SWCA
ENVIRONMENTAL CONSULTANTS
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December 10, 2019

Environmental Monitor

Re: Notification of filing a Notice of Intent for Ecological Restoration Project
University of Massachusetts Campus Pond Dredge Project
Amherst, MA

Notice of Intent Submission Date: January 2020

SWCA Environmental Consultants (SWCA), on behalf of the Facilities and Campus Services at the University of Massachusetts, Amherst (UMass) is seeking approval to dredge sediment from the Campus Pond located at the UMass Amherst Campus. The express goal and purpose of this dredging project is to improve water quality, aquatic habitat value, and flood storage capacity of the pond by increasing the water depth, removing sediments that serve as a nutrient source and contribute to pond eutrophication.

Reviewing Conservation Commission

Amherst Conservation Commission
Town Hall
4 Bolton Ave.
Amherst, Massachusetts 01002
Contact: Beth Wilson 413-259-3045
wilsone@amherstma.gov

Copies of the Notice of Intent may be acquired from the project manager, Valerie Miller at Vmiller@swca.com

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SCOPE OF WORK

SWCA has prepared BRP WW07 application and provided answers in the application. The summary of the dredging site and proposed work is outlined as well herein. In support of this application SWCA has prepared a joint public notice for the application of the 401 Water Quality Certification and the NOI. This public notice will be published in the Hampshire Daily Gazette, the local newspaper for Amherst, Massachusetts, within ten days of submitting this application to MADEP. The date the advertisement will be published is XXX. A copy of the public notice is presented in Appendix A.

UMass has performed pond management activities over the years, including invasive species management, installation of aeration systems, treatment with herbicides and flocculants, and hydro-raking has been conducted to reduce existing nutrients on the pond bottom by removing organic debris. In addition to these activities, UMass has also worked to reduce sediment from entering the pond by installing sediment traps within the existing concrete structure that carries Tan Brook. Campus Pond is an impoundment of this brook and receives retains the stormwater from large portions of the eastern and southern areas of the campus and portions of the Town of Amherst.

These activities were implemented as an alternative to dredging the pond to try and enhance the pond and provide a natural-looking centerpiece for the campus, while promoting ecological diversity. To date these actions have not been effective and have only provided short-term “fixes”. For this reason UMass would like to dredge the pond and remove the sediment. This has become the alternative of choice following years of short-term fixes.

The dredging of the pond will be a one-time event and there is no less damaging practicable alternative for this activity that is currently reasonably available or feasible. The project has been designed and will be conducted in a manner to minimize adverse impacts on water, the resource areas surrounding the pond, and animals present in the pond.

Activities that will be implemented, to reduce impacts to the surrounding area of work and resource areas include the following

- A limit of Limit of Disturbance (LOD) will be established at the pond and around the work area, including the dewatering cells. Sediment and erosion controls (silt fencing) will act as the LOD.
- Water in the pond will be drawn down slowly at 2-inches per day.
- Coffer dams will be used to maintain water on one side of the pond at all times.
- The project will be conducted in a phased approach so that one end of the pond is always maintained with water and animals will be moved from one end of the pond to the other by wildlife biologists.
- Best management practices will be implemented to maintain drying sediment in the constructed cells.
- Water from drying sediment will be managed and slowly returned to the pond through a pipe.
- Dredging will be conducted in the summer when water levels are low and students are not on campus.
- Entrances to the pond for dredging will be limited to one at the south end of the pond and one at the north end.

DESCRIPTION OF PROPOSED DREDGING SITE

The pond is an approximately 2.9-acre, manmade pond, which is actually an impoundment of Tan Brook. The pond is located in the center of the UMass Amherst campus, and is surrounded by the Old Chapel and Memorial Hall to the west, the Student Union and Integrative Learning Center to the north, Metawampee Lawn to the east and the Fine Arts Center to the south. Figure 1 (USGS Topographic Map) and Figure 2 (Orthophotograph) illustrate the location of the pond.

The purpose of the project is to improve the water quality and diversity of the pond by deepening the water body, removing nutrient-laden sediments and invasive aquatic vegetation. A project permitting plan set has been prepared (dated XXXX) and is included with this application. Sheet 1.0 illustrates the pond, existing conditions, existing shorelines, a north arrow, and water depths around the project. Project plans (Sheet 2) also illustrate the jurisdictional resource areas, and sediment bathymetry.

DREDGE DETAIL

The area of work will be the area surrounding Campus Pond and illustrated as the LOD, which will be encircled with silt fence. Tree protection will also be installed as outlined on Sheet 3.0. The removal of sediment will be by mechanical means, using a bucket excavator, skid-steer, and/or front-end loader. The project will **not** include permanent impacts to resource areas. The following temporary impacts to resource are listed below and these areas will be restored at the end of the project.

Bank: 40 linear feet

Land Under Water: 124,800 square feet

Work within the buffer zone to the pond will be related to managing excavated sediment in the laydown area/dewatering cells to be temporarily located on the east side of the pond within the lawn. This will be XXX of work within the buffer zone.

The dredging will be conducted by access to the LOD from the unnamed access road located between the west side of the Fine Arts Center and Campus Pond. A temporary 16-foot wide haul road consisting of crushed gravel or similar material will be constructed from the pond access point to the upgradient (eastern side) of the laydown area (Sheet 4.0).

The excavation of sediment from the pond will be conducted in 2 phases as outlined on the Pre-Dredge Water Control and Pond Lowering Plan, Sheet 4.0. As part of Phase 1, a coffer dam and turbidity curtains will be installed and the flow at the outlet structure adjusted to draw water down at 2-inches per day. The process will include diverting water from Tan Brook, upstream of the pond. Drawdown will be conducted at the pond outlet structure, which is typically set at 216'. It would be incrementally lowered to 210', which is the bottom of the sediment. This will be conducted until water in the northern end of the pond is drained, leaving water in the southern end of the pond.

A SWCA wildlife biologist will be assigned to monitor and, to the extent practicable, relocate the wildlife in and around the pond during dredging activities. Fish, amphibians, and other wildlife will be relocated to undisturbed areas of pond while work is conducted in the opposite end. Based on SWCA's previous monitoring of dewatering activities at the pond, it is expected that common wildlife species, such as bullfrog (*Rana catesbeiana*), green frog (*Rana clamitans*), snapping turtles (*Chelydra serpentina*), painted turtles (*Chrysemys picta*), and various fish such as sunfish

and minnows may be in the pond. There are no rare species or rare species habitat associated with this pond and area of the Amherst Campus.

Sediment from the north end of the pond will be excavated until reaching the proposed elevation of 208.5 feet (Sheet 5.0, Dredge Plan). Once this elevation is reached, and access to the north end of the pond is not needed, the access point used to enter the pond will be restored. The 10-foot wide aquatic shelf that is located within the pond, and that was impacted by equipment and dredging at the northern access point will be rebuilt and restored. The turbidity curtain will be removed and discarded, and water allowed to return to the northern end of the pond.

Phase 2 construction will include the installation of a new turbidity curtain and the lowering of the southern end of the pond. Wildlife biologists will again be on site for the water lowering and dredging so that animals can now be transferred to the northern end where work is complete. Sediment will then be removed from the southern end of the pond, in the same manner as was done for the northern end. Restoration to the southern access point and aquatic shelf will be conducted.

Excavated sediment from both ends of the pond will be staged on east side of the pond in the existing lawn area. Three dewatering cells, with a total capacity to treat 5,000 cubic yards of sediment will be constructed. Each dewatering cells will be bound by earthen containment berms (other materials may be used) and fitted with pipes that convey collected water back to the pond. SWCA estimates that the laydown/dewatering area and haul road would utilize approximately XX acres of the lawn. The lawn will be restored upon completion of the project. Dry sediment will be hauled to the former coal storage area off Tillson Farm Road. Figures 1 illustrates the location of Tillson Farm.

DESCRIPTION OF MATERIAL TO BE DREDGED

As required in MassDEP's regulation 314 CMR 9.07, SWCA conducted a "due diligence review" of the Campus Pond and vicinity of the pond to evaluate the potential for the Campus Pond sediment to have concentrations of oil or hazardous materials (OHM) as defined in 310 CMR 40.0000. As part of this due diligence and to support the dredging, sediment cores were collected from 8 locations and analyzed for the suite of 6 chemical parameters required in 314 CMR 9.07(2)(b). A copy of the Sediment and Due Diligence Review and Characterization Report is presented in Appendix A.

LOCATION OF PROPOSED DISPOSAL AND DEWATERING SITES AND PHYSICAL BOUNDARIES

The dewatering area and sequence of dewatering the pond is presented on Sheet 5.0. This will include constructing three dewatering cells on the lawn area east of the pond. Each cell will be constructed with earthen containment berms and have a crest elevation of 226 feet. Aqua barriers ……. The containment berms will be fitted with pipes that convey collected water back to the pond. The cells will not have a barrier and water draining from the sediment will be allowed to infiltrate within this area. The cells will also be fitted with a pipe that will allow excess water to drain back into the pond. This pipe will be placed in a manner that allows sediment to filter from the water, prior to be returned to the pond. Water The three dewatering cells will have a total capacity to treat 5,000 cubic yards of sediment.

When sediment is suitably dry, it will be transported to the onsite disposal location at Tillson Farm (Figure 1) where it will be utilized by UMass on other campus projects. This material would also be suitable for beneficial use at a lined landfill as daily cover pursuant to Interim Policy # COMM-94-007. If UMass was to send the soil off-site, approval from MassDEP's Division of Solid Waste Management would be obtained.