

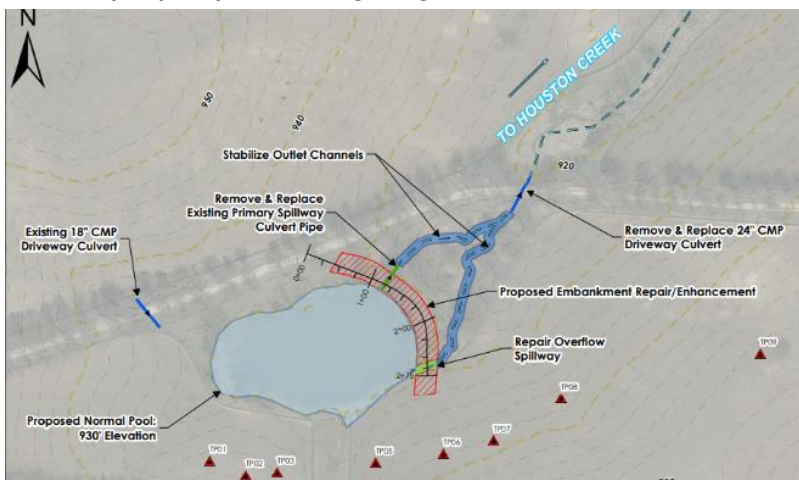


# Sruth Fuisce Pond Upgrades Feasibility Study Lexington, KY June - November, 2022

Ecogro was hired by a Paris horse farm owner to conduct a feasibility study and cost estimate for improvements to a large pond in the Licking River watershed. This pond will be a key feature to be viewed from where the owner will build a new house. Although the pond is approximately 0.8 acres and receives drainage from about 18 acres, it was shallow and not filling to capacity. Erosion of the spillway had cut into the earthen dam and threatened to lower the pond level even further. Bush honeysuckle and growth around the pond blocked views. Runoff from agriculture added nutrients to the water and boosted algae. The shallow depth and minimal habitat could not fully support sport fishing. Because of the pond's prominence, the owner wanted to see if and how it could be upgraded to a main attraction.

Working together the owner and the farm manager/tenant, our team of EcoGro and Stantec defined the goals of the study. Failing structures were evaluated for repair or replacement and increasing the normal pool depth. Our team documented key conditions and monitored flow after large rain events. Test pits were excavated to assess bedrock elevations as well as potential to harvest clay on site. After analysis of the drainage area and pond capacity, the team proposed a design for the embankment to handle the 100-year, 24-hour peak flow regime.

Second, the project would need to improve water clarity and quality. Based on site conditions, our team began to analyze various BMP's for pros and cons to our client's specialized needs. For instance, dredging and introducing potable water inflow were both identified as inappropriate for this project. Ultimately, the team decided that the best, most cost-effective path forward for the project was to: replace the primary spillway pipe, repair the overflow spillway, stabilize outlet channels, and to replace the driveway culverts. The team also met with regulators in the design phase to ensure proper permitting to go into construction.



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