

Community Preservation Committee Town of Arlington

CPA Funding – FY2019 Final Application

One (1) electronic copy and three (3) hard copies of the completed [Application](#) must be submitted to the CPAC no later than noon on **Friday, December 8, 2017 in order to be considered for the 2018 Annual Town Meeting**, with the electronic copy sent to AFidalgo@town.arlington.ma.us and the hard copies to:

Community Preservation Committee c/o Amy Fidalgo
Town of Arlington, 730 Massachusetts Ave., Arlington, MA 02476

Applications will be date stamped and assigned control numbers in the order that the hard copies are received.

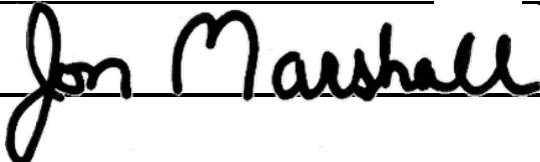
Project Title Arlington Reservoir Design and Engineering and Phase I Construction

Applicant/Contact Person Jon Marshall, Leslie Mayer, Don Vitters, Lela Shepherd, and David White

Organization Arlington Park & Recreation Commission, Conservation Commission and Arlington Reservoir Committee

Mailing Address 422 Summer Street, Arlington, MA 02474

Telephone 781-316- 3881 **E-mail** jmarshall@town.arlington.ma.us

Signature  **Date** 12/8/2017

CPA Category (*select one*):

Community Housing Historic Preservation Open Space Recreation

Amount Requested Phase I \$1,153,950

Total Anticipated Project Cost \$3,924,165

PROJECT DESCRIPTION: Attach answers to the following questions. Applications will be returned as incomplete if all requested information is not provided. Include supporting materials as necessary.

1. **Goals:** What are the goals of the proposed project?

The Park & Recreation Commission, in collaboration with the Conservation Commission, is requesting funding for FY2019 for the design, engineering and construction of Phase I of the Arlington Reservoir Master Plan currently in progress. These efforts will allow us to preserve, restore, rehabilitate, protect and enhance the habitat, watershed, conservation and recreational value of the area including improved access for community members of diverse abilities.

2. **Community Need:** Why is the project needed? Does it address needs identified in existing Town plans?

The Arlington Reservoir (the Res) was originally built as part of a municipal water supply system, but has served for more than a century as a much-used natural recreation, conservation and habitat area. The Town significantly improved the beach in the late 1970s, adding filters and an embankment to separate the swimming area from the rest of the Reservoir. The entire Reservoir area, especially the perimeter path, is used by community members and others year-round for a variety of passive and active recreational activities, including walking, jogging, bird-watching, fishing, non-motorized boating, skating, dog walking and gardening.

During the months of June, July and August, the Town operates a gated, chlorinated and filtered sandy bathing beach for resident and non-resident tag holders. The beach area includes a bathhouse, concession stand, pump house with water systems, picnic tables, benches and playground. The area surrounding the beach has a dam for flood mitigation, a natural parking lot, wooded conservation lands, a volunteer maintained habitat garden and a slightly less than one mile walking/jogging/cross-country path that encircles the water.

The total area of the Res and its shoreline is approximately 65 acres. Although all of the Res and its shoreline is owned by the Town of Arlington, about half of the area is located in the neighboring Town of Lexington. It is part of the watershed connecting Arlington's Great Meadows in Lexington to the Mystic Lakes and Mystic River via Mill Brook and would serve as the gateway to a conceptually envisioned Mill Brook linear pathway.

History of Needs Assessment for the Arlington Reservoir

In 2002-2003, a collaborative effort between the Arlington Public Schools art/science programs, the Arlington Center for the Arts (ACA) and the Arlington community resulted in the exploration of the ecosystem of the Arlington Reservoir. "*A Tour of the Arlington Reservoir*" guide, which documented issues in the area, was produced, and the area was introduced to several classes of elementary school students as a field study opportunity.

In 2006, the Town successfully completed a major award-winning engineering project to rehabilitate the earthen dam. This project ensured the dam's continued safe operation, while protecting the natural landscape. In 2010 the Reservoir Committee established a native plant wildlife habitat garden adjacent to the new emergency spillway. However, many of the issues identified in the guide still exist, and the infrastructure of the beach, which was constructed in the 1970's, is in dire need of upgrades.

The following Town planning documents have also identified the need to address issues at the Arlington Reservoir:

- Town of Arlington Master Plan indicates that “*Arlington Reservoir faces nonpoint pollution problems from pesticides and fertilizers from a nearby farm and surrounding homes. Water chestnuts are also a problem that the Town tries to control by manual and mechanical harvesting during the summer. Two storm drains on the Lexington side of the Reservoir also are sources of pollution.*”
- Town of Arlington Capital Plan has the Reservoir project as the recreation priority for FY2018 - FY2020.
- Beginning on page 126 of the Town of Arlington Open Space and Recreation Plan Action Plan, 2015-2022 goals and objectives related to the Arlington Reservoir are identified.
- Arlington Park and Recreation Commission Capital Plan has prioritized a master plan for the Arlington Reservoir as its primary project for FY2018 to determine the future renovation work necessary and implementation of the plan in phases for FY2019 & FY2020.
- Arlington Park and Recreation Commission ADA Plan (IHCD Study) identifies the needs for improved accessibility.

Ongoing Master Planning efforts for the Res in 2017 identified critical needs to be implemented in Phase I. The mechanical building and related equipment were assessed, environmental data was collected, and a thorough community engagement process is underway to develop a long-term conceptual plan for improvements. Given that the mechanical building and equipment were found to need immediate repair and/or replacement to ensure the continued operation of the bathing beach, it has been identified as a critical need and is the basis of the funding request for this application (See Appendix). Additionally, the first phase will focus on a pilot area of the trail and reservoir perimeter. Improvements consist of repair of erosion control issues, removal of invasive plant species, adding native species as needed, laying of new permeable and accessible trail surfacing, and ensuring positive drainage.

Phase II improvements will complete the remainder of trail and reservoir perimeter improvements, which will be based on the success of the pilot area completed in Phase I. Improvements are also planned for the parking facility, perimeter fencing, gates, and accessibility improvements around the entire Res. A boat ramp to assist with aquatic weed management and non-motorized recreational uses, interpretive signage that will describe the historical significance of the Reservoir, and fishing platforms will also be considered for future phasing. Specific to the bathing beach, future improvements will include bath house renovations, infrastructure improvements to the bathing beach, and additional renovation considerations as detailed under Item 7, Budget, in this application.

3. **Community Support:** What is the nature and level of support for this project? Include letters of support and any petitions.

As part of the Master Plan development process, three community meetings and an on-site listening session have been held so far. Meetings have had robust attendance with supportive and engaged community members from all areas of town. Specific letters of support are included in the Appendix.

The Arlington Reservoir Beach is a revenue producing recreational asset that serves

many individuals of all ages in the community. The following shows beach usage over the last five years:

	<i>FY2013 Actual</i>	<i>FY2014 Actual</i>	<i>FY2015 Actual</i>	<i>FY2016 Actual</i>	<i>FY2017 Actual</i>
Reservoir Tags					
Adult Resident	423	426	363	279	215
Child Resident	376	364	374	339	198
Senior Citizen	60	59	74	68	53
Non Resident	6	3	0	0	0
Resident Family	511	470	459	325	272
Non Resident Family	30	0	0	0	0
Resident Family +1	74	109	11	79	66
Non Rest Family +1	0	0	0	0	0
Total	1,480	1,431	1,281	1,090	804
Total Daily Passes	5,375	6,172	9,565	8,806	11,782

In addition to the general community using the beach during the summer, there are many users of the surrounding area in all seasons. Multiple stakeholders with interests in the waterbody and surrounding area include Arlington Park & Recreation Commission, Arlington and Lexington Conservation Commissions, Arlington Department of Public Works, the Vision 2020 Arlington Reservoir Committee, Open Space Committee, Mystic River Watershed Association and Mill Brook Study Group of the Master Plan Implementation Committee.

4. **Project Documentation:** Attach any applicable engineering plans, architectural drawings, site plans, photographs, any other renderings, relevant studies or material.
 - Existing Aerial
 - Watershed of Arlington Reservoir
 - Pump Building & Equipment Assessment
 - Facility Review of Arlington Reservoir Beach, November 22, 2017
 - Public Feedback
 - Letters of Support
5. **Timeline:** What is the schedule for project implementation, including a timeline for all critical milestones?

If the CPA funding is approved on or after July 1, 2018, the schedule for phase 1 of the project will be implemented as follows:

- Design and construction documents – Summer 2018
- Permit applications – Summer 2018
- Construction bid – Fall 2018
- Construction and construction administration services – Winter 2018/ Spring 2019
- Detailed planning for subsequent phases of the project, based on Master Plan completion, will continue throughout 2018 with the intent of seeking additional funding for FY2020.

6. **Credentials:** How will the experience of the applicant contribute to the success of this project?

- Arlington Park & Recreation Commission (APRC) in cooperation with the Town of Arlington Recreation Director(s) has a 45 year history of successful implementation of similar projects.
- All APRC projects are designed by registered landscape architects/engineers, constructed by qualified general contractors and coordinated with the Town of Arlington DPW and other departments.
- Summary of prior APRC projects completed from 2007 to 2017:

2017 – Robbins Farm Park - \$636,000

2016 – Magnolia Park - \$455,000

2015 – Spy Pond Tennis Courts - \$467,500

2014 – Hibbert Park - \$288,750 and North Union Spray Park - \$197,500

2013 – Florence Ave Park - \$435,000

2011 – Wellington Tennis Courts - \$525,728 and Thorndike Off-leash Recreation Area (grant funded)

2009 – Thorndike Parking Lot - \$170,000 and Summer Street Playground & Multi-generational Area - \$420,000

2008 – Pheasant Avenue Park/Greeley Playground - \$418, 400

2007 – Menotomy Rocks Park - \$355,000 and North Union Playground - \$136,000

7. **Budget:** What is the total budget for the project and how will funds be sourced and spent? All items of expenditure must be clearly identified. Distinguish between hard and soft costs and contingencies. (NOTE: CPA funds may not be used for maintenance.)

PHASE 1 IMPROVEMENTS	
Piloting of Trail & Reservoir Perimeter Improvements (+/- 50 LF), including:	\$20,000
<i>Repair of Erosion Control Issues</i>	
<i>Removal of Invasive Plant Species</i>	
<i>Trail Improvements</i>	
<i>FlexiPave (ADA accessible material)</i>	
<i>New Native Species</i>	
Pump Building & Equipment Repair/ Replacement (See Appendix)	\$765,000
<i>New Filtration System</i>	
<i>Renovation of Existing Suction System & Collector Tank System</i>	
<i>New Chemical Feed System</i>	
<i>Swap Use of Domestic Water for Reservoir Water</i>	
<i>New Inlet Delivery System</i>	
<i>Skimming System</i>	
<i>Building Renovations</i>	
SUBTOTAL	\$785,000
Construction Contingency (20%)	\$157,000
Contractor Mobilization, Overhead & Profit (15%)	\$117,750
Soft Costs (12%), including design, engineering and permitting	\$94,200
PHASE 1 TOTAL	\$1,153,950

NEXT PHASE IMPROVEMENTS	
Remaining Trail & Reservoir Perimeter Improvements (+/- 750 LF), including:	\$252,000
<i>Repair of Erosion Control Issues</i>	
<i>Removal of Invasive Plant Species</i>	
<i>Trail Improvements</i>	
<i>FlexiPave (ADA accessible material)</i>	
<i>New Native Species</i>	
Bath House Renovations	\$150,000
Parking Lot, Fence & Gates	\$288,000
Boat Ramp	\$10,000
Bathing Beach Infrastructure Improvements, including sediment cleanout	\$350,000
<i>Dredging of sediment</i>	
<i>Exotic vegetation removals from embankment</i>	
<i>Embankment reinforcement</i>	
<i>Weir reconstruction</i>	
<i>Armoring of the interior embankment walls</i>	
Accessibility Improvements	\$20,000
Interpretive Signage	\$3,000
Additional Renovation Considerations	
<i>Secondary Parking Lot</i>	\$30,000
<i>New Grilling Area at Concession</i>	\$105,000
<i>Basketball Court</i>	\$94,000
<i>Playground</i>	\$225,000
<i>Pathway Improvements</i>	\$55,000
<i>Overlook Decks</i>	\$20,000
<i>Beach Volleyball</i>	\$2,000
<i>New Tree and Shrub Planting</i>	\$85,000
<i>Pruning of Existing Trees</i>	\$22,500
<i>Beach Sand Replenishment</i>	\$32,000
<i>Entry Plaza</i>	\$31,000
<i>Stage & Amphitheater Seating</i>	\$110,000
SUBTOTAL	\$1,884,500
Construction Contingency (20%)	\$376,900
Contractor Mobilization, Overhead & Profit (15%)	\$282,675
Soft Costs (12%), including design, engineering and permitting	\$226,140
NEXT PHASE TOTAL	\$2,770,215
TOTAL PROJECT COST	\$3,924,165

8. **Other Funding:** What additional funding sources are available, committed, or under consideration? Include commitment letters, if available, and describe any other attempts to secure funding for this project.

Other funding sources under consideration include:

- Land and Water Conservation Fund
- Parkland Acquisitions and Renovations for Communities (PARC) Grant Program
- Capital Planning

- Recreation Department operational revenue opportunities will be evaluated as a source of funding for the project

9. **Maintenance:** If ongoing maintenance is required for your project, how will it be funded?

A detailed manual will be provided that includes milestones to be reached by year one, year three, five, and so on, which will be provided to the Town. An Operations & Maintenance Manual will also be provided for all of the equipment once it is installed and operational. As part of this process, maintenance will be identified on an annual or semi-annual basis to determine funding needs from the Recreation Department's operational budget.

Repair and replacement of the filter system are critical to the continued operation of the bathing beach. Repair and replacement of equipment will greatly improve water quality, improve disinfection and reduce the amount of chlorine needed. Overall, less man-hours will be needed for repairs, pump priming, skimming and other water filtration-related tasks.

10. **Impact on Town Budget:** What, if any, potential secondary effects will your proposed project have on the Town's Operating Budget? Are there any capital projects that rely on the successful completion of your project?

The Recreation Department relies on operation of the bathing beach for its operational budget. If the critical phase I work is not completed as soon as possible, the amount of operational revenue will be significantly impacted.

Critical improvements to the pump building & beach water filtration equipment will reduce chlorine costs and man-hours required to operate the beach. The reduced footprint of the new equipment will also provide much needed storage space in the pump building that should positively impact the bathhouse/concession building needs in future phases of the project.

ADDITIONAL INFORMATION: Provide the following additional information, as applicable.

1. **Control of Site:** Documentation that you have control over the site, such as a Purchase and Sales Agreement, option or deed. If the applicant does not have site control, explain what communications have occurred with the bodies that have control and how public benefits will be protected in perpetuity or otherwise.
 - The site spans the municipalities of Arlington and Lexington with 21.3 acres in Arlington and 44.7 acres in Lexington. The Town of Arlington owns and manages the entire perimeter of the waterbody.
 - Managing Agencies - Park and Recreation Commission / Dept. of Public Works / Conservation Commission / Town of Arlington.
 - All work to be done in any phase is limited to land owned and controlled by the Town of Arlington. The delineation of property line between Arlington and Lexington is identified in the survey information.
2. **Deed Restrictions:** In order for funding to be distributed, an appropriate deed restriction, meeting the requirements of Chapter 184 of Mass General Laws pursuant to section 12 of the Community Preservation Act, must be filed with the CPAC. Provide a copy of the actual or proposed restrictions that will apply to this project.

- No known deed restrictions required by Chapter 184.
3. **Acquisitions:** For acquisition projects, attach appraisals and agreements if available. Attach a copy of the deed.
 - No acquisitions required.
 4. **Feasibility:** Provide a list of all further actions or steps that will be required for completion of the project, such as environmental assessments, zoning approvals, and any other known barriers to moving forward.

As part of the Master Planning process, environmental assessments are underway and a report will be forwarded once the process has been concluded. Conservation Commission approvals from multiple municipalities are required in order to move forward.

5. **Hazardous Materials:** Provide evidence that the proposed project site is free of hazardous materials or there is a plan for remediation in place.

There are no known hazardous materials on site. Prior work by Weston & Sampson to reconstruct the dam and spillway structures did not turn up any hazardous materials.

6. **Permitting:** Provide evidence that the project does not violate any zoning ordinances, covenants, restrictions or other laws or regulations. What permits, if any, are needed for this project? Provide the expected date of receipt for necessary permits, and copies of any permits already acquired.

Permits for any work to be done will be required from both the Arlington and Lexington Conservation Commissions. Based on feedback from the Commissions, the project will be permitted accordingly.

7. **Environmental Concerns:** Identify all known wetlands, floodplains, and/or any natural resource limitation that occur within the boundaries of your submission.

The drainage to Arlington Reservoir is largely urban, but with several large open space zones (Pheasant Brook, Whipple Hill), with a total area of roughly 1200 acres (See Watershed of Arlington Reservoir in the Appendix). The primary surface drainage into the reservoir is through Munroe Brook, which flows from the northwest and receives considerable storm water. Outflow from Little Pond appears to join Munroe Brook slightly upstream of Arlington Reservoir. It is possible that some storm water drainage systems are diverted into or out of the watershed, such as from the Emerson Gardens complex, which is on the watershed boundary.

A few direct entry storm drains were observed during the site visit to the reservoir itself, and direct overland flows to the reservoir undoubtedly occur, but Munroe Brook appears to supply most water to the reservoir.

The watershed is about 46 times the area of the reservoir, making the watershed likely to be a dominant water and pollutant loading source; watersheds <10 times the area of the waterbody into which they drain tend to be lesser influences, while watersheds >50 times the waterbody area tend to be dominant influences. That influence is even greater when

the watershed is developed as residential area and related commercial, recreational, and transportation services.

8. **Professional Standards:** Evidence that appropriate professional standards will be followed if construction, restoration or rehabilitation is proposed. Evidence that the applicant and the project team have the proven or potential capacity to conduct the scope and scale of the proposed project, as evidenced by project leaders with appropriate qualifications and technical experience or access to technical expertise.
- The project will be managed by the Director of Recreation and experienced members of the APRC with assistance from members of the Conservation Commission and any other relevant Town Departments or agencies.
 - The project will be awarded to a professional services organization with appropriate design, engineering and environmental capabilities, such as Weston & Sampson - a firm with an interdisciplinary approach and qualifications as outlined here and in proposal:
 - o <http://www.westonandsampson.com/services/landscape-architecture/master-planning/>;
 - o <http://www.westonandsampson.com/services/environmental-consulting/>;
 - o <http://www.westonandsampson.com/services/civil-site-survey/survey/>

9. **Further Attachments:** None.

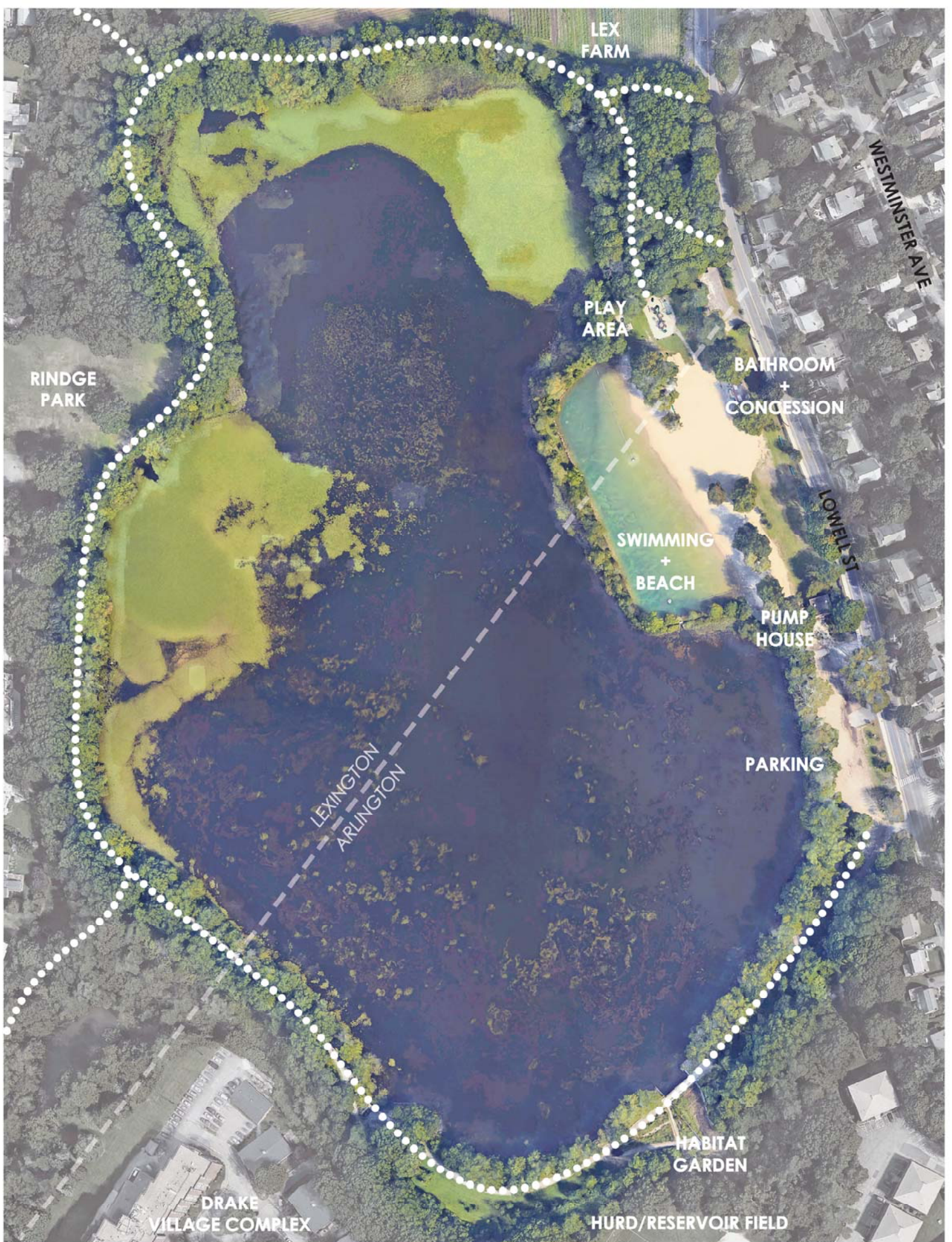
REMINDER: Projects financed with CPA funds must comply with all applicable state and municipal requirements, including the state procurement law, which requires special procedures for the selection of products, vendors, services, and consultants. Project sponsors will be required to meet with Arlington's Town Manager before the Town enters into any contracts or issues any purchase orders. However, this requirement can be waived if adherence to procurement procedures will be overseen by a Town Department Head or other MCPPO certified third party.

APPENDIX

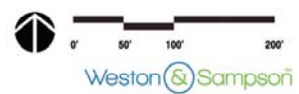
- Chart 1: Community Preservation Fund Allowable Spending Purposes
- Existing Aerial
- Watershed of Arlington Reservoir
- Pump Building & Equipment Assessment
- Facility Review of Arlington Reservoir Beach, November 22, 2017
- Public Feedback
- Letters of Support

**Chart 1
COMMUNITY PRESERVATION FUND ALLOWABLE SPENDING PURPOSES (G.L. c. 44B, § 5)**

	OPEN SPACE	HISTORIC RESOURCES	RECREATIONAL LAND	COMMUNITY HOUSING
DEFINITIONS (G.L. c. 44B, § 2)	Land to protect existing and future well fields, aquifers and recharge areas, watershed land, agricultural land, grasslands, fields, forest land, fresh and salt water marshes and other wetlands, ocean, river, stream, lake and pond frontage, beaches, dunes and other coastal lands, lands to protect scenic vistas, land for wildlife or nature preserve and land for recreational use	Building, structure, vessel, real property, document or artifact listed on the state register of historic places or determined by the local historic preservation commission to be significant in the history, archeology, architecture or culture of the city or town	Land for active or passive recreational use including, but not limited to, the use of land for community gardens, trails, and noncommercial youth and adult sports, and the use of land as a park, playground or athletic field. Does <u>not</u> include horse or dog racing or the use of land for a stadium, gymnasium or similar structure.	Housing for low and moderate income individuals and families, including low or moderate income seniors Moderate income is less than 100%, and low income is less than 80%, of US HUD Area Wide Median Income
ACQUISITION Obtain property interest by gift, purchase, devise, grant, rental purchase, lease or otherwise. Only includes eminent domain taking as provided by G.L. c. 44B	Yes	Yes	Yes	Yes
CREATION To bring into being or cause to exist. <i>Seideman v. City of Newton</i> , 452 Mass. 472 (2008)	Yes		Yes	Yes
PRESERVATION Protect personal or real property from injury, harm or destruction	Yes	Yes	Yes	Yes
SUPPORT Provide grants, loans, rental assistance, security deposits, interest-rate write downs or other forms of assistance directly to individuals and families who are eligible for community housing, or to entity that owns, operates or manages such housing, for the purpose of making housing affordable				Yes, includes funding for community's affordable housing trust
REHABILITATION AND RESTORATION Make capital improvements, or extraordinary repairs to make assets functional for intended use, including improvements to comply with federal, state or local building or access codes or federal standards for rehabilitation of historic properties	Yes if acquired or created with CP funds	Yes	Yes	Yes if acquired or created with CP funds



ARLINGTON RESERVOIR MASTER PLAN
EXISTING AERIAL



Watershed of Arlington Reservoir



ARLINGTON RESERVOIR MASTER PLAN

PUMP BUILDING + EQUIPMENT ASSESSMENT



RECOMMENDED IMPROVEMENTS

WATER FILTRATION + CLARITY

- New filtration system needed
- Renovate suction system and collector tank system
- New chemical feed system needed
- Introduce of UV treatment
- New inlet delivery system needed
- Skimming system needed

BUILDING

- Renovate interior
- New mechanical, electrical + plumbing
- Waterproofing + caulk repair



November 22, 2017

To: Cassidy Chroust

From: Mark Mariano, PE, CPO
Project Manager
Weston & Sampson Engineers, Inc.
85 Devonshire Street
Boston, MA 02109

Facility Review of Arlington Reservoir Beach

Please find below our review and findings of our facility review of the existing filter building, filter system, and water quality and safety of the Arlington Reservoir Beach:

Building:

The building is a double wythe concrete masonry building. The interior block wall is painted, with an exterior red brick veneer. The building roof is a metal truss structure with a flat roof. The building is installed on a cast in place concrete stem walls with a cast in place concrete floor.

Challenges Found:

- The building roof was not accessible during the time of the inspection, but the roof is believed to be original to the building. Scuppers and drain pipes are not properly transferring the water away for the building.
- Caulking and waterproofing around the building are showing signs of drying out and separation.
- The interior walls inside the building have paint peeling on the surface of the block. This could be a result of water getting into the cavity wall and pushing through the block.
- Ventilation is inadequate based on the horsepower of the pump, electrical components, and chemicals stored in the building.
- Electrical panels are rusty and corroded. With the storage of chemical in the building, the panels have experienced accelerated decay.

Filter System:

The current filter system utilizes a high rate pressure sand filter, pumps, strainers, and liquid sodium hypochlorite disinfection pumps. The current pump system has been sized for 1800 GPM, but the system maybe operating between 1200-1600 GPM.

There was a conversion performed over 25 years ago that converted the system from a vacuum suction filter to a pressure sand filter system. With this, there is a flow control structure found outside of the filter building. The intent of this was to retrieve water from the pond and suction from this basin, and be able to fill the system with the reservoir water.

Challenges Found:

- The filter sand has not been changed in over 10 years. The vessel is rusted. Operation has not been able to properly backwash the vessel, and it is unknown how much sand is still in the filter.
- The pump is currently a vertically mounted pump, however it is a flood suction pump that is above the static water level. It is challenging to prime the pump.
- The chemical controller no longer works, and doesn't appear to have worked for years.
- Instrumentation, such as flow meters and pressure gauges do not function properly.
- Chemical injection system is not interlocked with the pump.
- Town uses domestic water to supplement filling the pond when the water is too low.
- Site valves either do not open and operate or are having issues with them.

Water Quality and Safety:

Currently the water is circulated by the above-mentioned filtration system, and is delivered back to the bathing beach through a series of inlets found in the deeper end of the bathing beach. Water is also delivered through a fountain found in the bathing beach.

One end of the bathing beach is a beach entry where patrons enter on a slope between 1:12 and 1:20, railing are also provided.

The other three sides are overgrown with vegetation, and inaccessible.

Challenges Found:

- Water quality is a challenge to keep the water clear, and not cloudy.
- Animals such as duck and geese land, nest, and contaminate the water.
- Currently the water is not skimmed, and skimming occurs via manual labor. Skimming the water would remove the dirtiest part of the water.
- Delivery of the water is through inlets that are found in the basin. They are delivering water at a high velocity, which can impair patrons.
- The three inaccessible sides create an issue where it takes longer for a life guard to rescue someone, and does not allow a point of refuge for a tired swimmer to hold onto the wall or exit the bathing beach.
- The rocks found around the perimeter of the beach are an abrasion hazard for swimmers.
- Better identification, such as rope and floats to identify swimmers they are entering an area that is deeper than 5 FT.

Priority List for Improvement:

1. Water Filtration and Clarity:
 - a. New filtration system.
 - i. Estimated Cost: \$250,000, including new piping, filter, pump(s), drive(s), piping and valves.
 - b. Renovate existing suction system and collector tank system.
 - i. Estimated Cost: \$100,000, including removing the existing collector tank, installing a new collector tank, installing all interconnecting piping between the filter system and bathing beach.
 - c. New chemical feed system.
 - i. Estimated Cost: \$20,000, new tanks, feeders, controller, and piping.
 - d. Use of reservoir water in lieu of domestic to supplement the bathing beach.

- i. Estimated Cost \$20,000, influent water line from the reservoir side of the pond with a pump to bring free water into the system.
- e. Introduction of UV treatment.
 - i. Estimated Cost \$65,000, new medium pressure UV unit. Will help with disinfection and reduce the amount of chlorine used.
- f. New inlet delivery system.
 - i. Estimated Cost: \$30,000, new inlets system that reduces the velocity of water injected into the bathing beach.
- g. Skimming System.
 - i. Estimated Costs: \$30,000.

Estimated Costs: \$515,000.00

2. Building:

- a. Renovate interior of the building.
- b. New Mechanical Electrical and Plumbing
- c. Waterproofing the building & fix caulking.

Estimated Costs: \$250,000.00

Add Alt: Storage Building addition - \$275.00 / SF.

3. Bathing Beach Infrastructure Improvements:

- a. Creating a bathing beach where a swimmer can hold, rest on the edge of the pond. This could be done by filling in the perimeter edges to a shallower depth and creating a deeper bowl in the center, or creating a T shaped dock, which can allow life guards faster access to patrons and a point of resting for patrons.
- b. Removal of the rocks, and abrasion hazards on the banks.
- c. Solution for preventing birds from nesting and wading in the bathing beach.
- d. Remove vegetation on the berm, and create accessible paths.
- e. Create a dock on the rear berm to allow to staff a life guard and patron movement.

Estimated Costs: \$200,000.00 (with a dock)

If there are any questions on the information provided in this document please feel free to contact me at 978-532-1900 ext. 7407, or @ marianom@wseinc.com.

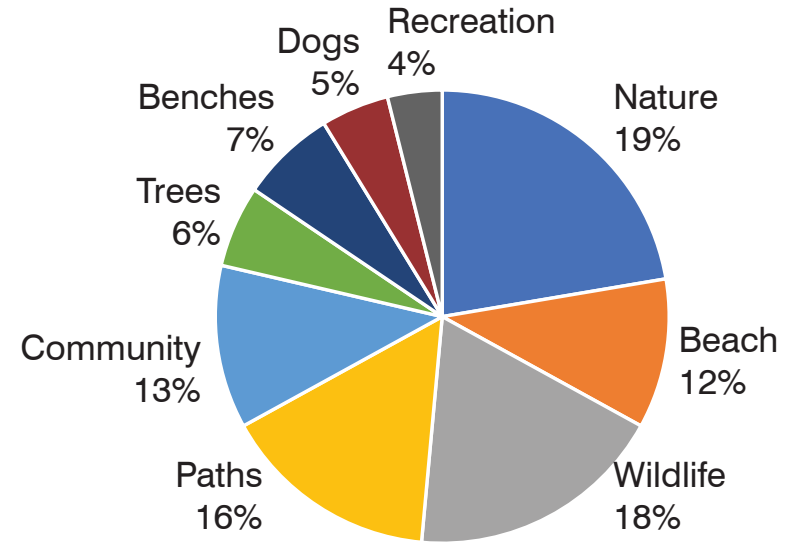
Mark Mariano, PE CPO
Project Manager

ARLINGTON RESERVOIR MASTER PLAN

PUBLIC FEEDBACK UPDATE

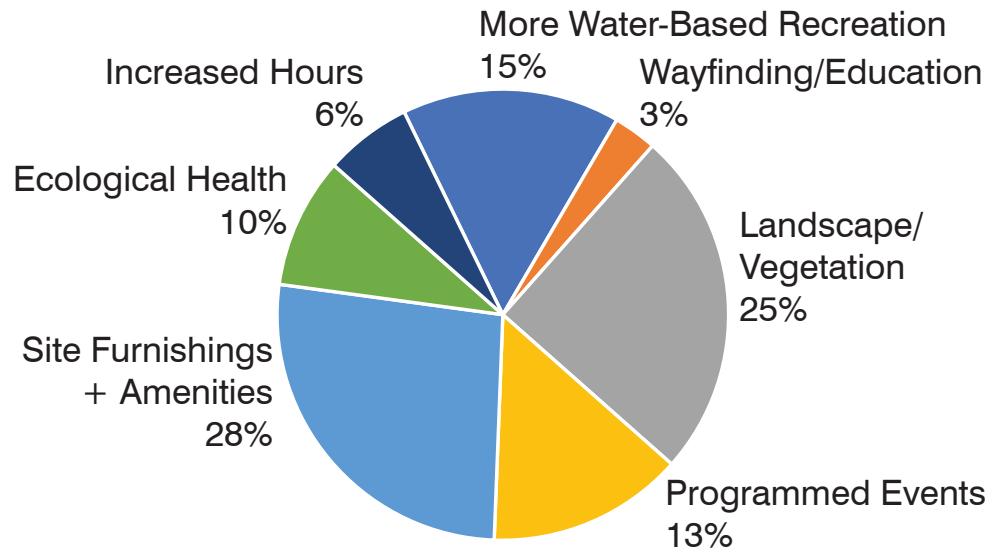
BEST THINGS ABOUT THE RES

- Swimming!
- Habitat garden, wildlife and trails.
- The willow trees.
- Shade and grass on the beach.
- Nature trail near Busa Farm.
- The loop trail.
- The shady beach!
- Fall/Winter walks with the dog.
- The beach is very affordable.



IMPROVEMENTS NEEDED

- More tables for lunch.
- Bigger/deeper swim area.
- Better maintenance of trails.
- Splash pad!
- Cleaner swimming water
- More walking/trail options.
- More programmable space (concerts, movies)
- Swimming lessons.
- Better water access.
- Food truck location.

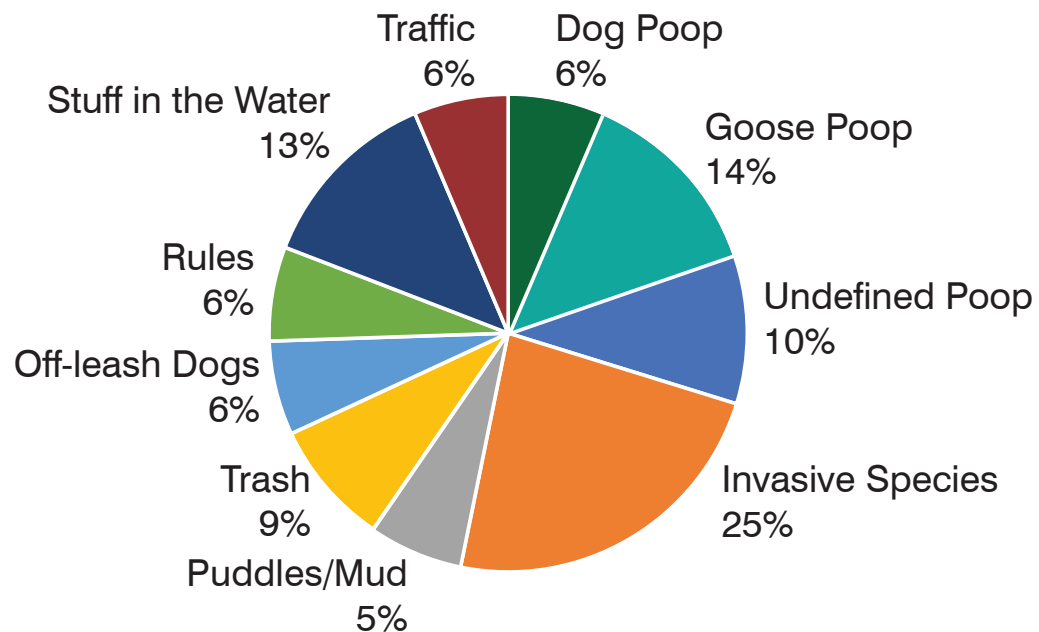


ARLINGTON RESERVOIR MASTER PLAN

PUBLIC FEEDBACK UPDATE (cont'd)

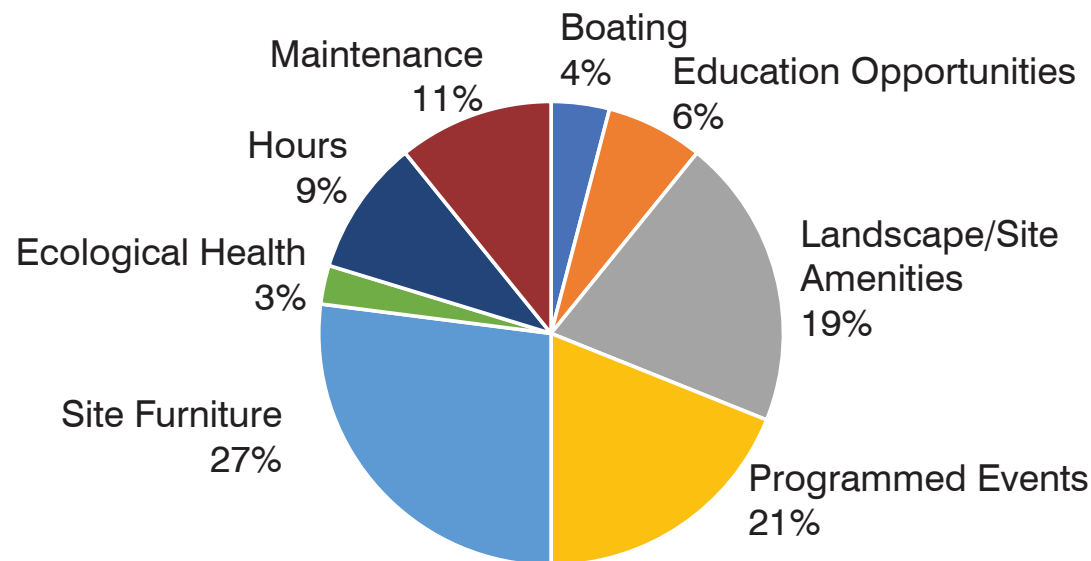
I WISH THE RES HAD LESS...

- Invasive plants.
- Debris floating in the water.
- Fencing along Lowell Street.
- Geese!
- Sediment in the swimming water.
- Erosion.
- Dog poop.
- Snow plowing! (cross country ski)
- Scum on bottom of swim area.



I WISH THE RES HAD MORE...

- Seating.
- Available beach hours in summer.
- Information on wildlife.
- Viewing opportunities.
- Public art.
- Year round access.
- Trash cans.
- Landscaped vegetation.



December 6, 2017

Jon Marshall
Director of Recreation
Town of Arlington
422 Summer Street
Arlington, MA 02474

Re: Support for Arlington Reservoir Master Plan Project

Dear Mr. Marshall:

I am writing in support of the Arlington Reservoir Master Plan Project. I have been an active participant and volunteer at many Reservoir activities for many years including dog walking, kayaking, fishing, swimming, ice skating, clean-up efforts, cross-country meets, and trail and garden maintenance. I completed an art project that was a time-lapse photographic record of the changes at the Res over 52 weeks that was presented at the Season of the Arlington Art Exhibit in 2015. Also, my daughter served as a lifeguard at The Res.

Because of the range of amenities that The Reservoir offers, it is very popular among Arlington residents. The Res needs infrastructure improvements to update facilities and to provide a high level of service for its users. This includes improving pedestrian and boating facilities, ADA access, water quality, and the parking lot.

I fully support the master planning effort to improve and preserve the Arlington Reservoir and the unique amenities it provides the residents of Arlington.

Very truly yours,



Jeff Maxtutis
176 Waverly Street
Arlington, MA 02476
781-646-7553
jeffrey.maxtutis@aecom.com



Open Space Committee

December 6, 2017

RE: Arlington Reservoir Design and Engineering and Phase 1 Construction

Arlington Community Preservation Committee
c/o Amy Fidalgo, Town of Arlington
730 Mass. Ave.
Arlington, MA 02476

Dear Ms. Fidalgo,

On behalf of the Open Space Committee, I am writing to support the Park and Recreation Commission and Conservation Commission's application for Community Preservation Act funds for Design and Engineering and Phase 1 Construction, based on the ongoing master planning process for the Arlington Reservoir.

The Res is an extensively used and highly valued open space for residents and visitors throughout the year. Protection of and improvements to both the natural resources and recreational amenities of the Res are among the most important goals and objectives outlined in the Town's *Open Space and Recreation Plan* for 2015-2022. See for example Chapter 9, Action Plan:

Goal 2: Preserve, maintain, and enhance existing open spaces, including watersheds, water bodies, and natural areas; parks, playgrounds and outdoor recreational facilities; and historic sites and cultural landscapes.

The Res offers the opportunity to address elements of all of these goals, and the master planning process to date has identified the priorities for Phase 1 implementation, as outlined in the application. The infrastructure of the pump house and equipment is in dire need of replacement in order for the beach to operate safely, so this major expense takes precedence over many natural resource and cultural landscape needs. However, we are pleased that this Phase 1 proposal does include repair and improvements to a short section of the Reservoir perimeter trail as a pilot project for future implementation phases.

We urge the Community Preservation Committee to fully support the Park and Recreation Commission and Conservation Commission's application to begin implementation of improvements to the Reservoir beach and trail, recognizing that the final master plan will detail many other needs for additional support.

Thank you and best regards,

A handwritten signature in blue ink that reads 'Ann LeRoy'.

Ann LeRoy, Chair
Arlington Open Space Committee

From: Joan Black <joan.c.black@gmail.com>
To: JRMarshall@town.arlington.ma.us
Date: 12/02/2016 03:01 PM
Subject: CPR Proposal for Arlington Reservoir

To Whom It May Concern:

My name is Joan Black and i am a life long resident of Arlington. I raised four children, the fourth generation of "Arlingtonians," on Bartlett Avenue as my grandparents purchased their home on Exeter Street in 1920. Arlington has many attributes as a desirable place to live and raise families. One important one has been the preservation of natural open spaces and recreational areas. This is a remarkable achievement for such a densely populated area such as our town. I am proud this has been a priority.

It is exciting that The Park and Recreation Commission in collaboration with The Arlington Conservation Committee are submitting a proposal for CPA funds to improve The Arlington Reservoir. The Res is a treasure and offers a variety of recreational opportunities in a natural setting. People of all ages, abilities and interests take advantage of the trail which encircles the water. I enjoy the route with my dogs and grandchildren. Recently with Arlington Dog Owners we participated in Bark for Life {Relay for Life Cancer Fund Raiser with dogs} at the Res. It was the fourth time i participated. This year a friend in a wheelchair with her service dog was on our team She was able to complete the route but with great difficulty and substantial help from my husband. Accessibility needs to be improved.

The natural setting is perfect for bird watching and ecological observations. Summer swimming is open to residents and non residents with the purchase of a pass. That is important to me that an affordable way to enjoy a beach is nearby and open to all.

Please consider The Arlington Reservoir for A CPA funds as ecological improvements are essential. Important issues of accessibility would also be addressed with this funding..

Thank you for any consideration you may be able to extend. Arlington is a town i am proud to call my home.

Joan Black
46 Bartlett Avenue
[781 454 5341](tel:7814545341)

From: Carly Campbell <carly.t.campbell@gmail.com>
To: blmayer@msn.com, JRMarshall@town.arlington.ma.us
Date: 11/28/2016 04:14 PM
Subject: CPA Application for the Arlington Reservoir

Dear Ms. Mayer and Mr. Marshall,

I am writing you regarding the application for CPA funds to improve the Arlington Reservoir. I moved to the Mt. Gilboa neighborhood 2 years ago, and the Res was a huge draw to the location. I frequently go for runs with friends around the Res, take our visitors on walks there, and walk my dog around the path - in all seasons. Even when I'm just using it as a cut through to get to Trader Joe's, I feel so fortunate to have that much natural beauty just steps away from my door.

Given my proximity to the Res, along with my regular use of it, I strongly support planning for improvements to the area. Please feel free to contact me with any questions.

Thank you,

Carly Campbell

50 Westmoreland Ave
Arlington MA 02474

978-835-1326

Hello,

The Res was one of the reasons we bought our house on Westminster in 1998. Since then, the Res has been a big part of our lives. When our son was young, we would take frequent walks around the Res, and in the summer we spent a great deal of our time at the beach, together with our neighbors and many others from all over the town. It's the only place I'm aware of where kids can swim outside in a natural setting in Arlington. In high school, our son was on the AHS cross-country team, with the Res as the home field, so it provides another valuable service to the community.

At this point in our lives, we still take walks around the Res several times a week, often with our dog. It's a restful, beautiful place to go.

It's a very special place to us, and many others in town. There are many young children in our neighborhood and throughout Arlington, and this is the only natural body of water where the kids can swim. I would like my neighbors to enjoy the same experience and community there that we have been blessed with when our son was young, but there are problems with aquatic growth, and geese that impact the experience, and the building with the bathrooms/food is old and outdated and needs some attention. I know there are other in Arlington who would not come to the Res beach because of concerns over geese droppings, and water quality, and the aquatic growth.

The Res is a beautiful asset to the town, and I can't think of a better use of the CPA funds than to provide the attention that it needs.

Thanks for your consideration.

Anne Ehlert
156 Westminster Ave

cell: 617 872 3306
home: 781 646 0988

From: Megan Lancelotta <meganschiller@gmail.com>
To: JRMarshall@town.arlington.ma.us, blmayer@msn.com
Date: 12/02/2016 02:44 PM
Subject: Support for Application to ACC for Reservoir Park Improvements

Dear Jon and Leslie,

My neighbor, Sue Doctorow, recently informed me that you are submitting an application to the Arlington Conservation Commission to begin the process of improving the Arlington Reservoir park area. As a resident of Arlington who lives close to the Reservoir and makes frequent use of the trails, playground, and swimming area, I would like to voice my strong support for this application.

The reservoir and surrounding areas is one of the true gems of Arlington. I have run the trails around it countless times in the ten years I have lived here. And when I had children, my family and I became frequent visitors of the Res Beach and playground. It is one of my kids' favorite fair weather activities.

Like so many of the open spaces around town, the reservoir park provides a much needed respite from the hustle and bustle of our little town. It is a beautiful area where people can recharge and reconnect with nature. It is utilized not only by the people who live closest to it, but by residents from all over town. I am so glad that the town values this wonderful asset, and would love to see them continue to put resources towards it to make it an even more lovely place for residents to enjoy.

To this end, I hope the ACC decides to pursue the comprehensive study of the area to determine what improvements they should pursue.

Many thanks for your work on this important initiative.

Sincerely,

Megan Lancelotta

161 Westminster Ave.

Arlington

From: Charles Strauss <strauss.charlie@gmail.com>
To: "Leslie Mayer - Park and Recreation Commissioner" <blmayer@msn.com>, "Jon Marshall - Arlington Recreation Director" <JRMarshall@town.arlington.ma.us>
Date: 11/29/2016 12:44 AM
Subject: CPA application for Arlington Reservoir area

Hello Leslie Mayer and Jon Marshall,

I am writing as an Arlington resident to voice my support for the CPA application currently under consideration for the Arlington Reservoir. I live on Westminster Ave, one block up the hill from Lowell St. The Res, along with the other neighborhood open spaces like Whipple Hill and Lex Farm, are primary reasons that I and my family chose to buy our house here. My family has enjoyed the Res for birthday parties, scavenger hunts, flashlight hikes, skipping rocks, bird watching, and, of course, swimming. I am grateful that Arlington has invested in its public open spaces, and I sincerely hope this continues.

Yours respectfully,
Charles Strauss
178 Westminster Ave

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PHASE 1 IMPROVEMENTS		
	Unit Cost	Notes
DEMOLITION + SITE PREPARATION	\$ 20,000	
Temporary Construction Fence	\$ 5,000	
Tree Pruning, Clearing and Grubbing	\$ 5,000	
Misc. Pump Equipment Demolition	\$ 10,000	Demo of pump, filter, hydraulic system
PILOTING OF TRAIL + RESERVOIR PERIMETER IMPROVEMENTS	\$ 20,000	
Repair of Erosion Control Issues (1 location)	\$ 8,000	Incl. coir fascine and stakes, labor, new native plantings, and seeding of erosional areas
Removal of Invasive Plant Species	\$ 6,000	Incl. labor and restoration of 0.25 acre, seeding
FlexiPave (50 LF)	\$ 6,000	Assumes 6' width
PUMP EQUIPMENT REPAIR/REPLACEMENT	\$ 495,000	
New Filtration	\$ 250,000	
Renovate Suction System & Collector Tank System	\$ 100,000	
New Chemical Feed System	\$ 20,000	
Install UV Treatment	\$ 65,000	
New Inlet Delivery System	\$ 30,000	
New Skimming System	\$ 30,000	
PUMP BUILDING REPAIRS	\$ 138,600	CPA - \$250,000
Structural	\$ 24,600	
Concrete Masonry Repair Allowance	\$ 10,000	
Masonry Sealer	\$ 4,600	
Steel Framing and Metal Deck Repair Allowance	\$ 10,000	Initial application only
Architectural	\$ 114,000	
Replace Roof	\$ 12,000	
New Double Door & Frame (exterior)	\$ 4,000	
Clean & Repoint Masonry	\$ 5,000	
New Door & Frame (interior)	\$ 2,000	
Prep & Paint Walls	\$ 6,000	
Prep & Paint Ceiling	\$ 4,000	
Outside Check In Area	\$ 25,000	Assumes post and beam with overhang
Clad the Building	\$ 42,500	
Add Inside Walls to Reconfigure Space	\$ 13,500	Assumes add'l 28' wall to separate equipment, plus a single interior door, basic power & lighting, ventilation
Construction Subtotal	\$ 673,600	
Construction Contingency (20%)	\$ 134,720	
Contractor Mobilization, Overhead & Profit (15%)	\$ 101,040	
Soft Costs (12%), including design, engineering and permitting	\$ 80,832	
PHASE 1 TOTAL	\$ 990,192	
PHASE 1 TOTAL SAY:	\$ 991,000	CPA - \$1,153,950