,243	cfs-\$ formula	
18503	Falls Mill Dam	TAZEWELL COUNTY	None	60	20,355,389	\$ 2,090,841	cfs-\$ formula	
03317	Broadus Dam	CAROLINE COUNTY	None	16	27,970,372	\$ 2,981,960	cfs-\$ formula	
08518	Forest Lake Hills Dam	HANOVER COUNTY	Conditional	5	40,053,471	\$ 868,762	cfs-\$ formula	
14343	Ferrell Edmunds Dam	PITTSYLVANIA COUNTY	None	3	45,062,375	\$ 1,044,122	cfs-\$ formula	
14104	Squall Creek Dam	PATRICK COUNTY	Conditional	3	46,788,518	\$ 730,536	cfs-\$ formula	
10503	Ewells Dam	LEE COUNTY	None	3	60,682,753	\$ 857,975	cfs-\$ formula	

15307	Omisol Dam	PRINCE WILLIAM COUNTY	Conditional	6	64,686,750	\$ 2,343,132	cfs-\$ formula	
14108	Braswell's Dam	PATRICK COUNTY	None	6	73,546,706	\$ 837,928	cfs-\$ formula	
06501	Lake Monticello Dam	FLUVANNA COUNTY	Conditional	45	73,559,111	\$ 2,523,752	cfs-\$ formula	
01921	Lake Vista Dam #1	BEDFORD COUNTY	Regular	6	79,855,183	\$ 1,591,967	cfs-\$ formula	
10501	Middleton Dam	LEE COUNTY	None	3	82,003,944	\$ 603,574	cfs-\$ formula	
77001	Windsor Lake Dam	ROANOKE CITY	Regular	24	91,896,107	\$ 275,000	Owner	
01922	Ivy Hill Dam	BEDFORD COUNTY	Regular					Meets minimum safety standards
04136	Lake Salisbury Dam	CHESTERFIELD COUNTY	Regular					Meets minimum safety standards
05930	Lake Newport Dam	FAIRFAX COUNTY	Regular					Meets minimum safety standards
05945	Dulles Station Regional Pond Dam	FAIRFAX COUNTY	Regular					Meets minimum safety standards
08583	Tiller Lake Dam	HANOVER COUNTY	Regular					Meets minimum safety standards
08908	Marrowbone Creek Dam #1	HENRY COUNTY	Regular					Meets minimum safety standards
09906	Lake Monroe Dam	KING GEORGE COUNTY	Regular					Meet minimum safety standards
13701	Lake of the Woods Dam	ORANGE COUNTY	Regular					Meets minimum safety standards
15303	Lake Montclair Dam	PRINCE WILLIAM COUNTY	Regular					Meets minimum safety standards
15504	Hogan Dam	PULASKI COUNTY	Regular					Meet minimum safety standards
03324	Lake Caroline Dam	CAROLINE COUNTY	Conditional					Meets minimum safety standards
06905	Cove Lake Dam #1	FREDERICK COUNTY	Conditional					Meets minimum safety standards
15329	North Fork Wetlands Bank	PRINCE WILLIAM COUNTY	Conditional					Meets minimum safety standards
16305	Willow Lake Dam	ROCKBRIDGE COUNTY	Conditional					Meets minimum safety standards
76011	Winston Lake Dam	RICHMOND CITY	Conditional					Meets minimum safety standards
04186	Westham GC Irrigation Lake Dam	CHESTERFIELD COUNTY	None					Meets minimum safety standards
08555	Regional Stormwater Facility T-40	HANOVER COUNTY	None					Meets minimum safety standards
15330	Market Center Pond 1 Dam	PRINCE WILLIAM COUNTY	None					Meets minimum safety standards
06921	Lake Isaac Dam	FREDERICK COUNTY	Regular					Money allocated
13708	Keaton's Run	ORANGE COUNTY	Regular					Money allocated
06914	Lake Holiday Dam	FREDERICK COUNTY	Conditional					Money allocated

10714	Gore Dam	LOUDOUN COUNTY	Conditional					Money allocated
09316	ASB Pond	ISLE OF WIGHT COUNTY	None					Limited available information
15707	Seven Islands Dam	RAPPAHANNOCK COUNTY	None					Dam doesn't exist
<p>Definition of terms as used in column "Estimate Basis":</p> <p>"Owner" means that the owner estimated the cost and the cost includes spillway cost and/or all other cost.</p> <p>"cfs-\$ formula" means that the dam only has spillway cost and the spillway cost was estimated by the cfs-\$ formula.</p> <p>"Owner &amp; DCR Engineer" means that the owner estimated the spillway cost and DCR engineer estimated seepage cost and/or non-spillway non-seepage cost.</p> <p>"DCR Engineer" means that DCR Engineer estimated the cost and the cost includes spillway cost, seepage cost, and/or non-spillway non-seepage cost.</p>								

**Table B5. Prioritization & Cost Estimates of Utility High Hazard Dam**

Inventory Number	Dam Name	County/City	Certificate	People Downstream	Prioritization Factor	Cost to fix (\$)	Estimate Basis	Comments
70001	Lee Hall Reservoir Dam	NEWPORT NEWS CITY	Conditional	3,000	247,515	3,038,815	cfs-\$ formula & DCR Engineer	
00304	Lower Ragged Mountain Dam	ALBEMARLE COUNTY	Conditional	480	875,179	1,200,000	Owner	
00356	Upper Ragged Mountain	ALBEMARLE COUNTY	Conditional	480	2,555,967	935,393	cfs-\$ formula	
00303	Sugar Hollow Dam	ALBEMARLE COUNTY	Regular					Meets minimum safety standards
12703	Diascund Creek Dam	NEW KENT COUNTY	Regular					Meets minimum safety standards
14350	Pittsylvania Power Station Raw Water Storage Basin Dam	PITTSYLVANIA COUNTY	Regular					Meets minimum safety standards
19526	Dominion Generation VA City Dam #1	WISE COUNTY	None					Meets minimum safety standards
Definition of terms as used in column "Estimate Basis": "Owner" means that the owner estimated the cost and the cost includes spillway cost and/or all other cost. "cfs-\$ formula" means that the dam only has spillway cost and the spillway cost was estimated by the cfs-\$ formula.								

**Table B6. High Hazard Dams with Federal License, Mining or Agricultural Exemption<sup>3</sup>**

Inventory Number	Dam Name	County/City	Owner Group	Certificate
06917	Unimin Fresh Water Dam	FREDERICK COUNTY	Private	Mining Exemption
06918	Unimin Tailings Dam	FREDERICK COUNTY	Private	Mining Exemption
00327	Whites Dam	ALBEMARLE COUNTY	Private	Agricultural Exemption
16705	Moss #2 Mine Pond	RUSSELL COUNTY	Private	Mining Exemption
16708	Middle Folk Slurry Impoundment Dam	RUSSELL COUNTY	Private	Mining Exemption
00302	South Rivanna Dam	ALBEMARLE COUNTY	Utility	Federal License or Federal Ownership
00501	Gathright Dam	ALLEGHANY COUNTY	Federal	Federal License or Federal Ownership
01503	South River Dam #27 (Upper Sherando)	AUGUSTA COUNTY	Federal	Federal License or Federal Ownership
01706	Bath Co. Pumped Storage - Upper Dam	BATH COUNTY	Utility	Federal License or Federal Ownership
01707	Bath Co. Pumped Storage - Lower Dam	BATH COUNTY	Utility	Federal License or Federal Ownership
01902	Smith Mountain Dam	BEDFORD COUNTY	Utility	Federal License or Federal Ownership
04101	Brasfield Dam	CHESTERFIELD COUNTY	Private	Federal License or Federal Ownership
04119	Lake View Dam	CHESTERFIELD COUNTY	Local Government	Federal License or Federal Ownership
05101	John W. Flannagan Dam	DICKENSON COUNTY	Federal	Federal License or Federal Ownership
06303	Mabry Mill Pond Dam	FLOYD COUNTY	Federal	Federal License or Federal Ownership
08101	Emporia Dam	GREENSVILLE COUNTY	Local Government	Federal License or Federal Ownership
08301	Banister Dam	HALIFAX COUNTY	Private	Federal License or Federal Ownership
08901	Philpott Dam	HENRY COUNTY	Federal	Federal License or Federal Ownership
11701	John H. Kerr Dam	MECKLENBURG COUNTY	Federal	Federal License or Federal Ownership
11702	Island Creek Dam	MECKLENBURG COUNTY	Federal	Federal License or Federal Ownership
14101	Talbott Dam	PATRICK COUNTY	Utility	Federal License or Federal Ownership
14102	Townes Dam	PATRICK COUNTY	Utility	Federal License or Federal Ownership
14301	Leesville Dam	PITTSYLVANIA COUNTY	Private	Federal License or Federal Ownership
15304	Upper Occoquan Dam	PRINCE WILLIAM COUNTY	Utility	Federal License or Federal Ownership
15305	Occoquan Lower Storage Dam	PRINCE WILLIAM COUNTY	Utility	Federal License or Federal Ownership

<sup>3</sup> If dams have a federal license, they are required to meet federal safety standards. Dams with a mining exemption are regulated by the Department of Mines, Minerals and Energy (DMME). Since dams with an agricultural exemption are exempt from DCR's regulations, they are not required to apply for certification and thus meet minimum safety standards.



15308	Camp 5 Dam	PRINCE WILLIAM COUNTY	Federal	Federal License or Federal Ownership
15502	Claytor Dam	PULASKI COUNTY	Utility	Federal License or Federal Ownership
16101	Niagara Dam	ROANOKE CO COUNTY	Utility	Federal License or Federal Ownership
16306	Cave Mountain Dam	ROCKBRIDGE COUNTY	Federal	Federal License or Federal Ownership
17702	North Anna Dam	SPOTSYLVANIA COUNTY	Utility	Federal License or Federal Ownership
17901	Lunga Dam	STAFFORD COUNTY	Federal	Federal License or Federal Ownership
17904	Breckinridge Dam	STAFFORD COUNTY	Federal	Federal License or Federal Ownership
19101	Beaver Creek Dam	WASHINGTON COUNTY	Federal	Federal License or Federal Ownership
19102	Clear Creek Dam	WASHINGTON COUNTY	Federal	Federal License or Federal Ownership
19501	North Fork of Pound Dam	WISE COUNTY	Federal	Federal License or Federal Ownership

**Table B7. Cost Estimates of State Owned Significant Hazard Dams<sup>4</sup>**

Inventory Number	Dam Name	State Agency Responsible for Dam	City/County	Estimate Basis	Cost to Upgrade Spillway
01101	Holiday Lake Dam	DCR	Appomattox County	% Spillway Capacity	\$2,866,472
01510	South River Dam #3	DOC	Augusta County	% Spillway Capacity	\$857,181
04103	Beaver Lake Dam	DCR	Chesterfield County	% Spillway Capacity	\$2,475,798
05934	NVCC Annandale Campus Dam	NVCC	Fairfax County	% Spillway Capacity	\$162,282
09510	Lake Matoaka Dam	W&M	James City County	% Spillway Capacity	\$1,241,219
16505	Lake Shenandoah	DGIF	Rockingham County	% Spillway Capacity	\$1,721,261
18101	Sunken Meadow Dam	DOT	Surry County	% Spillway Capacity	\$2,455,911
19308	Gardy Millpond Dam	DGIF	Westmoreland County	% Spillway Capacity	\$2,925,580
14512	Grigg Lake Dam	DOC	Powhatan County	Average	\$1,334,622
16513	JMU Amphitheatre	JMU	Rockingham County	Average	\$1,334,622

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<sup>4</sup> Cost estimates are for upgrading spillways to pass large storms and prevent dam failures.

**Table B8. Cost Estimates of SWCD Significant Hazard Dams**

Inventory Number	Dam Name	City/County	Estimate Basis	Cost to Upgrade Spillway
01513	South River Dam #24	Augusta County	% Spillway Capacity	\$608,852.23
02933	Slate River Dam #14	Buckingham County	% Spillway Capacity	\$1,834,853.44
02934	Slate River Dam #13	Buckingham County	% Spillway Capacity	\$1,866,984.56
03707	Roanoke Creek Dam # 49A	Charlotte County	% Spillway Capacity	\$1,663,725.67
14701	Buffalo Creek Dam #1	Prince Edward County	% Spillway Capacity	\$2,160,546
14702	Buffalo Creek Dam #3	Prince Edward County	% Spillway Capacity	\$1,369,111
14706	Buffalo Creek Dam #2	Prince Edward County	% Spillway Capacity	\$1,738,388
14707	Buffalo Creek Dam #5	Prince Edward County	% Spillway Capacity	\$1,069,537
14708	Buffalo Creek Dam #6	Prince Edward County	% Spillway Capacity	\$1,129,730
14709	Buffalo Creek Dam #7	Prince Edward County	% Spillway Capacity	\$763,712
14710	Buffalo Creek Dam #8	Prince Edward County	% Spillway Capacity	\$715,515

**Table B9. Cost Estimates of Local Government Significant Hazard Dams**

Inventory Number	Dam Name	City/County	Estimate Basis	Cost to Upgrade Spillway
00353	Hollymead Dam	Albermarle County	% Spillway Capacity	\$993,770.24
00368	Middle Mint Spings Dam	Albermarle County	% Spillway Capacity	\$526,503.22
01903	Beaverdam Creek Dam	Bedford County	% Spillway Capacity	\$734,173.67
03106	Brookneal Dam	Campbell County	% Spillway Capacity	\$1,459,016.71
05910	Lake Fairfax Dam	Fairfax County	% Spillway Capacity	\$1,682,575.59
06101	Warrenton Dam	Fauquier County	% Spillway Capacity	\$2,024,445.32
06904	Cherokee Dam	Frederick County	% Spillway Capacity	\$652,946.40
10703	Goose Creek Dam	Loudoun County	% Spillway Capacity	\$11,202,803.46
10923	Gordonsville Dam	Louisa County	% Spillway Capacity	\$3,092,951.88
11104	Lunenburg Beach Dam	Lunenburg County	% Spillway Capacity	\$473,129.27
11105	Nottoway Falls Dam	Lunenburg County	% Spillway Capacity	\$6,243,113.19
15306	Lake Jackson Dam	Prince William County	% Spillway Capacity	\$9,723,691.68
17105	Strasburg Dam	Shenandoah County	% Spillway Capacity	\$543,367.85
19510	Toms Creek Dam	Wise County	% Spillway Capacity	\$1,366,112.31

10732	Lake Drive Dam	Loudoun County	% Spillway Capacity	\$659,192.60
80023	Lake Kilby Water Treatment Plant Sludge Lagoon	Suffolk	% Spillway Capacity	\$151,800.91
11103	Modest Creek Dam	Lunenburg County	% Spillway Capacity	\$2,225,099
00316	Forest Lakes Subdiv A	Albermarle County	Average	\$1,334,621.97
05305	Wilcox Dam	Dinwiddie County	Average	\$1,334,622
05911	South Twin Lake Dam	Fairfax County	Average	\$1,334,622
05912	North Twin Lake Dam	Fairfax County	Average	\$1,334,622
05939	Kings Park West Section 18 Dam	Fairfax County	Average	\$1,334,622
08521	Sewage Disposal Pond Dam	Hanover County	Average	\$1,334,622
08509	Wachter Dam	Hanover County	Average	\$1,334,622
08705	Echo Dam	Henrico County	Average	\$1,334,622
76004	Upper Shields Lake Dam	Richmond City	Average	\$1,334,622
70005	Sluice Dam	Newport News	Average	\$1,334,622
80014	Godwins Millpond Dam	Suffolk	Average	\$1,334,622

**Table B10.** Cost Estimates of **Private Significant Hazard Dams**

Inventory Number	Dam Name	City/County	Estimate Basis	Cost to Upgrade Spillway
01906	Springhill Lake Dam	Bedford County	Owner	\$100,000
03309	Lake Land'or Dam	Caroline County	Owner	\$50,000
08539	Mattawan Dam	Hanover County	Owner	\$63,460
14717	Farmville Dam	Prince Edward County	Owner	\$250,000
17707	Wilderness Dam	Spotsylvania County	Owner	\$1,000,000
17710	Lee Lake Dam	Spotsylvania County	Owner	\$1,000,000
17906	Hidden Lake Dam	Stafford County	Owner	\$794,090
17711	Grant Lake Dam	Spotsylvania County	Owner	\$1,000,000
00341	Clover Dam	Albemarle County	% Spillway Capacity	\$1,404,505
00349	Loftlands Dam	Albemarle County	% Spillway Capacity	\$435,495
00387	Broadmoor Lake Dam	Albemarle County	% Spillway Capacity	\$1,105,723
00926	Tusculum Dam	Amherst County	% Spillway Capacity	\$1,198,033
01515	Camp Shenandoah Dam	Augusta County	% Spillway Capacity	\$960,073
01523	Smithleigh Dam	Augusta County	% Spillway Capacity	\$3,818,400
01703	Bath Alum Farm Dam	Bath County	% Spillway Capacity	\$598,379
01905	Bedford Lake Dam	Bedford County	% Spillway Capacity	\$2,913,317
01925	Swan Lake Dam	Bedford County	% Spillway Capacity	\$899,175

02305	Botetourt Country Club Dam	Botetourt County	% Spillway Capacity	\$362,874
03105	Lakewood Dam	Campbell County	% Spillway Capacity	\$2,004,035
03109	Jones Dam	Campbell County	% Spillway Capacity	\$693,269
03322	Lake Shannon Dam	Caroline County	% Spillway Capacity	\$778,277
03334	Lake Holly Dam	Caroline County	% Spillway Capacity	\$890,880
03341	Lake DeJarnette Dam	Caroline County	% Spillway Capacity	\$669,106
03350	Ladysmith Lake Dam	Caroline County	% Spillway Capacity	\$314,873
04122	Gregory's Pond Dam	Chesterfield County	% Spillway Capacity	\$3,744,813
04126	Napiers Savage Dam	Chesterfield County	% Spillway Capacity	\$358,958
04129	Woodland Pond	Chesterfield County	% Spillway Capacity	\$1,388,910
04146	First Branch Dam	Chesterfield County	% Spillway Capacity	\$1,728,894
05104	White Oak Creek Dam	Dickenson County	% Spillway Capacity	\$620,490
05301	Lake Jordan Dam	Dinwiddie County	% Spillway Capacity	\$4,081,320
05307	Burnt Quarter Dam	Dinwiddie County	% Spillway Capacity	\$1,564,991
05919	Fox Lake Dam	Fairfax County	% Spillway Capacity	\$334,553
06109	Kinloch Farm Dam	Fauquier County	% Spillway Capacity	\$1,663,854
06114	Johnson Dam	Fauquier County	% Spillway Capacity	\$907,184
06118	Coventry Dam	Fauquier County	% Spillway Capacity	\$575,617
06907	Twin Lake Dam	Frederick County	% Spillway Capacity	\$888,855
06903	Lake St. Clair Dam	Frederick County	% Spillway Capacity	\$932,239
06922	Silver Lake Dam	Frederick County	% Spillway Capacity	\$2,202,795
07501	Picketts Creek Dam	Goochland County	% Spillway Capacity	\$1,916,715
07305	Cow Creek Dam	Gloucester County	% Spillway Capacity	\$1,521,430
07508	Reservoir #1	Goochland County	% Spillway Capacity	\$702,702
04901	Trices Lake Dam	Cumberland County	% Spillway Capacity	\$1,525,641

07529	Stony Pond Dam	Goochland County	% Spillway Capacity	\$786,691
07706	Hidden Valley Estates Dam	Grayson County	% Spillway Capacity	\$362,874
07909	Reynolds Farm Dam	Greene County	% Spillway Capacity	\$811,410
07914	Twin Lakes Dam #3	Greene County	% Spillway Capacity	\$1,702,028
07915	Greene Mountain Lake Dam	Greene County	% Spillway Capacity	\$2,146,789
07918	Poplar Lake Dam	Greene County	% Spillway Capacity	\$607,204
08335	Cage Dam	Halifax County	% Spillway Capacity	\$513,003
08516	Colonial Forest Dam	Hanover County	% Spillway Capacity	\$573,754
08520	Lake Idylwild Dam	Hanover County	% Spillway Capacity	\$2,629,269
08548	Charter Lake	Hanover County	% Spillway Capacity	\$739,230
08554	Lower Lakes Dam	Hanover County	% Spillway Capacity	\$702,702
08714	Lake Overton Dam	Henrico County	% Spillway Capacity	\$748,083
08910	Lanier Dam	Henry County	% Spillway Capacity	\$676,870
09502	Horne's Lake Dam	James City County	% Spillway Capacity	\$295,926
09508	Barlows Pond Dam	James City County	% Spillway Capacity	\$2,332,010
10709	Daley Dam	Loudoun County	% Spillway Capacity	\$960,073
10739	Brambleton Land Bay 3 - Pond 6	Loudoun County	% Spillway Capacity	\$752,471
09513	Cranstons Mill Pond Dam	James City County	% Spillway Capacity	\$2,177,242
12502	Lake Monocan Dam	Nelson County	% Spillway Capacity	\$960,073
12701	Woodhaven Dam	New Kent County	% Spillway Capacity	\$3,730,722
12712	Coppers Mill Pond Dam	New Kent County	% Spillway Capacity	\$712,009
14111	Jackson/Moore Dam	Patrick County	% Spillway Capacity	\$732,496
14312	Arey Dam	Pittsylvania County	% Spillway Capacity	\$362,874
14323	Moore Dam	Pittsylvania County	% Spillway Capacity	\$550,325
14506	Lower Byers Dam	Powhatan County	% Spillway Capacity	\$119,325



15312	Silver Lake Dam	Prince William County	% Spillway Capacity	\$1,112,549
15501	Ottari Scout Camp Dam #2	Pulaski County	% Spillway Capacity	\$1,417,342
15506	Lake Powhatan Dam	Pulaski County	% Spillway Capacity	\$1,912,161
16102	Loch Haven Lake Dam	Roanoke County	% Spillway Capacity	\$928,701
16307	Cold Sulpher Springs Dam	Rockbridge County	% Spillway Capacity	\$1,130,163
17922	Seven Lakes Dam	Stafford County	% Spillway Capacity	\$983,782
18701	Lake of the Clouds Dam	Warren County	% Spillway Capacity	\$1,391,278
18709	Apple Mountain Lake Dam	Warren County	% Spillway Capacity	\$229,501
18711	Apple Mountain Upper Lake Dam	Warren County	% Spillway Capacity	\$114,751
18712	Loch Linden Dam	Warren County	% Spillway Capacity	\$493,127
19916	Queens Lake Dam	York County	% Spillway Capacity	\$1,016,694
68003	Lake Summit Dam	Lynchburg	% Spillway Capacity	\$660,787
04106	Lower Beaver Pond Dam	Chesterfield County	% Spillway Capacity	\$1,135,974
05302	Steers Dam	Dinwiddie County	% Spillway Capacity	\$628,515
06134	Warrenton Lake Dam	Fauquier County	% Spillway Capacity	\$628,515
07527	Reservoir # 2	Goochland County	% Spillway Capacity	\$847,137
06920	Lakeside Lake	Frederick County	% Spillway Capacity	\$256,590
08532	Pebble Creek Dam	Hanover County	% Spillway Capacity	\$612,601
14112	King Dam	Patrick County	% Spillway Capacity	\$140,540
14504	John L. Lewis Dam	Powhatan County	% Spillway Capacity	\$851,014
17109	Wunder Dam	Shenandoah County	% Spillway Capacity	\$1,808,917

17908	Lake Arrowhead Dam	Stafford County	% Spillway Capacity	\$678,874
17910	Kennedy Dam	Stafford County	% Spillway Capacity	\$664,168
17918	Hartlake Dam No. 1	Stafford County	% Spillway Capacity	\$429,358
17919	Hartlake Dam No. 2	Stafford County	% Spillway Capacity	\$229,501
18713	McCaffrey Dam	Warren County	% Spillway Capacity	\$1,147,507
01936	Eagle Eyrie Lake	Bedford County	% Spillway Capacity	\$256,590
01937	Chilarna Lake Dam	Bedford County	% Spillway Capacity	\$256,590
18502	Sportsman Club Dam	Tazewell County	% Spillway Capacity	\$1,282,952
18506	Walden Keene Dam	Tazewell County	% Spillway Capacity	\$811,410
03343	Thelma Pitts Dam	Caroline County	% Spillway Capacity	\$949,731
08703	Gillie Creek Dam	Henrico County	% Spillway Capacity	\$987,230
17925	Leeland Lake Dam	Stafford County	% Spillway Capacity	\$364,165
09527	Lake Nice	James City County	% Spillway Capacity	\$391,668
09719	Indian Mound Ponds Dam	King and Queen County	Average	\$1,334,622
00311	Paines Dam	Albemarle County	Average	\$1,334,622
00323	Cove Creek Dam	Albemarle County	Average	\$1,334,622
00332	Baileys Dam	Albemarle County	Average	\$1,334,622
00333	Irish Langhorne Dam	Albemarle County	Average	\$1,334,622
00334	Huckles Dam	Albemarle County	Average	\$1,334,622
00342	Edgehill NE Pond Dam	Albemarle County	Average	\$1,334,622
00363	Edgehill Farm Dam #2	Albemarle County	Average	\$1,334,622
00378	Windsor Hill Dam	Albemarle County	Average	\$1,334,622
00397	Edgehill Farm SE Dam	Albemarle County	Average	\$1,334,622
00398	Edgehill Farm NE Dam	Albemarle County	Average	\$1,334,622

00928	Greif Holding Pond Dam	Amherst County	Average	\$1,334,622
00931	Greif Aeration Pond Dam	Amherst County	Average	\$1,334,622
01915	Ramsey Dam	Bedford County	Average	\$1,334,622
01938	Garrard Lake Dam	Bedford County	Average	\$1,334,622
02302	Orchard Lake Dam	Botetourt County	Average	\$1,334,622
03120	Patrick Upper Dam	Campbell County	Average	\$1,334,622
03121	Patrick Lower Dam	Campbell County	Average	\$1,334,622
03310	Temples Mill Dam	Caroline County	Average	\$1,334,622
03311	Jiles Millpond Dam	Caroline County	Average	\$1,334,622
03312	James Dam	Caroline County	Average	\$1,334,622
03313	Daltons Dam	Caroline County	Average	\$1,334,622
03315	Collins Dam	Caroline County	Average	\$1,334,622
03316	Reedy Mill Dam	Caroline County	Average	\$1,334,622
03318	Elliotts Dam	Caroline County	Average	\$1,334,622
03319	Byrds Mill Dam	Caroline County	Average	\$1,334,622
03328	D. Pitts Dam	Caroline County	Average	\$1,334,622
03338	Boulwares Millpond Dam	Caroline County	Average	\$1,334,622
03344	Timberlake Dam	Caroline County	Average	\$1,334,622
03506	West Dam	Carroll County	Average	\$1,334,622
03714	Four Locusts Dam	Charlotte County	Average	\$1,334,622
04105	Cosby Dam	Chesterfield County	Average	\$1,334,622
04107	Clayville Lane Dam	Chesterfield County	Average	\$1,334,622
04110	Andrews Dam	Chesterfield County	Average	\$1,334,622
04140	Evergreen Lake Dam	Chesterfield County	Average	\$1,334,622
04144	Kcratchs Dam	Chesterfield County	Average	\$1,334,622
04160	Waterford #1 Dam	Chesterfield County	Average	\$1,334,622

04172	Timsbury South Dam	Chesterfield County	Average	\$1,334,622
04175	Meadowbrook Country Club Dam	Chesterfield County	Average	\$1,334,622
04179	Geara Woods Dam	Chesterfield County	Average	\$1,334,622
04719	Lake Rillhurst Dam	Culpeper	Average	\$1,334,622
04927	Benelli Dam	Cumberland County	Average	\$1,334,622
05306	Clarkes Dam	Dinwiddie County	Average	\$1,334,622
05943	Fair Lakes Dam #1	Fairfax County	Average	\$1,334,622
06103	Sawyer Dam	Fauquier County	Average	\$1,334,622
06106	Mathews Dam	Fauquier County	Average	\$1,334,622
06115	Airlie Dam	Fauquier County	Average	\$1,334,622
06117	Clifton Farm Lower dam	Fauquier County	Average	\$1,334,622
06119	Mellott Dam	Fauquier County	Average	\$1,334,622
06141	Fleetwood Farm Dam #2	Fauquier County	Average	\$1,334,622
06148	Waterford Farm	Fauquier County	Average	\$1,334,622
06301	Park Ridge Dam	Floyd County	Average	\$1,334,622
06705	Burdettes Dam	Franklin County	Average	\$1,334,622
06908	Pleasant Valley Lake Dam	Frederick County	Average	\$1,334,622
07304	Robins Dam	Gloucester County	Average	\$1,334,622
07306	Burke Dam	Gloucester County	Average	\$1,334,622
07504	Killerney Dam	Goochland County	Average	\$1,334,622
07515	Mayo Dam	Goochland County	Average	\$1,334,622
07520	Gathrights Dam	Goochland County	Average	\$1,334,622
07524	Harris Pond Dam	Goochland County	Average	\$1,334,622
07530	Little Creek Dam	Goochland County	Average	\$1,334,622
07533	Royal Virginia Golf Club Dam	Goochland County	Average	\$1,334,622

07536	Cheneys Creek Dam	Goochland County	Average	\$1,334,622
07704	Laurel Creek Dam	Grayson County	Average	\$1,334,622
07902	Teel Mt. Farm Dam	Greene County	Average	\$1,334,622
08503	Pollards Dam	Hanover County	Average	\$1,334,622
08505	Campbell Dam	Hanover County	Average	\$1,334,622
08524	Kings Pond Dam	Hanover County	Average	\$1,334,622
08525	Stanley Dam	Hanover County	Average	\$1,334,622
08533	Barkers Millpond Dam	Hanover County	Average	\$1,334,622
08534	Cherrydale Dam	Hanover County	Average	\$1,334,622
08535	Beatties Mill Dam	Hanover County	Average	\$1,334,622
08556	The Fields @ Cold Harbor	Hanover County	Average	\$1,334,622
08560	Carter-Hill @ Hickory Hill Road	Hanover County	Average	\$1,334,622
08577	Ellerson Mill Trace	Hanover County	Average	\$1,334,622
08707	Eberhard Dam	Henrico County	Average	\$1,334,622
08710	West End Lake	Henrico County	Average	\$1,334,622
08711	Wyndham Lake Dam	Henrico County	Average	\$1,334,622
08725	Westham Dam	Henrico County	Average	\$1,334,622
09306	Wrenns Dam	Isle of Wight County	Average	\$1,334,622
09511	Lake Pasbehegh Dam	James City County	Average	\$1,334,622
09705	Corbin Mill Dam	King and Queen County	Average	\$1,334,622
09706	Gressitt Dam	King and Queen County	Average	\$1,334,622
09717	Walker Coleman Dam	King and Queen County	Average	\$1,334,622

09718	Normans Dam	King and Queen County	Average	\$1,334,622
10102	Custis Dam	King William County	Average	\$1,334,622
10104	Cohoke Mill Dam	King William County	Average	\$1,334,622
10121	Boshers Mill Pond	King William County	Average	\$1,334,622
10911	Swifts Dam	Louisa County	Average	\$1,334,622
10925	Small Dam	Louisa County	Average	\$1,334,622
10941	Grassdale Dam	Louisa County	Average	\$1,334,622
11901	Healys Dam	Middlesex County	Average	\$1,334,622
11902	Barricks Dam	Middlesex County	Average	\$1,334,622
12511	Watts Dam	Nelson County	Average	\$1,334,622
12711	Goddins Dam	New Kent County	Average	\$1,334,622
12714	Lake Parker Dam	New Kent County	Average	\$1,334,622
12715	Lake Washington Dam	New Kent County	Average	\$1,334,622
13302	Clarks Mill Dam	Northumberland County	Average	\$1,334,622
13308	Snowden Park Dam	Northumberland County	Average	\$1,334,622
14306	Pine Dam	Pittsylvania County	Average	\$1,334,622
14508	Shawnee Dam #1	Powhatan County	Average	\$1,334,622
14516	Lake Shawnee Dam #3	Powhatan County	Average	\$1,334,622
14518	Lake Shawnee Dam #2	Powhatan County	Average	\$1,334,622
14520	Southern Service Corp. Dam	Powhatan County	Average	\$1,334,622
14524	Ransons Dam - middle	Powhatan County	Average	\$1,334,622

14552	Ransons Dam - south	Powhatan County	Average	\$1,334,622
14914	Kings Dam	Price George County	Average	\$1,334,622
15708	Mt Airy Hunt Club Dam	Rappahannock County	Average	\$1,334,622
15901	Chinns Dam	Richmond County	Average	\$1,334,622
15903	Mt. Airy Dam	Richmond County	Average	\$1,334,622
15908	Hogans Mill Dam	Richmond County	Average	\$1,334,622
17512	Ray Development Dam	Southampton County	Average	\$1,334,622
17708	Towles Dam	Spotsylvania County	Average	\$1,334,622
17907	Little Lake Arrowhead Dam	Stafford County	Average	\$1,334,622
18307	Harrells Dam	Sussex County	Average	\$1,334,622
18315	Mayes Dam	Sussex County	Average	\$1,334,622
18321	Parker No.-3 Dam	Sussex County	Average	\$1,334,622
19305	Horners Dam	Westmoreland County	Average	\$1,334,622
76006	Hobby Hill Dam	Richmond City	Average	\$1,334,622
00310	Smiths Dam	Albemarle County	Average	\$1,334,622
00348	Rogers Road Dam	Albemarle County	Average	\$1,334,622
00388	Chimney Rock Dam	Albemarle County	Average	\$1,334,622
00396	Albie Road Dam	Albemarle County	Average	\$1,334,622
003B6	Kinloch Farm Pond	Albemarle County	Average	\$1,334,622
003C4	Ednam Drive Dam	Albemarle County	Average	\$1,334,622
003D4	Preddy Creek Road	Albemarle County	Average	\$1,334,622
003D9	Brocks Mill Dam	Albemarle County	Average	\$1,334,622
03358	Upper Mt. Olympus Dam	Caroline County	Average	\$1,334,622

03362	Chesterfield Road Dam	Caroline County	Average	\$1,334,622
03364	Paige Road Dam	Caroline County	Average	\$1,334,622
03387	Spring Lake Dam	Caroline County	Average	\$1,334,622
033A4	Ames Dam	Caroline County	Average	\$1,334,622
04165	Ashbrook Dam	Chesterfield County	Average	\$1,334,622
04166	Birkdale Dam	Chesterfield County	Average	\$1,334,622
04174	Upper Meadowdale Dam	Chesterfield County	Average	\$1,334,622
04177	Beaufont Spring Dam	Chesterfield County	Average	\$1,334,622
04178	Lake Crystal Dam	Chesterfield County	Average	\$1,334,622
07551	Byrd Creek Farm North Dam	Goochland County	Average	\$1,334,622
07564	Broad Run IV Dam	Goochland County	Average	\$1,334,622
07578	Brookview Farm Dam	Goochland County	Average	\$1,334,622
07583	High Grove Dam	Goochland County	Average	\$1,334,622
08579	Hidden Lake Dam	Hanover County	Average	\$1,334,622
08585	Tyler Station Dam	Hanover County	Average	\$1,334,622
08592	Stumpy Road Dam	Hanover County	Average	\$1,334,622
08717	Duval Pond Dam	Henrico County	Average	\$1,334,622
08727	Lake Rooty Dam	Henrico County	Average	\$1,334,622
08728	Waterfront Lake	Henrico County	Average	\$1,334,622
09547	High Street SWM	James City County	Average	\$1,334,622
09707	Spring Branch Dam	King and Queen County	Average	\$1,334,622
09714	Garnett Millpond Dam	King and Queen County	Average	\$1,334,622
10111	Dublin Millpond Dam	King William County	Average	\$1,334,622



10128	Lancaster Road Dam	King William County	Average	\$1,334,622
10129	Dabneys Millpond Dam	King William County	Average	\$1,334,622
10130	McGeorge Pond Dam	King William County	Average	\$1,334,622
10952	Orchid Lake Dam	Louisa County	Average	\$1,334,622
10954	Old Mountain North	Louisa County	Average	\$1,334,622
10955	Old Mountain South	Louisa County	Average	\$1,334,622
10963	Little Anna Dam	Louisa County	Average	\$1,334,622
10972	Cooper Dam	Louisa County	Average	\$1,334,622
12722	Ranch Acres Dam	New Kent County	Average	\$1,334,622
14548	Holly Hills Dam	Powhatan County	Average	\$1,334,622
14549	Lake Louise Dam	Powhatan County	Average	\$1,334,622
17706	Hidden Trail Lake	Spotsylvania County	Average	\$1,334,622
17727	The Laurels	Spotsylvania County	Average	\$1,334,622
19513	Black Creek Dam	Wise County	Average	\$1,334,622

**Table B11.** Cost Estimates of **Utility Significant Hazard Dams**

Inventory Number	Dam Name	City/County	Estimate Basis	Cost to Upgrade Spillway
00306	Totier Creek Dam	Albermarle County	% Spillway Capacity	\$3,973,705
13903	Shenandoah Dam	Page County	Average	\$1,334,622
13904	Newport Dam	Page County	Average	\$1,334,622
00375	Lickinghole Creek	Albermarle County	% Spillway Capacity	\$2,959,145

**Table B12.** Significant Hazard Dams That Meet Minimum Public Safety Standards

Inventory Number	Dam Name	City/County	Owner Type
81003	Stumpy Lake Dam	Virginia Beach	Local Government
00325	Upper Mint Springs Dam	Albemarle County	Local Government
00924	Buffalo River Dam #4A	Amherst County	Local Government
02913	Slate River Dam #2	Buckingham County	Local Government
03702	Roanoke Creek Dam #72A	Charlotte County	Local Government
10701	Beaverdam Creek Dam	Loudoun County	Local Government
08544	Walden's Pond Dam	Hanover County	Local Government
11301	White Oak Dam #1	Madison County	Local Government
13715	Orange Raw Water Reservoir Dam	Orange County	Local Government
14302	Cherrystone Creek Dam #1	Pittsylvania County	Local Government
14303	Cherrystone Creek Dam #2A	Pittsylvania County	Local Government
17701	Ni River Dam #1	Spotsylvania County	Local Government
17902	Potomac Creek Dam #1	Stafford County	Local Government
17913	Potomac Creek Dam #2	Stafford County	Local Government
10934	South Anna Dam #22	Louisa County	Local Government

19509	Bens Branch Dam	Wise County	Local Government
68301	Winters Branch Dam	Manassas	Local Government
71002	Lake Whitehurst Dam	Norfolk	Local Government
19901	Harwood's Mill Dam	York County	Local Government
08541	Carter's Pond Dam	Hanover County	Local Government
01514	South River Dam #19	Augusta County	SWCD
02936	Slate River Dam #7	Buckingham County	SWCD
06701	Upper Blackwater River Dam #6	Franklin County	SWCD
08905	Leatherwood Creek Dam #2A	Henry County	SWCD
08909	Horse Pasture Creek Dam #2	Henry County	SWCD
10931	South Anna Dam #3	Louisa County	SWCD
10932	South Anna Dam #4	Louisa County	SWCD
10933	South Anna Dam #6B	Louisa County	SWCD
14711	Buffalo Creek Dam #9	Prince Edward County	SWCD
16504	Lower North River #22B	Rockingham County	SWCD
10926	South Anna No. 5	Louisa County	SWCD
05924	Upper Occoquan Dam	Fairfax County	Utility

06520	Bremo Power Station Dam	Fluvanna County	Utility
15320	Possum Point Ash Dam #D	Prince William County	Utility
70006	Lee Hall Upper Dam	Newport News	Utility
00301	Beaver Creek Dam #1	Albemarle County	Utility

10502	Keokee Dam	Lee County	State
15324	NVCC Woodbridge Campus Dam	Prince William County	State
19104	Hidden Valley Lake Dam	Washington County	State
12501	Nelson Dam	Nelson County	State
10707	Horsepen Dam	Loudoun County	Federal
00384	North Fork Park Pond Dam	Albemarle County	Private
01702	John Lawrence Dam	Bath County	Private
03102	Timberlake Dam	Campbell County	Private
04150	Ironbridge Dam	Chesterfield County	Private
04724	Troiano Dam	Culpeper County	Private
04905	Clements Dam	Cumberland County	Private
04922	Lower Ayers Dam	Cumberland County	Private
05909	Lake Anne Dam	Fairfax County	Private
15325	VA Gateway Regional SWM Dam	Prince William County	Private
05921	Lake Audubon Dam	Fairfax County	Private
05932	Kingstowne Lake Dam	Fairfax County	Private

05933	Crippen Dam	Fairfax County	Private
06123	Winslow Dam	Fauquier County	Private
07503	Dover Lake Dam	Goochland County	Private
07523	Bowles Dam	Goochland County	Private
07528	Rivergate Lake Dam	Goochland County	Private
09519	Rennicks Pond	James City County	Private
09905	Lake Madison Dam	King George County	Private
10710	Sleeter Lake Dam	Loudoun County	Private
10711	Precision Dynamics Lake Dam	Loudoun County	Private
10716	Oliver Dam	Loudoun County	Private
10727	Ashburn Village Lake #1	Loudoun County	Private
10734	Ashburn Village Lake #2	Loudoun County	Private
10736	Hope Parkway Dam	Loudoun County	Private
10937	Spring Creek Golf Course Irrigation Lake	Louisa County	Private
11315	Deep Run Farm Dam	Madison County	Private
14534	Avery Dam	Powhatan County	Private
14720	Brisentine Dam	Prince Edward County	Private
15326	New Bristow Village	Prince William County	Private
15331	Potomac Club Regional Pond Dam	Prince William County	Private
18703	Spring Lake Dam	Warren County	Private
18705	Lake Front Royal Dam	Warren County	Private

19304	Lake Independence Dam	Westmoreland County	Private
19314	Red Oak Dam	Westmoreland County	Private
76008	University Commons Dam	Richmond City	Private
80017	C-Pond Dam	Suffolk	Private
03331	Lake Devolia Dam	Caroline County	Private
06143	Lower Warrenton Lakes Dam	Fauquier County	Private
003C8	Martha Jefferson Retention Basin Dam	Albemarle County	Private
00504	Westvaco #2 Flyash Lagoon Dam	Alleghany County	Private
16308	Turner Dam	Rockbridge County	Private

**Table B13. High Hazard Dams That Meet Minimum Public Safety Standards**

Inventory Number	Dam Name	Owner Name	Owner Group	County/City	Comments
00303	Sugar Hollow Dam	Rivanna Water and Sewer Authority	Utility	ALBEMARLE COUNTY	Meets minimum safety standards
00344	Birdwood GC Hole #2 Dam	UVA Foundation	State	ALBEMARLE COUNTY	Meets minimum safety standards
00503	Clifton Forge Dam	Town of Clifton Forge	Local GOV	ALLEGHANY COUNTY	Meets minimum safety standards
00905	Pedlar River Dam	City of Lynchburg	Local GOV	AMHERST COUNTY	Meets minimum safety standards
00911	Buffalo River Dam #3	Amherst County	Local GOV	AMHERST COUNTY	Meets minimum safety standards
00912	Buffalo River Dam #2	County of Amherst	Local GOV	AMHERST COUNTY	Meets minimum safety standards
01501	South River Dam #26	Headwaters SWCD	SWCD	AUGUSTA COUNTY	Meets minimum safety standards
01502	South River Dam #25	Headwaters SWCD	SWCD	AUGUSTA COUNTY	Meets minimum safety standards
01506	Upper North River #76	City of Staunton	Local GOV	AUGUSTA COUNTY	Meets minimum safety standards
01507	Upper North River #77	Headwaters SWCD	SWCD	AUGUSTA COUNTY	Meets minimum safety standards
01508	South River Dam #23	Headwaters SWCD	SWCD	AUGUSTA COUNTY	Meets minimum safety standards
01511	South River Dam #4	Headwaters SWCD	SWCD	AUGUSTA COUNTY	Meets minimum safety standards
01518	Staunton Dam	City of Staunton	Local GOV	AUGUSTA COUNTY	Meets minimum safety standards
01528	South River Dam #8A	City of Waynesboro	Local GOV	AUGUSTA COUNTY	Meets minimum safety standards
01701	Douthat Lake Dam	VA DCR, Division of State Parks	State	BATH COUNTY	Meets minimum safety standards
01910	Falling Creek Reservoir Dam	Western Virginia Water Authority	Local GOV	BEDFORD COUNTY	Meets minimum safety standards
01922	Ivy Hill Dam	Liberty University	Private	BEDFORD COUNTY	Meets minimum safety standards
02301	Carvin Cove Dam	Western Virginia Water Authority	Local GOV	BOTETOURT COUNTY	Meets minimum safety standards
02507	Great Creek Dam #6A	Brunswick County	Local GOV	BRUNSWICK COUNTY	Meets minimum safety standards
03125	Otter River Raw Water Terminal Reservoir	Campbell County Utilities & Service Authority	Local GOV	CAMPBELL COUNTY	Meets minimum safety standards
03324	Lake Caroline Dam	Lake Caroline Property Owners Assoc.	Private	CAROLINE COUNTY	Meets minimum safety standards
03507	Stewarts Creek - Lovills Creek Dam #9	Carroll County	Local GOV	CARROLL COUNTY	Meets minimum safety standards
03708	Roanoke Creek Dam # 62	Southside SWCD	SWCD	CHARLOTTE COUNTY	Meets minimum safety standards
03711	Roanoke Creek Dam # 61A	Southside SWCD	SWCD	CHARLOTTE COUNTY	Meets minimum safety standards
03712	Roanoke Creek Dam # 31B	Southside SWCD	SWCD	CHARLOTTE COUNTY	Meets minimum safety standards
04112	Swift Creek Reservoir Dam	Chesterfield County	Local GOV	CHESTERFIELD COUNTY	Meets minimum safety standards
04115	Falling Creek Reservoir Dam	Chesterfield County	Local GOV	CHESTERFIELD COUNTY	Meets minimum safety standards
04136	Lake Salisbury Dam	Lake Salisbury Association	Private	CHESTERFIELD COUNTY	Meets minimum safety standards
04186	Westham GC Irrigation Lake Dam	Magnolia Green Development, LLC	Private	CHESTERFIELD COUNTY	Meets minimum safety standards
04706	Mountain Run Dam #18	Culpeper SWCD	SWCD	CULPEPER COUNTY	Meets minimum safety standards
05905	Pohick Creek Dam #7	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Meets minimum safety standards



05922	Pohick Creek Dam #4	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Meets minimum safety standards
05929	Pohick Creek Dam #1	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Meets minimum safety standards
05930	Lake Newport Dam	Reston Association	Private	FAIRFAX COUNTY	Meets minimum safety standards
05931	Fairview Lake Dam	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Meets minimum safety standards
05938	West Ox Road BMP Dam	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Meets minimum safety standards
05940	Burke Centre Section 11B Dam	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Meets minimum safety standards
05945	Dulles Station Regional Pond Dam	Merrybrook Run, LP	Private	FAIRFAX COUNTY	Meets minimum safety standards
05946	Pulte McLean SWM Pond Dam	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Meets minimum safety standards
05948	Dulles Corner Lake Dam	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Meets minimum safety standards
06145	Cedar Run Dam #3	Town of Warrenton	Local GOV	FAUQUIER COUNTY	Meets minimum safety standards
06905	Cove Lake Dam #1	Alexander W. K. McDowell	Private	FREDERICK COUNTY	Meets minimum safety standards
07309	Beaverdam Reservoir Dam	Gloucester County	Local GOV	GLOUCESTER COUNTY	Meets minimum safety standards
08555	Regional Stormwater Facility T-40	T.L. Hunt, LLC	Private	HANOVER COUNTY	Meets minimum safety standards
08583	Tiller Lake Dam	Hunting Hawk Golf Course	Private	HANOVER COUNTY	Meets minimum safety standards
08903	Beaver Creek Dam	City of Martinsville Water Dept	Local GOV	HENRY COUNTY	Meets minimum safety standards
08908	Marrowbone Creek Dam #1	Blue Ridge SWCD	Private	HENRY COUNTY	Meets minimum safety standards
08913	Smith River Dam	City of Martinsville Electric Dept	Local GOV	HENRY COUNTY	Meets minimum safety standards
09506	Little Creek Dam	Newport News Waterworks	Local GOV	JAMES CITY COUNTY	Meets minimum safety standards
09906	Lake Monroe Dam	Presidential Lakes POA	Private	KING GEORGE COUNTY	Meets minimum safety standards
12703	Diascund Creek Dam	City of Newport News Waterworks	Utility	NEW KENT COUNTY	Meets minimum safety standards
13701	Lake of the Woods Dam	Lake of the Woods Association, Inc.	Private	ORANGE COUNTY	Meets minimum safety standards
13901	Dry Run Dam #102	Town of Luray	Local GOV	PAGE COUNTY	Meets minimum safety standards
14350	Pittsylvania Power Station Raw Water Storage Basin Dam	Dominion Generation	Utility	PITTSYLVANIA COUNTY	Meets minimum safety standards
14734	Bush River Dam #2	Piedmont SWCD	SWCD	PRINCE EDWARD COUNTY	Meets minimum safety standards
14735	Bush River Dam #12	Prince Edward County	Local GOV	PRINCE EDWARD COUNTY	Meets minimum safety standards
15303	Lake Montclair Dam	Montclair Property Owners Assoc.	Private	PRINCE WILLIAM COUNTY	Meets minimum safety standards
15322	Prince William Parkway Regional SWM	Prince William County	Local GOV	PRINCE WILLIAM COUNTY	Meets minimum safety standards
15323	Fashion Place Mall	Prince William County	Local GOV	PRINCE WILLIAM COUNTY	Meets minimum safety standards
15329	North Fork Wetlands Bank	North Fork Wetlands Bank, LC	Private	PRINCE WILLIAM COUNTY	Meets minimum safety standards
15330	Market Center Pond 1 Dam	Landservices Development Corporation	Private	PRINCE WILLIAM COUNTY	Meets minimum safety standards
15504	Hogan Dam	Thornsprings Group LLC	Private	PULASKI COUNTY	Meets minimum safety standards

15509	Gatewood Dam	Town of Pulaski	Local GOV	PULASKI COUNTY	Meets minimum safety standards
16105	Woods End Dam	Roanoke County	Local GOV	ROANOKE CO COUNTY	Meets minimum safety standards
16305	Willow Lake Dam	Glenn M. Koogler	Private	ROCKBRIDGE COUNTY	Meets minimum safety standards
16501	Lower North River #80	Shenandoah Valley SWCD	SWCD	ROCKINGHAM COUNTY	Meets minimum safety standards
16502	Lower North River #78	Shenandoah Valley SWCD	SWCD	ROCKINGHAM COUNTY	Meets minimum safety standards
16503	Lower North River #83	Shenandoah Valley SWCD	SWCD	ROCKINGHAM COUNTY	Meets minimum safety standards
16506	Lower North River #81C	City of Harrisonburg	Local GOV	ROCKINGHAM COUNTY	Meets minimum safety standards
16507	Lower North River #82	Shenandoah Valley SWCD	SWCD	ROCKINGHAM COUNTY	Meets minimum safety standards
16509	Shoemaker River #1A	Shenandoah Valley SWCD	SWCD	ROCKINGHAM COUNTY	Meets minimum safety standards
16510	Shoemaker River #4C	Shenandoah Valley SWCD	SWCD	ROCKINGHAM COUNTY	Meets minimum safety standards
17104	Woodstock Dam	Town of Woodstock	Local GOV	SHENANDOAH COUNTY	Meets minimum safety standards
17301	Hungry Mother Dam	VA DCR, Division of State Parks	State	SMYTH COUNTY	Meets minimum safety standards
17704	Motts Run Reservoir Dam	City of Fredericksburg/Spotsylvania County	Local GOV	SPOTSYLVANIA COUNTY	Meets minimum safety standards
17719	Hunting Run Dam	Spotsylvania County	Local GOV	SPOTSYLVANIA COUNTY	Meets minimum safety standards
17911	Aquia Creek Dam	Stafford County	Local GOV	STAFFORD COUNTY	Meets minimum safety standards
18505	Upper Clinch Valley Dam #1B	Tazewell County	Local GOV	TAZEWELL COUNTY	Meets minimum safety standards
19516	Big Cherry RCC Dam	Town of Big Stone Gap	Local GOV	WISE COUNTY	Meets minimum safety standards
19526	Dominion Generation VA City Dam #1	Dominion Generation	Utility	WISE COUNTY	Meets minimum safety standards
72001	Lower Norton Reservoir Dam	City of Norton	Local GOV	NORTON CITY	Meets minimum safety standards
76011	Winston Lake Dam	St.Michael's Episcopal School	Private	RICHMOND CITY	Meets minimum safety standards
80003	Lake Burnt Mills Dam	City of Norfolk, Dept. of Utilities	Local GOV	SUFFOLK CITY	Meets minimum safety standards
80013	Lake Meade Dam	City of Portsmouth, Dept. of Utilities	Local GOV	SUFFOLK CITY	Meets minimum safety standards
01904	Stoney Creek Reservoir Dam (Bedford)	City of Bedford	Local GOV	BEDFORD COUNTY	Money allocated
05901	Barcroft Dam	Lake Barcroft Watershed Improv. Dist.	State	FAIRFAX COUNTY	Money allocated
05923	Pohick Creek Dam #2	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Money allocated
05928	Pohick Creek Dam #3	Fairfax County Board of Supervisors	Local GOV	FAIRFAX COUNTY	Money allocated
06144	Licking Run Dam	Fauquier County	Local GOV	FAUQUIER COUNTY	Money allocated
06914	Lake Holiday Dam	Lake Holiday Country Club, Inc.	Private	FREDERICK COUNTY	Money allocated
06921	Lake Isaac Dam	Lake Isaac Estates POA	Private	FREDERICK COUNTY	Money allocated
10714	Gore Dam	James C. Athey	Private	LOUDOUN COUNTY	Money allocated
13708	Keaton's Run	Lake of the Woods Association	Private	ORANGE COUNTY	Money allocated
13902	Dry Run Dam #101	Town of Luray	Local GOV	PAGE COUNTY	Money allocated
15302	T. Nelson Elliott Dam	City of Manassas	Local GOV	PRINCE WILLIAM COUNTY	Money allocated
16104	Clifford D. Craig Memorial Dam	Western Virginia Water Authority	Local GOV	ROANOKE CO COUNTY	Money allocated

17101	Stony Creek Dam #9	Lord Fairfax SWCD	SWCD	SHENANDOAH COUNTY	Money allocated
72002	Upper Norton Reservoir Dam	City of Norton	Local GOV	NORTON CITY	Money allocated
81005	Lake Smith	City of Norfolk, Department of Utilities	Local GOV	VIRGINIA BEACH CITY	Money allocated
09316	ASB Pond	International Paper	Private	ISLE OF WIGHT COUNTY	Limited available information
05936	Regional Pond S-7 Dam	Fairfax County Park Authority	Local GOV	FAIRFAX COUNTY	Dam was designed but never built
10127	King William Reservoir	City of Newport News	Local GOV	KING WILLIAM COUNTY	Dam was designed but never built
15707	Seven Islands Dam	Roger Jones	Private	RAPPAHANNOCK COUNTY	Dam doesn't exist
17926	Rocky Pen Run Reservoir Dam	Stafford Co. Board of Supervisors	Local GOV	STAFFORD COUNTY	Dam doesn't exist