ANNEX D

High Hazard Potential Dams

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A.1 Planning Process

As part of the 2023 hazard mitigation plan update effort, Anderson and Oconee County have developed this Annex to assess dam risks and comply with the Stafford Act as amended by the Disaster Mitigation Act of 2000. The High Hazard Potential Dams Annex to the South Carolina State Hazard Mitigation Plan and 2020 State of the Dams Report were reviewed, and relevant data was incorporated into this annex.

South Carolina dams are managed through the South Carolina Dam Safety Program (SCDSP) within the SC Department of Health and Environmental Control (SCDHEC). As the regulatory authority for dams, SCDSP maintains the inventory of state regulated dams and inspects dams of Significant and High Hazard potential on a 3- and 2-year cycle, respectively, and reassesses those of Low Hazard Potential at least once every 5 years. The program also evaluates the appropriate hazard classification of proposed and unregulated dams as needed. Upon commencement of the plan update, Anderson County Office of

Emergency Management contacted SCDSP to request an updated list of Anderson and Oconee County state regulated dams and their classifications.

Once the hazard profile was completed both counties and SCDSP determined appropriate mitigation goals more specific to the dam hazard for the county level plan along with mitigation actions addressing the dam hazard and the potential impacts.

A.2 How Dams Pose a Public Safety Hazard

Dams represent a hazard to public safety in three main ways: 1) non-breach flooding, 2) breach (i.e., dam failure) flooding, and 3) upstream flooding. Additionally, a dam breach failure can be broken down into two main types: sunny-day and rainy-day.

A.2.1 Non-Breach Flooding (Downstream)

A non-breach flood event is generally the result of necessary or intentional releases that, while rare occurrences, are much higher in flow rate and total volume than normal releases. These releases can be through the dam's spillway system (i.e., auxiliary or "emergency" spillways) or can be the result of overtopping of dams that are designed to overtop (i.e., concrete dams, or earthen dams that have armoring designed to withstand overtopping without eroding). This type of event poses a flood risk in that downstream populations may be caught unaware and locations that do not normally experience flooding may flood. For example, a HHPD is required to have spillway capacities that comply with the Spillway Design Flood criteria found in SC Code of Regulations 72-1, *et seq.*, and repeated in **TABLE I** below. As is apparent from **TABLE I**, a HHPD can and should have spillway capacity in excess of the 100-year flood. As a result of FEMA's National Flood Insurance Program, local ordinances have restricted development within FEMA-approved 100-year flood plains but not wider, the result being a HHPD that is simply operating as it was designed has the ability to threaten areas where no building restrictions apply and where populations may not expect flooding to occur. Additionally, a dam that is designed to overtop could conceivably pass flood flows so extreme a large downstream area (potentially larger than the dam's breach inundation area) would need to be notified of the flood risk, even though the dam is not at risk of breaching.

It is not uncommon to see structures built in the auxiliary spillway channel downstream of a dam, especially when these channels/flow paths are on property not under the control of the dam owner. In the event of imminent activation of an auxiliary spillway, owners/residents of these structures (whether homes, roadways, or other infrastructure) may need to be notified and emergency protective measures taken.

As the Limitations section of this document will address later on, the SCDSP is unable to provide detailed analysis of the non-breach flooding risk for HHPDs in the planning area at this time. This is a limitation that the SCDSP plans on utilizing FEMA grant funding and contractual assistance to correct in the next 12 months.

TABLE I: SPILLWAY DESIGN FLOOD CRITERIA FOR HHPDS

Size Classification (by Height OR Impoundment Volume)	Spillway Design Flood (SDF)
Very Small (<25 ft and <50 acre-ft)	**100-year to ½ Probable Maximum Flood (PMF)[1]**
Small (≥25 ft and <40 ft OR ≥50 and <1,000 acre-ft)	**½ PMF to PMF**
Intermediate (≥40 ft and <100 ft OR ≥1,000 acre-ft and <50,000 acre-ft)	**PMF**
Large (≥100 ft OR ≥50,000 acre-ft)	**PMF**

Source: South Carolina Code of Regulations, Reg. 72-1, et seq.
Note: [1]"Probable Maximum Flood (PMF)" is defined in SC Reg. 72-1 as "the largest flood that theoretically could occur at a given site during our present geological and climatic era."

A.2.2 Breach Flooding (Downstream)

A dam breach is a failure of a dam structure resulting in an uncontrolled release of water or other fluids from the impounded reservoir that causes downstream flooding. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and severe property damage if development exists downstream of the dam. Dam failure can result from natural events (e.g., extreme precipitation events, earthquakes), human-induced events (e.g., misoperation, lack of or deferred maintenance, vandalism, terrorism), or, more commonly, some combination of the two. The most common cause of dam failure in earthen dams is prolonged rainfall that produces inflow into the reservoir in excess of the dam's spillway capacity, causing dam overtopping and erosion of the earthen dam embankment until an uncontrolled release occurs. The human-induced factor in these overtopping dam failure events is usually related to the dam's spillway system, and the loss of spillway capacity thereof: either a spillway is obstructed by debris, is not in proper functioning condition, requires manual operation (which never comes or comes too late), . There are two main types of dam breach, which are defined by the hydrologic conditions surrounding the dam failure:

- The sunny-day dam breach is an event that occurs without any antecedent or concurrent rainfall and by definition occurs when the reservoir is at normal pool elevation, i.e., the water level established by a primary spillway's inflow elevation, and the downstream receiving stream is also at a normal water level such that all downstream floodplain storage is available.

- The other type of breach event, a rainy-day breach, occurs as a result of antecedent or concurrent rainfall somewhere in the dam's watershed and/or in the downstream floodplain and can be any of a range of scenarios where the reservoir is above normal pool elevation (up to the crest of the dam or even slightly above if the dam is being overtopped in the scenario), is receiving increased inflow from the upstream watershed, and the downstream floodplain storage is limited or fully exhausted.

A.2.3 Upstream Flooding

Dams can also represent a hazard to upstream areas (i.e., areas around the impounded reservoir and within the floodplain of the impounded stream) in the event of extreme inflow events or misoperation of the dam that results in water level in the impounded reservoir reaching or exceeding the top of the dam. While this is usually a much smaller flood risk (i.e., much lower flood depths and velocities) than the downstream flood risk from non-breach or breach flooding, upstream populations can be caught unawares from a rise in the reservoir water level that exceeds the normal range of reservoir fluctuation. This type of flooding usually represents a much lower risk for loss of human life than downstream flooding, but can represent a significant risk for property damage, flooding of roadways, and other adverse infrastructure impacts.

A.3 Background

Worldwide interest in dam and levee safety has risen significantly in recent years. Aging infrastructure, new hydrologic information, and population growth in floodplain areas downstream from dams and near levees have resulted in an increased emphasis on safety, operation, and maintenance.

According to the US Army Corps of Engineers there are over 91,000 *regulated* dams in the United States today, the majority of which are privately owned. There is no known official estimate for the number of unregulated dams in the US, but the SCDSP estimates there may be as many as 50,000 *unregulated* dams in South Carolina alone. Besides private entities, other owners of dams include state and local authorities, public utilities, and federal agencies. The benefits of dams are numerous: they provide water for drinking, navigation, and agricultural irrigation. Dams also provide hydroelectric power, create lakes for fishing and recreation, and save lives by preventing or reducing floods.

Though dams have many benefits, they also can pose a risk to communities if not designed, operated, and maintained properly. Each dam in the state of South Carolina has the potential to fail and suddenly release its impounded water, flooding the land downstream. This threat is only exacerbated by aging infrastructure dams (i.e., dams built to serve a public use, such as flood control or hydropower) and the multitude of typically smaller dams built primarily for recreational and aesthetic purposes. Dams built before 1977 pre-date the SC Dams and Reservoirs Safety Act and were constructed without the need for a construction permit from the SCDSP. Aside from Federally-owned or regulated dams, most of these pre-law dams were built without the involvement of a licensed Professional Engineer, design standards, or oversight of any kind. Furthermore, dams built since the passage of the Act have been subject to an evolution of design standards and best engineering practices that have seen many once-standard practices (such as seepage cut-off walls and use of geotextiles) become frowned upon. These aging and sub-standard dams make up the bulk of South Carolina's portfolio of dams.

SCDSP oversees permitting, inspections and general compliance for nearly 2,300 state-regulated dams under authority vested by the SC Dams and Reservoirs Safety Act, SC Code Ann. §49-11-110, *et seq*. and the SC Dams and Reservoirs Safety Act Regulations, SC Code Regs. 72-1, *eq seq*. A dam subject to state regulation is classified based on its potential for causing loss of life or damage to improved property in the event of the dam's failure or improper operation. Consequences from dam failure that the program considers and evaluates in assigning a Hazard Potential Classification include potential impacts to homes, businesses, roads, railroads, commercial and industrial facilities, and public utilities (i.e., water, sewer, electric, gas). There are three hazard potential classifications found in the SC Dam and Reservoirs Safety Act and Regulations — High, Significant, and Low. **TABLE II** explains these classifications. This Annex will focus on the High Hazard Potential Dams (HHPDs) only.

TABLE II: SOUTH CAROLINA HAZARD POTENTIAL CLASSIFICATION OF DAMS

CLASS I	CLASS 2	CLASS 3
High Hazard	**Significant Hazard**	**Low Hazard**
Dam failure will likely cause loss of life or serious damage to home(s), industrial and commercial facilities, important public utilities, main highway(s) or railroads.	Dam failure will not likely cause loss of life but may damage home(s), industrial and commercial facilities, secondary highway(s) or railroads, or interrupt the service of relatively important public utilities.	Dam failure may cause minimal property damage to others. Loss of life is not expected.

Source: South Carolina Code of Regulations, Reg. 72-2.C. Hazard Potential Classification.

A.4 Location and Profiles

According to the SCDSP's Geographic Information Systems (GIS) web application (https://gis.dhec.sc.gov/scdams), as of May 5, 2023, there are 60 state-regulated dams in Anderson County and 54 in Oconee County. Of these 114 total dams in the two counties, 55 are classified as High Hazard Potential Dams (HHPDs), 30 in Oconee County and 25 in Anderson County. This information is summarized in **TABLE III** and depicted geographically in **FIGURE 1**. Additionally, there are 11 state-regulated HHPDs in neighboring Pickens and Greenville Counties that could cause downstream impacts in the planning area of Anderson and Oconee Counties. **FIGURE 2** shows the location of these Greenville and Pickens Counties (i.e., extra-jurisdictional) HHPDs. The SCDSP's GIS web application is the preferred source of information for HHPDs in the planning area because this web application reflects SCDSP's data on all state-regulated in real-time, and it also provides a wealth of additional information and tools to assist the user in performing detailed analysis of the geographic environment and upstream and downstream impacts of almost every dam subject to state regulation.

TABLE III: SUMMARY OF HIGH HAZARD POTENTIAL DAMS

CLASSIFICATION	ANDERSON	OCONEE	TOTAL
CLASS 1 – HIGH HAZARD	23	30	53
STATE CLASS 1 – HIGH HAZARD	2	0	2
TOTAL	25	30	55

Source: South Carolina Department of Health and Environmental Control, 2023

As shown in **TABLE III**, State Class 1 dams are a sub-set of Class 1 dams that are less than 25 feet in height and have a storage capacity of less than 50 acre-feet (i.e., "Very Small" size class as shown in **TABLE I**) but that may cause loss of life in the event of dam failure. The reason for this separation is that State Class 1 dams do not meet the federal definition of "dam" found at 33 U.S.C. §467(3), and therefore are not eligible for the HHPD Grant Program. While State Class 1 dams are smaller and impound less than other Class 1

dams, they still represent a potential to cause loss of life and thus should not be treated as any less important. The authority to regulate these dams comes from the SC Dams and Reservoirs Safety Act, SC Code Ann. §49-11-110, *et seq*.

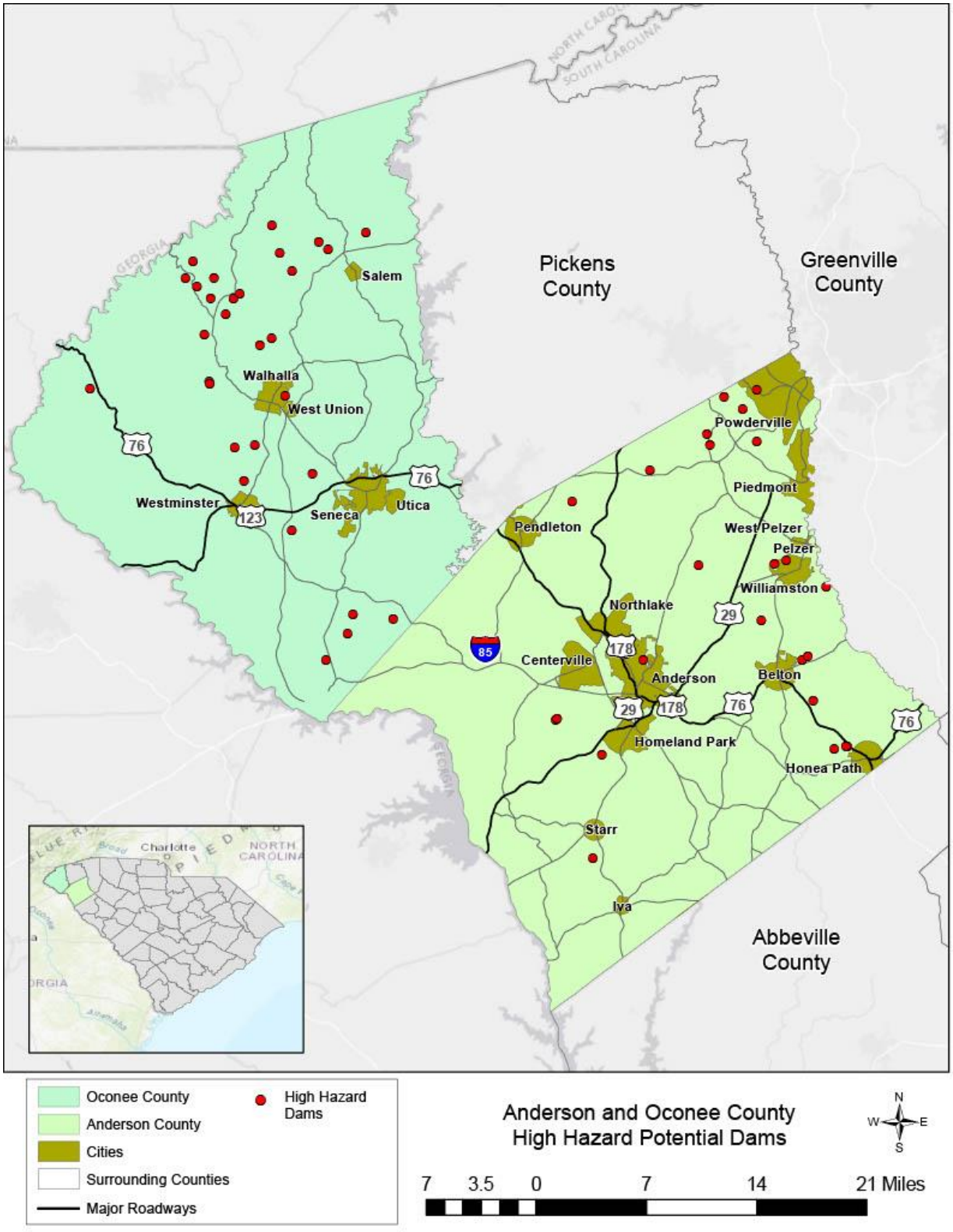
Anderson and Oconee Counties are home to 22 dams that were built by the United States Department of Agriculture (USDA) under Public Law 566 to serve a flood prevention, watershed protection, or water supply purpose. Public Law 566 was passed in 1954 by the US Congress and established a program by which the USDA would design and build dams on watersheds of ≤250,000 acres and with ≤5,000 acre-feet in storage capacity with the intention of turning over maintenance and operations of said dams to local project sponsors known as Watershed Conservation Districts (WCD). Statewide in South Carolina, 105 PL-566 dams were built between 1954 and 1990. There are six Watershed Conservation Districts in Anderson and Oconee Counties that own a combined 22 dams, 20 of which are HHPDs, as shown in **TABLE IV** below.

TABLE IV: NUMBER OF FLOOD CONTROL HHPDS

WATERSHED CONSERVATION DISTRICT (WCD)	ANDERSON	OCONEE
BEAVERDAM CREEK WCD	0	4
BIG CREEK WCD	2	0
BROADMOUTH CREEK WCD	2	0
BRUSHY CREEK WCD	4	0
CONEROSS CREEK WCD	0	4
THREE AND TWENTY CREEK WCD	4	0
TOTAL	**12**	**8**

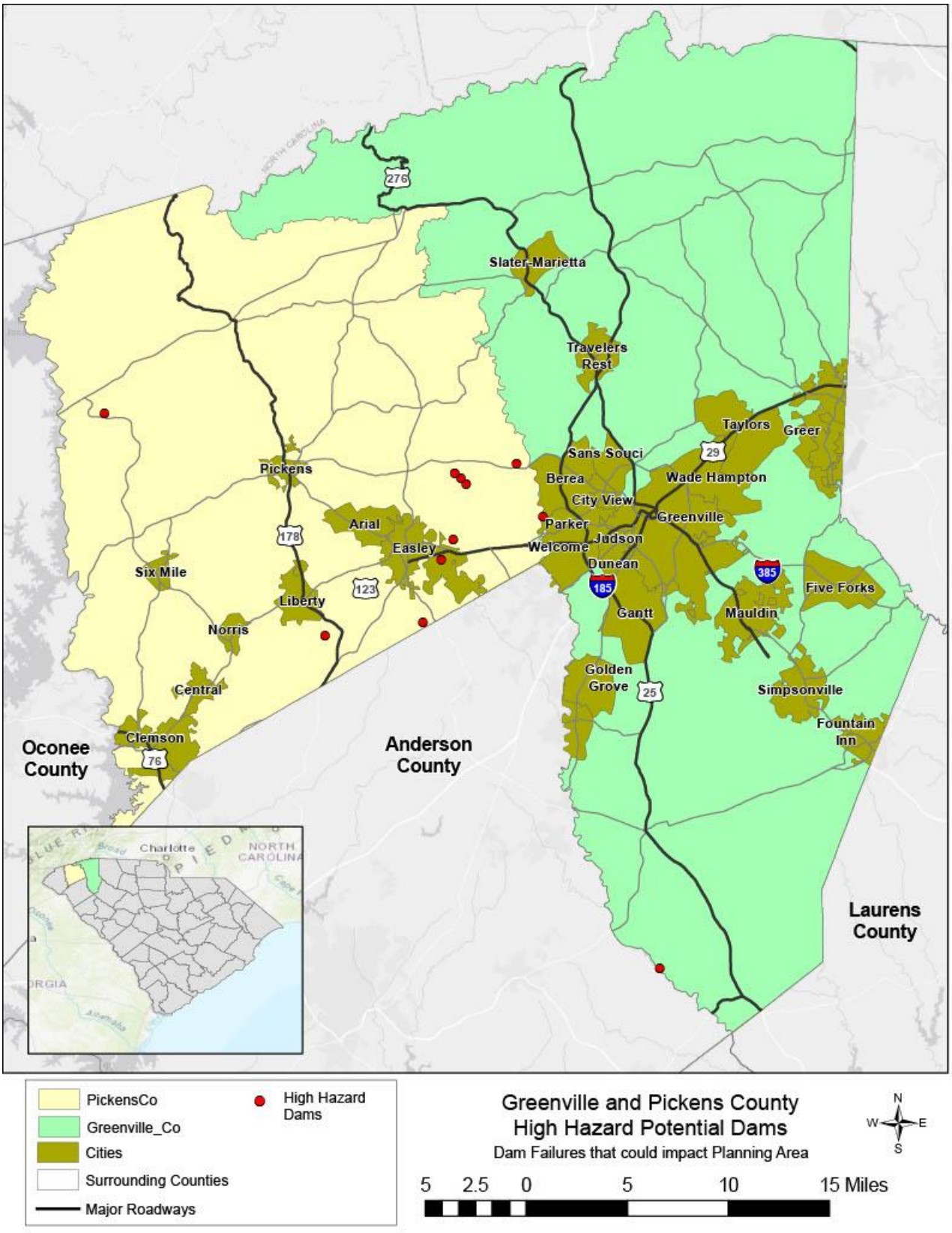
Source: South Carolina Department of Health and Environmental Control, 2023

FIGURE 1: ANDERSON/OCONEE COUNTY HHPD LOCATIONS



Source: South Carolina Department of Health and Environmental Control, 2023; Dynamic Map available at https://gis.dhec.sc.gov/scdams

FIGURE 2: GREENVILLE/PICKENS COUNTY HHPD LOCATIONS



Source: South Carolina Department of Health and Environmental Control, 2023; Dynamic Map available at https://gis.dhec.sc.gov/scdams

At the state level, the SCDSP utilizes a methodology for assessing the state-regulated dams based on specific, critical risk factors including dam condition, performance under extreme load conditions, and consequence of failure called Screening Level Risk Analysis (SLRA).[1] Based on these critical risk factors, the dams are given a risk rating called Total Risk Factor (TRF). The SLRA accounts for possible dam failures due to flooding, seismic events, and static instability. This methodology is used to produce Total Risk Factor (TRF) scores and rankings that reflect the relative risk posed by the portfolio of HHPDs in the planning area. The High Hazard Potential Dams Annex to the State Hazard Mitigation Plan outlines the prescribed methodology for calculating the TRF.[2] The information is not shared publicly for multiple reasons but available to government officials for mitigation planning purposes.

The SLRA methodology and resultant TRF scores and rankings require the user to properly understand and interpret the data to be able to make risk-informed decisions regarding HHPDs. First, the information that feeds into the analysis is not static as the conditions affecting dams are ever changing and inspections and evaluations are continuously updated. The TRF information contained in this report is already out-of-date and should not be used for planning purposes – the SCDSP should always be contacted for the most current TRF rankings. Second, the SLRA relies on a variety of data sources that have significant limitations, hence the "Screening Level" moniker in its name. For the most part, the SLRA does not incorporate detailed engineering analyses to derive the various factors that determine the TRF scores. Third, TRF scores are not an absolute indicator and should only be compared to another dam's TRF score. The general concept of "Screening Level Risk Analysis" has been adopted by many other state and federal agencies, but the specific methodology is typically different in every implementation, and thus SCDSP's TRF score is not comparable to any other state or agency's TRF. The proper use of TRF is to generate a ranking of HHPDs and to prioritize mitigation actions for dams with a higher TRF rank. Fourth, TRF is separated into a TRF-Flooding and a TRF-Seismic, because the SCDSP realized that combining the flood hazard and seismic hazard into a single TRF score causes the flooding component to overwhelm the seismic component such that all the highest-ranking dams are being driven by their flood risk. Mitigation planners need to be aware of how different hazards drive risk differently for the portfolio of HHPDs in their planning jurisdictions, hence the separation of Flooding and Seismic TRF scores and rankings.

The Dams and Reservoirs Safety Act requires all of the HHPDs in the state to have an Emergency Action Plan (EAP). Of the HHPDs in Anderson and Oconee Counties, 36 out of the 55 HHPDs have an EAP of some type. Of the extra-jurisdictional HHPDs (i.e., in Greenville and Pickens Counties), 9 of the 11 have an EAP of some type. EAPs can vary a great deal in format and content and still meet minimum regulatory requirements. In an effort to improve the quality and effectiveness of the state's standard EAP template, SCDSP updated its EAP template in 2017 to more closely align with FEMA's guidance on EAP content (*Federal Guidelines for Dam Safety - Emergency Action Planning for Dam*s, FEMA 64, July 2013). As of May 5, 2023, 21 HHPDs of the 66 have EAPs that meet or exceed the standard set by SCDSP's 2017 template. While SCDSP has authority to impose fines on dam owners for non-compliance with the statutory EAP requirement, SCDSP instead has a compliance assistance policy whereby SCDSP staff will assist dam owners in completing an EAP by performing dam breach modeling using the Decision Support System for Water Infrastructure Security (DSS-WISE™) Lite dam breach modeling software and creating dam breach inundation maps and a list of potentially inundated properties to overcome what is likely the largest technical hurdle in creating a modern EAP. SCDSP staff will also pre-populate the majority of the EAP template for a dam owner and requiring the dam owner to obtain only emergency contact information (i.e., telephone numbers) for the potentially inundated properties and then performing a final review of the draft EAP before signing their acceptance of the information and responsibility for implementing the emergency actions required therein. All HHPDs are required to have an EAP and that focus is cultivated in the mitigation actions for the planning jurisdiction.

A.4.1 Lists of Anderson/Oconee HHPDs

TABLE V: LIST OF ANDERSON COUNTY HHPDS

Dam Name	State ID	National Inventory ID	Lat.	Long.	Construction Type	Year of Construction	Primary Use	Ownership Type
BIG CREEK WCD DAM-RENTZ/WILLIAMS 2	D0005	SC00547	34.6253	-82.4999	Earth	1967	Flood Control	Public
BIG CREEK WCD DAM-SHOREBROOK 1	D0006	SC00546	34.6285	-82.4865	Earth	1967	Flood Control	Public
GLENN POND DAM 2	D3108	SC01817	34.4779	-82.7407	Earth	1966	Recreation	Private
GLENN POND DAM 1	D3109	SC01816	34.479	-82.7389	Earth	1961	Recreation	Private
THREE AND TWENTY CREEK WCD DAM-GRIFFIS 9B	D3112	SC00553	34.679	-82.7267	Earth	1968	Flood Control	Public
MCGEE POND DAM	D3119	SC00555	34.3506	-82.6968	Earth	1957	Agriculture	Private
LAKE HUNTINGTON DAM	D3123	SC00557	34.5348	-82.6444	Earth	1970	Recreation/ Stormwater Mgt	Private
THREE AND TWENTY CREEK WCD DAM-JAMESON 5B	D3124	SC00552	34.709	-82.6404	Earth	1967	Flood Control	Public
THREE AND TWENTY CREEK WCD DAM-TRIPP 14	D3126	SC00564	34.7437	-82.5773	Earth	1973	Flood Control	Public
ANDERSON POND DAM	D3128	SC00540	34.6228	-82.5847	Earth	1952	Recreation	Private
BRUSHY CREEK WCD DAM-HOPKINS 11A	D3130	SC00542	34.7782	-82.5586	Earth	1960	Flood Control	Public
BRUSHY CREEK WCD DAM-GANTT 17	D3131	SC00544	34.7674	-82.5376	Earth	1964	Flood Control	Public
THREE AND TWENTY CREEK WCD DAM-ROBINSON 15	D3132	SC00554	34.7339	-82.5737	Earth	1968	Flood Control	Public
BRUSHY CREEK WCD DAM-KRAEMER 16	D3137	SC00543	34.7851	-82.5222	Earth	1964	Flood Control	Public
BRUSHY CREEK WCD DAM-TRIPP 18	D3139	SC00545	34.7374	-82.5213	Earth	1961	Flood Control	Public
LOLLIS POND DAM	D3140	SC01828	34.572	-82.5133	Earth	1963	Recreation	Private
BROADMOUTH CREEK WCD DAM-247-W 9	D3142	SC00551	34.5361	-82.4674	Earth	1966	Flood Control	Public
BROADMOUTH CREEK WCD DAM-PHILLIPS 8	D3143	SC00550	34.5405	-82.4609	Earth	1965	Flood Control	Public
G STEVENS POND DAM	D3147	SC01708	34.4995	-82.4545	Earth	1967	Recreation	Private
FRIDDLE POND B DAM	D3151	SC01706	34.4579	-82.417	Earth	1973	Recreation	Private
FRIDDLE POND A DAM	D3152	SC01705	34.4575	-82.4156	Earth	1979	Recreation	Private
SEATON ACRES POND DAM	D3153	SC00560	34.4549	-82.4298	Earth	1970	Recreation	Private
RANKEN POND DAM	D3265	SC01815	34.5394	-82.664	Earth	1949	Recreation	Private
WS LEE STEAM PLANT PRIMARY ASH BASIN DAM	D4887	SC12284	34.6041	-82.4415	Earth	1974	Industrial	Private
FIRST QUALITY TISSUE ASB DAM	SCD5037	SCD5037	34.4469	-82.6886	Earth	2019	Industrial	Private

Source: South Carolina Department of Health and Environmental Control, 2023

TABLE VI: LIST OF OCONEE COUNTY HHPDS

Dam Name	State ID	National Inventory ID	Lat.	Long.	Construction Type	Year of Construction	Primary Use	Ownership Type
LAKE CHEOHEE DAM	D1632	SC00511	34.9289	-83.0682	Earth	1950	Recreation	Private
TOWNES CREEK DAM	D1634	SC00512	34.9036	-83.0587	Earth	1961	Recreation	Private
LEONIDAS DAM	D1635	SC00532	34.9144	-83.0153	Earth	1960	Recreation	Private

WHITEWATER LAKE DAM	D1636	SC00513	34.9078	-83.0045	Earth	1961	Recreation	Private
CHATTOOGA LAKE DAM	D1637	SC00519	34.8939	-83.1556	Earth	1954	Recreation	Private
MOUNTAIN REST LAKE DAM	D1638	SC00518	34.8782	-83.1633	Earth	1960	Recreation	Private
LAKE LEROY DAM	D1639	SC00510	34.8702	-83.1501	Earth	1960	Recreation	Private
GORDONS LAKE DAM	D1640	SC01190	34.8791	-83.1314	Earth	1961	Recreation	Private
MTN LAKE DAM (LAKE BECKY)	D1641	SC00515	34.8458	-83.1176	Earth	1958	Recreation	Private
OCONEE STATE PARK DAM 1	D1642	SC00517	34.8647	-83.1022	Earth	1935	Recreation	Public
OCONEE STATE PARK DAM 2	D1643	SC00538	34.8605	-83.1094	Earth	1970	Recreation	Public
CRYSTAL LAKE DAM	D1645	SC00516	34.8271	-83.1435	Earth	1948	Recreation	Private
BOOKER'S LAKE DAM	D1646	SC00536	34.8249	-83.066	Earth	1948	Recreation	Private
LAKE JEMIKE DAM 1	D1648	SC00525	34.7833	-83.1342	Earth	1944	Recreation	Private
LAKE JEMIKE DAM 2	D1649	SC01199	34.7816	-83.1338	Earth	1959	Recreation	Private
HORSESHOE LAKE DAM	D1650	SC00534	34.7748	-83.2674	Earth	1960	Recreation/ Agriculture	Private
BROWNS LAKE DAM	D1651	SC00520	34.7716	-83.0491	Earth	1950	Recreation	Private
CONEROSS CREEK WCD DAM 1A	D1652	SC00522	34.7232	-83.1046	Earth	1962	Flood Control	Public
CONEROSS CREEK WCD DAM 8	D1653	SC00521	34.7254	-83.082	Earth	1962	Flood Control	Public
CONEROSS CREEK WCD DAM 9A	D1655	SC00523	34.6927	-83.0934	Earth	1963	Flood Control	Public
CONEROSS CREEK WCD DAM 21	D1656	SC00524	34.701	-83.0169	Earth	1963	Flood Control	Public
BEAVERDAM CREEK WCD DAM 5	D1665	SC00526	34.5685	-82.9238	Earth	1971	Flood Control	Public
BEAVERDAM CREEK WCD DAM 2	D1666	SC01200	34.5711	-82.9684	Earth	1974	Flood Control	Public
BEAVERDAM CREEK WCD DAM 4	D1667	SC00527	34.5534	-82.9744	Earth	1973	Flood Control	Public
BEAVERDAM CREEK WCD DAM 3A	D4026	SC02423	34.5288	-82.9978	Earth	1981	Flood Control	Public
DICKERSON FISHING LAKE	D4104	SC02538	34.6477	-83.039	Earth	1970	Recreation	Private
FIDDLERS COVE DAM	D4186	SC02426	34.8867	-83.0442	Earth	1988	Recreation	Private
BOB EDWARDS DAM	D4398	SC02651	34.8182	-83.0787	Earth	1992	Recreation	Private
EAST VILLAGE CR FARM POND	D4582	SC03518	34.8603	-83.1348	Earth	2007	Recreation	Private
JOCASSEE RIDGE REFLECTIONS DAM	D4587	SC02835	34.9234	-82.9629	Earth	2008	Recreation	Private

Source: South Carolina Department of Health and Environmental Control, 2023

TABLE VII: LIST OF EXTRA-JURISDICTIONAL HHPDS[1]

Dam Name	State ID	National Inventory ID	County	Lat.	Long.	Construction Type	Year of Construction	Primary Use	Ownership Type
SALUDA LAKE DAM	D4469	SC00024	Greenville	34.8524	-82.4843	Concrete	1905	Hydroelectric	Private
HOLLIDAYS BRIDGE DAM	D4470	SC00559	Greenville	34.5298	-82.3768	Concrete	1906	Hydroelectric	Private
B F FINLEY DAM 1	D1931	SC00693	Pickens	34.8789	-82.5563	Earth	1961	Recreation	Private
B F FINLEY DAM 2	D1932	SC00694	Pickens	34.875	-82.5513	Earth	1954	Recreation	Private
B FRANK FINLEY DAM	D1930	SC00695	Pickens	34.8824	-82.5616	Earth	1970	Recreation	Private
LAKE DIANA DAM	D1969	SC00710	Pickens	34.921	-82.8674	Earth	1944	Recreation	Private

MERRITTS POND	D1942	SC00712	Pickens	34.7749	-82.5872	Earth	1972	Recreation	Private
MALLARD COVE (FOREST DR)	D1935	SC01296	Pickens	34.8199	-82.572	Earth	1957	Recreation	Private
LOYDS POND DAM	D1934	SC01396	Pickens	34.8347	-82.5619	Earth	1972	Recreation	Private
STANLEY MCJUNKIN DAM	D4396	SC02648	Pickens	34.8902	-82.508	Earth	1992	Recreation	Private

Source: South Carolina Department of Health and Environmental Control, 2023
Note: 1. Extra-Jurisdictional HHPDs represent dams that are not physically located in the planning jurisdiction but whose failure could have impacts that would be felt within the jurisdiction.

A.5 Historical Occurrences

South Carolina's geographic location and climate result in regular impacts by weather events that result in extreme amounts of precipitation over short periods of time. Historic rainfall in South Carolina in October 2015 associated with Hurricane Joaquin resulted in 50 state-regulated dam failures and one federally-regulated dam failure statewide. Many dams in the state exist on smaller streams that have no floodplain classification (e.g., Zone A (100-year return period) or Zone X (500-year return period)) or subject to floodplain regulation (e.g., Zone AE), leaving downstream residents unaware of potential risks.

As Anderson and Oconee are counties located in the upstate of SC, they have suffered less effects from the tropical systems that have affected other areas of the state in the midlands and coast; however, there are occasional, high rainfall events in the region that are capable of causing significant hydrologic consequences for dams in the area.

Data from the National Centers for Environmental Information (NCEI) Storm Events Database (formerly the National Climatic Data Center (NCDC)) was reviewed to ascertain information on historical dam breach events located in the upstate of SC such as Anderson and Oconee are counties. NCEI does not track dam or levee breach events as individual event types, but information on past events can be found in the episode narratives for flood and flash flood events.

Since limited information was available on past events for Anderson and Oconee are counties located in the upstate of SC through NCEI, the South Carolina State Hazard Mitigation Plan was also reviewed to supplement additional information on historical dam breach events. The events described below occurred across the state of South Carolina:

August 24–31, 1995 (Flooding and Flash Flooding): Remnants of Tropical Storm Jerry dumped an initial three to five inches of rain. As additional bands moved across the state, flash flooding developed in various areas and roads became flooded and impassable. At least six bridges were destroyed in Laurens County, several small dams broken, and three fatalities. The current total cost estimates for the damages caused by this extended flood event equal $18,717,472.

October 01–05, 2015: A stalled cold front pulled moisture from nearby Hurricane Joaquin. Record breaking rainfall caused extreme flooding across large areas of the state. Accumulations reached as high as 26.88 inches. Flash flood emergencies were issued for several counties. 51 dams across the state were breached or collapsed. Several rivers reached major flood stage. 19 fatalities were confirmed as a result of the flooding. Property damage was estimated to be at least $75,000,000. Emergency orders were issued for 75 dams, and 192 additional dams were identified as needing inspection and potential repairs.

October 08, 2016: Hurricane Matthew moved up the southeast coast and slowly weakened to a category 1 storm as it moved up along the South Carolina coast and then eastward near the North Carolina coast. The hurricane brought 6 to 12 inches of rain and up to 15 inches to some areas of northeast South Carolina, with the bulk of the rainfall occurring within a 12-hour period. This rain fell on wet to in some cases saturated soil due to much above normal rainfall in September. The result was historic flooding, widespread flash flooding, and an extended period of river flooding. Approximately 25 dams breached, and 12 emergency order dams had severe storm damage. Matthew's flooding rains, surge and wind brought loss of life, displaced tens of thousands of people, and caused hundreds of millions of dollars in structural damage as homes and businesses were devastated or totally destroyed. Major infrastructure will have to be repaired or rebuilt.

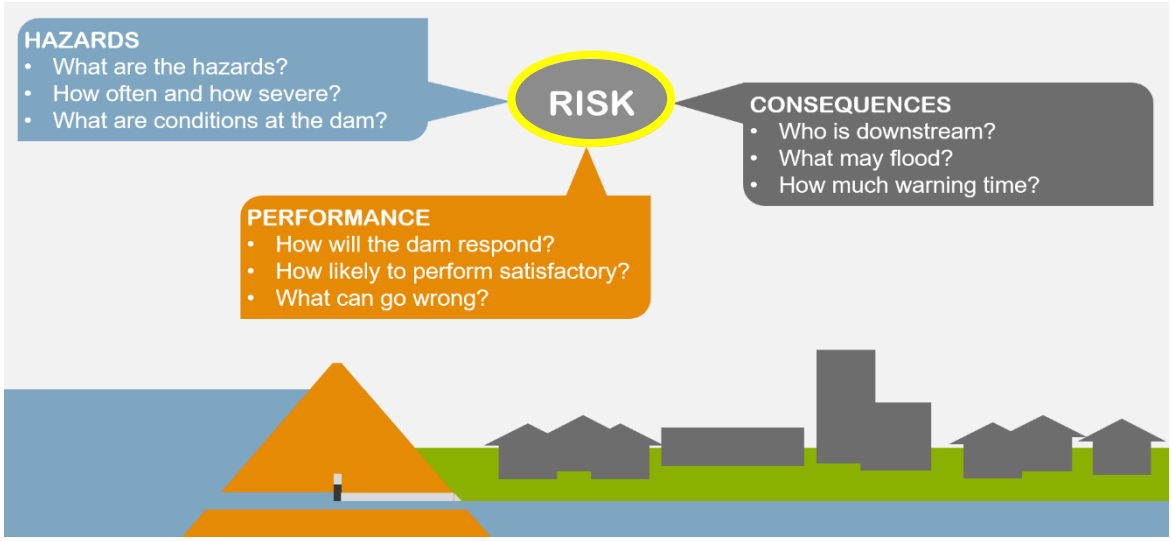
A.5.1 Probability of Future Occurrence

Any dam, no matter how well built, has the potential to fail and suddenly release its impounded water, flooding the land downstream. This is why the SC Dams and Reservoirs Safety Act makes no provision for the age, type of construction, or condition of a dam in assigning Hazard Potential Classifications. The threat from dam failure increases for aging dams. As previously discussed, older dams were not built to current engineering standards, and the effect of decades of variable hydrostatic loadings (i.e., water pressure) will weaken an earthen dam in ways that are not always evident from visual inspections. What's more, many dams exist on smaller streams that are not mapped as floodplains or subject to floodplain regulation, leaving downstream residents unaware of potential risks.

A.6 Dams and Risk

When talking about dams, overall risk can be thought of as a component of three main components: 1) **Hazard**, 2) **Resistance** (ability to withstand the hazard, also called "Performance"), and 3) **Consequences**. Any one factor can completely control risk (e.g., if there are no consequences from dam failure, there is no risk), but this is usually unrealistic if not impossible to achieve, and so risk has to be reduced by a combination of efforts that target all three components of risk. Obviously, some hazards are outside of human control (e.g., extreme rainfall, earthquakes), and so our efforts are generally targeted at *increasing* the dam's resistance to hazards or *reducing* the consequences from dam failure. **FIGURE 3** below depicts the three-component nature of risk as it pertains to dams.

FIGURE 3: THE THREE COMPONENTS OF DAM RISK

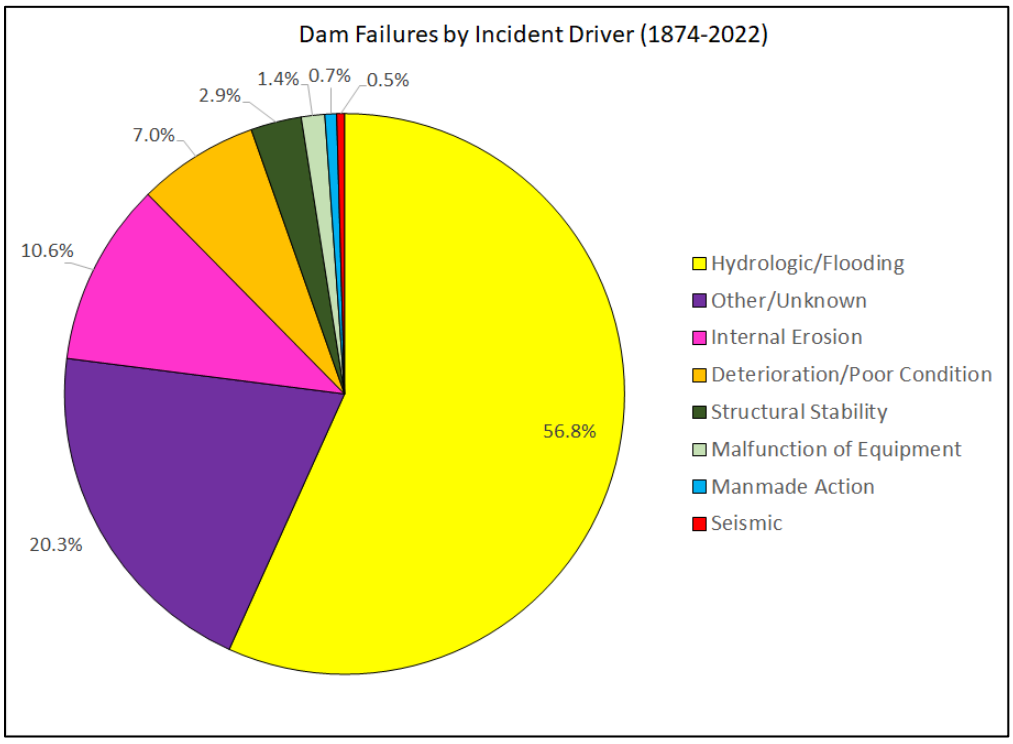


Source: US Army Corps of Engineers, https://www.nwp.usace.army.mil/Missions/Flood-Risk-Management/Dam-Safety/Managing-Risk/

A.6.1 Hazards that Can Impact Dams

The Association of State Dam Safety Officials (ASDSO) provides a database of recorded dam failures in the United States since 1874 and the attributed driving force behind these failures. From this database, last updated in February 2023, there are 9 categories of "Incident Drivers" that led to a recorded dam failure in the United States. **FIGURE 4**, below, provides a breakdown of the 444 dam failures.

FIGURE 4: HISTORICAL DAM FAILURES BY INCIDENT DRIVER



Source: Association of State Dam Safety Officials, 2023 (https://damsafety.org/incidents)

The hazards that could act directly on a dam and stress the dam to the point of partial or complete failure include:

- Hydrologic/Flooding Hazard

  The field of hydrology is, in essence, the interaction of rainfall with terrain. The construction of dams alters the response of the land to rainfall. For a dam constructed on a natural watercourse (i.e., not a lagoon or basin with pumped or regulated inflow), rainfall and runoff in the dam's watershed causes inflow into the impounded reservoir, which increases the forces acting on the dam. The hydrology-driven failure mode is well understood as the most common dam failure mode category for dams by a large majority (see **FIGURE 4**). If the dam's spillway system cannot safely pass the inflow flood waters, the reservoir water level will rise and can overtop the dam. Overtopping of an earthen embankment dam that has no overtopping protection may lead to erosion of the downstream side of the embankment, which is made up of soil placed and (hopefully!) compacted by the dam builder and is much more susceptible to erosion than natural ground. Dams with overtopping protection may be able to resist the flow of water over the crest and down the downstream slope, but different types of overtopping protection will have different degrees of resistance. Grass is one type of overtopping protection, and can perform well at resisting erosion of the downstream side of the embankment when the overtopping depth is low, velocities are slow, and the duration of overtopping is short. Other types of overtopping protection can resist greater depths, velocities, and durations of overtopping, to the extent that a concrete structure can be designed to withstand virtually any degree of overtopping. Once erosion begins on the downstream side of the dam, a process called head cutting will gradually remove soil from the dam and will erode in the upstream direction. The rate of erosion will vary based on multiple factors, and will be greater in non-cohesive (sandy) soils than cohesive (silty and clayey) soils. Once erosion reaches the crest of the dam and begins to approach the impounded reservoir, there is relatively little soil left to be removed before an uncontrolled release of the reservoir occurs. By this point, a reservoir breach is imminent and little time remains before the crest is entirely eroded through and the reservoir begins flowing through the breach and rapidly expanding it in size.

- Manmade Action

  Virtually no dam failure incident is completely free from human error or negligence in some form. Since dams are designed, built, maintained, and operated by humans, when a dam failure occurs, it's not terribly difficult to find a human factor in the mix of contributing factors.

  - Negligence

    The South Carolina Dams and Reservoirs Safety Act (SC Code § 49-11-110, *et seq.*) states that "The owner of a dam or reservoir constructed in this State solely is responsible for maintaining the dam or reservoir in a safe condition throughout the life of the structure." Unfortunately, it is the failure of some dam owners to take this responsibility seriously, and this failure is most egregious in the case of High Hazard Potential Dams, where failure or misoperation of the dam is likely to cause loss of life or seriously damaging consequences that may threaten human life indirectly. A dam owner who takes this responsibility seriously will keep well-informed on the condition of their dam by: making frequent visits to the dam to perform self-inspections, regularly testing equipment to

ensure operability and reliability, staying on top of all required maintenance tasks, and having a current Emergency Action Plan, to name but a few. A dam owner who relies solely on SCDHEC's bi-annual inspections for awareness of the condition of their dam is not a responsible dam owner.

Some of the most common forms of dam owner or operator negligence include:

- Failure to keep spillways free from accumulated trash and debris
- Failure to keep woody vegetation and trees off the dam
- Failure to maintain erosion protection on the dam
- Failure to regularly test and maintain water control devices on the dam (e.g., low-level drain valves, spillway gates,
- Failure to control burrowing animals and beavers
- Failure to work with a licensed Professional Engineer; performing unpermitted modifications and repairs
- Failure to maintain waterproofing in concrete joints
- Failure to inspect embankment drain pipes and clean out as needed
- Failure to maintain a current Emergency Action Plan

- Misoperation

All dams require at least some human intervention to operate properly. Ideally, a dam will have been designed and built with a means to control the water level in the reservoir. Typical means for water level control include low-level lake drains, siphons, lift gates, and removable stop logs. An owner or operator of a dam with such water-level control features must be able to rely on said features at all times. Furthermore, owners and operators must be responsible (and not negligent, as previously discussed) such that water level control features are operated at the appropriate times, to include in advance of large rainfall events, during times of dangerously high-water levels, and when performing sensitive maintenance or repairs on the dam. Failure to operate these features in a responsible manner and at the appropriate times can put not just the entire dam at risk of failure, but can also cause non-breach flooding of upstream and downstream areas.

Larger dams generally serve an industrial or economic purpose and thus generally require more operational management and control than smaller dams, which are mostly for recreation. Dams that provide a raw water source for drinking water or that contain hydroelectric generation stations generally operate with a small amount of freeboard (i.e., the separation distance between the reservoir's normal water level - "normal pool" - and the elevation of the emergency or auxiliary spillway) to maximize the efficiency and reliability of their operations. The less freeboard a dam maintains the higher the requirements on operational control and water level management. With this high demand for operational control comes an increased risk of misoperation, as the monitoring of weather and inflow river gages becomes more critical so that reservoir releases are timed correctly and release volumes are only as much as are needed and no more, as loss of raw water storage or loss of head for hydroelectricity generation equates to lost revenue. An exception to this among the larger state-regulated dams are the flood control dams built by the USDA-Natural Resources Conservation Service (NRCS) and operated and maintained by Watershed Conservation Districts (WCD). The WCD dams are typically operated with a large amount of freeboard such that they require less operational management than other types of large dams.

For a dam that does not impound a river or stream and does not receive inflows that result from rainfall and runoff, overtopping is also a possibility, but is not associated with a hydrological event. These types of impoundments are most commonly used by industries and utilities that need storage of process fluids or waste waters and have a regulated inflow/outflow (e.g., filled and emptied via sluice gates or via pumping). This type of impoundment could be overtopped from rainfall that falls entirely within the perimeter of the dam, but such an occurrence would almost certainly involve a contributing human error/misoperation component. Dams that are operated with little or no freeboard (i.e., available storage) and do not have free outflow are at greater risk of being overtopped from a rainfall event. This regulated inflow and outflow creates the possibility for overtopping via human or equipment misoperation.

One famous example of overfilling that resulted in total failure of a dam happened in Missouri in 2005. The Taum Sauk Dam was a pumped storage reservoir that failed and caused over $1 billion in damages and 4 injuries (but no loss of life) as a result of a faulty Supervisory Control and Data Acquisition (SCADA) system. The SCADA system didn't correctly register the high-water level and operators continued filling the basin until the dam was overtopped and the embankment eroded to the point of a complete breach.

- Vandalism/Terrorism

The hazard posed by malicious actors' intent on causing destruction and harm is, and will always be, a real and possible threat. Vandalism covers a range of actions, from simple and (generally) harmless graffiti, to theft, to unauthorized operation of equipment and controls, up to and including the intentional destruction of property. Vandalism is separated from terrorism in that the actors committing vandalism are generally not doing so with the intent of causing destruction and harm to the larger public, and are likely unaware of the potential repercussions of their actions. However, the end result can be the same as an act of terrorism: an uncontrolled release of the impounded fluid from a dam.

Terrorism, by contrast, is usually an action that is conducted with the intention of causing destruction and harm to as many people as possible in a pre-meditated fashion. Terrorism is likely preceded by the actors researching and investigating the dam, its vulnerabilities/deficiencies, its security and defensive design features, and the consequences of dam failure. Terrorism is likely the most difficult hazard to protect against, as the sophistication and dedication of the malicious actors can never be foreknown. Additionally, terrorism can be expected to result in the worst-case scenario for consequences from uncontrolled release and/or dam failure, as the actors can choose the time of the destructive act so to maximize the damage to areas downstream.

From the historical database of dam failure incidents maintained by ASDSO (**FIGURE 4**), of the three dam failures attributed to "Manmade Action," none make any indication that an act of vandalism or terrorism was associated with the dam failures; however, there is a large category of "Unknown" dam failures (nearly 20%) where little information is known as to the cause of the incident. It is likely the hazard posed by vandalism and terrorism is under-reported, as all trace of any malicious actions are likely lost following an incident, and very few dams, even HHPDs, maintain a human presence and/or security system to monitor for and record unauthorized personnel and trespass.

- Earthquakes

  An earthquake is a seismic event that causes movement of the ground surface in different directions and results in a cyclic loading on a dam. The motion imparted by a seismic event can cause deformation in an earthen embankment, cracking in a concrete structure, and deformation in the foundation materials beneath a dam. Deformation of earthen embankments may take many forms, but is commonly seen as longitudinal (parallel to dam) or transverse (through dam) cracking, settlement (differential or global), and sliding/sloughing of slopes. Slope failures can reduce the width of the embankment and cause uncontrolled release of the impounded water. Cracking in the embankment can create pathways for flow through the embankment which, through internal erosion processes, can grow to cause uncontrolled release of the reservoir. The motion associated with an earthquake can also cause damage to concrete or metal spillways and other appurtenant structures, as well as to any electrical and mechanical equipment, instrumentation, security features, etc., present on the dam.

  Another earthquake-induced mechanism that can result in loss of integrity in the embankment and foundation soils is liquefaction, where the ground acceleration and cyclical shaking caused by an earthquake causes the pore water pressure in saturated soils to increase such that the soil mass itself loses all structural integrity. If liquefaction occurs in the foundation soil, the dam may settle, which reduces dam height and, correspondingly freeboard, which makes overtopping more likely. Foundation settlement is also likely to cause cracking of the embankment or concrete, depending on type of construction. Depending on the saturated zone with the embankment (the larger the zone of saturation, the more likely liquefaction is to cause dam failure), liquefaction can also cause a deformation in the embankment itself. Dams built on foundations composed of alluvial deposits (i.e., soil particles carried by water and deposited in ancient floodplains) are more prone to liquefaction, and the deeper the alluvial layer the more settlement would be expected to occur. Embankment dams with no internal drainage features (i.e., design features incorporated into the dam during construction to reduce the extent of the saturated zone) are also more prone to liquefaction.

- Internal erosion

  Internal erosion occurs within a dam when water can move at relatively great speeds through a dam unimpeded. Internal erosion is exacerbated by an elevated water surface in the reservoir, as the driving mechanism is the water pressure, or “head”, that causes water to seek a lower elevation outlet. The mechanism behind internal erosion begins at the downstream portion of the dam, where soil particles are able to dislodge and exit the dam easiest, and then progresses upstream as increasing numbers of soil particles are removed by water flowing through the dam. If this process continues long enough, such that soil loss has progressed backward toward the reservoir, then the internal erosion pathways act as hydraulic conduits, similar to actual pipes. This process is known as “piping” within the dam. Should these “pipes” grow large enough, the “pipe” ceiling will ultimately collapse, causing a sinkhole or sliding failure on the downstream slope of the dam. The flowing water will remove the remains of the collapsed pipe and the process will begin again, growing closer to the reservoir. Certain soils are more capable of maintaining a “pipe” roof, and dams constructed with these soils are more prone to piping. Once the piping makes a direct hydraulic connection with the reservoir the failure mode will advance quickly and a dam breach will occur.

  A similar mechanism as described above can occur not within the embankment dam itself but under it, through the dam’s foundation soils. When this occurs, it is referred to not as “piping”

but as a "boil," as the exiting water and soil appears (generally) downstream of the toe of the dam and bubbles up from the ground, as if the emerging soil-water mixture is boiling. It is the same mechanism at work, but is usually a result of poor (or no) treatment or excavation of highly permeable in situ soils (or highly fractured rock) prior to or during the construction of the dam.

- Landslides

  The threat of landslides poses a risk to dams where one finds specific site topography such as cliffs or hillsides/mountainsides in close proximity to, and at an elevation above, the reservoir. In the event of an unstable land mass and a triggering event (e.g., earthquake or extreme rainfall) that initiates collapse of the cliff or hillside/mountainside, the hazard to a dam is that the water displaced by the collapsing land mass will raise the water level in the reservoir and create waves, such that dam failure by overtopping and erosion of the crest and downstream slope is possible. Concrete dams or earthen dams with robust overtopping protection would be much less vulnerable to this hazard. Oconee County, as one of the most mountainous counties in South Carolina, does possess the topography that makes landslides a real possibility. Anderson County is much less mountainous and thus is not of concern for this analysis. While the threat exists, the data represented by **FIGURE 4** above indicates not a single recorded dam failure was caused by landslide within the reservoir. Therefore, for purposes of this plan and threat analysis, landslides will be considered a remote threat to Anderson/Oconee HHPDs until more detailed analysis can be performed.

- Drought

  A prolonged period of dry weather, whether an officially designated "drought" or not, generally reduces the risks posed by HHPDs, as reservoir water levels drop and the hydraulic loading on the dams is reduced. This makes the likelihood of dam overtopping and internal erosion failure events less likely while the drought persists. However, droughts can pose a unique hazard for HHPDs as well, especially if the drought is followed by extreme precipitation. A prolonged period without rainfall in a dam's watershed will reduce inflows and cause the water level in the reservoir to drop. If all inflow ceases, the reservoir level will drop below normal pool, or could even dry up completely. If this happens at an earthen embankment dam, any clay soils in the dam may begin to desiccate (dry out), which results in shrinking and desiccation cracking in clays. Slow refilling of the reservoir would allow the clays to saturate and swell, essentially self-repairing these cracks, but a fast refilling may cause seepage through the cracks in the clay and lead to internal erosion. This process is known as "piping" within the dam, where internal erosion pathways act as hydraulic conduits, similar to actual pipes. Should these "pipes" grow large enough, the "pipe" ceiling will collapse, a sinkhole will appear on the dam's surface, and a dam failure mechanism will have initiated.

  Another concern for drought is with the erosion protection that grass and other vegetation provide erosion protection for an earthen dam. Prolonged drought may kill this vegetation, which would reduce a dam's resistance to erosion from overtopping. Therefore, while during a drought risk is generally reduced, when the drought ends, risk may be increased compared to what it was prior to the drought occurring.

- Wildfire

  While not a common occurrence, and generally limited in extent when they do occur, wildfires can pose a hazard to dams in South Carolina. As mentioned above in the discussion on drought,

if the vegetation on an earthen dam is killed, that dam loses its resistance to erosion. Wildfire is more common during periods of dry weather, and so this is a case of cascading hazards, where drought + wildfire followed by extreme precipitation could combine to cause overtopping of dam and increased susceptibility to erosion of the earthen embankment.

Another risk wildfire pose is to any components of a dam that are made of plastic. Plastics are in common use on dams, whether in the form of pipe for spillways and siphons, or in the form of Turf Reinforcement Matting (TRM) for adding additional erosion protection for vegetated slopes. Frequently, old metal corrugated pipe that has reached the end of its useful life is rehabilitated with a plastic liner pipe. A wildfire on a dam could ignite plastic pipe, causing it to severely jeopardize a dam's spillway. If plastic pipe was to ignite, it would be difficult to extinguish, and the melting of plastic caused by the intense heat would cause the pipe to plug itself and thus means for safely passing flood flows would be jeopardized. It is also possible the pipe could burn completely through the dam, causing a structural weakness and pathway for seepage, piping, and embankment collapse. Should TRM ignite, this would be much more of an intense fire than a grass fire alone and would certainly remove any erosion protection the dam may have had.

Lastly, depending on the severity of the wildfire, power lines or communication lines could be damaged, resulting in potential loss of electricity, instrumentation, communications, security, and warning systems at a dam.

- Cascading Impacts from Dam Hazards

As already mentioned somewhat in the discussion on Drought and Wildfire, hazards that impact dams can have a synergistic effect when occurring simultaneously or in a succession. For example, drought can cause a domino effect of problems for dams if later followed by wildfire and/or extreme precipitation. Drought can dry out ("desiccate") clay soils in a dam, which causes shrinking and desiccation cracking in the part of the dam that is supposed to be a low-permeability zone that is resistant to seepage. Seepage and piping (i.e., internal erosion mechanisms) will be more likely if a dam has experienced prolonged dryness such that clays have experienced desiccation cracking. Drought can also kill grasses that provide erosion protection in auxiliary spillways and on the surface of dams. Droughts make wildfire more intense and harder to control, and thus more likely to occur and to burn a larger area. Extreme precipitation following a drought and/or wildfire will have more erosive power as soils will be exposed.

An earthquake is also capable of causing cascading impacts that can have a synergistic effect and increase the impact from one of the hazards listed above occurring on its own. An earthquake could cause a landslide into the reservoir in addition to stressing the dam, such that the dam could experience the equivalent of a flood event while being subjected to deformation forces. An earthquake could also occur during passage of a flood event caused by extreme precipitation, but these two relatively rare events occurring together is generally considered too remote a risk to take into consideration.

The most common cascading impact from dam hazards would have to be manmade action (meaning misoperation or inaction) occurring simultaneously with or in succession to a natural hazard. Dams without robust and tested EAPs, dams with untrained or inexperienced operators, dams with unreliable control devices, etc., are all examples of how manmade action can exacerbate the risk from a natural hazard alone.

A.6.2 Consequences Evaluation

The evaluation and estimation of the consequences of a dam's failure is a complex and multi-disciplinary endeavor. In this report, dam failure consequences have been estimated using a consistently-applied methodology adopted by the SCDSP. More detail on this methodology is available in Appendix A, but the critical information is that dam failure is modeled as a sunny-day dam failure with water level at the top of the dam and the dam breaches suddenly and completely.

The Decision Support System for Water Infrastructure Security (DSS-WISE™) Lite software system is used to perform the dam breach simulations as previously described. DSS-WISE™ Lite was chosen by the SCDSP as the best tool for this purpose, mostly out of necessity, but without sacrificing public safety. The "necessity" previously mentioned is a reference to the fact that comparable 2-dimensional hydrodynamic models (i.e., models necessary for simulating non-steady state conditions like a dam breach), such as FLO-2D®, HEC-RAS, and MIKE 21, require a great amount of training and technical expertise to set up and run and have confidence in the results. (Using a 2-dimensional model is preferable to using a 1-dimensional model for dam breach analysis because in a 2-d model the path of the water coming out of the breach does not need to be known. A 2-d model also provides flow data, such as depth and velocity, at every point in the simulation domain, whereas a 1-d model only provides information at user defined cross-sections along the floodplain. A 2-d model is also needed for areas where flow is encountering a built environment such as buildings, walls, and similar obstructions to flow, and flow paths may be repeatedly diverging and converging.) The use of DSS-WISE Lite software allowed the SCDSP to set up and perform detailed dam breach modeling in literally minutes per dam. The good fortune of having statewide Light Detection and Ranging (LiDAR) coverage freely available from the Department of Natural Resources meant that the most challenging inputs (bottom of dam elevation, top of dam elevation, normal pool elevation, maximum pool elevation, normal pool volume, maximum pool volume) for dam breach modeling could be obtained relatively easily, yet without sacrificing accuracy, via Geographic Information Systems (GIS) software and methods. The statewide LiDAR also provided a highly detailed terrain model for inclusion in the DSS-WISE Lite software program. The SCDSP's use of DSS-WISE Lite (as described in Appendix A) allowed for virtually all 2,300± state-regulated dams to have breach simulations performed, with inundation maps and associated GIS files available to the public. The SCDSP makes the results of these DSS-WISE Lite simulations available via its GIS web application at https://gis.dhec.sc.gov/scdams.

The SCDSP relied on several sources of population and development data to estimate the Anderson/Oconee County population potentially at risk of inundation due to dam failure[5]. The DSS-WISE Lite Human Consequence Module (HCOM) utilizes LandScan population estimates to determine both daytime and nighttime Population-at-Risk (PAR) for the dam breach inundation area delineated by the DSS-WISE Lite hydraulic simulation module. These PAR estimates have been provided for each of the 55 HHPDs in Anderson and Oconee Counties and the 11 extra-jurisdictional dams located in Greenville and Pickens Counties that have dan breach inundation areas that impact the planning area. Additionally, the ESRI Living Atlas "USA Structures" data layer was compared with the DSS-WISE Lite dam breach inundation areas plus a 50-foot buffer to determine the number and type of structures at risk of inundation from dam failure. The 50-foot buffer was applied because the SCDSP's methodology for dam breach modeling does not account for the most extreme flood scenario that is conceivably possible, which is a dam failure during the passage of the Probable Maximum Flood while water is at its highest point in the reservoir. Beyond structure identification, SCDSP also looked for important institutions – schools, hospitals, nursing facilities, childcare facilities, gas and electric distribution facilities, roads, and railroads - within the buffered dam breach inundation areas. Due to the integration of HCOM and DSS-WISE Lite, a 50-foot buffer could not be applied for calculation of PAR.

In addition to the dam breach inundation areas downstream of the dams, the areas upstream of a dam that could experience flooding from a high reservoir level were looked at. These areas would not see the extreme flood velocities associated with a dam breach and so loss-of-life is not as much of a concern as is things like impacts to roadways and economic impacts from flood damage. For the upstream flooding analysis, the SCDSP looked at the areas that would be inundated by a dam at maximum pool, i.e., with water level at the dam crest. The maximum pool polygon was utilized without a buffer applied, as the maximum pool can be determined to a high level of accuracy. Similar to the downstream area, structures were analyzed by identifying features from the ESRI Living Atlas "USA Structures" layer located within the maximum pool polygons. Beyond structure identification, SCDSP also looked for important institutions – schools, hospitals, nursing facilities, childcare facilities, gas and electric distribution facilities, roads, and railroads – within the maximum pool polygons.

TABLE VIII: TOTAL RISK FACTORS FOR FLOODING (RANKINGS AND RAW SCORES)

Dam Name	State ID	TRF-Flooding Rank	Total Risk Factor - Flooding
BEAVERDAM CREEK WCD DAM 2	D1666	1	37.51
GLENN POND DAM 2	D3108	2	36.29
BOOKER'S LAKE DAM	D1646	3	35.39
B F FINLEY DAM 2	D1932	4	33.89
EAST VILLAGE CR FARM POND	D4582	5	32.76
GLENN POND DAM 1	D3109	6	30.44
CHATTOOGA LAKE DAM	D1637	7	24.09
BIG CREEK WCD DAM-SHOREBROOK 1	D0006	8	23.25
B F FINLEY DAM 1	D1931	9	23.04
B FRANK FINLEY DAM	D1930	10	22.86
HOLLIDAYS BRIDGE DAM	D4470	11	20.16
CRYSTAL LAKE DAM	D1645	12	19.87
BRUSHY CREEK WCD DAM-TRIPP 18	D3139	13	18.94
SEATON ACRES POND DAM	D3153	14	17.56
LOYDS POND DAM	D1934	15	16.31
TOWNES CREEK DAM	D1634	16	14.81
HORSESHOE LAKE DAM	D1650	17	14.77
LAKE JEMIKE DAM 1	D1648	18	14.55
RANKEN POND DAM	D3265	19	13.26
LAKE JEMIKE DAM 2	D1649	20	13.01
BRUSHY CREEK WCD DAM-HOPKINS 11A	D3130	21	12.26
LEONIDAS DAM	D1635	34	9.04
CONEROSS CREEK WCD DAM 8	D1653	35	8.60
BROADMOUTH CREEK WCD DAM-PHILLIPS 8	D3143	36	7.81
BOB EDWARDS DAM	D4398	37	7.72
BIG CREEK WCD DAM-RENTZ/WILLIAMS 2	D0005	38	7.57
WS LEE STEAM PLANT PRIMARY ASH BASIN DAM	D4887	39	7.15
THREE AND TWENTY CREEK WCD DAM-TRIPP 14	D3126	40	7.11
FRIDDLE POND B DAM	D3151	41	7.05
OCONEE STATE PARK DAM 1	D1642	42	7.03
BROADMOUTH CREEK WCD DAM-247-W 9	D3142	43	6.65
BROWNS LAKE DAM	D1651	44	6.64
THREE AND TWENTY CREEK WCD DAM-ROBINSON 15	D3132	45	6.55
BEAVERDAM CREEK WCD DAM 4	D1667	46	6.35
LAKE LEROY DAM	D1639	47	6.23
BEAVERDAM CREEK WCD DAM 5	D1665	48	6.14
CONEROSS CREEK WCD DAM 9A	D1655	49	5.42
WHITEWATER LAKE DAM	D1636	50	5.17
MTN LAKE DAM (LAKE BECKY)	D1641	51	5.09
G STEVENS POND DAM	D3147	52	5.03
BRUSHY CREEK WCD DAM-GANTT 17	D3131	53	5.00
STANLEY MCJUNKIN DAM	D4396	54	4.92

MCGEE POND DAM	D3119	22	12.21	LAKE HUNTINGTON DAM	D3123	55	4.09
MALLARD COVE (FOREST DR)	D1935	23	11.56	GORDONS LAKE DAM	D1640	56	3.85
LAKE CHEOHEE DAM	D1632	24	10.19	LOLLIS POND DAM	D3140	57	3.19
THREE AND TWENTY CREEK WCD DAM-JAMESON 5B	D3124	25	10.17	BRUSHY CREEK WCD DAM-KRAEMER 16	D3137	58	2.88
CONEROSS CREEK WCD DAM 1A	D1652	26	10.12	FRIDDLE POND A DAM	D3152	59	2.86
MERRITS POND	D1942	27	10.08	ANDERSON POND DAM	D3128	60	2.34
SALUDA LAKE DAM	D4469	28	9.89	THREE AND TWENTY CREEK WCD DAM-GRIFFIS 9B	D3112	61	1.90
FIDDLERS COVE DAM	D4186	29	9.75	JOCASSEE RIDGE REFLECTIONS DAM	D4587	62	1.46
CONEROSS CREEK WCD DAM 21	D1656	30	9.24	DAM ON CHRISTINE DRIVE	D5010	----[1]	----[1]
MOUNTAIN REST LAKE DAM	D1638	31	9.18	FIRST QUALITY TISSUE ASB DAM	D5037	----[1]	----[1]
BEAVERDAM CREEK WCD DAM 3A	D4026	32	9.17	OCONEE STATE PARK DAM 2	D1643	----[1]	----[1]
DICKERSON FISHING LAKE	D4104	33	9.123234572	LAKE DIANA DAM	D1969	----[1]	----[1]

Source: South Carolina Department of Health and Environmental Control, 2023
Note: [1]Complete data for scoring was not available at time of the plan's publication.

TABLE IX: TOTAL RISK FACTORS FOR SEISMIC (RANKINGS AND RAW SCORES)

Dam Name	State ID	TRF-Seismic Rank	Total Risk Factor - Seismic	Dam Name	State ID	TRF-Seismic Rank	Total Risk Factor - Seismic
GLENN POND DAM 1	D3109	1	33.88	MALLARD COVE (FOREST DR)	D1935	34	6.03
GLENN POND DAM 2	D3108	2	32.26	TOWNES CREEK DAM	D1634	35	5.48
BOOKER'S LAKE DAM	D1646	3	25.76	MOUNTAIN REST LAKE DAM	D1638	36	5.42
BIG CREEK WCD DAM-SHOREBROOK 1	D0006	4	21.26	LOLLIS POND DAM	D3140	37	5.40
MCGEE POND DAM	D3119	5	18.55	G STEVENS POND DAM	D3147	38	5.25
B F FINLEY DAM 2	D1932	6	17.34	CONEROSS CREEK WCD DAM 1A	D1652	39	5.24
HOLLIDAYS BRIDGE DAM	D4470	7	16.50	BROADMOUTH CREEK WCD DAM-PHILLIPS 8	D3143	40	5.19
MERRITS POND	D1942	8	15.72	MTN LAKE DAM (LAKE BECKY)	D1641	41	5.01
LOYDS POND DAM	D1934	9	15.21	BRUSHY CREEK WCD DAM-GANTT 17	D3131	42	4.73
SEATON ACRES POND DAM	D3153	10	15.02	BRUSHY CREEK WCD DAM-KRAEMER 16	D3137	43	4.73
B FRANK FINLEY DAM	D1930	11	14.64	BEAVERDAM CREEK WCD DAM 5	D1665	44	4.46

B F FINLEY DAM 1	D1931	12	14.40	BEAVERDAM CREEK WCD DAM 4	D1667	45	4.37
BEAVERDAM CREEK WCD DAM 2	D1666	13	12.27	CONEROSS CREEK WCD DAM 21	D1656	46	4.15
CHATTOOGA LAKE DAM	D1637	14	11.39	CONEROSS CREEK WCD DAM 8	D1653	47	4.04
RANKEN POND DAM	D3265	15	10.21	FRIDDLE POND A DAM	D3152	48	3.95
BEAVERDAM CREEK WCD DAM 3A	D4026	16	10.15	BROWNS LAKE DAM	D1651	49	3.95
EAST VILLAGE CR FARM POND	D4582	17	9.81	LAKE JEMIKE DAM 1	D1648	50	3.91
BIG CREEK WCD DAM-RENTZ/WILLIAMS 2	D0005	18	9.24	OCONEE STATE PARK DAM 1	D1642	51	3.86
THREE AND TWENTY CREEK WCD DAM-JAMESON 5B	D3124	19	9.13	LAKE CHEOHEE DAM	D1632	52	3.82
CRYSTAL LAKE DAM	D1645	20	8.95	LEONIDAS DAM	D1635	53	3.81
FRIDDLE POND B DAM	D3151	21	8.61	GORDONS LAKE DAM	D1640	54	3.75
BRUSHY CREEK WCD DAM-TRIPP 18	D3139	22	7.55	ANDERSON POND DAM	D3128	55	3.60
DICKERSON FISHING LAKE	D4104	23	7.50	STANLEY MCJUNKIN DAM	D4396	56	3.37
BRUSHY CREEK WCD DAM-HOPKINS 11A	D3130	24	7.38	CONEROSS CREEK WCD DAM 9A	D1655	57	3.00
SALUDA LAKE DAM	D4469	25	7.33	LAKE LEROY DAM	D1639	58	2.80
BOB EDWARDS DAM	D4398	26	6.79	LAKE HUNTINGTON DAM	D3123	59	2.72
FIDDLERS COVE DAM	D4186	27	6.73	WHITEWATER LAKE DAM	D1636	60	2.55
HORSESHOE LAKE DAM	D1650	28	6.62	THREE AND TWENTY CREEK WCD DAM-GRIFFIS 9B	D3112	61	1.57
WS LEE STEAM PLANT PRIMARY ASH BASIN DAM	D4887	29	6.57	JOCASSEE RIDGE REFLECTIONS DAM	D4587	62	10.99
THREE AND TWENTY CREEK WCD DAM-ROBINSON 15	D3132	30	6.20	DAM ON CHRISTINE DRIVE	D5010	----[1]	----[1]
THREE AND TWENTY CREEK WCD DAM-TRIPP 14	D3126	31	6.16	FIRST QUALITY TISSUE ASB DAM	D5037	----[1]	----[1]
BROADMOUTH CREEK WCD DAM-247-W 9	D3142	32	6.10	OCONEE STATE PARK DAM 2	D1643	----[1]	----[1]
LAKE JEMIKE DAM 2	D1649	33	6.06	LAKE DIANA DAM	D1969	----[1]	----[1]

Source: South Carolina Department of Health and Environmental Control, 2023
Note: [1]Complete data for scoring was not available at time of the plan's publication.

TABLE X: DOWNSTREAM IMPACTS WITHIN SUNNY-DAY BREACH INUNDATION AREA + 50-FT BUFFER ZONE

Critical Facility Type	Within 50 ft Buffer Zone – Anderson	Within 50 ft Buffer Zone – Oconee
Population-at-Risk (Daytime)[1]	467	362
Population-at-Risk (Nighttime)[1]	560	719
All Structures	837	1094
Residential Structures	713	992
Non-Residential Structures	124	102
Schools	0	0
Hospitals	0	0
Child Care Centers	0	0
Senior Care Facilities	0	0
Electrical Distribution	6	0
Gas Distribution	0	0
Wastewater Treatment	1	0
Water Treatment	2	1
Overtopped Roads	409	774

Source: South Carolina Department of Health and Environmental Control, 2023

Note: [1]Population-at-Risk numbers were calculated using DSS-WISE Lite's Human Consequences (HCOM) module and thus correspond to the dam breach inundation area as determined by DSS-WISE Lite without a buffer applied.

A.7 Limitations, Deficiencies, and Plan to Overcome

There are multiple, significant limitations to the risk assessment and consequence estimates portrayed in this plan, which the reader must be aware of. The SCDSP and Anderson-Oconee Counties were unable to perform an analysis of social, environmental, and economic impacts from HHPDs as this is information that has never been compiled and tracked before the April 2022 Local Mitigation Planning Policy Guide made it a requirement and the aforementioned agencies do not have the staff expertise or funding to do so at this time. The SCDSP also does not have extensive information on non-breach risk for HHPDs and thus cannot provide an analysis of this risk category at this time. The SCDSP has a plan to utilize its FEMA National Dam Safety Program State Assistance grant in Federal Fiscal Year 2023 (and beyond if necessary) to acquire contractual support to fill data gaps and perform the associated all-dam risk analysis for each HHPD in the state. The information gained from this statewide effort will feed into every local plan as well as the State's HHPD Dams Annex that is to be updated in approximately the next 12 months.

There are also significant limitations to the data presented herein. First, in performing the Screening Level Risk Assessment, the SCDSP focused on the Hydrologic (Overtopping) and Seismic Hazards. Secondary hazards that could reduce a dam's resistance to these primary factors, such as drought, wildfire, human misoperation, and vandalism, were not analyzed. Incorporation of these factors would exceed the scope (and objective) of the Screening Level Risk Analysis which has been performed on the state's complete inventory of HHPDs and would be more appropriate for a Semi-Quantitative or Quantitative Risk Analysis performed on a single dam (i.e., a significantly more expensive and time-consuming undertaking). Third, as mentioned previously, the scenario used by the SCDSP for dam breach modeling was a sunny-day, maximum

pool dam failure and the modeling was performed using the DSS-WISE™ Lite software. The use of this single scenario and modeling software offers both benefits and limitations, as can be found discussed in Appendix A. The limitations include: 1) DSS-WISE Lite, which was developed to be easy-to-use and return results quickly, places severe constraints on the model developer (e.g., terrain model cannot be edited, pressurized flow in pipes and culverts cannot be modeled, conveyances less than 10-feet in diameter cannot be "seen" by the model, etc.), and 2) no rainy-day scenarios were analyzed, and thus consequence estimates do not reflect dam breaches with downstream areas already in a state of flooding (it is for this reason that a 50-foot buffer was applied to the dam breach inundation areas).

No additional effort has been made in the determination of potential loss of life beyond the use of DSS-WISE Lite HCOM module for calculating Population at Risk (PAR) and counting of structures within 50-foot buffered breach inundation areas using GIS. The evaluation of potential loss of life is an advanced and highly subjective scientific, engineering, and sociological analysis that is beyond the scope of this analysis and is something that has never been undertaken by the SCDSP because of a lack of resources and expertise.

There is currently no plan to address the limitations described above for the Screening Level Risk Assessment and use of DSS-WISE Lite; there may be no justification to do so anyway. The Screening level Risk Assessment and DSS-WISE Lite are not meant to be precise tools and should not be utilized for engineering or design purposes. They are, however, suitable for planning and emergency preparedness purposes. The point in discussing the limitations here is so that the reader is better informed about the information that is being used for planning decisions and understands that if more precise and accurate information is required for a given dam, then a Semi-Quantitative or Quantitative Risk Analysis and/or use of advanced hydraulic modeling software is needed.

The Anderson-Oconee joint mitigation planning area is not immune from the risks posed by state-regulated HHPDs. Federally-owned or -regulated HHPDs are also a risk to the planning area, but these are already discussed outside of this HHPD Annex, in the main Anderson-Oconee Joint Hazard Mitigation Plan. The detailed summary of the HHPDs and potential impacts from upstream flooding and downstream dam breach inundation is presented herein for planning purposes and to assist in identification of the dams of greatest risk, with the ultimate goal to aid in risk-informed decision making that will result in effective protective actions.

The limitations and deficiencies of this plan and its constituent data are mostly a product of the recent implementation of the *Local Mitigation Planning Policy Guide* (FP 206-21-0002, FEMA 2022) and the SCDSP's lack of data and expertise to provide all FEMA requires in Pages 34-35 of the *Guide* within a short timeline following the previous Anderson-Oconee Joint Hazard Mitigation Plan's expiration in April 2023. Despite the short turnaround, the data and analysis presented herein is by far the most detailed analysis to date of the state-regulated HHPDs that are located in and/or could impact the planning area. Further analysis of this data will be ongoing as the SCDSP plans on utilizing specialist contractual support to look at the impacts examined herein as well the social, environmental, and economic impacts of the HHPDs examined herein.

A.8 Mitigation Goals and Actions

The primary goal of all local governments is to promote the public health, safety, and welfare of its citizens. In keeping with this standard, Anderson/Oconee County and the participating municipalities have developed six goal statements for local hazard mitigation planning in the county that are specific to High Hazard Potential Dams. The Anderson/Oconee County High Hazard Potential Dam Mitigation Goals are presented in **TABLE XI**. SCDHEC was actively involved in the development of mitigation goals and actions fostering the overall strategy. Consistent implementation of actions over time will ensure that community goals are achieved.

TABLE XI: ANDERSON/OCONEE COUNTY HIGH HAZARD POTENTIAL DAM MITIGATION GOALS

	Goal
Goal #1	Local government and the community shall have the capability to initiate and sustain emergency response operations during a dam failure event to include shelter designations and services.
Goal #2	Provide for continuity of local government operations during a dam failure event to include plan development, resource identification, redundant equipment, facilities, and/or supplies to facilitate reestablishing local government operations after a disaster.
Goal #3	The health, safety, and welfare of the community's residents and visitors shall be provided for during a dam failure event by ensuring adequate systems for notifying the public at risk and providing emergency instruction during a disaster is available in all identified hazard areas as well as adequate resources, equipment, and supplies to meet citizens' health and safety needs after a disaster.
Goal #4	The policies and regulations of local government shall support effective hazard mitigation programming throughout the community to include reducing the vulnerability of facilities in the community posing an extra health or safety risk when damaged or disrupted by a dam failure event. Land use policies, plans, and regulations shall discourage and/or prohibit inappropriate location of structures or infrastructure components in areas of higher risk and enforce appropriate development codes.
Goal #5	The availability and functioning of the community's infrastructure shall not be significantly disrupted by a dam failure event. Transportation facilities and systems serving the community shall be constructed and/or retrofitted to minimize the potential for disruption during a disaster.
Goal #6	Develop and maintain an education program to inform all members of the community of the dam failure risks/hazards threatening the local area and assist them in understanding their vulnerability to High Hazard Potential Dams and provide technique ideas to minimize vulnerability to those hazards.

The following mitigation actions have been proposed by the county and participating jurisdictions as effective measures to reduce High Hazard Potential Dam Risk for Anderson and Oconee Counties. The following are the key elements described for each mitigation action:

- Hazard(s) Addressed—Hazard which the action addresses.
- Relative Priority—High, moderate, or low priority as assigned by the jurisdiction.
- Lead Agency/Department—Department responsible for undertaking the action.
- Potential Funding Sources—Local, State, or Federal sources of funds are noted here, where applicable.
- Implementation Schedule—Date by which the action the action should be completed. More information is provided when possible.
- Implementation Status (2023)—Indication of completion, progress, deferment, or no change since the previous plan. If the action is new, that will be noted here.

TABLE XII: ANDERSON/OCONEE COUNTY HIGH HAZARD POTENTIAL DAM MITIGATION ACTIONS

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2021)
Prevention							
HHPD-P-1	Prioritize dam removals for mitigation funding, and if a private dam owner wishes to remove a dam, serve as a project sponsor under the HHPD Grant Program to make more dam removal projects eligible under the grant.	HHPD	High	Anderson/Oconee County Emergency Management	HHPD Grant	2023-2028	New Action
HHPD-P-2	Map dam breach inundation areas in addition to 100-year flood elevations to help identify potentially at-risk structures using SCDHEC data on dam breach inundation areas, population at risk (PAR) estimates, and other data about breach consequences to enhance the understanding of flood risks posed by dam failure.	HHPD	High	Anderson/Oconee County Floodplain Manager; SCDHEC	Local	2023-2028	New Action
Emergency Services							
HHPD-ES-1	Work with local jurisdictions, SCDHEC, and dam owners to develop Emergency Action Plans for all Class 1 and Class 2 dams that have an impact on the residents of Anderson/Oconee County.	HHPD	Moderate	Anderson/Oconee County Emergency Management	Local	2023-2028	New Action
HHPD-ES-2	Conduct more frequent exercises for HHPDs similar to the Emergency Action Plan (EAP) exercise SCDHEC, SCEMD, and Anderson/Oconee County EM.	HHPD	Moderate	Anderson/Oconee County Emergency Management	Local	2023-2028	New Action
Public Education and Awareness							
HHPD-PEA-1	Provide Operations and Maintenance training for private dam owners to mitigate against risks associated with potential dam failure and flooding as recommended in FEMA's Mitigation Dam Task Force Strategic White Paper on Dam Risk (November 2015).	HHPD	Moderate	Anderson/Oconee County Emergency Management	Local	2023-2028	New Action

APPENDIX A – METHODOLOGY FOR DAM BREACH INUNDATION MODELING

S.C. Department of Health and Environmental Control

What is a Dam Breach Inundation Map?

A dam breach inundation map depicts an estimate of the flooding that can reasonably be expected to occur from the failure of an *individual* dam. The dam breach flood inundation extents and hazards are primarily caused by the stored water behind a dam and the magnitude of discharge when that water is suddenly released when a dam fails. The sudden release of stored water from a dam is depicted herein *separately* from flood hazards such as natural riverine flooding. In other words, this map is NOT intended to show the flooding downstream of a dam that would result from rainfall events. Because flooding frequently occurs without a dam breach please consult FEMA's Flood Map Service Center or the appropriate county website for maps depicting normal riverine flooding caused by rainfall events where a dam breach is *not* involved (e.g., map of the 100-year floodplain).

How does SCDHEC model dam breaches?

The practice of dam breach modeling and inundation mapping relies on scientific and physical principles, limited and imperfect data, assumptions, and approximations. Vast amounts of data and computer processing are needed to perform the highest-accuracy modeling currently achievable, which results in a cost- and time-prohibitive endeavor for SCDHEC to undertake for every dam. To protect the public, it is necessary to decrease overall accuracy for the sake of cost and efficiency to provide complete inundation mapping for the state. To ensure that this is accomplished with minimal sacrifice of public safety, a degree of reasonableness and conservatism in the dam breach scenario is introduced as a "safety factor." This scenario, wherein the maximum water volume that can be held by a dam is rapidly released in a catastrophic dam failure, is considered to represent an extreme, but probable, dam failure event. Additionally, SCDHEC staff utilize a sunny-day condition to achieve a clear understanding of a dam's hazard potential. This sunny-day, maximum pool, rapid release scenario represents an intermediate scenario between those specified by Regulation[1], and its use by SCDHEC is primarily as a preliminary screening tool. *The scenario just described should not be viewed as a worst-case scenario, but rather one that can be used to illustrate potential downstream impacts solely caused by the dam and the impounded water*. Computer software known as DSS-WISE™ Lite is used to simulate the breach of the dam and the resulting downstream flooding.

What is DSS-WISE™ Lite?

DSS-WISE™ stands for *Decision Support System for Water Infrastructure Security*. The DSS-WISE™ Lite program was created at, and is operated by, the University of Mississippi's National Center for Computational Hydroscience and Engineering (NCCHE) with funding provided by the Department of Homeland Security

[1] The SC Dams and Reservoirs Safety Act Regulations requirements for dam breach inundation mapping can be found at Reg. 72-3.D.2.c.(1)(b) and 72-3.D.2.c.(2)(b). These Regulations (Chapter 72) can be viewed at the following website: https://www.scstatehouse.gov/coderegs/statmast.php. The first required breach scenario is the sunny-day dam failure with the reservoir at normal pool, while the second is the rainy-day dam failure with the reservoir at maximum pool and the breach occurring during passage of the Spillway Design Flood.

(DHS). SCDHEC has access to DSS-WISE™ Lite thanks to this DHS funding and manages access to DSS-WISE™

Lite for dams located in South Carolina. The following NCCHE website provides additional detail on DSS-WISE™ Lite: https://dsswiseweb.ncche.olemiss.edu/. More-advanced, feature-rich, and customizable software exists.

What is a Dam Breach Scenario?

Dams can fail in many different ways (i.e., failure modes) and under a wide range of conditions. The dam breach scenario is the specific combination of failure mode, antecedent weather conditions and downstream conditions, plus assumptions and approximations, that are required to successfully simulate a dam breach. Various scenarios may be needed to fully describe all potential impacts of a dam failure for planning and design purposes, but for screening and emergency response purposes, the scenario described previously provides a conservative result and is useful in approximating the dam breach impacts for use in decision-making.

What is a "Sunny Day" dam breach scenario?

SCDHEC's approach to dam breach modeling utilizes a "sunny day" dam failure scenario to represent an "any given day" type of breach that is NOT hydrologically induced (i.e., not rainfall driven), but is more likely caused by some weakness in the dam that may have gone unnoticed. There is no antecedent rainfall in a "Sunny Day" scenario; that is, the period of time before the dam breach has been free of rainfall, so there is no rainfall runoff flowing into the reservoir and the downstream floodplain is not experiencing any degree of flooding. The "sunny day" scenario provides a useful understanding of the flooding potential that the dam *alone* possesses, without any complications introduced by recent or concurrent rainfall and flooding. While this scenario may not represent the worst-case scenario, it is a reasonable approach that simplifies the analysis and serves as a useful screening tool to allow SCDHEC staff to ascertain the hazard potential of the dam more clearly.

What is a "Complete and Sudden" Dam Breach?

A "complete and sudden" breach implies a failure where the entire dam is removed instantaneously at a point in time in the simulation. Because there are many areas of uncertainty in how a breach can occur, the complete and sudden failure takes the approach of looking at this extreme failure mode to again add conservatism to the results. For example, the time that it takes for a breach to fully form, and the ultimate dimensions of that breach, are just two areas of uncertainty. Other uncertainties are predicting where the breach occurs in and along the dam, and the type of failure or failure mode (e.g., overtopping, piping, slope failure, foundation failure). A complete and sudden dam failure removes these uncertainties.

What is a "Progressive" Dam Breach?

DSS-WISE™ Lite allows the user to define a progressive failure mode with a specific breach location and a breach progression that grows over time to a final width and height. There have been many studies of real dam breaches conducted over the years to determine progressive breach characteristics of dams in relation to the different failure modes. From these case studies, empirical relationships have been created that provide estimates for dam breach parameters such as breach formation time, final breach width, final breach height, and peak outflow. SCDHEC primarily uses the empirical relationship established by David C. Froehlich, Ph.D., P.E., which was presented in his 2008 paper *Embankment Dam Breach Parameters and Their Uncertainties*, available at the following website: https://doi.org/10.1061/(ASCE)0733-9429(2008)134:12(1708).

The empirical relationships for breach characteristics from this study were selected due to the large number

of earthen embankment dams used in the study, the same type of dam that makes up the overwhelming portion of regulated dams in South Carolina.

What are the limitations with SC DHEC's Dam Breach Inundation Modeling methodology?

As stated before, SCDHEC utilizes a "Sunny Day" scenario. Due to the complexities associated with modeling a hydrologic event occurring simultaneously with dam failure, SCDHEC focuses on the "Sunny Day, Maximum Pool" failure, which provides a reasonably conservative approach. The "Sunny Day, Maximum Pool" scenario can be thought of as a screening tool. By the term "screening tool" we mean that if a dam has the potential to cause high hazard impacts in the "Sunny Day, Maximum Pool" failure, then it is at least capable of those impacts in the "Maximum Pool During Passage of the Spillway Design Flood" dam failure, the second scenario required by Regulation[1]. *The modeling presented here should not be considered a complete picture of the potential hazards posed by the dam. The mapping is not intended for use in dam design or construction. The intent of this mapping is to provide a preliminary understanding of a dam's hazard potential for use in emergency.* It is the dam owner's responsibility to perform a dam breach analysis consistent with the scenarios required by Regulation[1].

Other limitations include:

- DSS-WISE™ Lite cannot model pressurized flow (e.g., flow in pipes and culverts). If flow through a pipe or culvert is included in the model, it is modeled as open channel flow. However, small culverts should be expected to become obstructed with debris in the event of a dam breach, and so, *for small culverts*, not including them in the model is not considered a limitation.
- DSS-WISE™ Lite is limited in how the underlying terrain model can be modified. The terrain model is based on a Digital Elevation Model (DEM) created from Light Distance and Ranging (LiDAR) data collected between 2007 and 2013. Changes to terrain since that time will not be captured until the terrain model is updated with more current LiDAR data. Additionally, buildings and similar obstructions to overland flow are not captured in the terrain model and the water levels in lakes, ponds, rivers, and streams represent the water surface elevation at the time the LiDAR data were collected and are unchangeable.
- DSS-WISE™ Lite cannot simulate cascading dam failures. Each simulation can account for only one dam failure. In other words, dams both upstream and downstream of the study dam are assumed to NOT fail. If failure of an upstream dam were to cause failure of the downstream dam, the flooding (both in extent and in depths and velocities) could be worse than the inundation map shows.

APPENDIX B – SUMMARY DATA TABLES

Summary Table B.I: Anderson County High Hazard Dams

State ID	Dam Name	Coordinate	Upstream- # of all structures	Upstream- # of roads overtopped	Downstream- # of all structures	Downstream- # of roads overtopped	Downstream- # of railroads overtopped	Downstream- # of dams	Downstream- # of Water Infrastructure	Downstream- # of Electricity Generation
D0005	BIG CREEK WCD DAM-RENTZ/WILLIAMS 2	34.62533915,-82.49990828	1	0	56	14	1	0	6	0
D0006	BIG CREEK WCD DAM-SHOREBROOK 1	34.62846732,-82.48648519	11	1	115	21	1	0	5	0
D3108	GLENN POND DAM 2	34.47793836,-82.74070994	0	0	7	4	0	0	1	0
D3109	GLENN POND DAM 1	34.47904722,-82.73893139	0	0	6	3	0	0	1	0
D3112	THREE AND TWENTY CREEK WCD DAM-GRIFFIS 9B	34.679,-82.7267	0	1	15	3	0	0	2	0
D3119	MCGEE POND DAM	34.35057214,-82.69678591	0	0	12	7	0	0	0	0
D3123	LAKE HUNTINGTON DAM	34.53482782,-82.64441821	0	0	57	7	0	0	1	0
D3124	THREE AND TWENTY CREEK WCD DAM-JAMESON 5B	34.70895787,-82.64043538	1	1	1	2	0	0	0	0
D3126	THREE AND TWENTY CREEK WCD DAM-TRIPP 14	34.74367065,-82.57730143	0	1	12	2	0	0	0	0
D3128	ANDERSON POND DAM	34.6228216,-82.58474098	6	0	33	11	0	0	1	0
D3130	BRUSHY CREEK WCD DAM-HOPKINS 11A	34.7782,-82.5586	1	1	118	9	0	0	0	0
D3131	BRUSHY CREEK WCD DAM-GANTT 17	34.76737843,-82.53759953	4	1	22	2	0	0	0	0
D3132	THREE AND TWENTY CREEK WCD DAM-ROBINSON 15	34.7339,-82.5737	15	5	18	4	0	0	0	0
D3137	BRUSHY CREEK WCD DAM-KRAEMER 16	34.78514081,-82.52221834	1	0	61	3	0	0	0	0
D3139	BRUSHY CREEK WCD DAM-TRIPP 18	34.73742511,-82.52133962	3	3	89	6	0	0	2	1
D3140	LOLLIS POND DAM	34.57199824,-82.51331379	1	0	5	2	0	0	0	0
D3142	BROADMOUTH CREEK WCD DAM-247-W 9	34.53612823,-82.46741701	5	3	8	4	0	0	0	0
D3143	BROADMOUTH CREEK WCD DAM-PHILLIPS 8	34.54053805,-82.46087851	1	1	13	8	0	0	3	0
D3147	G STEVENS POND DAM	34.49952015,-82.45452662	0	0	3	2	0	0	4	0
D3151	FRIDDLE POND B DAM	34.45789436,-82.41703935	1	0	1	3	0	0	0	0
D3152	FRIDDLE POND A DAM	34.45748097,-82.41559224	2	0	4	3	0	0	0	0
D3153	SEATON ACRES POND DAM	34.45489883,-82.42981492	0	2	6	5	0	0	0	0
D3265	RANKEN POND DAM	34.53939451,-82.66398788	0	0	36	3	0	0	0	0
D4887	WS LEE STEAM PLANT PRIMARY ASH BASIN DAM	34.6041,-82.4415	0	0	138	0	0	0	0	0
D5037	FIRST QUALITY TISSUE ASB DAM	34.4469, -82.6886	0	0	1	4	0	0	12	0

Summary Table 2: Oconee County High Hazard Dams

State ID	Dam Name	Coordinate	Upstream- # of all structures	Upstream- # of roads overtopped	Downstream- # of all structures	Downstream- # of roads overtopped	Downstream- # of railroads overtopped	Downstream- # of dams	Downstream- # of Water Infrastructure	Downstream- # of Electricity Generation
D1632	LAKE CHEOHEE DAM	34.9289,-83.0682	8	1	156	4	0	1	0	0
D1634	TOWNES CREEK DAM	34.90357352,-83.05871859	97	3	56	12	0	0	0	0
D1635	LEONIDAS DAM	34.9144,-83.0153	0	0	32	0	0	1	0	0
D1636	WHITEWATER LAKE DAM	34.90796795,-83.00428695	7	1	176	11	0	0	1	0
D1637	CHATTOOGA LAKE DAM	34.8939,-83.1556	7	2	30	8	0	1	0	0
D1638	MOUNTAIN REST LAKE DAM	34.87815281,-83.16331943	2	4	17	12	0	0	0	0
D1639	LAKE LEROY DAM	34.8702,-83.1501	0	0	25	5	0	0	0	0
D1640	GORDONS LAKE DAM	34.87907669,-83.13143525	0	0	9	1	0	0	0	0
D1641	MTN LAKE DAM (LAKE BECKY)	34.84583824,-83.11763074	17	4	27	7	0	0	0	0
D1642	OCONEE STATE PARK DAM 1	34.8647,-83.1022	1	0	37	3	0	1	1	0
D1643	OCONEE STATE PARK DAM 2	34.86047845,-83.10939474	0	0	26	3	0	1	0	0
D1645	CRYSTAL LAKE DAM	34.82714019,-83.14346311	2	1	10	3	0	0	0	0
D1646	BOOKER'S LAKE DAM	34.8249,-83.066	0	0	28	6	0	0	0	0
D1648	LAKE JEMIKE DAM 1	34.78326259,-83.13420584	1	1	12	3	0	0	0	0
D1649	LAKE JEMIKE DAM 2	34.78163892,-83.13383701	0	0	7	6	0	1	0	0
D1650	HORSESHOE LAKE DAM	34.77477218,-83.26740925	5	0	4	2	0	0	0	0
D1651	BROWNS LAKE DAM	34.77163877,-83.04905576	5	0	148	4	0	0	0	0
D1652	CONEROSS CREEK WCD DAM 1A	34.7232,-83.1046	3	6	30	8	0	0	3	0
D1653	CONEROSS CREEK WCD DAM 8	34.72541836,-83.08203207	0	1	10	5	0	0	1	0
D1655	CONEROSS CREEK WCD DAM 9A	34.69274798,-83.09336311	1	1	4	2	0	0	0	0
D1656	CONEROSS CREEK WCD DAM 21	34.70096476,-83.01691871	8	4	11	5	0	0	0	0
D1665	BEAVERDAM CREEK WCD DAM 5	34.56850966,-82.92383713	0	1	4	6	0	0	0	0
D1666	BEAVERDAM CREEK WCD DAM 2	34.57107862,-82.96838738	0	1	24	4	0	0	0	0

Summary Table B.II: Greenville and Pickens County High Hazard Dams

State ID	Dam Name	County	Coordinate	Upstream- # of all structures	Upstream- # of roads overtopped	Downstream- # of all structures	Downstream- # of roads overtopped	Downstream- # of railroads overtopped	Downstream- # of dams	Downstream- # of Water Infrastructure	Downstream- # of Electricity Generation
D1930	B. FRANK FINLEY DAM	Pickens	34.882433,-82.561597	2	1	9	2	0	0	0	0
D1931	B.F. FINLEY DAM 1	Pickens	34.878768,-82.556055	0	1	7	2	0	0	0	0
D1932	B.F. FINLEY DAM 2	Pickens	34.874958,-82.551299	1	0	14	2	0	0	0	0
D1934	LOYDS POND DAM	Pickens	34.83475,-82.561895	1	0	30	8	0	0	0	0
D1935	MALLARD COVE (FOREST DR)	Pickens	34.80455,-82.571992	0	1	42	2	0	0	1	0
D1942	MERRITTS POND	Pickens	34.774937,-82.587177	0	0	1	4	0	0	0	0
D1969	LAKE DIANA DAM	Pickens	34.921035,-82.867404	2	0	22	3	0	0	0	0
D4396	STANLEY MCJUNKIN DAM	Pickens	34.890237,-82.508047	0	0	56	2	0	0	1	1
D4469	SALUDA LAKE DAM	Greenville	34.85235928,-82.48428186	14	0	214	18	0	0	1	1
D4470	HOLLIDAYS BRIDGE DAM	Greenville	34.529464,-82.377206	0	0	16	4	0	0	0	1
D5010	DAM ON CHRISTINE DRIVE	Pickens	34.764555,-82.672004	0	0	338	0	0	0	2	0

APPENDIX C – DETAILED DATA TABLES

D0005 BIG CREEK WCD DAM-RENTZ/WILLIAMS 2

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	1

- No roads overtopped

Downstream Area:

Structures	Number
Residences	46
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	2
Government	1
Industrial	0
Unclassified	6
Utility and Misc.	1
TOTAL	56

- Roads inundated or overtopped

ROAD NAME	TYPE
Mattison Drive	Local
Cherokee Road	Local
Ida Tucker Blvd	State Secondary (S-577)
Dacus St	Local
W Main St	State Highway (S-20)
Spring Park	Local
Gossett Drive	Local

Williams St	State Secondary (S-576)
Woodmere Ct	Local
Mill Street	State Secondary (S-931)
Mahaffey Road	State Secondary (S-212)
Big Creek Rd	State Secondary (S-54)
Cannon Bottom Rd	State Secondary (S-116)
SC-247	State Highway (SC-247)
TOTAL	14

- Railroad overtopped

NAME
GREENVILLE & WESTERN RAILWAY

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	COOPER SAND & GRAVEL/SALUDA RIVER PLANT	SCG730157-1DA	Industrial	Anderson	Construction Sand & Gravel
ENDPIPE	BELTON/DUCWORTH (SALUDA)	SC0045896-001	Municipal	Anderson	Sewerage Systems
ENDPIPE	WILLIAMSTON/BIG CRK EAST WWTP	SC0046841-001	Municipal	Anderson	Sewerage Systems
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC0002291-009	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC0002291-008	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC0002291-001	Industrial	Anderson	Electric Services

<u>Counties effected: 2</u>

- Anderson
- Greenville

D0006 BIG CREEK WCD DAM-SHOREBROOK 1

Upstream Area:

Structures	Number
Residences	11
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	11

- Roads inundated or overtopped

ROAD NAME	TYPE
Hardwood Rd	State Secondary (S-853)

Downstream Area:

Structures	Number
Residences	94
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	9
Government	1
Industrial	0
Unclassified	9
Utility and Misc.	2
TOTAL	115

- Roads inundated or overtopped

ROAD NAME	TYPE
Waterfront Dr	Local
Ida Tucker Blvd	State Secondary (S-577)
Cherokee Rd	Local
Mattison Drive	Local
Dacus St	Local

Rogers St	Local
College Drive	Local
Minor St	Local
W Main St	State Highway (SC-20)
Spring Park	Local
Gossett Drive	Local
Cul-de-sac off Gossett (unnamed)	Local
Williams St	State Secondary (S-576)
Woodmere Ct	Local
Ridge Ct	Local
Gate Ct	Local
Mill Street	State Secondary (S-931)
Mahaffey Rd	State Secondary (S-212_
Big Creek Rd	State Secondary (S-54)
Cannon Bottom Rd	State Secondary (S-116)
SC-247	State Highway (SC-247)
TOTAL	21

- Railroad overtopped

NAME
GREENVILLE & WESTERN RAILWAY

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	BELTON/DUCWORTH (SALUDA)	SC0045896-001	Municipal	Anderson	Sewerage Systems
ENDPIPE	WILLIAMSTON/BIG CRK EAST WWTP	SC0046841-001	Municipal	Anderson	Sewerage Systems
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC0002291-009	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC0002291-008	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC0002291-001	Industrial	Anderson	Electric Services

Counties effected: 2

- Anderson
- Greenville

D3108 GLENN POND DAM 2

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	7
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	7

- Roads inundated or overtopped

ROAD NAME	TYPE
Lauren Flynn Dr	Local
Strawberry Rd	Local
Hillhouse Rd	Local
Broadwell Mill Rd	Local

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	FIRST QUALITY TISSUE SE LLC	SC0049115-001	Industrial	Anderson	Paper Mills

Counties effected: 1

- Anderson

D3109 GLENN POND DAM 1

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	6
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	6

- Roads inundated or overtopped

ROAD NAME	TYPE
Lauren Flynn Dr	Local
Strawberry Rd	Local
Hillhouse Rd	Local

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	FIRST QUALITY TISSUE SE LLC	SC0049115-001	Industrial	Anderson	Paper Mills

Counties effected: 1

- Anderson

D3112 THREE AND TWENTY CREEK WCD DAM-GRIFFIS 9B

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- Roads inundated or overtopped

ROAD NAME	TYPE
Central Road	State Secondary (S-231)

Downstream Area:

Structures	Number
Residences	13
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	2
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	15

- Roads inundated or overtopped

ROAD NAME	TYPE
Bishops Brank Rd	State Secondary (S-57)
Danenhower Rd	State Secondary (S-300)
Cherry St Ext	State Secondary (S-115)

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	MICHELIN N AMERICA/SAN DY SPRGS	SC0026701-001	Industrial	Anderson	Tires and Inner Tubes
ENDPIPE	MOUNT VERNON MILLS/LAFRAN CE	SC0000485-001	Industrial	Anderson	Broadwoven Fabric Mills, Manmade Fiber and Silk

Counties effected: 1

- Anderson

D3119 MCGEE POND DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	10
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	2
Government	0
Industrial	0
Unclassified	2
Utility and Misc.	0
TOTAL	12

- Roads inundated or overtopped

ROAD NAME	TYPE
Gentry Road	Local
Brooks McGee Rd	Local
Carrington Ln	Local
Good Hope Church Rd	State Secondary (S-105)
Tiny McConnell Rd	Local
Brown Rd	Local
Warren Watt Rd	Local

Counties effected: 1

- Anderson

D3123 LAKE HUNTINGTON DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	47
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	10
Government	0
Industrial	0
Unclassified	2
Utility and Misc.	0
TOTAL	57

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	ANDERSON/ROCKY RIVER	SC0023744-001	Municipal	Anderson	Sewerage Systems

Counties effected: 1

- Anderson

D3124 THREE AND TWENTY CREEK WCD DAM-JAMESON 5B

Upstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- Roads inundated or overtopped

ROAD NAME	TYPE
Red Barn Road	State Secondary (S-165)

Downstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- Roads inundated or overtopped

ROAD NAME	TYPE
Slab Bridge Road	State Secondary (S-164E)
Melton Road	State Secondary (S-73 N)

Counties effected: 1

- Anderson

D3126 THREE AND TWENTY CREEK WCD DAM-TRIPP 14

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- Roads inundated or overtopped

ROAD NAME	TYPE
Hunt Road	State Secondary (S-184)

Downstream Area:

Structures	Number
Residences	10
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	2
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	12

- Roads inundated or overtopped

ROAD NAME	TYPE
Fire Station Rd	Local
Hamlin Rd	Local

Counties effected: 1

- Anderson

D3128 ANDERSON POND DAM

Upstream Area:

Structures	Number
Residences	6
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	6

- No roads overtopped

Downstream Area:

Structures	Number
Residences	28
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	5
Commercial	3
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	33

- Roads inundated or overtopped

ROAD NAME	TYPE
Hampton Rd	Local
Paulan Rd	Local
Long Rd	Local
Wilson Rd	Local
Hopewell Rd	Local
Bree Drive	Local
Midway Rd	State Secondary (S-76)
Old Williamston Rd	State Secondary (S-331)

Cox Rd	Local
Snow Rd	State Secondary (S-904)
Cresta Verde	Local

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	ANDERSON/ROCKY RIVER	SC0023744-001	Municipal	Anderson	Sewerage Systems

Counties effected: 1

Anderson

D3130 BRUSHY CREEK WCD DAM-HOPKINS 11A

Upstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- Roads inundated or overtopped

ROAD NAME	TYPE
Estates Dr	Local

Downstream Area:

Structures	Number
Residences	117
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	117

- Roads inundated or overtopped

ROAD NAME	TYPE
St Paul Rd	State Secondary (S-485)
Armistead Lane	Local
Colonel Johnson Rd	Local
Old Mill Rd	Local
Mt. Airy Church Rd	Local

Cely Rd	Local
Anderson Rd	State Highway (SC-81)
Oak Rd	State Secondary (S-363_
Saluda Dr	Local

Counties effected: 1

- Anderson

D3131 BRUSHY CREEK WCD DAM-GANTT 17

Upstream Area:

Structures	Number
Residences	4
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	4

- Roads inundated or overtopped

ROAD NAME	TYPE
Laboone Road	Local

Downstream Area:

Structures	Number
Residences	20
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	1
Government	0
Industrial	1
Unclassified	0
Utility and Misc.	0
TOTAL	22

- Roads inundated or overtopped

ROAD NAME	TYPE
Old Mill Rd	Local
Mt Airy Church Rd	Local

Counties effected: 1

- Anderson

D3132 THREE AND TWENTY CREEK WCD DAM-ROBINSON 15

Upstream Area:

Structures	Number
Residences	14
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	15

- Roads inundated or overtopped

ROAD NAME	TYPE
Julie Rd	Local
Robinson Rd	Local
Lake Rd (Two sections)	Local
Old Cuffy Creek Ln	Local
Riley Ct	Local

Downstream Area:

Structures	Number
Residences	15
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	3
Government	0
Industrial	1
Unclassified	0
Utility and Misc.	0
TOTAL	18

- Roads inundated or overtopped

ROAD NAME	TYPE
Pelzer Hwy	State Highway (SC-8)
Three and Twenty Rd	State Secondary (S-485)

Avendell Rd	Local
Hamlin Rd	Local

Counties effected: 1

- Anderson

D3137 BRUSHY CREEK WCD DAM-KRAEMER 16

Upstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- No roads overtopped

Downstream Area:

Structures	Number
Residences	57
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	3
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	61

- Roads inundated or overtopped

ROAD NAME	TYPE
Sitton Hill Rd	Local
Three Bridges Rd	State Secondary (S-74)
Saluda Dr	Local

Counties effected: 1

- Anderson

D3139 BRUSHY CREEK WCD DAM-TRIPP 18

Upstream Area:

Structures	Number
Residences	2
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	3

- Roads inundated or overtopped

ROAD NAME	TYPE
Highway 86	State Highway (SC 86)
Mountain Springs Rd (Two Sections)	Local
Southern Oaks Dr	Local

Downstream Area:

Structures	Number
Residences	80
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	6
Government	0
Industrial	2
Unclassified	0
Utility and Misc.	1
TOTAL	89

- Roads inundated or overtopped

ROAD NAME	TYPE
Ranch Circle	Local
Bonznza Circle	Local

Timms Road	Local
Old Williamston Rd	Local
Watergate Drive	Local
Saluda Dr	Local

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	REWA/PIEDMONT REGIONAL WWTP	SC0048470-001	Municipal	Greenville	Sewerage Systems
ENDPIPE	PALMETTO AGGREGATES/RIVER ROAD	SCG730628-1DA	Industrial	Anderson	

- Electricity Generation/Distribution

Plant Name	Utility Name	Utility ID	City	County	State	Zip	Street Address	Prime Source
Piedmont Hydro Power Project	Central Rivers Power US, LLC	64078	Piedmont	Greenville	SC	29673	Highway 86	hydroelectric

Counties effected: 1

- Anderson

D3142 BROADMOUTH CREEK WCD DAM-247-W 9

Upstream Area:

Structures	Number
Residences	5
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	5

- Roads inundated or overtopped

ROAD NAME	TYPE
Glenwood Street	State Secondary (S-207)
Berry Ct	Local
Robin Ct	Local

Downstream Area:

Structures	Number
Residences	7
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	8

- Roads inundated or overtopped

ROAD NAME	TYPE
Cooley Bridge Rd	State Highway (SC-247)
Blakes Dairy Rd	Local
Rockey Ford Rd	Local
Hamby Rd	Local

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	INGERSOLL-RAND COMPANY	SC0047520-001	Industrial	Anderson	Motor Vehicle Parts and Accessories
ENDPIPE	BELTON/DUCWORTH (SALUDA)	SC0045896-002	Municipal	Anderson	Sewerage Systems
ENDPIPE	BELTON/DUCWORTH (SALUDA)	SC0045896-003	Municipal	Anderson	Sewerage Systems

Counties effected: 2

- Anderson
- Abbeville

D3143 BROADMOUTH CREEK WCD DAM-PHILLIPS 8

Upstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- Roads inundated or overtopped

ROAD NAME	TYPE
Benton Road	Local

Downstream Area:

Structures	Number
Residences	9
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	4
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	13

- Roads inundated or overtopped

ROAD NAME	TYPE
Hwy 247	State Highway (SC 247)
Blakes Dairy Road	Local
Rocky Ford Road	Local
Hamby Road	Local
Brick Mill Road	State Secondary (S-751)
Abercrombie Road	State Secondary (S-1012)

Holliday Dam Road	State Secondary (S-82)
Princeton Hwy	US Hwy (US 76)

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	THOMASON CONSTRUCTION/TAYLOR MINE	SCG731185-000	Industrial	Laurens	Miscellaneous Non-metallic minerals
ENDPIPE	INGERSOLL-RAND COMPANY	SC0047520-001	Industrial	Anderson	Motor Vehicle Parts and Accessories
ENDPIPE	BELTON/DUCWORTH (SALUDA)	SC0045896-002	Municipal	Anderson	Sewerage Systems
ENDPIPE	BELTON/DUCWORTH (SALUDA)	SC0045896-003	Municipal	Anderson	Sewerage Systems

Counties effected: 3

- Anderson
- Abbeville
- Laurens

D3147 G STEVENS POND DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	3
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	3

- Roads inundated or overtopped

ROAD NAME	TYPE
Campbell Road	State Secondary (S-285)
Pinson Farm Rd	State Secondary (S-205)

Counties effected: 1

- Anderson

D3151 FRIDDLE POND B DAM

Upstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- No roads overtopped

Downstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- Roads inundated or overtopped

ROAD NAME	TYPE
Linda Drive	State Secondary (S-664)
Austin Road	State Secondary (S-203)
Armstrong Road	State Secondary (S-604)

Counties effected: 2

- Anderson
- Abbeville

D3152 FRIDDLE POND A DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	2
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- No roads overtopped

Downstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	3
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	4

- Roads inundated or overtopped

ROAD NAME	TYPE
Linda Drive	State Secondary (S-664)
Austin Road	State Secondary (S-203)
Armstrong Road	State Secondary (S-604)

Counties effected: 2

- Anderson
- Abbeville

D3153 SEATON ACRES POND DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- Roads inundated or overtopped

ROAD NAME	TYPE
Parker Road	Local
Edgewood Road	Local

Downstream Area:

Structures	Number
Residences	6
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	6

- Roads inundated or overtopped

ROAD NAME	TYPE
C-18-67B	Local
Tiny Greer Rd	Local
Austin Rd	State Secondary (S-203)
Armstrong Rd	State Secondary (S-604)
Paige Rd	Local

Counties effected: 2

- Anderson
- Abbeville

D3265 RANKEN POND DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	32
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	4
Utility and Misc.	0
TOTAL	36

- Roads inundated or overtopped

ROAD NAME	TYPE
Forest Hill Dr	Local
Valley Dr	Local
Wedgewood Dr	Local

Counties effected: 1

- Anderson

D4887 WS LEE STEAM PLANT PRIMARY ASH BASIN DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	97
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	28
Commercial	1
Government	0
Industrial	0
Unclassified	8
Utility and Misc.	4
TOTAL	138

- No roads impacted

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	WILLIAMSTON/BIG CRK EAST WWTP	SC0046841-001	Municipal	Anderson	Sewerage Systems
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC0002291-009	Industrial	Anderson	Electric Services
ENDPIPE	DUKE	SC000229	Industrial	Anderson	Electric Services

	ENERGY/WS LEE STEAM STATION	1-008			
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC000229 1-01C	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC000229 1-01B	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC000229 1-001	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC000229 1-01A	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC000229 1-003	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC000229 1-005	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC000229 1-006	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC000229 1-007	Industrial	Anderson	Electric Services
ENDPIPE	DUKE ENERGY/WS LEE STEAM STATION	SC000229 1-004	Industrial	Anderson	Electric Services

- Electricity Generation/Distribution

Plant Name	Utility Name	Utility ID	City	County	State	Zip	Street Address	Prime Source
Pelzer Lower	Central Rivers Power US, LLC	64078	Williamston	Anderson	SC	29627	900 Dunlap Road	hydroelectric

<u>Counties effected: 2</u>

- Anderson
- Greenville

SCD5037 FIRST QUALITY TISSUE ASB DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- Roads inundated or overtopped

ROAD NAME	TYPE
Cleveland Road	Local
Hard Hillhouse Drive	State Secondary (S-258)

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	FIRST QUALITY TISSUE SE LLC	SC0049115-001	Industrial	Anderson	Paper Mills

- Electricity
    - Potential damage to Duke Energy electrical substation located on the First Quality Tissue property and utility towers located adjacent to Richland Creek.

Counties effected: 3

- Anderson
- Greenville
- Pickens

D1632 LAKE CHEOHEE DAM

Upstream Area:

Structures	Number
Residences	6
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	2
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	8

- Roads inundated or overtopped

ROAD NAME	TYPE
Lake Cheohee Rd	Local

Downstream Area:

Structures	Number
Residences	152
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	3
Commercial	0
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	156

- Roads inundated or overtopped

ROAD NAME	TYPE
Lake Cheohee Road	Local
Ldma Drive	Local
Jumping Branch Road	Local
Knox Creek Road	Local

- Dams downstream

- D1634

Counties effected: 1

- Oconee

D1634 TOWNES CREEK DAM

Upstream Area:

Structures	Number
Residences	97
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	97

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Evergreen Ridge Rd	Local
Point Pl	Local
Jumping Branch Rd (Two sections)	Local

Downstream Area:

Structures	Number
Residences	51
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	5
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	56

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Knox Creek Road	Local
Cherokee Lake Road	Local

Tamassee Knob Road	State Secondary (S-95)
Cheohee Valley Road	State Secondary (S-375)
Tamassee Lane	Local
Cheohee Valley Road	State Secondary (S-172)
SC 11	State Highway (SC-11)
9418 Road	Local
Bumgardner Drive	State Secondary (S-32)
Little River Lane	Local
Flat Shoals Road	State Secondary (S-129)
Oconee Creek Road	State Secondary (S-129)

Counties effected: 1

- Oconee

D1635 LEONIDAS DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	32
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	32

No roads impacted

- Dams downstream
    - D1636

Counties effected: 1

- Oconee

D1636 WHITEWATER LAKE DAM

Upstream Area:

Structures	Number
Residences	7
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	7

- Roads inundated or overtopped

ROAD NAME	TYPE
Whitewater Lake Rd	Local

Downstream Area:

Structures	Number
Residences	165
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	3
Government	0
Industrial	0
Unclassified	7
Utility and Misc.	0
TOTAL	176

- Roads inundated or overtopped

ROAD NAME	TYPE
Whitewater Lake Road	Local
N Lake Drive	State Secondary (S-577)
N Little River Road	State Secondary (S-57)
Paradise Cove	Local

Ridge Road	Local
SC 11	State Highway (SC 11)
Alexander Road	State Secondary (SC-145)
Grant Mill Road	Local
Crestwood Drive	State Secondary (SC-737)
Belmore Farm Drive	Local
Friendly Drive	Local

- Water Infrastructure

FEATURE	**NAME**	**NPDES Pipe**	**FACILITY TYPE**	**COUNTY NAME**	**SITE DESCRIPTION**
ENDPIPE	DUKE ENERGY/OCONEE NUCLEAR	SC0000515-001	Industrial	Oconee	Electric Services

Counties effected: 2

- Oconee
- Pickens

D1637 CHATTOOGA LAKE DAM

Upstream Area:

Structures	Number
Residences	7
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	7

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Chattooga Lake Road (Three sections)	Local
Camden Lane	Local

Downstream Area:

Structures	**Number**
Residences	30
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	30

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Chattooga Lake Rd	Local
Ball Park Rd	Local
Village Creek Rd	Local

Moxley Dr	Local
Bethlehem Trl	Local
Coppermine Rd	Local
Highlands Hwy	State Highway (SC 28)
Chattooga Ridge Rd	State Highway (S-258)

- Dams downstream
    - D1639

Counties effected: 1

- Oconee

D1638 MOUNTAIN REST LAKE DAM

Upstream Area:

Structures	Number
Residences	2
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	2

- Roads inundated or overtopped

ROAD NAME	TYPE
Lake Dr	Local
Mountain Rest Lake Rd (Three sections)	Local
Wren Rd	Local
Whipporwill Hollow Road	Local

Downstream Area:

Structures	Number
Residences	16
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	17

- Roads inundated or overtopped

ROAD NAME	TYPE
Mountain Rest Lake Rd	Local

Ore Yonder Rd	Local
Chattooga Ridge Rd	State Secondary (S-258 E)
Clyde's Old Place Rd	Local
Loblolly Knoll Rd	Local
Moorhead Place Rd	Local
Meadowview Dr	Local
Winding River Rd	Local
Verner Mill Rd	Local
River Ridge Dr	Local
Chauga Hill Rd	Local
Jerry Creek Rd	Local

Counties effected: 1

- Oconee

D1639 LAKE LEROY DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	24
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	1
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	25

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Coppermine Rd	Local
Highlands Hwy	State Highway (SC 28W)
Moorehead Place Rd	Local
Mill Rd	Local
Chauga River Rd	Local

Counties effected: 1

- Oconee

D1640 GORDONS LAKE DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	7
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	2
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	9

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Highlands Hwy	State Secondary (S-28)

Counties effected: 1

- Oconee

D1641 MTN LAKE DAM (LAKE BECKY)

Upstream Area:

Structures	**Number**
Residences	17
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	17

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Lake Becky Road *is dam	Local
Bonner Road	Local
Lisa Ln (Two sections)	Local
Whippoorwill Roost Dr	Local

Downstream Area:

Structures	**Number**
Residences	17
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	3
Commercial	7
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	27

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Lake Becky Rd	Local
Old Mill Ln	Local
Donel Dr	Local

Crystal Lake Rd	Local
Crystal Cove Dr	Local
Turtle Creek Trail	Local
Highlands Hwy	State Highway (SC 28W)

Counties effected: 1

- Oconee

D1642 OCONEE STATE PARK DAM 1

Upstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- No roads overtopped

Downstream Area:

Structures	Number
Residences	32
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	2
Commercial	2
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	37

- Roads inundated or overtopped

ROAD NAME	**TYPE**
State Park Road	Local
Lisa Lane	Local
Lake Becky Road	Local

- Dams downstream
    - D1641

- Water Infrastructure

FEATURE	**NAME**	**NPDES Pipe**	**FACILITY TYPE**	**COUNTY NAME**	**SITE DESCRIPTION**
ENDPIPE	SC DPRT/OCONEE STATE PARK	SCG570014-001	Domestic	Oconee	Amusement and Recreation Services, NEC

Counties effected: 1

- Oconee

D1643 OCONEE STATE PARK DAM 2

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	25
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	26

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Nirvana Lane	Local
Lisa Lane	Local
Lake Becky Road	Local

- Dams downstream
    - D1641

Counties effected: 1

- Oconee

D1645 CRYSTAL LAKE DAM

Upstream Area:

Structures	Number
Residences	2
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	2

- Roads inundated or overtopped

ROAD NAME	TYPE
Crystal Lake Rd	Local

Downstream Area:

Structures	Number
Residences	10
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	10

- Roads inundated or overtopped

ROAD NAME	TYPE
Land Bridge Road	Local
Whetstone Road	State Secondary (S-193)
Cassidy Bridge Road	State Secondary (S-290)

Counties effected: 1

- Oconee

D1646 BOOKER'S LAKE DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	25
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	2
Commercial	0
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	28

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Booker Lake Road	Local
Pickett Post Road	State Secondary (S-181)
Brewer Road	Local
Kimmy Lane	Local
Pickens Highway	State Highway (SC-183)
SC 11	State Highway (SC-11)

Counties effected: 1

- Oconee

D1648 LAKE JEMIKE DAM 1

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- Roads inundated or overtopped

ROAD NAME	TYPE
Lake Jemiki Rd	Local

Downstream Area:

Structures	Number
Residences	12
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	12

- Roads inundated or overtopped

ROAD NAME	TYPE
Lake Jemiki Rd	Local
Misty Valley Dr	Local
Busch Creek Rd	Local

Counties effected: 1

- Oconee

D1649 LAKE JEMIKE DAM 2

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	7
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	7

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Lake Jemiki Road	Local
Misty Valley Drive	Local
Creekside Drive	Local
Bursch Creek Road	Local
Bruce Lane	Local
Coneross Farm Road	Local

- Dams downstream

- D1652

Counties effected: 1

- Oconee

D1650 HORSESHOE LAKE DAM

Upstream Area:

Structures	Number
Residences	5
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	5

- No roads overtopped

Downstream Area:

Structures	Number
Residences	4
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	4

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Orchard Road	State Secondary (S-538)
Sockem Dog Circle	Local

Counties effected: 2

- Oconee
- Rabun, GA

D1651 BROWNS LAKE DAM

Upstream Area:

Structures	Number
Residences	5
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	5

No roads overtopped

Downstream Area:

Structures	Number
Residences	125
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	9
Government	0
Industrial	0
Unclassified	14
Utility and Misc.	0
TOTAL	148

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Starrit Lane	Local
Torrington Road	State Secondary (S-324)
Sangamo Drive	State Secondary (S-354)
Binder Ridge Drive	Local

Counties effected: 1

- Oconee

D1652 CONEROSS CREEK WCD DAM 1A

Upstream Area:

Structures	Number
Residences	3
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	3

- Roads inundated or overtopped

ROAD NAME	TYPE
Camp Rd	Local
Hunters Trail	Local
Coffee Rd	State Secondary (S-36)
Montclair Ln	Local
Stribling Shoals Rd	Local
Coneross Farm Rd	Local

Downstream Area:

Structures	Number
Residences	22
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	6
Commercial	1
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	30

- Roads inundated or overtopped

ROAD NAME	TYPE
Rocky Way	Local

Nectarine Cir	Local
Bunky Kelley Rd	Local
Rock Crusher Rd	Local
Water Works Rd	Local
Hesse Hwy	Local
Andrew Pickens Scenic Pkwy	State Highway (SC 11N)
Critter Rd	State Secondary (S-135N)

- Water Infrastructure

FEATURE	**NAME**	**NPDES Pipe**	**FACILITY TYPE**	**COUNTY NAME**	**SITE DESCRIPTION**
ENDPIPE	OCONEE CO/CONEROSS CREEK WWTF	SC0033553-001	Municipal	Oconee	Sewerage Systems
ENDPIPE	OCONEE COUNTY ROCK QUARRY	SCG730448-000	Industrial	Oconee	
ENDPIPE	WALHALLA/CONEROSS CREEK WTP	SCG641004-001	Municipal	Oconee	Water Supply

Counties effected: 1

- Oconee

D1653 CONEROSS CREEK WCD DAM 8

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- Roads inundated or overtopped

ROAD NAME	TYPE
Duck Pond Rd	Local

Downstream Area:

Structures	Number
Residences	7
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	3
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	10

- Roads inundated or overtopped

ROAD NAME	TYPE
Water Works Rd	Local
Hesse Hwy	Local
Skeeter Creek Dr	Local
Westminster Hwy	State Highway (SC 183N)
Andrew Pickens Scenic Pkwy	State Highway (SC 11N)

- Water Infrastructure

FEATURE	**NAME**	**NPDES Pipe**	**FACILITY TYPE**	**COUNTY NAME**	**SITE DESCRIPTION**
ENDPIPE	WALHALLA/CONEROSS CREEK WTP	SCG641004-001	Municipal	Oconee	Water Supply

Counties effected: 1

- Oconee

D1655 CONEROSS CREEK WCD DAM 9A

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- Roads inundated or overtopped

ROAD NAME	TYPE
Doyle St	State Secondary (S-91)

Downstream Area:

Structures	Number
Residences	3
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	4

- Roads inundated or overtopped

ROAD NAME	TYPE
East Bennett Road	State Secondary (S-109)
Westminster Highway	State Secondary (S-183)

Counties effected: 1

- Oconee

D1656 CONEROSS CREEK WCD DAM 21

Upstream Area:

Structures	Number
Residences	8
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	8

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Charter Oak Drive	Local
Shrine Club Road	Local
Alberts Rd	Local
Nix Rd	Local

Downstream Area:

Structures	Number
Residences	11
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	11

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Bountyland Road	State Secondary (S-135)
Chetola Road	Local
Richland Road	State Secondary (S-13)

Poplar Springs Road	State Secondary (S-35)
Gibson Road	Local

Counties effected: 1

- Oconee

D1665 BEAVERDAM CREEK WCD DAM 5

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Hunt Rd	State Secondary (S-184)

Downstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	2
Utility and Misc.	0
TOTAL	4

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Babb Road	State Secondary (S-53)
Fairplay Road	State Secondary (S-117)
McAdams Road	Local
Simmons Ford Road	Local
Gaines Road	Local

Counties effected: 2

- Oconee
- Anderson

D1666 BEAVERDAM CREEK WCD DAM 2

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- Roads inundated or overtopped

ROAD NAME	TYPE
State Highway 59	State Highway (SC-59)

Downstream Area:

Structures	Number
Residences	21
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	3
Utility and Misc.	0
TOTAL	24

- Roads inundated or overtopped

ROAD NAME	TYPE
Earls Mill Road	State Secondary (S-206E)
Edgewood Dr	Local
Rodgers Rd	State Secondary (S-99N)
W Pine Grove Rd	State Secondary (S-66E)

Counties effected: 2

- Oconee
- Anderson

D1667 BEAVERDAM CREEK WCD DAM 4

Upstream Area:

Structures	Number
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- No roads overtopped

Downstream Area:

Structures	Number
Residences	7
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	7

- Roads inundated or overtopped

ROAD NAME	**TYPE**
West Pine Grove Road	State Secondary (S-66)
Rodgers Road	State Secondary (S-99)
Tucker Farm Road	Local

Counties effected: 2

- Oconee
- Anderson

D4026 BEAVERDAM CREEK WCD DAM 3A

Upstream Area:

Structures	Number
Residences	6
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	6

- Roads inundated or overtopped

ROAD NAME	TYPE
Lake Dr	Local
Summers Ln	Local
Wilderness Rd	Local
Jojo Lane	Local

Downstream Area:

Structures	Number
Residences	68
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	12
Utility and Misc.	0
TOTAL	80

- Roads inundated or overtopped

ROAD NAME	TYPE
Highway 59	State Highway (SC 59)
Feltman Road	State Secondary (S-167)
West Pine Grove Road	State Secondary (S-66)

Richey Road	State Secondary (S-207)

- Water Infrastructure

FEATURE	**NAME**	**NPDES Pipe**	**FACILITY TYPE**	**COUNTY NAME**	**SITE DESCRIPTION**
ENDPIPE	LAKE HARTWELL WATER TREATMENT PLANT	SCG646068-001	Municipal		

Counties effected: 2

- Oconee
- Anderson

D4104 DICKERSON FISHING LAKE

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	2
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	3

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Armstrong Rd	State Secondary (S-49)

- Water Infrastructure

FEATURE	**NAME**	**NPDES Pipe**	**FACILITY TYPE**	**COUNTY NAME**	**SITE DESCRIPTION**
ENDPIPE	OCONEE CO/CONEROSS CREEK WWTF	SC0033553-001	Municipal	Oconee	Sewerage Systems

Counties effected: 1

- Oconee

D4186 FIDDLERS COVE DAM

Upstream Area:

Structures	Number
Residences	4
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	4

- Roads inundated or overtopped

ROAD NAME	**TYPE**
The Bear Blvd	Local

Downstream Area:

Structures	Number
Residences	27
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	28

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Cheohee Valley Rd	State Secondary (S-375)
Tamassee Knob Rd	State Secondary (S-95)
Tamassee Lane	Local
Cheohee Valley Road (Second Location)	State Secondary (S-172)
Little River Lane	Local

Counties effected: 1

- Oconee

D4398 BOB EDWARDS DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	7
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	2
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	9

- Roads inundated or overtopped

ROAD NAME	**TYPE**
White Cut Road	State Secondary (S-174)
Brewer Road	Local

Counties effected: 1

- Oconee

D4582 EAST VILLAGE CR FARM POND

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	6
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	7

- No roads impacted

Counties effected: 1

- Oconee

D4587 JOCASSEE RIDGE REFLECTIONS DAM

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	76
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	77

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Shack Hollow Road	Local
Jocassee Lake Road	State Secondary (S-25N)

Counties effected: 2

- Oconee
- Pickens

D1969 LAKE DIANA DAM

Located in Pickens County

Upstream Area:

Structures	Number
Residences	2
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	2

- No roads overtopped

Downstream Area:

Structures	Number
Residences	20
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	2
Utility and Misc.	0
TOTAL	22

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Nona Lem Trail	Local
Crowe Creek Road	State Highway (SC 133N)
Cedar Creek Road	Local

Counties effected: 2

- Pickens

- Oconee

D1930 B. FRANK FINLEY DAM
Located in Pickens County

Upstream Area:

Structures	**Number**
Residences	2
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	2

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Louise Lake Road (is dam)	Local

Downstream Area:

Structures	**Number**
Residences	9
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	9

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Lida Falls Rd	Local
Franklin Finley Rd	Local

Counties effected: 3

- Pickens
- Anderson
- Greenville

D1931 B.F. FINLEY DAM 1

Located in Pickens County

Upstream Area:

Structures	**Number**
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Lida Falls Road (is dam)	Local

Downstream Area:

Structures	**Number**
Residences	7
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	7

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Franklin Finley Rd	Local
Jim Hunt Rd	Local

Counties effected: 3

- Pickens
- Anderson
- Greenville

D1932 B.F. FINLEY DAM 2

Located in Pickens County

Upstream Area:

Structures	**Number**
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- No roads overtopped

Downstream Area:

Structures	**Number**
Residences	14
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	14

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Franklin Finley Rd	Local
Jim Hunt Rd	Local

Counties effected: 3

- Pickens
- Anderson

- Greenville

D1934 LOYD POND DAM
Located in Pickens County

Upstream Area:

Structures	**Number**
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- No roads overtopped

Downstream Area:

Structures	**Number**
Residences	30
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	30

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Pace Valley Rd	Local
Campbell Ave	Local
Prince Perry Rd	State Secondary (S-135)
Rocky Ln	Local
Long Creek Dr	Local
Heritage Rd	Local

Old Forest Rd	Local
Kay Dr	Local

Counties effected: 3

- Pickens
- Anderson
- Greenville

D1935 MALLARD COVE (FOREST DR)

Located in Pickens County

Upstream Area:

Structures	**Number**
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Dogwood Lane *is dam	Local

Downstream Area:

Structures	**Number**
Residences	39
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	1
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	42

- Roads inundated or overtopped

ROAD NAME	**TYPE**
McAlister Rd	State Secondary (S-136)
Briarwood Dr	Local

- Water Infrastructure

FEATURE	**NAME**	**NPDES Pipe**	**FACILITY TYPE**	**COUNTY NAME**	**SITE DESCRIPTION**
ENDPIPE	EASLEY/MIDDLE BRANCH WWTP	SC0039853-001	Municipal	Anderson	Sewerage Systems

Counties effected: 2

- Pickens
- Anderson

D1942 MERRITTS POND

Located in Pickens County

Upstream Area:

Structures	**Number**
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	**Number**
Residences	1
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	1

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Johnson Rd	State Secondary (S-52)
N Watson Rd	State Secondary (S-60)
Zion Church Rd	State Secondary (S-42)
Ridge Rd	Local

Counties effected: 2

- Pickens
- Anderson

D4396 STANLEY MCJUNKIN DAM

Located in Pickens County

Upstream Area:

Structures	**Number**
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	**Number**
Residences	52
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	1
Commercial	0
Government	0
Industrial	0
Unclassified	3
Utility and Misc.	0
TOTAL	56

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Farrs Bridge Road	State Highway (SC 183 N)
Saluda View Drive	Local

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPI	EASLEY COMB	SCG641007-001	Municipal	Pickens	Water Supply

PE	UTIL/DON L MOORE				

- Electricity Generation/Distribution

Plant Name	**Utility Name**	**Utility ID**	**City**	**County**	**State**	**Zip**	**Street Address**	**Prime Source**
Saluda Dam	Northbrook Carolina Hydro LLC	13763	Greenville	Greenville	SC	29611	391 OBA Road	hydroelectric

Counties effected: 3

- Pickens
- Anderson
- Greenville

D4469 SALUDA LAKE DAM

Located in Greenville County

Upstream Area:

Structures	**Number**
Residences	12
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	2
Utility and Misc.	0
TOTAL	14

- No roads overtopped

Downstream Area:

Structures	**Number**
Residences	202
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	4
Government	7
Industrial	0
Unclassified	1
Utility and Misc.	0
TOTAL	214

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Shop Ct	Local
Covenant Dr	Local
Riverview Dr	Local
Knollview Dr	Local
Riverview Cir	Local
Anthony Dr	Local
Shady Acres Cir	Local

Ron Ln	Local
Old Easley Bridge Rd	State Secondary (S-85)
Jean Dr	Local
Avice Dale Dr	Local
Lakeview Dr	Local
Pickens Dr	Local
Grouse Ct	Local
Quailhaven Dr	Local
Birch River Rd	Local
Old Dunham Bridge Rd	State Secondary (S-327)
River Rd	Local
River Road Circle	Local
Riverside Dr	Local
Acadia Ave	Local

- Water Infrastructure

FEATURE	**NAME**	**NPDES Pipe**	**FACILITY TYPE**	**COUNTY NAME**	**SITE DESCRIPTION**
ENDPIPE	REWA/GEORGES CREEK	SC0047309-001	Municipal	Greenville	Sewerage Systems

- Electricity Generation/Distribution

Plant Name	**Utility Name**	**Utility ID**	**City**	**County**	**State**	**Zip**	**Street Address**	**Prime Source**
Saluda Dam	Northbrook Carolina Hydro LLC	13763	Greenville	Greenville	SC	29611	391 OBA Road	hydroelectric

Counties effected: 3

- Pickens
- Anderson
- Greenville

D4470 HOLLIDAYS BRIDGE DAM

Located in Greenville County

Upstream Area:

Structures	**Number**
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	**Number**
Residences	9
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	5
Commercial	0
Government	0
Industrial	0
Unclassified	1
Utility and Misc.	1
TOTAL	16

- Roads inundated or overtopped

ROAD NAME	**TYPE**
Holliday Dam Rd	State Secondary (S-51)
Mountain Creek Rd	Local
Ballard Rd	Local
Unnamed road from Erwin Mill Rd	Local

- Electricity Generation/Distribution

Plant Name	**Utility Name**	**Utility ID**	**City**	**County**	**State**	**Zip**	**Street Address**	**Prime Source**
Hollidays Bridge Hydro	Northbrook Carolina Hydro LLC	13763	Honea Path	Anderson	SC	29654	1000 Holliday Dam Road	hydroelectric

Counties effected: 4

- Pickens
- Anderson
- Abbeville
- Laurens

D5010 DAM ON CHRISTINE DRIVE

Located in Pickens County

Upstream Area:

Structures	Number
Residences	0
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	0
Commercial	0
Government	0
Industrial	0
Unclassified	0
Utility and Misc.	0
TOTAL	0

- No roads overtopped

Downstream Area:

Structures	Number
Residences	308
Hospitals	0
Schools and Day Cares	0
Assisted Living Facilities	0
Agriculture	3
Commercial	16
Government	2
Industrial	0
Unclassified	9
Utility and Misc.	0
TOTAL	338

- No roads overtopped or inundated

- Water Infrastructure

FEATURE	NAME	NPDES Pipe	FACILITY TYPE	COUNTY NAME	SITE DESCRIPTION
ENDPIPE	PENDLETON-CLEMSON REG. WWTF	SC0035700-001	Municipal	Anderson	Sewerage Systems
ENDPIPE	MILLIKEN & CO/PENDLETON	SCG250280-A10	Industrial	Anderson	Finishers of Broadwoven Fabrics of Manmade

	FINISHING PLANT				Fiber and Silk

Counties effected: 2

- Pickens
- Anderson

For a listing of all dams in Anderson and Oconee county: https:/www.emd.andersonsheriff.org/damsannex