

May 17, 2018 - Fresh Pond Reservation Master Plan Advisory Board Meeting Minutes

Submitted: Sam Corda – September 20, 2018

Advisory Board Members in Attendance:

Janice Snow (Chair), David Kaplan, Jim Barton, Janet Burns, Adam Corbeil, Jennifer Letourneau, Deborah Masterson, Purvi Patel, Candace Young, Claudia Thompson, Susan Agger and Jamie Porreca

Advisory Board Members Not in Attendance:

Ann Roosevelt

Water Department in Attendance:

Sam Corda, Vincent Falcione, Tim Puopolo

Others in Attendance:

Jim Wilcox, DPW

Meeting opened at 6:03 pm

Meeting Minutes: S. Corda

Item 1: Review Agenda

No changes

Item 2: Meeting Minutes

Deborah Masterson moved and Purvi Patel seconded the motion to approve the minutes from March 15, 2018 as written. The vote was unanimous in favor of the motion.

Item 3: Wetland Swale Design Standards

Jim Wilcox gave a presentation on Stormwater Management and Enhancing Open Space in Cambridge. He noted that the first choice for controlling stormwater is soft controls, such as vegetated swales and wetland plantings at the Reservation. The designs may include outlet pipes. Designs capacity is based on NOAA rainfall frequency charts and state standards for so called, “two-year storms” of one inch of rain falling over 24 hours. The goal is to treat the first inch of rain before it flows into water bodies. The presentation slides can be seen using the link below.

<http://www.cambridgema.gov/~media/Files/waterdepartment/freshpondreservation/advisoryboardagendasandminutes/Minutes/2018/presentationmay2018.pdf?la=en>

Item 4: Cambridge Public Schools (CPS) Ecology Education Projects at the Reservation

Susan Agger, Director of the Maynard Ecology Center (MEC) and an Advisory Board member described the new CPS Science Curriculum standards she is implementing at Fresh Pond Reservation. The new standards are based on research on how people learn and the importance of cross-cutting concepts of increasing complexity and learning by doing: planning, investigating, using evidence to support a conclusion, testing variables and using the internet to look for trends. Over the 2017-2018 school year 800 CPS students (grades 2-4) studied water and earth systems at the Reservation. Please see the attachment A for more information.

Item 5: Annual Golf Course Landscape Report

Adam Corbeil, Division Head Cambridge Recreation and Advisory Board member noted that the Water and Public Works Departments have been very helpful in approaches for managing the golf course landscape. They are currently evaluating the condition of North Pond's water quality and the extent of invasives along its banks. The wet weather this spring has slowed some projects. All the drainage improvements are working well and there has been an increase in wildlife habitat. Golf course staff are using integrated pest management techniques to protect the water supply.

On safety: The gas tank has been repaired, upgraded and inspected by MA DEP and the project is complete.

Working with the City's Race and Equity team, Adam has worked to make the course welcoming to a diverse group of users. They now offer an introduction to golf as part of two-week summer camps, provide golf clubs at City youth centers and a Tuesday morning golf program.

Item 6: Revised Stewardship Plant List – Meeting#2 Report

Dave Kaplan handed out a summary of the second meeting of the Board's Planting Committee with our consultants to review and update the Fresh Pond Reservation Master Plant List. The revised May 16, 2018 draft reorders the original eight criteria into two categories: (1) Planting goals and (2) plant lists and sourcing criteria. The first goal is now to manage the Reservation to create and/or restore native plant communities to provide native wildlife habitat and biodiversity that protects and improves water quality. See attachment B for details.

Item 7: Watershed Managers Report

Drainage and Community Garden Project: Contractors are working on the punch list to finish the project before Fresh Pond Day, June 9th. We also expect the Community garden site will be completed the last week in May.

Landscape Maintenance: Vinnie Falcione is working on clean-up, aeration and slice seeding. Irrigation is getting turned on. Mulching and replanting any damaged vegetation will soon follow. Contractors are working on masonry repairs to the historic stone overlooks to close out Phase 1 of the Kingsley Park Project.

Black's Nook Fencing: Currently, there are approximately seven miles of fencing installed at Fresh Pond Reservation. See attachment D. We discussed replacing the temporary long-term fencing around Black's Nook with a permanent option. It was proposed that black chain link fencing is a very good option. It is the most practical and has a low visual impact.

Claudia Thompson moved, and Deb Masterson seconded a motion to select the 4' black chain link fencing. The vote was unanimous with Janice Snow abstaining.

Item 8: Annual Reservation Volunteer Project Report

Ranger Tim Puopolo reported that this year's volunteer program was going well. He noted that individual volunteers and members of partnering organizations devoted 1748 hours to restoration and education events at the Reservation in 2017. Tim handed out a summary of previous year activities containing much information about volunteering organization, events, target zones and a look forward. See attachment C.

Item 9: Sign-up & Plan for Fresh Pond Day - June 9, 2018

The event will run from 11:00 am to 3:00pm with setup starting at 10:00 am. The main location will be near the Drainage and Community Garden project. There will be music and many other things to do and enjoy. A canopy may be available for the Board volunteers. Signup sheets are available for staffing the Advisory Board table and for volunteering with Tim.

Item 10: Review/Approve 2018-19 Meeting Schedule: 3rd Thursday

- Sept 20, 2018; Nov 15, 2018; March 21, 2019; May 16, 2019.

Janice Snow moved, and Jim Barton seconded the motion to approve the meeting dates for the next year. The vote was unanimous in favor of the motion.

Item 11: Preliminary Agenda for Sept 20, 2018 Advisory Board Meeting

Eco-Counter/Fresh Pond user report, Long Term Master Plan Projects: Annual Update, Fresh Pond Day Report

Item 12: Public Comment

There was no public comment.

Jim Barton moved, and Deb Masterson seconded the motion to adjourn the meeting. The vote was unanimous in favor of the motion. The meeting was adjourned at 7:58pm.

ATTACHMENT A

CPS Maynard Ecology Center

The following CPS Science curriculum is supported by a field investigation to the Fresh Pond Reservation:

- Second Grade - **Plant and Animal Survival** (April – June)
- Third Grade - **Weather** – (November – December)
- Fourth Grade - **Earth's Changing Surface** (September - December)
- Fifth Grade - **Matter in Earth Systems at the Alewife Engineered Wetland** (November – December)

All field studies are aligned to the Massachusetts Science, Technology, and Engineering Frameworks 2016 and the Next Generation Science Standards Science Practices.

Field Studies at Fresh Pond Reservation for School-Year 2017-2018

Grade Level	Field Study Description	Number of Students
Grade 2	Students engage in focused observations at the wildflower meadow, NE sector woodlands and Black's Nook pond in order to compare the differences as well as similarities in the plants and animals found in these different environments. Plants and animals must meet their needs in these environments in order to survive.	334
Grade 3 Pioneering	Students use a variety of weather tools, practicing how to accurately read instruments with different units, while recording weather data at Fresh Pond. Students consider local weather data using the USGS monitoring stations at the reservoirs to look for patterns in the data over time.	55
Grade 4	Students make observations on the reservation that gives them data to support their claims about weathering, erosion and deposition. At MEC students develop investigations using stream table models adjusting variables such as slope, water flow rate, volume and earth material which helps provide the evidence to understand what causes weathering, erosion and deposition. Stream table observations are then applied to how these processes shape the land over time.	411

Grade 5 Alewife Stormwater Wetland	<p>The water cycle model tour allows students to track different paths that water molecules take through the engineered stormwater wetland. Students will apply their understanding of the particle nature of matter (water) to this open system. Particulates settle out in the wetland or will be left behind as water molecules evaporate, are absorbed into the sediments or are absorbed by plant roots.</p> <p>The watershed walk provides a place-based experience where students will apply their understanding of how water moves between Earth's systems: hydrosphere, geosphere, atmosphere and biosphere as it passes through the engineered wetland. The watershed walk provides context for how the Alewife Reservation and the north and west portions of Cambridge are part of the Mystic River Watershed while two thirds of Cambridge lie in the Charles River Watershed.</p>	220
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Total CPS students visiting Fresh Pond during the school day – 800 students

ATTACHMENT B

FPR Master Plant List Update

5.16.2018, 2nd draft

This plant list was guided by the stewardship goals approved by the Cambridge Water Department and Fresh Pond Advisory Board for the FPR *Sustainable Landscape Management Plan*, which are in turn informed by the *Fresh Pond Reservation Master Plan*. As articulated in the *FPRMP* Vision Statement, the three interrelated goals are to protect and enhance water quality, biodiversity for wildlife habitat, and open space for active and passive recreation. Human response to plants is biological, and ornamental characteristics like fruit, bloom and foliage color have long influenced plant selection and propagation. However, the understanding of plants comprising distinct and diverse communities has evolved as invasive species have proliferated and native species have been displaced, disrupting ecosystem function. The selection criteria for the updated FPR Plant List still celebrate the aesthetic qualities of plants we cherish, but are also guided by scientific data that demonstrates the importance of plant communities within a specific ecoregion. And by placing plants in their natural communities, plants will flourish, and represent to the next generation of Cantabrigians a dynamic and robust version of New England character.

Planting Goals:

1. Manage Fresh Pond Reservation to create and/or restore native plant communities to provide life cycle habitat and food source to native fauna, increase biodiversity, and protect and improve water quality.
2. Periodically assess the vigor of plant communities and the wildlife they support by documenting plant growth, plant reproduction, wildlife counts, etc. Test, and if required, amend soils to support plant communities. Use adaptive management strategies to analyze, edit and update the plant list based on these findings. Resilience to changing climate patterns and introduced pests shall also inform future updates to the master plant list.
3. Identify and interpret the use of both natural plant communities and ornamental specimens for the enjoyment and education of visitors.

Plant List Selection and Plant Sourcing Criteria:

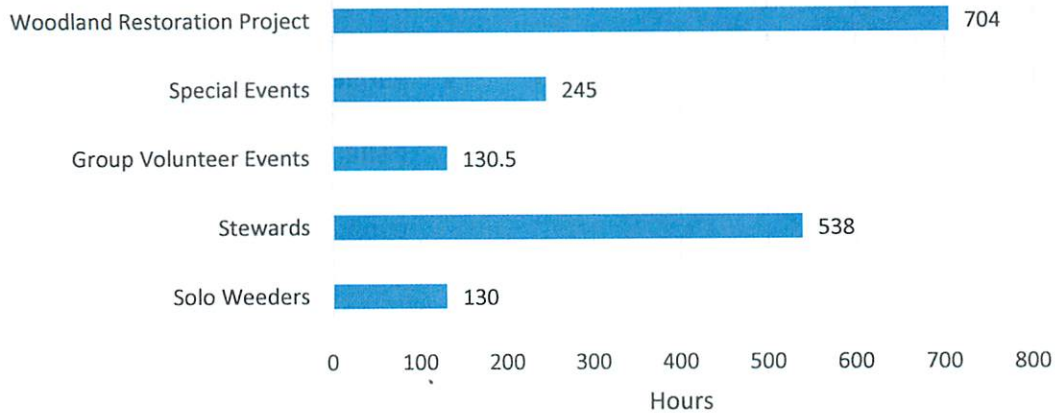
1. List, propagate and install plants native to the Boston Basin Ecoregion, an area defined by *Bio Map 2 Technical Report*, Massachusetts Department of Fish & Game and The Nature Conservancy, 2011. Verify the native status of plants with the most current edition of *The Vascular Plants of Massachusetts: A County Checklist*. Make plant lists searchable by restoration plant communities on the Reservation.
2. Select straight species whenever possible; to maximize habitat value, do not specify or allow substitutions of cultivars, selections, or hybrids. Exceptions include plants subject to pest infestation like *Ulmus americana*.
3. List and install plants that do not require routine chemical treatments to protect water, soil, air quality and Reservation users.
4. Encourage the commercial nursery production and distribution of plants native to the Boston Basin ecoregion. Procure local genetic stock when possible.

5. Develop a separate "Landscape List" of resilient ornamentals native to the Eastern United States for use as specimen plantings at high visibility entries and facilities. The Landscape List will reflect the historic use of plants on the Reservation as well as include plants that thrive in urban conditions. These specimen plants will not be installed or allowed to propagate in restoration areas.

ATTACHMENT C

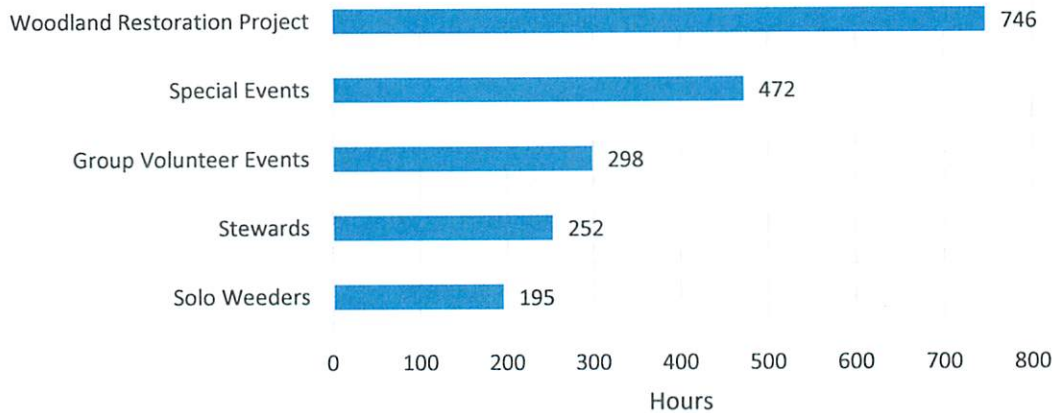
FRESH POND VOLUNTEER UPDATE – 5/17/2018

Distribution of Volunteer Hours in **2017** (Total: 1,748.5)



Compare 2017 (above) to 2016 (below)

Distribution of Volunteer Hours in **2016** (Total: 1,963)



Total Stewardship including Monday evenings, Tuesday mornings, Thursday mornings, and weekend events: 1,372.5 hours

Total Outreach/Education/Arts ("Special Events"): 245 hours

Total Solo Vigilante Stewardship: 130+ hours

List of organizations with whom we have partnered:

- MIT CityDay
- People Making a Difference
- Fo Guang Buddhist Temple
- FORMA Therapeutics

Special Events Requiring Volunteers:

- Garlic Mustard Family Weed-Out
- Fresh Pond Day
- Milkweed Planting
- Pod Patrol Sessions
- Purple Loosestrife Monitoring
- Monarch Butterfly Program
- PARK(ing) Day
- Assisting with miscellaneous small public programs

Stewardship Targets by Zone:

- Weir Meadow: Garlic Mustard, Mugwort
- Kingsley Park Area: Garlic Mustard, Pokeweed, Bittersweet
- Woodland Restoration Project: Buckthorn
- Lusitania Meadow Area: Garlic Mustard, Thistle, Buckthorn, Bittersweet
- Neville Place/Butterfly Meadow: Garlic Mustard, Buckthorn, Bittersweet
- Little Fresh Pond: Purple Loosestrife

Looking Forward

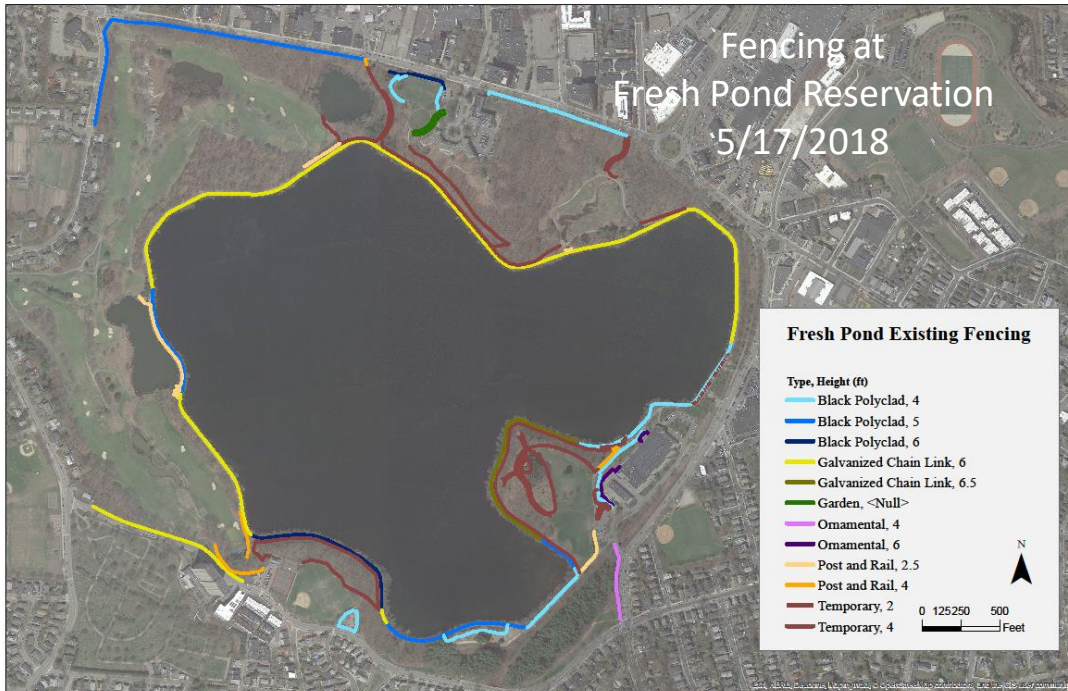
Tuesday and Thursday stewardship sessions meet every week, April through November and often December weather dependent). We will be holding twice-monthly Monday Evening weed-outs in between public programs, and hope to increase the number of volunteer sessions held on weekends to accommodate diverse schedules. The “Stewardship” category contained 60 unique volunteer days in 2017. We are attempting to replicate and expand on this success.

Regarding volunteer recruitment, inquiries are now beginning to amass. Groups are reserving dates in April/May for stewardship activity. Individuals will soon have the option to attend one of our ongoing and open volunteer stewardship days or help with special programming.

Spring Stewardship Season Kicks Off Soon!

- Fresh Pond Stewards resumed on the 1st week of April, and has met every week since
- Fresh Pond Day recruiting has begun for Saturday June 9th
- “Caterpillars Count” insect census taking begins Summer 2018 (after Fresh Pond Day)

ATTACHMENT D



Fresh Pond Reservation Fencing	
Fence Type, Height (ft)	Fence Length (ft)
Black Polyclad, 4	4,820
Black Polyclad, 5	4,357
Black Polyclad, 6	1,543
Subtotal	10,720
Galvanized Chain Link, 6.5	1,409
Galvanized Chain Link, 6	7,694
Subtotal	9,103
Garden (Neville)	557
Garden (Parkway)	260
Subtotal	817
Ornamental, 4	487
Ornamental, 6	471
Subtotal	958
Post and Rail, 2.5	1,487
Post and Rail, 4	988
Post and Rail, 5	246
Subtotal	2,721
Temporary, 2	406
Temporary, 4	12,165
Subtotal	12,570
Grand Total	36,629

*Updated 5/3/2018

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2' Post and Rail (Wood & Mesh)



4' Temporary Plant Establishment Fence



6' Black Polyclad Chainlink



4' Black Polyclad Chain Link with Ornamental Fence in background



Blacks Nook Permanent Fencing Options

Fence Type, Height (ft)	Estimated Cost/ft	Distance (ft)	Estimated Total Cost	Source
Post and Rail, 4	\$65	760	\$49,400	Kingsley, March 2014
Galvanized Chain Link, 4	\$37	760	\$28,120	Steelco spillway, April 2018
Black Polyclad, 4	\$36	760	\$27,360	DCG, February 2017
Temporary, 4	\$12	760	\$9,120	DCG, February 2017