



Crystal Pond: Dam Reconstruction Fact Sheet 4.1.2024

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Overview:

It took us well over one (1) year to find a contractor who met our specific needs for Crystal Lake Pond at a price that made sense. We have been communicating in the quarterly newsletters, through eblasts, posting to the McCullough website (Kuester), and have given presentations at Quarterly Open Board meetings for the past 1.5 years. Once we had a firm commitment from the Contractor and worked through all the legal and insurance requirements (which were extensive), the Contractor set the start date based on their schedule. The contract was fifty-six pages long, required eight insurance premiums from the Contractor, and we had to develop an engineering plan through a firm that designs earthen dams such as ours. We completed two rounds of bids before finding the right contractor. The McCullough reserve account is funding the project, and no additional cost will be passed to homeowners as a special assessment.

Historical Information: 1972 - 2021

- Crystal Lake Pond area consists of two smaller ponds that were created by building an earthen dam in 1972 for the Crystal Springs Golf course to use primarily for irrigation and aesthetics for the golf course.
 - *A third pond located on the West side of McCullough Club Drive (bridge) is a designated wetland (AKA Pond #1). All three are connected.
- The two ponds were created by constructing a paved golf cart causeway from one side to the other. Irrigation piping was buried alongside.
- An underground culvert pipe in Pond #2 (SC side) allowed water to flow down and under the causeway to supply the lower pond (AKA Pond #3) located on the NC side of the course.
- The ponds & dam were not part of Weiland's (initial developer) plans submitted and approved by Mecklenburg County. No development, improvements, maintenance, or inspections were scheduled for the dam or pond areas once construction started for McCullough.
- In 2014 North Carolina reduced the number of Dams being inspected annually, dropping "low-risk" dams like ours off the list. Pulte claimed no responsibility for maintaining Crystal Lake or the surrounding areas.
- Crystal Lake is part of a 79-acre parcel that stretches from the clubhouse behind Country Lake Drive and includes Pond #3 as well as the causeway. This parcel was deeded to the HOA in 2016 from Weiland.
- From 2016 through 2021 the pond served as a focal point for those purchasing homes in McCullough. It was a home to wildlife and was featured as a sales tool to those who wanted to build and live here.

Dam Breach: 2021

- The water from the ponds disappeared in the fall of 2021. The Main overflow pipe is currently plugged, and the secondary emergency overflow has washed out.
- This created two breaches in the earthen dam, which over time further deteriorated into one large breach, and created a safety concern.
- This damage was created by a lack of maintenance to the area, including restriction in the main overflow culvert and cracked concrete of the secondary emergency overflow. Also, trees being overgrown created weak areas degrading the integrity of the earthen dam.

Decision Making Period: 2022 – 2023

- In the spring of 2022, the Board of Directors (BOD) accepted information from Pulte to determine a path forward.
 - By July of 2022 Pulte scheduled core samples to be drilled and analyzed to determine the types of soils that are present to provide data for planning.
 - Core sample data was provided to the BOD, with a recommendation to retain an engineering company to review.
- August 2022 – The BOD retained Northwest Geoscience (NWG) to do a feasibility study on reconstructing the dam for Crystal Lake.
- NWG was also asked to develop an estimated budget for a project of this size. Project feasibility would be dependent on the engineering report which was reviewed by the BOD in the Fall of 2022.
- November 2022 - The study concluded that we could repair the dam with the soil available within the HOA common open space (COS).
- The BOD reviewed the covenants (CCR's) and the engineering report with legal counsel and our insurance carriers to determine our options moving forward.
- Per CCR', Article V Maintenance, Section 1, part iii, "the association shall maintain and keep in good repair ...any Lake, Dam and appurtenant structures located within the community."
- The BOD reviewed the engineering report, analyzed the reserves and expenses for the community, and sought consultation with both the Town of Pineville and Mecklenburg County before making any decision to move forward with repairing the dam.
- The BOD reviewed Mecklenburg County, NC, and York County, SC codes and requirements regarding permits, safety, and any legal and insurance considerations that needed to be complied with.
- Several site visits were conducted with municipality officials to ensure compliance which determined that there were significant safety issues with the current state of Crystal Lake. Our options were to repair the dam or address significant safety issues, both of which would be costly.
- NWG was hired to develop a construction scope and preliminary engineering design plan. The plan was provided in early 2023 to the BOD for review.
- Considering all safety, financial, and alternative options, the BOD approved the project to reconstruct and repair the dam, thus Crystal Lake in 2023.

Project Planning 2023 - present

- Revisions to the project scope were made after uncovering information about transferring water from Pond #2/Pond #3. We opted to eliminate the causeway and utilize the soil to fill the main dam breach, resolving the challenge of finding fill material.
- Utilizing the soil from the causeway, approved by the engineers, resulted in significant cost savings compared to importing fill dirt from offsite.
- The engineering drawings and specifications were completed, and the BOD collaborated with NWG to prepare bid documents. These documents were then distributed to contractors specializing in earthen dam reconstruction.
- We underwent two extended bid periods until we identified a suitable contractor possessing the required expertise and estimated cost to collaborate on the dam repair project.
- The BOD collaborated diligently with our contractors, legal team, and insurance brokers to formulate a comprehensive contract safeguarding all parties and covering every aspect of the project. Guided by our Community Manager, this critical process, completed in March 2024, ensured the protection of all homeowners and our community for such a large project.
- Finally, we moved on to logistics and planning which included meeting with the contractors at the site as well as presenting the information to homeowners in April 2024.

Dam Reconstruction Committee

- Nick Gallo – HOA Board VP - MBA in Finance and specializes in Contract and Finance Operations.
- Mike Rockefeller – HOA Board Secretary – Electrical Engineering and Project Management
- Rob Rose – Crystal Lake Committee Chairman – Mechanical Engineering Degree and MBA in Business

Contractors

- Barfield Grading Company, Inc. (BGC) – Alan Barfield
- Northwest Geoscience (NWG)– Barry Nelson, Project Manager

The next 90 days | What to expect:

1. Dorsey Entrance – Walkthrough with contractors on April 12th, confirm staging areas and access paths.
2. Vehicles coming through the neighborhood. Occasional use of Dorsey parking lot as a temporary staging area.
3. Activity at the pond divider as they make the two ponds into one pond. Excavation and hauling of soil.
4. Use of Country Lake Drive for parking vehicles. Frequent visits by the retained construction manager.