

Myrtle Trace
Stormwater Management System
Maintenance Plan

2017

Lake Maintenance and Preservation
Study Committee Membership

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Lake Maintenance and Preservation

Charge

The committee, after review and discussion of the results of the bathymetry, will revisit the Tier One-Tier Three recommendations made in 2016. This committee will identify any immediate needs to be addressed and outline a specific plan of action for 2017 based on available funds. In addition, long range, multi-year plans including cost estimates and priorities for future budget consideration will be developed.

Nancy Southard, President
Myrtle Trace Homeowners Association
February, 2017

Introduction

In February, 2017 the Board of Directors reconvened the Stormwater Management Committee for the purpose of reviewing recommendations of the previous year's plan completed in May, 2016.

The committee reviewed the 2016 plan and agreed the 2016 recommendations were still relevant and should be considered when developing the 2017 plan. Two of the recommendations proposed in the 2016 plan have been implemented.

In the fall of 2016, Bathymetry mapping of the lakes was completed by Estate Management. Bathymetry mapping is the study of underwater depth of lake or ocean floors. In other words, bathymetry is the underwater equivalent to topography maps. The bathymetry maps are a resource document for the Board of Directors when making decisions to dredge the lakes.

Drainage improvements behind Hickory Drive were completed in 2017 by the Board of Directors.

It was the consensus of the committee that the development of retaining walls is a separate lake improvement program created by the Board of Directors and would not be part of this plan. The ad hoc committee overseeing the construction of retaining walls will continue their work as originally charged by the Board of Directors. The construction of retaining walls should be coordinated with lake maintenance /improvements projects.

The Committee completed its charge and the maintenance plan will be presented to the Myrtle Trace Board of Directors for their approval and implementation.

Process and Outcomes

The committee met several times between February and May to address their charge. At the initial meeting previous work was reviewed and members were asked to review the December, 2016 report and recommendations. Members developed a list of issues and concerns facing Myrtle Trace regarding storm water management. The HOA Board Treasurer reviewed funding available in the 2017 budget. Prior to the next meeting, Paul Sallas and David Smyth conducted a survey of the condition of outfalls and culverts for committee consideration. (See

appendix for full report.) Contact was also made with Burning Ridge Golf Course to discuss their responsibility in clearing swales that border Myrtle Trace. Subsequently work was begun on this issue. Additionally, the Board assumed responsibility for drainage issues on common property so this was removed from Committee consideration. In following meetings a proposal to add a timer to the existing pump system controlling water to Lakes Dove and Wren was reviewed. Dredging of high priority sites was discussed and names of companies who could be contacted to obtain bids for completing work were identified. (See Appendix for list.)

The final list of stormwater management issues, relative to the lakes, was agreed upon:

- Dredging
- Lake Dove leaks
- Emergency drainage outfall Lakes Cormorant/Osprey
- Debris/silt blocking outfalls/culverts
- Discrepancy in pipe size between inflows and outfalls
- Requirement to manually switch pumps to control flow to different lakes

The need for lake bank retaining walls was removed from the final list since a separate HOA committee and budget line item exists to address this issue.

The committee also established criteria to be used for prioritizing:

- Community benefit
- Homeowner benefit
- Cost/benefit ratio
- Regulatory compliance
- Safety
- Immediacy of need

Each committee member individually completed a rating sheet for the issues using the agreed upon criteria. These were aggregated and resulted in the development of prioritized recommendations. In addition to the issue specific recommendations, three over-arching implementation recommendations are noted in the report conclusion.

Recommendations

These prioritized recommendations are presented as a plan to minimize the impact of storm water flooding in the event of hurricanes or other major weather events, as well as to improve the health and appearance of Myrtle Trace lakes.

Tier One

Restore the lakes to their original depth through a planned schedule of dredging.

- In 2017 dredge the lake areas that have immediate and obvious dredge needs. Sparrow, Oriole (including the drainage area off Berry Tree) and Cormorant (in area off Wedgewood) are very shallow and at times emit a noxious odor. An estimate of \$19,699 was obtained in 2016 for this job. (See Appendix.) The 2017 cost will increase by 3%. Funds are available in the current HOA repair and replacement budget under the lines for lake renewal and dredging. A list of firms to contact for bids to complete the task is contained in the report appendix.
- Based on the results of the bathymetry mapping completed in 2016, develop a schedule with cost estimates to complete the dredging process for the remaining lakes thereby restoring them to their original depth. Use the schedule when developing the HOA annual budgets so that adequate funds are allocated. This will both meet the legislative requirement and provide adequate storm water management for the Myrtle Trace community.

Tier Two

Implement both one time and on-going initiatives to keep lake outfalls and culverts free of debris and silt, allowing water to flow freely. Narrow lake fingers with no outlet must also be kept debris free to maintain water quality.

- Contract with a professional firm for a one time clean out of all culverts. When this task is completed, regular cleaning of outfall areas should reduce/eliminate build-up of debris within the culverts.
- Work with the HOA grounds contractor to develop and implement a calendar for inspecting and cleaning the lake outfall and narrow finger areas. Regular maintenance of these areas will allow the natural flow of water and also allow lakes to accommodate additional water during storms. This recommendation can be implemented immediately at no cost to the community since the responsibility is already included in the contract for grounds maintenance.

Tier Three

Expand the emergency drainage system from Lakes Cormorant and Osprey by creating an additional outfall which would empty into the county ditch. This will reduce the potential for flooding of the 60 homes surrounding the two lakes.

- Currently all water from these lakes drains onto golf course property. Drainage there is not adequate to handle the outfall from heavy rains. As a first step, contract with a professional engineer to complete a survey of the affected area to determine the feasibility of adding an additional outfall. (See appendix for one proposal.) If this action is feasible, initiate conversation with the county to obtain their support. Once these steps are completed, contract with a professional engineer for a design to address the concern. From there follow the HOA procedure to obtain bids for the work and implement the design.

Manage the water levels of Lakes Dove and Wren to maintain their health and appearance and reduce the manual labor required on a regular basis. Explore the cost and effectiveness of the three options identified below, select one and implement.

- Extend the pipe which feeds water to Lake Dove to connect with the pipe that runs under Myrtle Trace Drive to Lake Wren. (See appendix for complete description of this option.)
- Upgrade the existing pump system that controls the flow of water to Lakes Osprey, Dove and Wren by installing a timer controlled system to the pumps. (See appendix for project description and one estimate.)
- Install a bentonite liner to seal the lake. For the liner to be effective, a lake bank retaining wall would need to be constructed around the entire lake. One estimate, obtained in January, 2016, to install the liner is \$14,711. At this time the cost far exceeds the cost of the current solution of adding water to the lake when the level is low.

Conclusion

The Committee completed its charge to review the 2016 bathymetry mapping and the recommendations included in the 2016 plan. During discussions of the 2016 plan, additional lake maintenance improvements were identified and are included in the 2017 plan. As proposed in the 2016 plan, dredging of Lakes Oriole (including both sides of Berry Tree) and Sparrow and the area of Lake Cormorant by Wedgewood were reaffirmed as the first priority for 2017 lake improvements. The original 2016 cost estimate presented by Estate Management of \$19,699 will increase by 3%, by dredging these areas in 2017. The bathymetry mapping will serve as a guide for future lake dredging actions.

Debris and silt blocking water flow in culverts and outfalls is a new maintenance issue that requires further study for the most efficient and cost effective method to remove the silt and debris. Also it is recommended that a regular maintenance schedule be developed to clean the debris from in front of outfalls and in narrow lake fingers which have no outlet.

The cost associated with pumping water into the lakes was identified as an ongoing issue, particularly for Lake Dove, also known as “lake leaky”. Lake Dove has had water leaks since it was constructed. Low water levels in Dove also impacts Lake Wren water levels. Water is pumped from Dove to Wren which further lowers the water in Dove. The leak in Lake Dove also impacts on pumping water into Lakes Osprey and Cormorant. Two manually controlled pumps are used to pump water in these lakes. A Property Committee volunteer oversees the operation of lake pumps. The feasibility of an automated switching system should be investigated to control the flow of water in the different lakes. Of concern is the continuing availability of a community volunteer willing to assume the task of switching the pumping to the Lakes Dove, Wren, Osprey and Cormorant.

Property flooding was another concern of the committee. In the 2016 plan and the 2017 plan the committee proposed an emergency outfall to lower water levels and prevent flooding of

Lake Cormorant. Residential lots and homes bordering this lake have flooded during severe storms and hurricanes. The emergency outfall should be further investigated as to feasibility of construction to reduce flooding of lake side properties. Additionally, the feasibility of a method of lowering water levels in the lakes prior to a predicted major storm should be explored. This might involve changing/adding gates by designated outfalls.

In conclusion, the committee agreed to three over all implementation recommendations:

- To work closely with the Lake Banks Committee in implementing actions proposed in the lake maintenance plan.
- To increase the annual contribution to the Repair and Replacement budget for lakes maintenance.
- To appoint a special committee to oversee the implementation of plan recommendations; membership to consist of three to five individuals and a board liaison.