

**RICHLAND COUNTY
PINEWOOD LAKE AD HOC
COMMITTEE AGENDA**



Tuesday, APRIL 19, 2022

2:00 PM

RICHLAND COUNTY COUNCIL 2021



Bill Malinowski
District 1
2018-2022



Derrek Pugh
District 2
2020-2024



Yvonne McBride
District 3
2020-2024



Paul Livingston
District 4
2018-2022



Allison Terracio
District 5
2018-2022



Joe Walker III
District 6
2018-2022



Gretchen Barron
District 7
2020-2024



Overture Walker
District 8
2020-2024



Jesica Mackey
District 9
2020-2024



Cheryl English
District 10
2020-2024



Chakisse Newton
District 11
2018-2022



Richland County Pinewood Lake Ad Hoc Committee

AGENDA

April 19, 2022 - 2:00 PM

Council Chambers

2020 Hampton Street, Columbia, SC 29204

The Honorable Alison Terracio	The Honorable Chakisse Newton	The Honorable Cheryl English
County Council District 5	County Council District 11	County Council District 10

1. **Call to Order** The Honorable Chakisse Newton

2. **Minutes** The Honorable Chakisse Newton
 - a. November 13, 2018 [PAGES 5-12]

3. **Adoption of Agenda** The Honorable Chakisse Newton

4. **Election of Chair**

5. **Items for Action**
 - a. Pinewood Lake Park Dam [PAGES 13-65]

6. **Adjournment**



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Richland County Council
Pinewood Lake Ad Hoc Committee
November 13, 2018 – 3:00 PM
4th Floor Conference Room
2020 Hampton Street, Columbia 29204

COMMITTEE MEMBERS PRESENT: Bill Malinowski, Chair; Greg Pearce, and Calvin Jackson

OTHERS PRESENT: Michelle Onley, Tracy Hegler, Quinton Epps, and Ashley Powell, Gwen Kennedy, and Norman Jackson

1. **Call to Order** – Mr. Pearce called the meeting to order at approximately 3:00 PM
2. **Adoption of the Agenda** – Mr. Malinowski moved, seconded by Mr. C. Jackson, to adopt the agenda as published. The vote in favor was unanimous.
3. **Election of Chair** – Mr. Pearce moved, seconded by Mr. C. Jackson, to nominate Mr. Malinowski for the position of Chair. The vote in favor was unanimous.

4. **Pinewood Lake Park Foundation Inventory Disposition**

- a. **Staff Recommendation** – Mr. Pearce stated he has no idea what the background on this issue is.

Mr. Malinowski stated he knows it was discussed at Council and got kicked back here.

Mr. Pearce requested the background on why we are disposing of property, or what is going on.

Ms. Hegler stated it is a super simple request. Staff has worked with the Foundation the last few months to determine what items are in the house and on the property that they acquired through their years of management. Staff has a list of the inventory, but they did not have the authority to dispense of it. The same as we could not open up the doors to this facility and take it. The request is to simply give us direction on giving the Foundation that inventory back. It is a long list of things they have acquired throughout the course of working at the park.

Mr. Pearce inquired if it was acquired with County money, or private money.

Ms. Hegler stated we went through some inventory. Some probably were, but we were not able to corroborate much of that. There are 2 parts to this. The first is physical inventory; things that are within the house the Foundation would like to take that staff has no object to them taking. Staff could not, necessarily, show any receipts for it that the County had paid for it. The second part, and probably what is a little more complex, is there are a couple of items they have put into the house that they would

Pinewood Lake Ad Hoc Committee
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prefer monetary reimbursement for.

Mr. Pearce stated, "Like wiring."

Ms. Hegler stated it is really a 2-part request. The first is, all of the items that staff has on a 3-page list that the Foundation has identified as theirs. The County does not have claims to them. Staff would ask your approval to go ahead and set up a time with them to let them come and retrieve those items. The second issue, is a little more complicated. A few things they could like reimbursement for. She stated she has no real recommendation there, except for one of those items we did see had been purchased by the County, the security cameras. The others are things like a sink in the shelter and the yellow guard fencing they purchased for the park's use. Those things they would like monetary reimbursement for, staff seeks the committee's direction on.

Mr. Pearce inquired as to why the Foundation is vacating. He thought they were still going to work.

Ms. Hegler stated you turned over management of the property to the Conservation Commission.

Mr. Pearce stated, that is correct, but he thought the Commission was going to work with the Foundation.

Ms. Hegler stated the Commission has attempted to do that through a couple of years. The Foundation is out there as a volunteer-basis when they reserve the facility, like anybody else could be, but they are not actively...

Mr. Pearce stated, for clarification, the Foundation needs to vacate the house. He stated the Foundation is in the house.

Ms. Hegler stated you turned over the day-to-day management to the Conservation Commission. The Commission has attempted, over the course of 2 years, to set up some up some sort of an arrangement with the Foundation, which they have never agreed to. We continue to allow them out there on a volunteer basis, when they would like to use the property, just like anybody. You could use it for a social function. The purposes of brooms, chairs, or sorts of things that are inside of the house are day-to-day maintenance and operational things she does not think the Foundation is interested in doing.

Mr. Pearce stated, so when that decision was made, someone inventoried the house, determined what belonged to the County, and what belonged to the Foundation.

Ms. Hegler stated we met the Foundation's Director out there, and that person went through and checked off everything.

Mr. Pearce stated some of the stuff there was no concerns over.

Ms. Hegler stated, "Most of it."

Mr. Pearce stated we are down to a smaller list of things the Foundation wants reimbursement for, some of which, are things that were physically attached to the building. We are supposed to make a decision about that.

Ms. Hegler stated since it includes money, they would need to be directed as to how you wanted to proceed with compensating for that.

Mr. Pearce inquired if there is a list of those items in the agenda.

Ms. Hegler stated the list is on the first page of the briefing document; security cameras, steel cables with yellow barricades, sinks and grill trays.

Mr. N. Jackson stated the concern he has is the Foundation was asked to manage and operate the park from its inception. He stated they went out and collected artifacts, and furnished the building with these artifacts, with the intent that they would be reimbursed with the Pinewood Lake Park Phase II money, which never happened. After it was approved, the new Administrator stepped in, so they have not been reimbursed for anything. The Foundation furnished the park, especially the historic house, with artifacts for the historic part of it. Some of it was purchased with the money they received doing it. After it was turned over to the Conservation Commission, there were several meetings, and there was an attempt for the Foundation to continue to operate or manage the park, even though it is under the Conservation Commission. The Conservation Commission even approved a budget, that was delivered to Council late, and Gerald Seals sent us a copy of the budget, but it came after 5:00. It was never placed on the County budget; therefore, they were left out, but they were asked to continue to operate the park until July 1, 2018. For a year after the Conservation Commission took over the park, the Foundation ran the park. The security camera and wiring for the camera was a part of securing the building. When they were asked to leave, they requested to be paid for the work they did in the building and the equipment they placed in the building. They were told "No". It would be removed and given back to them. He inquired what the Foundation would do with the cameras and wires. He would recommend the Administrator get more involved in this, and see what he has the authority to do, and what the Conservation Commission has the authority to do, and bring back to committee. At the end of the day, there was a letter, by Gerald Seals, in the budget, that no County employee should be at that building. It was in the budget when the budget was approved. He stated there is a County employee there for 3 hours a day. If you want to rent or take a historic tour, there is a sign on the door with a number to call. The park went from being occupied 7 days a week, up to 10 hours a day, to 3 hours a day with a note on the door. That was not the intent for operating the park. He has seen several emails back and forth where the Foundation tried to work the staff, and it never happened. He stated he is appalled. He has never seen anything like this in his entire life. The attitude of treating the customer, or how these people were treated. He thinks the Administrator should look into before the committee makes any decision.

Mr. C. Jackson stated he is inclined to agree, without a lot of background, and without hearing both sides of the story, with most of the comments made by Mr. N. Jackson. His interest in this has always been to have this park be fully completed, renovated, up and running, functioning and operating like so many of our other parks in Richland County are doing. He never in his wildest dreams would have imagined that a park that was operating, with limited staffing, but operating and open on a regular basis, has now been relegated to almost an artifact itself, and not being functioning. When he was a part of the earlier discussions, in reference to the Conservation Commission, his desire was to have the Conservation Commission become a fiscal agent because they were a County agent. Initially we started talking about, just as we thought we wanted to do with the Recreation Commission, being more hands on, and more involved. The purpose of providing additional funding and support was to get the park up and running. To go from that vantage point, a year ago, to now talking about who owns cameras and wires, whether people can or cannot get access to building, and who is managing on a daily basis, is something he thinks, in his opinion, we are way off course. His reasoning and desire to be a part of this

committee is to get the Pinewood Lake Park up and running, and functional, to resolve the issues with regards to renovations and construction of Phase II, and to get answers to some of those critical questions. It is not to remove anybody from the facility. It is not to deny anybody access to the use of the facility. He would concur that before we take any action on the recommendation on whether or not there is money owed, or not owed, and for what, that we ask the new Administrator to...and for all the reasons that are front of us. Ms. Hegler, Mr. N. Jackson and Mr. Pearce will be moving out of the picture. He does not want, with all of those individuals moving out of the picture, for us to make a rash or hasty decision today that can impact us come January. We have a new Interim Administrator, who has just moved into the picture, who has very little, if any knowledge about what is going on. His recommendation is that we not take any action on this specific item today, and that we ask the Interim Administrator to get involved, have independent meetings, and then a joint meeting with the Foundation leadership and Conservation Commission leadership to resolve the matters, and get us back on track to making Pinewood Lake Park what it should be.

Mr. Malinowski stated, for clarification, that Ms. Hegler said there were some items the County did not have receipts for to show ownership. Do we think there are some items that belong to the County that we do not have receipts for? If they have receipts, and show ownership, then give it to them, but if they do not have them either, and you think it is County, he thinks we need to have a definitive list before any decisions are made also.

Ms. Hegler stated you have to realize the Foundation managed it for a number of years. She would not guess that anything was physically purchased by the County for the park. Her guess is that the Foundation purchased everything that is in there. Whether or not they used County funds is what she cannot speak to. It would only be an opinion.

Mr. Malinowski stated that would be something that would need to come out during the meeting Mr. C. Jackson referred to.

Ms. Hegler stated they have looked through all of the invoicing they have gotten from the Foundation, for this purpose, and the only thing they saw on the list...the list of what they are claiming to be theirs is in your packet. It is just sort of everyday household items. They do not see those on any invoices, so there is no way to say the County ever did purchase it.

Mr. Malinowski stated his recollection is, when this was brought up at the Council meeting, Mr. Livingston commented, regarding the cameras, Mr. N. Jackson stated, it is not like they can use them anymore. They bought them for use there, so why not consider a reimbursement of those amounts and keep them there, in place, functioning for the benefit of the park.

Ms. Kennedy stated she agrees wholeheartedly with what both Mr. Jacksons have said. Just out of curiosity, what are you going to do with wiring? It is almost absurd that you would think about repossessing used wiring, and some other things that were named. What are you going to do with a sink?

Ms. Hegler stated they are not asking to do that. For the most part, they are asking to give the stuff back to them. The wiring they are asking to be reimbursed for. We are not asking to take any of this out. We are simply asking for direction on whether or not you want us to reimburse them for those things, or not. The cameras, she agrees with you. She would not suggest ripping them out and give them to them. They would have no need for them.

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Ms. Kennedy stated you would almost have to destroy parts of the park.

Ms. Hegler stated the Foundation is asking to be reimbursed for that. They want monetary reimbursement for it.

Ms. Kennedy stated, if they paid for the stuff, over a period of time, and she is sure there is a lot of stuff they probably did pay for over a period of time, she can see the reimbursement for it. She agrees with what has already been said. She thinks we need to investigate a little bit more, all these areas, before we make any final decision. We need further investigation because there is a whole lot of stuff being left out.

Mr. Pearce inquired what the list on Attachment A is.

Ms. Hegler stated that is the list of items, within the house, that the Foundation supplied to us saying we had purchased. If you look at the top, that is County-owned items.

Mr. Pearce inquired if this stuff stays.

Ms. Hegler stated, that is correct. On p. 6 entitled "Pinewood Lake Park Inventory Report", is the list of items they went through and claimed were the Foundation's. She stated they typed this up after having spent hours in the facility with the Foundation. Her understanding is, the Executive Director for the Foundation went through and stuck a sticker on everything that was the Foundation's property. Mr. Epps was with her for hours, and those items are documented here. All of which, we are proposing to allow them to retrieve, if they should want to.

Mr. Pearce inquired where the items that are questionable are.

Ms. Hegler stated the list is in the briefing memo at the beginning of the agenda. The Foundation wanted to take away those items, and in addition, asked for monetary reimbursement for the security cameras, the yellow barricades, sinks and grill trays.

Mr. Pearce inquired, out of curiosity, what is the price.

Ms. Hegler stated they know what the price of the security cameras were because we found an invoice, in the amount of \$660, where the County paid for those.

Mr. Pearce stated we can eliminate that.

Ms. Hegler stated the steel cable and yellow barricades, sinks and grill trays, we have no idea. We could ask them, if you should choose to reimburse them for that.

Mr. Pearce inquired about what kind of sink we are talking about.

Ms. Hegler stated the sinks are in the picnic shelters, as well as the grill trays. To Ms. Kennedy's point, we would not ask them to take that away. That would be like when you rent a house and you go in...

Mr. Pearce inquired if the sink is plumbed.

Mr. Epps responded in the affirmative.

Ms. Hegler stated, the question before you, is obviously not to take that out, but they want reimbursement for it. She does not have the authority to do that.

Mr. N. Jackson stated the people were asked to leave the park, and take their belongings. They cannot use it. Over the years, they put these things in the park. If they were told to take their stuff, they said pay us for it. Staff told them they were not paying them for it, but they would allow the Foundation to take it. He stated they want to be reimbursed for what they paid, and the work they have done.

Mr. Pearce stated, for clarification, these are the only items in question.

Ms. Hegler stated, by staff's opinion, yes.

Mr. Pearce stated, but we do not have a price on that.

Ms. Hegler stated, only because we do not have the authority to do that, or to give them the other items, but staff would recommend we do. That is why it is before you.

Mr. Pearce stated this could not be a lot of money here. We are talking about a sink, some barricades, and a grill tray.

Mr. Epps stated it would probably be \$2,000 - \$3,000, at most.

Ms. Hegler stated it is the principal of you wanting to spend budget on that.

Mr. C. Jackson stated the issue, for him, has nothing...that is why he wants to keep us back on that point. We are talking about someone being asked to vacate the premises. In asking to vacate the premises, we are debating about what they can take, what they should not take, and how much we owe them for things they bought. To him, it is not even the issue. The issue, for him, is how do we get it back on track. Get the Foundation back in there operating; working cooperatively with the Conservation Commission. If they failed 3 times, let's try a 4th time, with a new Director. To him, the issue is getting Pinewood Lake Park up and running. Not about who owns what material because they need to leave and cannot come back in the park. He does not even want to debate about what they owe, and how much it is worth. He wants to force staff to work with the Foundation to get Pinewood Lake Park back on track. That is his recommendation. And, that is why he injected the neutral party of the new Interim Administrator, who does not have any baggage, or any issues on either side of the issue.

Mr. C. Jackson moved, seconded by Mr. Pearce, to direct the new Interim Administrator, to investigate this issue. To meet with the appropriate parties from the Foundation, and the Conservation Commission, to try to resolve the ongoing dilemma. If we do not, then the Pinewood Lake Park, as we know it, will cease to exist, and he does not want that to happen.

Mr. Pearce inquired if the park, as it stands, functioning, or not functioning.

Mr. N. Jackson stated it is halfway functioning.

Ms. Hegler stated it is functioning. It is functioning very well. On July 1, 2017, after an action of Council,

she has a memo, and the actions of Council, that directed the Conservation Commission to manage day-to-day operations of that park. A memo and letter was sent to the Foundation saying their contract ceased June 30, 2017. That is why we are operating under this umbrella of the Conservation Commission is doing this work day-to-day. In your budget, there was something submitted from the Administrator. It did include budget to hire staff, and we have staff that are working at the park. They are there as often as anyone was beforehand, and there is a number to be gotten every time. Our experience over the last year, is that the Foundation was not there every day. We have somebody out there about the same time any other park is managed. She stated it is operating just fine.

Mr. Malinowski stated he would give Mr. N. Jackson a brief moment to clarify, but staff is the one that should have the official answers.

Mr. N. Jackson stated he is out there. It is a vision of his. He has had meetings with the Foundation and staff. He stated the Foundation tried to have a meeting with their attorney about 2 weeks ago, and staff said they were not meeting with them. He thinks that was really embarrassing because they wanted to settle these things. Before, the Foundation had someone out there 7 days a week. Now we have a sign on the door. He stated he went out there Friday. This young fellow came about 12:00....

Mr. Malinowski stated that is not your clarification.

Mr. N. Jackson stated he was clarifying for Mr. Pearce. He asked how the park runs and the operation of the park. They are saying it is operating perfectly, but it is not. There is a sign on the door. It says, if you need to tour or rent the facility, call this number. When the budget was passed, it was clear that no one from Richland County was to work at the park. The budget was not to hire someone to work at the park, the budget was to hire someone to manage and develop a system for the Conservation property we all owned, not to work at the park. Even though it gave the Conservation Commission authority to manage and operate the park, it was not for them to physically operate the park, but to work with the Foundation, that changed. Initially, if you look at the budget from the Conservation Commission, which did not get to Council because staff got it late, they had a budget to pay the Foundation to operate and manage the park. It never got to Council.

Mr. Pearce stated he thinks he is incline to go...he is very unclear as to what...he thought that what we voted for was that the Conservation Commission would take over the supervision of the park, but the Foundation would have a role in operating the park. He stated he may have a bad recollection. He thinks he would agree with Mr. N. Jackson, let's see if we cannot get some clarification.

Mr. C. Jackson stated he has the same recollection because he remembers distinctively the Conservation Commission saying they did not want to run the park. He remembers that in the budget discussion. They said they did not want that responsibility, and that is why he thought, we then said, we would force the hand of them to work with the Foundation, who would run it, but would report to the Conservation Commission. That is why he is thinking today, whatever was decided, we need to have the new Interim Administrator get involved.

Mr. Pearce stated that needs to be clarified, and if that was the case, then a subsequent committee needs to know why that relationship is not working, in more detail. The Council could then decide whether that needs to be modified or updated in some way. He stated we have made a huge investment out there, and it too late to turn back now. We have got to do something with it.

Mr. Malinowski stated the motion on the floor directs the Interim Administrator to meet with the Foundation, individually, meet with the Conservation Commission, individually, and then meet with both groups together to try and resolve the ongoing dilemma of how the park is, or is not functioning.

The vote in favor was unanimous.

Mr. Pearce moved, seconded by Mr. C. Jackson, that prior to the next meeting of this committee, he would like to see the actual document on how this park was to have been managed, and what it was that was voted on by Council.

Ms. Hegler stated the Conservation Commission has an adopted plan, which she will send to the committee.

Mr. Malinowski stated there is a motion for staff to bring back, to this committee, at the next meeting.

Mr. Pearce stated the actual verbiage of what was voted on by Council on how this park was to be managed, is what he wants to see it in writing to verify what we voted.

The vote in favor was unanimous.

5. **ADJOURNMENT** – The meeting adjourned at approximately 3:31 PM



Agenda Briefing

Prepared by:	Aric A Jensen	Title:	Assistant County Administrator
Department:	Administration	Division:	Click or tap here to enter text.
Date Prepared:	March 8, 2022	Meeting Date:	April 19, 2022
Legal Review	Patrick Wright via email	Date:	March 14, 2022
Budget Review	Abhijit Deshpande via email	Date:	March 30, 2022
Finance Review	Stacey Hamm via email	Date:	March 22, 2022
Approved for consideration:	County Administrator	Leonardo Brown, MBA, CPM	
Committee	Pinewood Lake Ad Hoc		
Subject:	Pinewood Lake Park Dam		

RECOMMENDED/REQUESTED ACTION:

Staff requests the committee discuss the request of the Pinewood Lake Park Foundation Board of Trustees, and either hold in committee for further discussion, or recommend that Council begin negotiations to acquire the dam and related property for zero consideration.

Request for Council Reconsideration: Yes

FIDUCIARY:

Are funds allocated in the department’s current fiscal year budget?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
If no, is a budget amendment necessary?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

ADDITIONAL FISCAL/BUDGETARY MATTERS TO CONSIDER:

No funding has been allocated at this time.

COUNTY ATTORNEY’S OFFICE FEEDBACK/POSSIBLE AREA(S) OF LEGAL EXPOSURE:

Taking ownership of the dam and related property would inherently result in the County assuming potential liabilities and assuming responsibility for repairs and maintenance. Regardless, if the dam were to fail under the current arrangement, the County may still have liability because of its ownership interest in the park.

REGULATORY COMPLIANCE:

None applicable.

MOTION OF ORIGIN:

There is no associated Council motion of origin.

Council Member	Click or tap here to enter text.
Meeting	Click or tap here to enter text.
Date	Click or tap here to enter text.

STRATEGIC & GENERATIVE DISCUSSION:

Pinewood Lake Park (PLP) is located on approximately 44 acres in Lower Richland immediately adjacent to Garners Ferry Rd. It is a fairly high profile property within a 15 minute drive of the City of Columbia. Pinewood Lake encompasses approximately 20 of the 44 total acres and is artificially created by a relatively low and wide earthen dam with concrete headgate and unlined spillway. During the flooding of 2015/16, the spillway was breached, and the lake level dropped several feet to its current elevation.

The lake and surrounding property were originally a private recreation area. In 2012, Richland County acquired the current Park property. At approximately the same time, the dam and related property were acquired by Scale, Inc. In 2017, ownership of the dam property was transferred to the not-for-profit Pinewood Lake Park Dam Foundation, who is the current owner.

Richland County Administrator Leonardo Brown received a letter from the Pinewood Lake Park Foundation Board of Trustees dated February 23, 2022 regarding the current condition of the dam. It states that in the Foundation's opinion, it is in the community's interest to repair the dam and restore Pinewood Lake Park to its pre-flood condition.

The letter also sets forth two options for restoring the property. Option 1 proposes an expansion of the existing easement held by the County on the Foundation property, to include the right to repair and maintain the dam structure. Option 2 proposes to give to Richland County "free of charge" the dam structure and related property.

County Administration is also aware that the existing dam structure is considered a high hazard by South Carolina Department of Health and Environmental Control (SCDHEC) due to its current condition. As such, action will be necessary by the County and/or Foundation to remedy the situation.

In addition to the previous background information, Administration offers the following observations:

1. Pinewood Lake Park is a desirable public facility located in Lower Richland close to existing urban areas;
2. The majority of the Park and lake are located on property owned by Richland County;
3. The dam and related infrastructure are located on property owned by the Pinewood Lake Park Foundation;
4. Neither the Foundation nor the County are currently structured to operate a fully functional urban park of this size;
5. Repairing the dam structure and performing related deferred park maintenance will likely cost in excess of \$1M, and the Foundation does not have the resources to perform this task;
6. It is not advisable to spend public funds to make improvements to privately owned infrastructure, so if the Council decides that the dam should be repaired, it should anticipate acquiring the property.

Based on these observations, County Administration recommends that the following occur before County Council agrees to accept ownership of the property:

1. An appropriate agency, such as the Recreation Commission, agrees to accept the PLP property, or Council approves permanent operation plans and a funding source;

2. An engineer's estimate is prepared and sufficient funds are allocated to perform the dam restoration work;
3. Construction/design plans are completed and approved;
4. Construction bid is awarded.

In terms of procedure, it is recommended that the Pinewood Lake Park Ad Hoc Committee consider the facts at hand and make the appropriate recommendation to Council. If the recommendation is for the full Council to consider acquisition of the property, then the successful motion should articulate, at a minimum, the conditions under which the property would be accepted, the source of operational funding, and the intended future use of the property.

ADDITIONAL COMMENTS FOR CONSIDERATION:

Click or tap here to enter text.

ATTACHMENTS:

1. Exhibits A and B - Aerial maps
2. Image of spillway breach flow in May 2018
3. South Carolina Department of Health and Environmental Control Letter dated June 02, 2021
4. Letter to Administrator Brown dated February 23, 2022

PINEWOOD LAKE PARK Exhibit A



PINEWOOD LAKE PARK
Exhibit B







June 2, 2021

VIA CERTIFIED & FIRST-CLASS MAIL

9214 8969 0099 9790 1419 6668 22

Pinewood Park Foundation
 c/o Greg Sinkler
 1135 Old Garners Ferry Road
 Columbia, SC 29209
 Also via e-mail to: gsinkler23@gmail.com

Subject: Inspection of PINWOOD LAKE DAM, D0580, Richland County, High Hazard Class

Dear Representative of the Pinewood Park Foundation:

Pinewood Lake Dam sustained significant damage as a result of October 2015's historic rainfall, putting the dam in an unsafe condition. The South Carolina Department of Health and Environmental Control (the Department/DHEC) has made efforts to work with the Pinewood Lake Foundation to repair the dam through entering into a Consent Agreement in 2017 and the issuance of a repair permit, which expired without implementation in March 2020. Your dam was inspected by the Department on May 27, 2020. No construction or evidence of actions to carry out the permit you received to repair the dam was observed. More recently, the Department inspected your dam on May 5, 2021. The Dam remains in an unsafe condition. The report of that inspection is enclosed. Please review it closely. Dam Safety Program staff are available to discuss the results of the inspection with you. A summary of the inspection report is as follows:

Inspection Summary

Overall Rating: Unsatisfactory

Repair Activities Requiring a Permit

- Repair the breached area in the former auxiliary spillway.
- Repair the large eroded areas on either side of the primary spillway.
- Implement a tree management plan for trees greater than 4" in diameter.
- As an alternative to repair, the dam may be formally removed and decommissioned under a removal permit

Maintenance Activities NOT Requiring a Permit

- Continue to maintain a safe water level in the reservoir as stipulated in the executed and signed consent agreement dated May 9, 2017.
- Cut and remove brush, woody vegetation, and trees less than 4" in diameter.
- Establish grass cover (or erosion protection) on the slopes.

Monitoring Activities

- Monitoring the condition of the primary spillway.
- Monitor the breached area.
- Monitor the health of the large trees.

Emergency Action Plan (EAP)

- An up-to-date emergency action plan should be submitted to the Department. Department staff is available to assist with this via email at response@dhec.sc.gov.

Dam Hazard Class Review

- Hazard class should: stay the same.

Your dam is currently a High-hazard (i.e., a Class 1) dam and its overall condition was assessed as "Unsatisfactory". This rating, as established by the U.S. Army Corps of Engineers for the National Inventory of Dams, means "A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution."

Repair activities denote significant deficiencies with the dam and require the involvement of a Professional Engineer licensed to practice engineering in South Carolina. A list of engineers familiar with the design and permitting of dams in South Carolina is enclosed as a courtesy. Your engineer should prepare and submit a permit application to the Department for the necessary repair work or for removal of the dam. No action can be taken to repair or remove the dam until you have received a Department-issued permit. **The Department requires the submission of a Permit Application no later than July 23, 2021.**

Maintenance activities should be initiated immediately if you have not already done so and should be completed by July 23, 2021. The involvement of a Professional Engineer is not required for maintenance activities. Photographs shall be submitted to the Department as confirmation that these maintenance items have been addressed; alternatively, the Department can be contacted to visit the dam and review the completed maintenance work.

As the owner of a regulated dam, it is your responsibility to routinely monitor the dam for any further deterioration of the dam which may lead to dam failure. Monitoring activities should be initiated immediately if you have not already done so and should continue until the Department determines that conditions at the dam no longer pose a threat to life or property. Please notify the Department if you notice any change in the area(s) being monitored. Pay special attention to any areas of seepage, looking for changes in the volume of flow and whether the seepage water is clear or cloudy/muddy. Cloudy/muddy water is an indication that soil is being removed from inside the dam, creating potential voids through the dam that can ultimately lead to dam failure. Involvement of a Professional Engineer may be required if changes or deterioration of the situation is observed.

In closing, failure to maintain the dam in a safe condition is a violation of the SC Dams and Reservoirs Safety Act, S.C. Code Ann. 49-11-110, et seq., (2008). Additionally, Consent Agreement 17032-W required obtaining a permit for repair or removal of the dam. The previously issued repair permit (Permit No. DAM000157) expired on March 6, 2020 and the permitted repairs have not been completed. The Department has determined that the absence of an in-effect permit puts Pinewood

Park Foundation in violation of the terms of Consent Agreement 17-032-W, and this matter may be referred to the Department's office of General Counsel for further action and/or result in the Department issuing an "Inspection and Repair Order" and/or a "Maintenance Order." The Department requests your voluntary compliance by submittal of a permit application for repair or removal of the dam by the date provided above to forestall legal referral and/or issuance of any orders. The consequences of non-compliance with a Department-issued order may include the assessment of civil penalties pursuant to the S.C. Dams and Reservoir Safety Act, S.C. Code Ann. 49-11-110, et seq. (2008) and Regulation 72-1, et seq. (2012).

Should you have questions regarding the content of this letter, or wish to discuss any of the findings, requirements, schedules, and/or deadlines contained herein, please feel free to contact me at (843) 992-0238, or by email at sullivrd@dhec.sc.gov.

Please submit all documents/correspondence to:

Bureau of Water – Dam Safety Program
2600 Bull Street
Columbia, SC 29201

Sincerely,



Ryan Sullivan
Dam Safety Regional Engineering Associate

Enclosure: PINWOOD LAKE DAM (D0580) Preliminary Inspection
 List of Engineers
 Inundation Map
 Tree Management Guidance Document

cc: File: D0580

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form




Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Inspection Information

1. *Date of Inspection* 05/05/2021

	<p>Photo Taken: 5/5/2021 11:04:37 AM GPS Latitude: 33.9451361111111 GPS Longitude: -80.9131555555556 GPS Altitude: 57.3533210332103 meters</p>
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2. *Inspectors Present* Ryan Sullivan, Sandra Sailer-Taylor

3. *Other Persons Attending Inspection*

Name	Phone	Owner/Engineer/Other
Greg Sinkler		Owner Rep.

4. *Is this a follow-up inspection?* Yes No NA

Observation/Instrumentation

1. *Estimate the current level of the water in the reservoir:* Breached

Water level is being kept down due to failure of the emergency spillway.

2. *Describe the current weather & conditions:* Sunny

3. *Recent rainfall quantity:* Less than 2"

4a. *Are Piezometers or Observation Wells present?* Yes No

4b. *(If Present:) Condition of Piezometers/Observation Wells*

5a. *Is a Staff Gauge or Recorder present?* Yes No

5b. *(If Present:) Condition of Staff Gauge or Recorder*

6a. *Are Measurement Weirs Present?* Yes No

6b. *(If Present:) Condition of Weirs:*

7a. *Number of Spillways Present* 2

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form

Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021



Observation/Instrumentation		
<i>7b. Type of Spillways Present</i>	Earthen Overflow/Runaround, Other (Specify In Comments)	
<table border="1"><tr><td>Vertical Gate. Earthen runaround has previously failed.</td></tr></table>		Vertical Gate. Earthen runaround has previously failed.
Vertical Gate. Earthen runaround has previously failed.		
<i>8. Other:</i>		
<i>9. Additional Comments (Refer to item number if applicable)</i>		

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021

Completed Date: 05/07/2021

Embankment: Crest

Is this section applicable for this dam?

Yes No



Photo Taken: 5/5/2021 10:52:21 AM
GPS Latitude: 33.9436833333333
GPS Longitude: -80.9117666666667
GPS Altitude: 56.9652976758994 meters



Photo Taken: 5/5/2021 10:59:37 AM
GPS Latitude: 33.9441111111111
GPS Longitude: -80.9118277777778
GPS Altitude: 52.7301902868503 meters



Photo Taken: 5/5/2021 11:02:13 AM
GPS Latitude: 33.9445527777778
GPS Longitude: -80.9125361111111
GPS Altitude: 57.0943259848211 meters

PINEWOOD LAKE DAM : D0580



Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021

Completed Date: 05/07/2021

Embankment: Crest	
<p>1. Grass Cover</p> <p>There is a paved path on the crest. Grass cover along the edges of the crest is greatly limited but heavy vegetation and large trees.</p>	Monitor
<p>2. Deleterious Vegetation</p> <p>Heavy brush and woody vegetation observed on the crest.</p>	Investigate
<p>3. Trees</p> <p>Trees greater than 4" in diameter observed on the crest.</p>	Action Required
<p>4. Animal Activity</p>	Monitor
<p>5. Surface Cracking</p> <p>Cracking and warping observed on the footpath.</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>May 5, 2021 at 11:03:51 AM +33.944822, -80.912897 1151 Old Garners Ferry Rd Columbia, SC 29209 United States</p> </div> <div style="width: 45%;"> <p>Photo Taken: 5/5/2021 11:03:51 AM GPS Latitude: 33.9448194444444 GPS Longitude: -80.9128944444444 GPS Altitude: 57.4042434394193 meters</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;">  <p>May 5, 2021 at 11:04:21 AM +33.944954, -80.913013 1151 Old Garners Ferry Rd Columbia, SC 29209 United States</p> </div> <div style="width: 45%;"> <p>Photo Taken: 5/5/2021 11:04:21 AM GPS Latitude: 33.9449638888889 GPS Longitude: -80.9130111111111 GPS Altitude: 57.8328246863343 meters</p> </div> </div>	Investigate
<p>6. Horizontal Alignment</p>	Monitor

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021

Completed Date: 05/07/2021

Embankment: Crest	
<i>7. Settlement</i>	Monitor
<i>8. Sinkhole</i>	No Deficiency
<i>9. Erosion</i>	Action Required
<p>Large breach through the crest at the failed emergency spillway. Significant erosion also observed on either side of the primary spillway.</p>	
	<p>Photo Taken: 5/5/2021 10:54:11 AM GPS Latitude: 33.9440027777778 GPS Longitude: -80.9119472222222 GPS Altitude: 58.5315208825847 meters</p>
	<p>Photo Taken: 5/5/2021 10:54:40 AM GPS Latitude: 33.9440027777778 GPS Longitude: -80.9119472222222 GPS Altitude: 58.5315208825847 meters</p>
<i>10a. Are Alterations/Repairs Present?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>10b. (If Present:;) Alterations/Repairs Condition</i>	
<i>11. Other:</i>	

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Embankment: Crest	
<i>12. Embankment: Crest Condition</i>	Regular Monitoring Necessary, Needs Maintenance, Needs Permitted Repair(s), Condition Prevented Full Inspection
Violation Determined: 5/6/2021 DAMMAINTREP	
<i>13. Additional Comments (Refer to item number if applicable)</i>	
Concrete/Masonry Dams: Crest	
<i>Is this section applicable for this dam?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>1. Surface Conditions</i>	
<i>2. Horizontal Alignment</i>	
<i>3. Vertical Alignment</i>	
<i>4. Condition of Joints</i>	
<i>5. Unusual Movement</i>	
<i>6a. Are Alterations/Repairs Present?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>6b. (If Present:) Alterations/Repairs Condition</i>	
<i>7. Other:</i>	
<i>8. Concrete/Masonry Dam Crest Condition</i>	
<i>9. Additional Comments (Refer to item number if applicable)</i>	

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Embankment: Upstream Slope

Is this section applicable for this dam?

Yes No



Photo Taken: 5/5/2021 10:52:42 AM
GPS Latitude: 33.9438527777778
GPS Longitude: -80.9116055555556
GPS Altitude: 57.2326317070203 meters



Photo Taken: 5/5/2021 10:55:44 AM
GPS Latitude: 33.9440305555555
GPS Longitude: -80.9118888888889
GPS Altitude: 53.8855247981546 meters



Photo Taken: 5/5/2021 11:03:54 AM
GPS Latitude: 33.9448194444444
GPS Longitude: -80.9128944444444
GPS Altitude: 57.4042434394193 meters

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Embankment: Upstream Slope	
1. <i>Grass Cover</i>	Monitor
<input type="text" value="Grass cover limited by heavy brush."/>	
2. <i>Deleterious Vegetation</i>	Investigate
<input type="text" value="Heavy brush and vegetation, prevented full inspection."/>	
3. <i>Trees</i>	Action Required
<input diameter="" in="" observed="" on="" slope."="" the="" type="text" upstream="" value="Trees greater than 4"/>	
4. <i>Animal Activity</i>	Monitor
5. <i>Surface Cracking</i>	Monitor
<input type="text" value="Condition prevented full inspection."/>	
6. <i>Subsidence, Sinkhole</i>	No Deficiency
7. <i>Slide, Slough, Scarp</i>	Monitor
<input type="text" value="Condition prevented full inspection."/>	
8. <i>Groins</i>	Monitor
9. <i>Erosion</i>	Action Required
<input type="text" value="Large breach at failed emergency spillway."/>	
10a. <i>Slope Protection/Armoring Present?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
10b. <i>(If Present:) Slope Protection/Armoring</i>	
11a. <i>Alterations/Repairs Present?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
11b. <i>(If Present:) Alterations/Repairs Condition</i>	
12. <i>Other:</i>	
13. <i>Embankment: Upstream Slope Condition</i>	Regular Monitoring Necessary, Needs Maintenance, Needs Permitted Repair(s), Condition Prevented Full Inspection
<input type="text" value="Violation Determined: 5/6/2021 DAMMAINTREP"/>	
14. <i>Additional Comments (Refer to item number if applicable)</i>	
Concrete/Masonry Dams: Upstream Face	
<i>Is this section applicable for this dam?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021

Completed Date: 05/07/2021

Concrete/Masonry Dams: Upstream Face	
<i>1. Surface Conditions</i>	
<i>2. Condition of Joints</i>	
<i>3. Unusual Movement</i>	
<i>4. Abutments</i>	
<i>5a. Alterations/Repairs Present?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>5b. (If Present:) Alterations/Repairs Condition</i>	
<i>6. Other:</i>	
<i>7. Concrete/Masonry Dams: Upstream Face Condition</i>	
<i>8. Additional Comments (Refer to item number if applicable)</i>	

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form

Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021



Embankment: Downstream Slope

Is this section applicable for this dam?

Yes No



Photo Taken: 5/5/2021 10:57:56 AM
GPS Latitude: 33.9439861111111
GPS Longitude: -80.9120638888889
GPS Altitude: 54.6734275296263 meters



Photo Taken: 5/5/2021 11:00:26 AM
GPS Latitude: 33.9443527777778
GPS Longitude: -80.9123222222222
GPS Altitude: 54.8185081771041 meters



Photo Taken: 5/5/2021 11:03:27 AM
GPS Latitude: 33.9448194444444
GPS Longitude: -80.9128944444444
GPS Altitude: 57.4042434394193 meters

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Embankment: Downstream Slope	
1. Grass Cover	Investigate
Grass cover greatly limited by brush and woody vegetation	
2. Deleterious Vegetation	Action Required
Dense brush and woody vegetation observed on the downstream slope. Condition prevented full inspection.	
3. Trees	Action Required
Trees greater than 4" in diameter observed on the downstream slope.	
4. Animal Activity	Monitor
Condition prevented full inspection.	
5. Surface Cracking	Monitor
Condition prevented full inspection.	
6. Subsidence, Sinkhole	Monitor
Condition prevented full inspection.	
7. Slide, Slough, Scarp	Monitor
Condition prevented full inspection.	
8. Groins	Monitor
Condition prevented full inspection.	



PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form

Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021



Embankment: Downstream Slope	
9. Erosion	Action Required
<p>Large breach at failed emergency spillway. Large eroded areas on either side of the primary spillway.</p>  <p>May 5, 2021 at 10:57:44 AM +33.943974, -80.912081 Old Garners Ferry Rd Columbia SC 29209 United States</p>	<p>Photo Taken: 5/5/2021 10:57:44 AM GPS Latitude: 33.9439722222222 GPS Longitude: -80.9120777777778 GPS Altitude: 55.4793357933579 meters</p>
 <p>May 5, 2021 at 10:59:06 AM +33.944020, -80.912081 Old Garners Ferry Rd Columbia SC 29209 United States</p>	<p>Photo Taken: 5/5/2021 10:59:06 AM GPS Latitude: 33.9440194444444 GPS Longitude: -80.9120861111111 GPS Altitude: 54.1938133041336 meters</p>
10a. Slope Protection/Armoring Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
10b. (If Present:) Slope Protection Condition	
11. Wet Areas	Monitor
Condition prevented full inspection.	
12a. Seepage	<input type="checkbox"/> Yes <input type="checkbox"/> No
Condition prevented full inspection.	
12b. (If Present): Seepage Flow	
13a. Drainage System Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Embankment: Downstream Slope	
<i>13b. (If Present:) Drainage System Condition</i>	
<i>14a. Alterations/Repairs Present?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>14b. (If Present:) Alterations/Repairs Condition</i>	
<i>15. Other:</i>	
<i>16. Embankment: Downstream Slope Condition</i>	Regular Monitoring Necessary, Needs Maintenance, Needs Permitted Repair(s), Condition Prevented Full Inspection
<div style="border: 1px solid black; padding: 5px;"> Violation Determined: 5/6/2021 DAMMAINTREP </div>	
<i>17. Additional Comments (Refer to item number if applicable)</i>	
Concrete/Masonry Dams: Downstream Face	
<i>Is this section applicable for this dam?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>1. Surface Conditions</i>	
<i>2. Condition of Joints</i>	
<i>3. Unusual Movement</i>	
<i>4. Drains</i>	
<i>5. Leakage</i>	
<i>6. Abutments</i>	
<i>7a. Alterations/Repairs Present?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>7b. (If Present:) Alterations/Repairs Condition</i>	
<i>8. Other:</i>	
<i>9. Concrete/Masonry Dam: Downstream Face Condition</i>	
<i>10. Additional Comments (Refer to item number if applicable)</i>	

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form

Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021



Downstream Area	
<i>Is this section applicable for this dam?</i>	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<p>Photo Taken: 5/5/2021 11:01:21 AM GPS Latitude: 33.9444277777778 GPS Longitude: -80.9124138888889 GPS Altitude: 57.3703880028565 meters</p>
<i>Is Downstream Area clear?</i>	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
1. Trees	Investigate
Condition prevented full inspection.	
2. Deleterious Vegetation	
Condition prevented full inspection.	
3. Wet Areas	Monitor
Condition prevented full inspection.	
4a. Seepage	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Condition prevented full inspection.	
4b. (If Present): Seepage Flow	
5a. Boils	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Condition prevented full inspection.	
5b. (If Present): Boil Flow	
6a. Alterations/Repairs Present	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
6b. (If Present:) Alterations/Repairs Condition	
7. Other:	

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Downstream Area

8. Downstream Area Condition

Regular Monitoring
Necessary, Needs
Maintenance, Needs
Permitted Repair(s),
Condition Prevented
Full Inspection

Violation Determined: 5/6/2021
DAMMAINTREP

9. Additional Comments (Refer to item number if applicable)

Spillways: Erodible Channel

Is this section applicable for this dam?

Yes No

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Spillways: Erodible Channel

The earthen channel/emergency spillway has failed.



Photo Taken: 5/5/2021 11:04:58 AM
GPS Latitude: 33.94513611111111
GPS Longitude: -80.91315555555556
GPS Altitude: 57.3533210332103 meters



Photo Taken: 5/5/2021 11:06:10 AM
GPS Latitude: 33.94520277777778
GPS Longitude: -80.91326944444444
GPS Altitude: 56.3679389963364 meters



Photo Taken: 5/5/2021 11:29:16 AM
GPS Latitude: 33.94525277777778
GPS Longitude: -80.91323055555556
GPS Altitude: 50.5888786198398 meters

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Spillways: Erodible Channel	
<i>1. Location</i>	
<i>2. Grass Cover</i>	Action Required
<i>3. Deleterious Vegetation</i>	Action Required
<i>4. Trees</i>	No Deficiency
<i>5. Animal Activity</i>	Monitor
<i>6. Subsidence, Sinkhole</i>	No Deficiency
<i>7. Slide, Slough, Scarp</i>	Monitor
<i>8. Erosion</i>	Action Required
<i>9. Debris</i>	Monitor
<i>10. Flowing?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
<i>11a. Alterations/Repairs Present</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
<i>11b. (If Present:) Alterations/Repairs Condition</i>	
<i>12. Other:</i>	
<i>13. Spillway: Erodible Channel Condition</i>	Regular Monitoring Necessary, Needs Maintenance, Needs Permitted Repair(s), Condition Prevented Full Inspection
<div style="border: 1px solid black; padding: 5px;"> Violation Determined: 5/6/2021 DAMMAINTREP </div>	
<i>14. Additional Comments (Refer to item number if applicable)</i>	
Spillways: Non-Erodible Channel	
<i>Is this section applicable for this dam?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>1. Location</i>	
<i>2. Approach Area</i>	
<i>3. Weir/Control</i>	
<i>4. Sidewalls</i>	
<i>5. Channel Floor</i>	
<i>6. Condition of Joints</i>	

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Spillways: Non-Erodible Channel

7. Surface Condition

8. Unusual Movement

9. Discharge Channel

10. Debris

11. Flowing? Yes No NA

12a. Boils Yes No NA

12b. (If Present): Boils

13a. Alterations/Repairs Present Yes No NA

13b. (If Present:) Alterations/Repairs Condition

14. Other:

15. Spillway: Non-Erodible Channel Condition

16. Additional Comments (Refer to item number if applicable)

Spillways: Inlet Structure

Is this section applicable for this dam? Yes No

Vertical gate is currently being kept open to keep the water level down.



Photo Taken: 5/5/2021 10:48:58 AM
GPS Latitude: 33.9442555555556
GPS Longitude: -80.9121638888889
GPS Altitude: 51.6801414855988 meters

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021

Completed Date: 05/07/2021

Spillways: Inlet Structure



Photo Taken: 5/5/2021 10:55:39 AM
GPS Latitude: 33.9440305555555
GPS Longitude: -80.9118888888889
GPS Altitude: 53.8855247981546 meters



Photo Taken: 5/5/2021 10:57:33 AM
GPS Latitude: 33.9439861111111
GPS Longitude: -80.9120722222222
GPS Altitude: 56.0248069656645 meters



Photo Taken: 5/5/2021 11:33:13 AM
GPS Latitude: 33.9441055555556
GPS Longitude: -80.9119861111111
GPS Altitude: 48.8906516963632 meters

1. Location

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Spillways: Inlet Structure	
2a. Intake Structure	No Deficiency
2b. Intake Structure Types	Vertical Gate, Other (Explain In Comments)
<input type="text" value="Weir"/>	
3. Trashrack	Not Present
4a. Low-Level Valve Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
4b. (If Present:) Low-Level Valve Condition	
5. Debris	No Deficiency
6a. Repairs/Alterations Present	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
6b. (If Present:) Alterations/Repairs Condition	
7. Other:	
8. Spillway: Inlet Structure Condition	Regular Monitoring Necessary
9. Additional Comments (Refer to item number if applicable)	
Spillways: Outlet Works	
Is this section applicable for this dam?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1. Location	
2a. Outlet Structure	
2b. Outlet Structure Type	
3. Outlet Pipe	
4. Primary Closure/Control	
5. Secondary Closure/Control (If Applicable)	
6. Unusual Movement	
7a. Seepage	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
7b. (If Present): Seepage	
8. Stilling Basin	
9. Normal Flow Quantity	
10. Low-Level Flow Quantity	

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form



Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021

Spillways: Outlet Works	
11a. Alterations/Repairs Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
11b. (If Present:) Alterations/Repairs	
12. Other:	
13. Outlet Works Condition	
14. Additional Comments (Refer to item number if applicable)	
Emergency Action Plan	
Is this section applicable for this dam?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
An updated emergency action plan should be submitted to the Department. Department staff is available to assist with this.	
1. Date of last update of emergency plan:	
2a. EAP provided by owner?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
2b. (If EAP was not provided, was a copy of the EAP form left with the owner?)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
3. Does EAP contain emergency alert plan?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
4. Does EAP contain specific actions to take if the dam has failed or is failing?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
5. Additional Comments (Refer to item number if applicable)	
Downstream Hazard Check	
1. Satellite Imagery	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
2. Inundation Map	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
3. Structures/Developments	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
4. Roads/Railways	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
5. Utilities	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
6. Consider For Reclass?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Current high hazard classification is appropriate.	
7. Additional Comments (Refer to item number if applicable)	
Inspection Summary	
1. Overall Condition (*Per National Inventory of Dams Definition)	Unsatisfactory

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form

Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021



Inspection Summary

-----NID Definitions-----

(SATISFACTORY) No existing or potential dam safety deficiencies are recognized.

Acceptable performance is expected under all loading conditions in accordance with state engineer's rules and regulations for dams or tolerable risk guidelines.

(FAIR) No existing dam safety deficiencies are recognized for normal loading conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action.

(POOR) A dam safety deficiency is recognized for loading conditions, which may realistically occur. Remedial action is necessary. A POOR condition is used when uncertainties exist as to critical analysis parameters, which identify a potential dam safety deficiency. Further investigations and studies are necessary.

(UNSATISFACTORY) A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.

(NOT RATED) This should only be used if it is not possible to assess to dam's condition due to site constraints on visibility on the day of inspection. If vegetation is a problem the owner should be ordered perform maintenance to remove it before the next visit.

3. Final Comments

The breached area in the former auxiliary spillway should be repaired with a permit submitted by a Professional Engineer.

The large eroded areas on either side of the primary spillway should be repaired with a permit submitted by a Professional Engineer.

A permitted tree management plan should be developed and implemented by a Professional Engineer for trees greater than 4" in diameter.

Cut and remove brush, woody vegetation, and trees less than 4" in diameter.

Grass cover (or erosion protection) should be established on the slopes.

Maintain a safe water level.

Monitor the condition of the primary spillway, breached area, and large trees.

An up-to-date emergency action plan should be developed and submitted to the Department. Department staff is available to assist with this.

PINEWOOD LAKE DAM : D0580

Dams Preliminary Inspection Form

Inspector: Ryan Sullivan

Start Date: 05/06/2021 Completed Date: 05/07/2021



Inspection Summary

Preliminary Dam Inspection Disclaimer:

The information contained in the preliminary inspection report is intended as an aid to identify those dams that require maintenance and/or repair actions to reduce their danger to human life or property only. It is not intended as professional engineering or consulting advice for conditions or situations present at individual dams. It is not a substitute for a detailed inspection, nor does it replace the need for services provided by registered professional engineers. If your dam is experiencing an unusual situation consult with engineering professionals to find an appropriate remedy. Preliminary inspections conducted by South Carolina Department of Health and Environmental Control (the Department) are provided "AS IS" and "as available", without warranties of any kind, either express or implied. Preliminary inspections consist only of a visual but technical examination of the dam and its appurtenant works. All findings are based solely on visual observations of the inspector at the time of the inspection. Common law holds that the storage of water is a hazardous activity and the Department does not assume any responsibility or risk for your actions or inactions. Dam owners are responsible for the safe operations and maintenance of their impoundment structures.

PINEWOOD LAKE DAM (D0580)
Violation List



Form	Determined	Description	Sec. #
Dams Preliminary Inspection Form	5/6/2021	Reference: DAMMAINTREP	
Dams Preliminary Inspection Form	5/6/2021	Reference: DAMMAINTREP	
Dams Preliminary Inspection Form	5/6/2021	Reference: DAMMAINTREP	
Dams Preliminary Inspection Form	5/6/2021	Reference: DAMMAINTREP	
Dams Preliminary Inspection Form	5/6/2021	Reference: DAMMAINTREP	

MAINTENANCE, REPAIR, and TREE MANAGEMENT STANDARD OPERATING PROCEDURES



DAMS SAFETY PROGRAM

INTRODUCTION

The Department of Health and Environmental Control (DHEC or the Department) is providing these Standard Operating Procedures (SOP) document to assist dam owners and their engineers in defining what are considered maintenance activities, what are considered repair activities, and outlining the steps for developing a phased approach to remove existing tree growth from earthen dams within a reasonable time.

This approach to tree removal is based on the Federal Emergency Management Agency (FEMA) Document No. 534 (Technical Manual for Dam Owners: Impacts of Plants on Earthen Dams, September 2005), which states, “*Many individual dam owners and small dam owner organizations are not financially capable of undertaking comprehensive dam remediation projects in one major construction contract. Therefore, they must undertake dam remediation programs in a sequential manner.*” Ultimately, the Department aims to achieve the removal of established tree growth from regulated dams in the state.

Although there are varying schools of thought and research as to the viability of tree growth on dams, trees and brush, research by federal regulatory agencies such FEMA, the US Army Corps of Engineers, the Federal Energy Regulatory Commission, and US Department of Interior Bureau of Reclamation have determined that especially in an uncontrolled growth state, trees are detrimental to dams. DHEC has adopted this position as well.

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SECTION 1

PURPOSE

This document has three intended goals. First, it defines what the Department considers maintenance activities. Next it defines what the Department considers repair activities. Lastly, it aims to present the requirements for establishing a phased, yet safe and systematic approach to removing existing tree growth from earthen dams within a reasonable time.



Figure 1: Poorly Maintained Dam with Extensive Tree Growth

SECTION 2: INFORMATION

2.1 Definitions

Appurtenant Structures (also Appurtenances): Structures such as spillways, inlet/outlet structures, auxiliary spillways, ramps, docks, etc., that are necessary for the safe operation of a dam.

Certified Arborist: A person certified by the International Society of Arboriculture (ISA) as qualified in the study and management of trees and woody vegetation.

Clay: Fine-grained, plastic soils that, when properly compacted, form dense, relatively impermeable soil layers.

Clearing: The process of cutting or felling trees close to ground level.

Conifer: Trees that do not shed their leaves and produce seeds as cones, typically pines, spruces, yews, etc.

DBH: Diameter at Breast Height refers to the diameter of the tree trunk at the approximate height of an average person's chest.

Deciduous: Trees which naturally shed their leaves, typically during colder months of the year.

Deadfall: Trunks, limbs, boughs, and/or branches that drop or fall to the ground when dead trees fall over or parts break and fall off of the tree.

Grubbing: The process of removing the stump and root ball below ground surface elevation.

Internal Erosion: The erosion of the interior soils of an earthen dam or its foundation that results as soils are dissolved or are carried away by seepage. Internal erosion can progressively worsen and lead to the failure of the dam. See Piping.

Old Growth: For the purposes of this document only, typically refers to older trees that are 12 inches DBH or larger.

Professional Engineer: A professional engineer actively licensed to practice engineering in the state of South Carolina, as stipulated in the Dam and Reservoirs Safety Act and Dam and Reservoirs Safety Act Regulations, Regulation 72-1 and 72-9. It is strongly encouraged that this engineer has relevant experience in evaluating, assessing, designing, and/or constructing dams.

Rip Rap: Common name for large diameter stone, with sizes and weights defined in Section 804.2.1 of the most recent edition of the South Carolina Department of Transportation Standard Specifications for Highway Construction. Rip rap is commonly used on the upstream slopes of dams for slope and wave protection.

Root Ball: The ball or bundle of dense root growth immediately beneath the trunk of the tree that, with the extended root system, anchors, feeds, and supports a tree or other woody vegetation.

Piping: A form of internal erosion which initiates by backward erosion, or erosion in a crack or high permeability zone, and results in the formation of a continuous tunnel called a “pipe” between the upstream and downstream side of the embankment or its foundation. For the purposes of this document only, piping is of particular concern along decaying root paths penetrating the embankment resulting in the creation of a preferential pathway for internal seepage flow.

Sapling: For the purposes of this document only, typically refers to a young tree 4 inches DBH or smaller.

Shrub: A woody plant without a defined central stem or trunk. Shrubs may naturally grow on their own, or may develop as new growth on the stumps of hardwood trees that have had the trunks cut.

Stump: The remainder of tree trunk left behind at or near the ground surface after the tree has been cut down.

Surface Erosion: The natural washing away or dissolution of soils at the surface of the ground caused by rainfall running over the ground surface. Manmade activities and traffic can exacerbate this.

Tap Root: The main and consequently the largest root typically extending vertically down below the tree trunk that anchors, supports, feeds, and assists with nutrient uptake for a tree or other woody vegetation.

Topsoil: Rich, organic soil that contains the nutrients to support healthy vegetation growth.

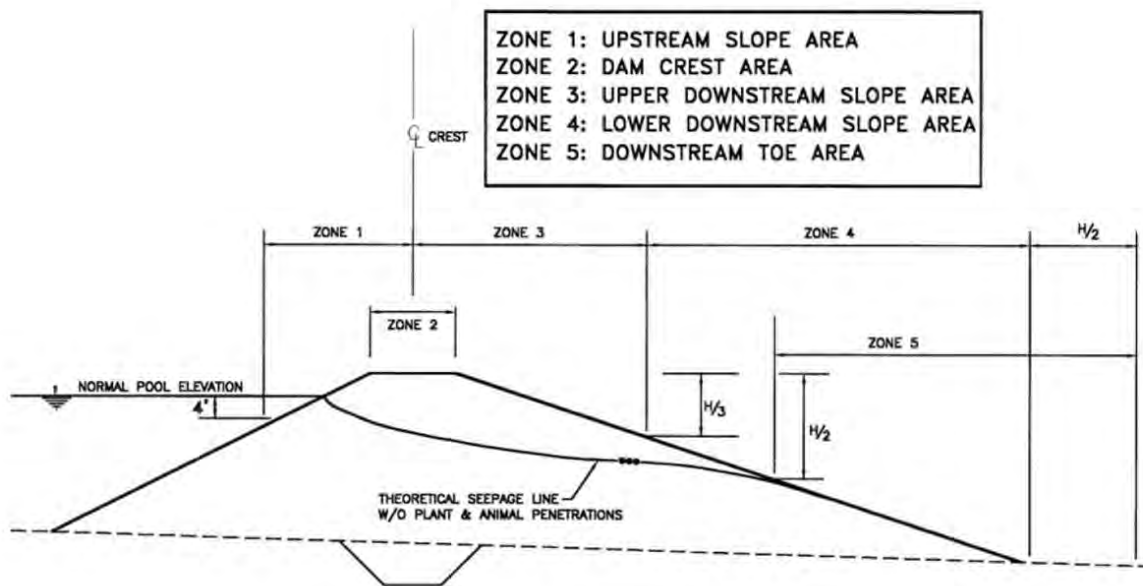
Trunk: The main stem of a tree or other woody plant.

Void: The hole or opening in the embankment or foundation soil created when the root ball of a tree is removed or blows over.

57 Stone: Commercially available aggregate or stone with a nominal 3/8-inch diameter.

2.2 Dam Repair Zones

The diagram below is reprinted from Chapter 6 of FEMA 534 and represents remedial repair zones on a typical dam. It is presented to familiarize the reader with some of the dam specific terminology presented in this SOP.



REMEDIAL DAM REPAIR ZONES

NOTE: Part of Zone 5 lies beyond the downstream toe of the dam, and according to the diagram, equates to a distance of half of the height of the dam. This SOP document defines Zone 5 as extending beyond the downstream toe of the dam, a distance, equating to half of the height of the dam or 15 feet, whichever distance is **smaller**. This is especially important for Tree Management Plans.

SECTION 3: MAINTENANCE AND REPAIR

DHEC Dam and Reservoirs Safety Act Regulations, Regulation 72-1 and 72-9 (the Regulations), require regular maintenance of dams to ensure they continue to operate in a safe manner, protecting downstream life and property. Maintenance activities are continuously performed to help ensure the long-term stability and performance of earthen dams and may be undertaken without receiving a permit from the Department. Dam repairs, under the Regulations, require a permit, must be performed under the direction of a Professional Engineer – as defined above, and must have Department approval through the permitting process, prior to starting.

3.1 Maintenance Activities

Maintenance activities:

- Generally take little time to complete but may be performed frequently over the life of the dam, typically by 1 to 2 people in 3 days or less;
- Considered good housekeeping and/or routine activities to keep the dam in good working order;
- Do not require specialized training or skill to complete;
- Are generally carried out using only hand tools (shovels, rakes, etc.)
- May use gasoline powered equipment (lawn mowers, weed eaters, chainsaws, portable generators, etc.), but typically do not utilize diesel powered machinery to perform
- Needed materials, supplies, and tools normally do not require commercial delivery; and,
- It is not necessary to lower the reservoir to complete

Maintenance activities typically include:

- Repairing animal burrows;
- Removing vegetation and debris from inlets, spillway structures, outlets, and auxiliary spillways;
- Mowing, removal of trees and brush 4 inch diameter and smaller;
- Repairing surface erosion damage less than 12 inches deep that has not exposed the core of the dam or has not changed the dam's cross sectional area (width); and,
- Seeding, fertilizing, amending soil to promote healthy grass growth.

3.2 Repair Activities

Repair activities in general are more extensive than maintenance activities and are:

- Generally long-term to complete – possibly up to a year or more;
- Typically undertaken to preserve the long term stability and performance of the dam;
- Necessary to return the dam and/or keep it in good working order;
- Performed under the direction of a Professional Engineer;
- Require a permit from the Department prior to starting work;
- Excavated deeper than 12 inches into the dam, spillway, and/or auxiliary spillway;
- Change grades or elevations of dam crest, spillway, and/or auxiliary spillway;
- Require bulk delivery of materials and/or the use of heavy machinery to complete; and,
- May require lowering the reservoir for completion

Work activities and efforts that are more extensive than are listed in Section 3.1 shall be considered a repair, and shall require submitting a plan and permit application by a Professional Engineer, according to the Regulations.

SECTION 4: TREE MANAGEMENT

4.1 General

The management of woody vegetation on dams generally has three components.

- 1. Maintenance Activities** – Such activities include, but are not limited to, the removal and prevention of the growth of small vegetation and saplings (4-inches or less) found growing anywhere on the dam. Small vegetation includes undergrowth, shrubs, vines, Kudzu, privets, bushes, briars, “Pokeweed,” etc. Saplings (4-inches or less) can be cut close to ground level leaving the stump and roots in place; however, the stump must be treated to kill the plant, prevent future shrub-like growth and stop further growth of the roots.

Areas of bare ground on the dam created by the removal of brush and saplings must be re-vegetated as described in Section 5 of this document.

All dam owners whose dams presently have old growth trees established on them must maintain trees according to the Tree Management Plan also described in subsequent of this document.

- 2. Tree Removal** – Tree growth on a dam should immediately be removed according to the steps outlined in Section 4.3 of this document, and should only be performed after a dam repair permit has been issued. However, in an emergency situation, a tree can be removed without submittal of a Tree Management Plan or prior approval by the Department.

After emergency tree removal, a repair report, developed by the Engineer containing the same information as a repair plan, must be submitted by the Owner within seven days of the emergency removal.

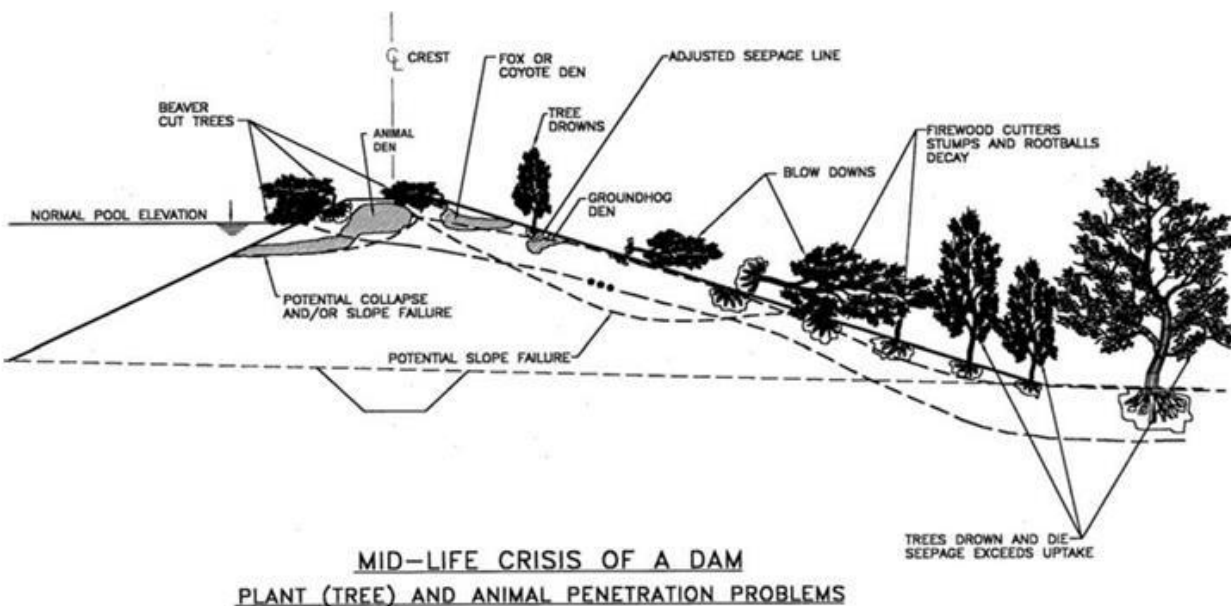
- 3. Tree Management** – If an existing earthen dam has larger (old growth) trees growing on it; and, dam failure or danger to life, property, or infrastructure is not imminent, the dam owner may elect to develop and submit to DHEC a plan, known as a Tree Management Plan. A Tree Management Plan is expected to be a long-term (5-10 year) sequenced plan detailing procedures for the systematic, phased removal of old growth trees from the dam and all appurtenant structures, while carefully managing those remaining, as outlined in the following sections, until the dam is eventually free of trees. The plan itself must be developed by a Professional Engineer and approved by the Department. The Department recognizes that full removal of trees from dams may take multiple years to complete, but expects that complete tree removal from an earthen dam is possible within a 5-year to 10-year period of time.

NOTE: Tree management plans shall only be developed for existing earthen dams with trees presently growing on them. This document shall explicitly NOT allow tree growth to occur on new dams, dams currently under construction, or dams permitted for construction at the time of document issue.

When any tree growing on a dam represents a threat to the overall stability and/or safety of the dam, especially a tree that appears to present a potential imminent dam failure, it shall be removed as soon as possible after discovery.

Implementing a phased approach to tree removal under a Tree Management Plan does NOT relieve the owner of the requirements of the Regulations.

4.2 Impact of Tree Growth on Earthen Dams



The image above is reprinted from FEMA 534. Some of the impacts of tree growth on earthen dams, also adapted from FEMA 534, are:

- Uprooted trees produce large voids, which reduces freeboard and reduces dam cross section available to maintain stability.
- Decaying roots create seepage paths and internal erosion problems.
- Trees interfere with effective dam safety monitoring and inspection for seepage, cracking, sinkholes, slumping, settlement, deflection, and other signs of stress; as well as maintenance or repair of these issues.
- Trees hinder desirable vegetative cover and may contribute to embankment erosion.
- Trees obstruct emergency spillway capacity.
- Falling trees cause possible damage to spillways and outlet structures.
- Tree roots may clog embankment underdrain systems [if present].
- Growing roots can cause cracking, uplifting and/or displacing concrete structures and other appurtenant structures.

- Localized turbulence and scouring around trees growing in auxiliary spillways during overtopping of the dam embankment or when discharge through the auxiliary spillway occurs.
- Trees may provide cover for burrowing animals.
- Growing trees loosen compacted soil.
- Roots tend to wedge into open joints and cracks in foundation rock along abutment groins and toes of embankment, thus increasing piping and leakage potential.
- Roots can penetrate conduit joints and joints in concrete structures.

The Regulations require “regular maintenance of dams to prevent the growth of trees on the dam and in the spillway.” This SOP supports this requirement by adhering to the concept that tree growth is detrimental to the long-term safety, stability, and performance of earthen dams. However, it provides a framework for dam owners and/or their consultants to develop a plan for tree removal in a systematic and safe manner that exercises good land management and dam safety practices.

For more information on the negative effects of tree growth on earthen dams and the industry standards for management of woody vegetation growth on them, readers are directed to the list of publications below, which may be available by visiting the appropriate organization’s website.

1. FEMA 534: Technical Manual for Dam Owners: Impacts of Plants on Earthen Dams, September 2005.
(<https://www.fema.gov/media-library-data/20130726-1446-20490-2338/fema-534.pdf>)
2. FEMA L-263: Dam Owner’s Guide to Plant Impact on Earthen Dams, September 2005
(http://www.fema.gov/media-library-data/20130726-1502-20490-1952/fema_l263.pdf)
3. US Army Corps of Engineers Engineering Technical Letter ETL-1110-2-583, April 2014.
(http://www.publications.usace.army.mil/Portals/76/Publications/EngineerTechnicalLetters/ETL_1110-2-583.pdf)
4. UN Manual on Small Earth Dams: A Guide to Siting, Design, and Construction, 2010.
(<http://www.fao.org/docrep/012/i1531e/i1531e00.htm>)

4.3 Tree Removal Requirements

Removal of brush and woody vegetation 4-inches and smaller should occur immediately, as these are deemed maintenance activities that do not require a permit. The tree removal component of the Tree Management Plan will require a dam repair permit from the Department and must be developed by a Professional Engineer. The submittal should include a schedule for implementation, and should prescribe the procedures for:

- Tree clearing;
- Stump removal by excavation or grinding;
- Grubbing as needed;
- Completely backfilling the void in a strictly controlled manner;
- Proper regrading and compaction with compatible soil; and,
- Establishing a vegetative cover.

4.4 Prioritization of Tree Removal

As part of a phased approach, dam owners should prioritize the removal of trees. Trees presenting the highest threats to dam integrity should be assigned the highest priority and targeted for removal first. General characteristics of trees representing higher hazards are as follows:

- ✓ Larger trees represent a higher threat than smaller trees.
- ✓ Evergreen trees represent a threat of potential blowing over, more so than deciduous trees, due to the year round presence of leaves which are more likely to catch large winds or accumulate ice; and higher wind forces and ice accumulation are more likely to induce the tree to topple.
- ✓ Fruit- and nut-bearing trees due to their potential to attract burrowing animals.
- ✓ Trees on the crest (Zone 2) and upper three feet of the slopes (upper portions of Zones 1 and 3), and trees in Zone 5 due to the higher potential for trees to blow over in these areas.
- ✓ Trees located close to critical appurtenances (e.g., inlet/outlet works).
- ✓ Tree species with large ranging roots, such as Cottonwood trees, represent a higher threat than species which do not, such as Oak trees.

It should be noted that this list of hazards is not intended to be nor should it be considered a complete or final list. The specific characteristics of the trees present on the dam should be considered by the dam owner and the owner's Professional Engineer in developing the removal priorities and sequence of removal outlined in Tree Management Plans. Evaluation of the potential hazard each tree represents should be considered on a case-by-case basis when developing dam repair plans and/or Tree Management Plans.

4.5 Tree Removal Process

Trees are to be removed from a dam in a systematic way that protects its integrity and safeguards all appurtenant structures to promote the long-term performance of the dam. General requirements for tree removal procedures include, but are not limited to, the following:

- Under the direction of a Professional Engineer, prepare and submit a dam repair permit application outlining the means and methods intended to be taken to safely remove the trees, backfill the void created, and establish a healthy grass cover.
- The Owner and the Owner's Engineer are strongly encouraged to lower the reservoir water level elevation during the tree removal process to reduce any threat to life or property, in the event of an unintended or accidental failure of the dam.
- Each dam repair zone has specific removal criteria. The reader is referred to the maintenance zone's specific instructions in the following sections.
- Trees with **diameters between four (4) inches and twelve (12) inches** should be cut level with the ground.
- Stumps of cut trees, including the stump itself, the rootball to a radius of at least 10 feet extending in all directions from the vertical centerline of the trunk or stump, and all roots 2 inches in diameter and larger within the 10-foot radius, should be removed by excavation, pulling (extraction), or grinding.

- If stumps are ground, grind all stumps and roots to approximately 12 inches below the ground surface.
- Rootball cavity should be cleaned of organic material.
- All cavities should be backfilled with well-compacted soil, free of organics and meeting the zone specific requirements below.
- The backfill soil shall be selected for compatibility with existing embankment materials.
- Backfill should be compacted as specified by the Professional Engineer (typically 95% of maximum dry density and \pm 2% optimum moisture content, as determined by laboratory Standard Proctor testing)
- At least 4 inches of topsoil will be placed over the backfill.
- A vegetative cover shall be planted at all locations that have been backfilled to prevent surface erosion in accordance with Section 5 of this document.

Stumps of trees in areas armored with rip rap, such as the upstream embankments and spillways, cannot usually be excavated, extracted, or ground down, but can be chemically treated so they will not continually form new sprouts. Certain herbicides are effective for this purpose and can even be used at water supply reservoirs if applied by licensed personnel in accordance with state regulations administered by Clemson University. In some circumstances, with prior approval from DHEC, a stump may be treated with a waterproof sealant to prolong stump and rootball decay. For more information on herbicides, the reader is directed to: www.clemson.edu/public/regulatory/pesticide_regulation/.

4.5.A Repair Zones 1 and 2 ONLY

All trees growing in Zone 1 and Zone 2 (reference the Dam Repair Zone diagram presented in Section 4.2 of this document) regardless of size, shall be removed in accordance with the Tree Removal Process in the preceding section.

The backfill soil shall be selected for compatibility with existing embankment materials, should preferably be clayey in nature, and free of all organics.

If the upstream slope of the dam is exposed to wave action (by wind or by motorized watercraft), rip rap armoring should be installed on the slope to protect embankment soil from erosion due to wave action. If it is determined that the embankment is not subjected to significant wave action, a vegetative cover shall be planted to prevent surface erosion, in accordance with Section 5 of this document.

4.5.B Repair Zones 3, 4, and 5

Tree removal in Zones 3, 4, and 5 (reference the Dam Repair Zone diagram presented in Section 4.2 of this document) up to a distance the smaller of 15 feet or half the height of the dam beyond the downstream toe of the dam to, shall be removed in accordance with the Tree Removal Process presented in the preceding section.

Backfill soil should be well-compacted soil of the same nature as, and no more impervious than, the soil originally used to construct the downstream embankment of the dam. In Zones 3, 4, and 5, if a void is extensive enough; consideration should be given to using a sandy fill as a filter to relieve seepage originating from decaying roots.

4.5.C Long-Term Management

Measures outlined in the long-term management sections of the Tree Management Plan which must be addressed include, but are not limited to, the following:

- ✓ All trees, in all zones, must be trimmed and thinned up to a minimum height of 5 feet to allow for visibility and access.
- ✓ All trees and woody vegetation at or near the dam crest must be scheduled for removal, but while in place, should be trimmed to allow unobstructed inspection of the crest.
- ✓ All presently dead, dying, and otherwise unsalvageable trees shall be removed, regardless of size.
- ✓ All trees observed to be severely leaning or showing indications of potential to blow over, must be removed.
- ✓ All saplings must be removed and no new woody vegetation growth be allowed to develop.
- ✓ Schedule for removing large trees greater than 12 inches accompanied by a dam repair permit application, and a schedule for removing all trees from the dam within 5-10 years of the date of dam repair permit issuance.

Additionally, the Tree Management Plan should require any tree with a trunk diameter of twelve (12) inches or greater, presently growing on a dam be monitored and inspected once annually by a Certified Arborist to assess its health. These trees shall be pruned and maintained in good health (free from disease or insect infestations), as directed by an Arborist until they are removed. However, if an infestation or disease is reported by an Arborist, the dam owner should immediately notify the Department and remove the tree within one year of discovery of the condition. A list of certified arborists as of 2006 is available by visiting <http://www.state.sc.us/forest/ptreeservice.pdf>. For a complete list of certified arborists across the United States and to check ISA certification, visit <http://www.isa-arbor.com/>.

The Tree Management Plan and the dam repair permit, once approved by the Department, will remain in effect until the old growth trees have been removed from the dam. The Professional Engineer will provide the Department with an annual report detailing the number of trees removed, method of removal, status (health) of the trees remaining, and the Arborist's assessment of the trees. Tree removal and backfill placement photographs should be included in the engineer's annual update. In some cases the Department may require submission of a report more or less frequently than annually.

SECTION 5: VEGETATIVE COVER

The establishment and control of a well-maintained grass cover on the banks, toe, and crest of earthen dams vegetation is a critical aspect of dam maintenance.

Properly maintained grass prevents erosion of embankments and earthen spillways and increases the overall stability of the dam. Installation and maintenance of the grass cover typically does not require a permit from the Department unless compacted soil is being placed to backfill large voids on the dam.

Bare ground areas on the dam created by the removal of underbrush, shrubs, and trees should have a vegetative cover (grass) planted immediately after vegetation removal to prevent surface erosion. A good reference for the installation of a vegetative cover is Section 810 of the most recent edition of the South Carolina Department of Transportation (SCDOT) Standard Specifications for Highway Construction. A copy may be downloaded by visiting the SCDOT's website at:

http://www.scdot.org/doing/doingPDFs/2007_full_specbook.pdf (a link in the table of contents will take the viewer directly to page 867 where Section 810 begins).

SECTION 6: EMERGENCY ACTION PLANS

While trees are present on a dam, dam owner's Emergency Action Plan (EAP) should be modified as follows:

- Dam Owner or Dam Owner's Agent is required, within six hours of observing any fallen tree, to assess any damage to the dam surface or appurtenant structure;
- Contact information for the appropriate individuals to notify if damage could result in loss of structural integrity or hydraulic capacity;
- Upon activation of the EAP, the dam owner shall notify DHEC of the situation. DHEC may be reached 24 hours per day at (888) 481-0125.
- Implement other emergency actions to prevent further damage first, then repair the resulting void or restore the capability of the outlet structure to regulate water level in the reservoir.
- Additional steps may include, but not be limited to:
 - Lowering of or completely draining the reservoir (which may necessitate submitting a permit application to install a siphon system);
 - Maintaining on-site an adequate stockpile of repair materials including #57 stone, rip rap, sandy clay soil, sand, geotextiles, and sandbags; and,
 - Outline procedures to mobilize a construction crew to the site within 6 hours after initial notification of damage to a dam due to an uprooted tree.

February 23, 2022

Leonardo Brown
Richland County Administrator
CC: Overture Walker, Chakisse Newton
2020 Hampton Street
P.O. Box 192
Columbia, SC 29202

Re: Pinewood Lake Park Dam Structure and Emergency Spillway

Dear Mr. Brown,

The Pinewood Lake Park Foundation Board of Trustees firmly believe it is in the best interest of the residents of Richland County that this emergency spillway and dam/spillway (dam structure) be repaired.

Repairing these would:

1. Help the park move forward in completing its mission of meeting the needs and desires of the ever-growing community - as well as all of Richland County.
2. Allow the lake level to be raised so the park can reach its full potential by repairing the walking trail damaged in the flood of 2015 and connecting the presently two disconnected sides of the park.
3. Revive the lake - which is increasingly being effected by this situation. What was once a part of the lake is now tall grasses and trees. (Google Earth images attached.)

The Foundation would like to offer two options for the county's consideration regarding the repair of the dam structure and the damaged portion of the emergency spillway. This emergency spillway performed as designed by giving way to protect the dam during the flood of 2015 and would require little repair.

Option1 : The original easement arranged between the county and the Pinewood Lake Park Foundation, states that it was created for *"the purpose of developing, constructing, maintaining and providing for the public use of a walking trail."* This option would allow the easement, dated March 6th of 2015, to be amended to allow the County to make the necessary repairs to the dam structure and the damaged portion of the emergency spillway. The amendment would simply extend the already agreed upon terms to give Richland County the right to repair and maintain (as necessary) the dam structure and emergency spillway in perpetuity.

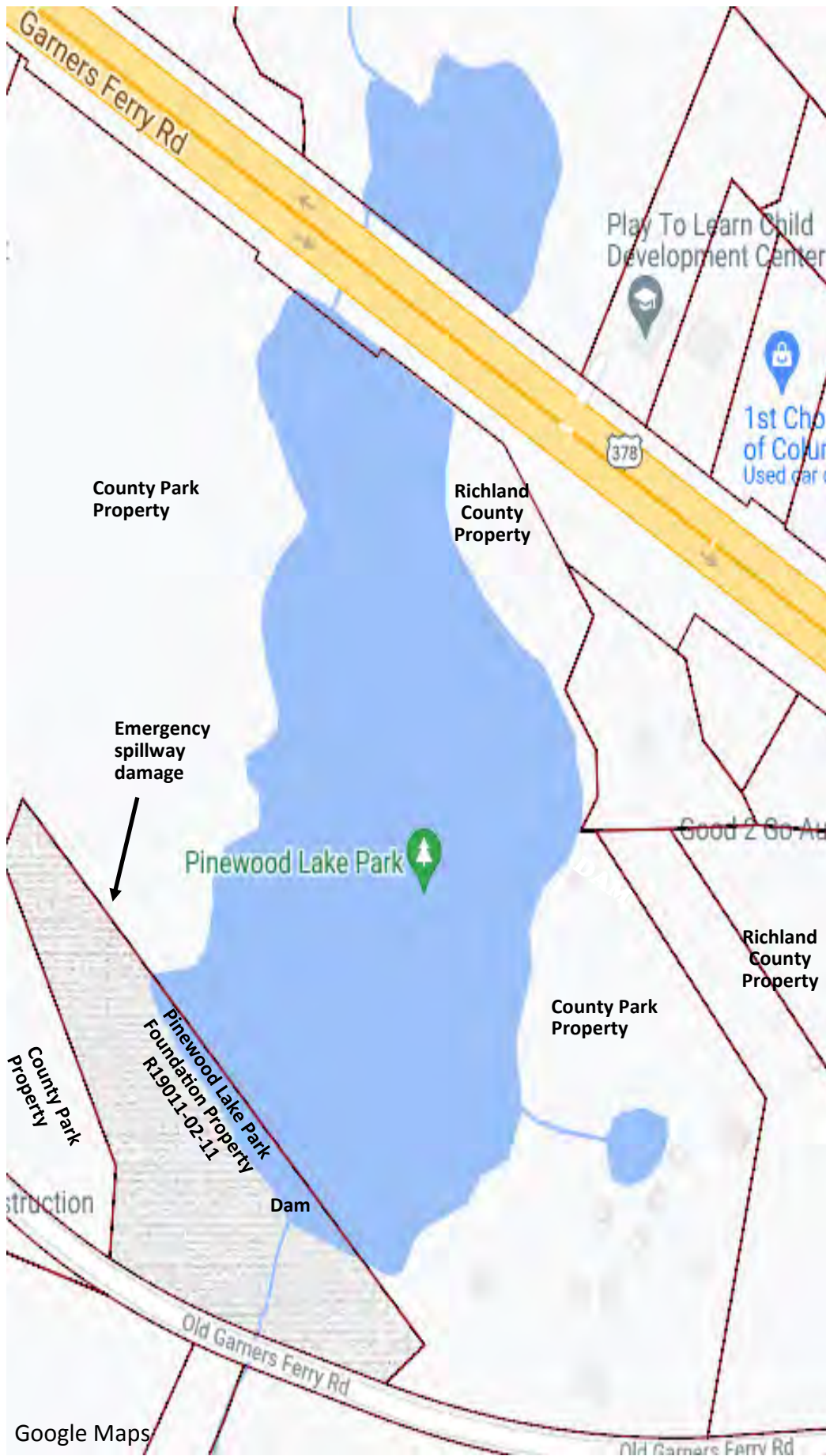
Option 2: The dam structure and appropriate adjacent dam structure property would be given to Richland County, free of charge, so the county can move forward with repairing the dam structure. In addition, the damaged emergency spillway would be given to Richland County so that it, too, could be repaired.

A perpetual, exclusive easement appurtenant for the construction, maintenance, and public use of a paved walking path/trail on the Servient Tenement to connect to and serve the Dominant Tenement. Said easement shall be 30 feet in width, and it is specifically shown and delineated as "30' ingress/egress easement" on that certain plat attached hereto as Exhibit A and having the same property shape, metes, measurements, and bounds as shown on said plat, be all measurements a little more or less.

This easement is granted to Grantee specifically for use by the public. This grant of easement shall specifically include the right of Grantee to erect, construct and maintain appurtenances and improvements as would be reasonably expected to abut a public walking path/trail and park, including but not limited to, benches, landscaping, hardscaping, lighting, picnic tables and small shelters. This easement is also specifically subject to the rights of the Grantor herein to use the said easement property for any lawful purpose so long as such use does not interfere with the Grantees and the public's specific use of the easement as herein granted. It is specifically understood that the Grantee, its successors and/or assigns, shall NOT be allowed to construct or erect any gates, structures or bathers on the said defined easement which would limit Grantor's access to the Dam Structure for the purposes of inspection, construction, and maintenance of such.

Respectfully,

Greg Sinkler
President, Pinewood Lake Park Foundation
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