May 16, 2019 - Fresh Pond Reservation Master Plan Advisory Board Minutes

Submitted: Sam Corda – November 21, 2019

Advisory Board Members in Attendance:
Janice Snow (Chair), David Kaplan, Janet Burns, Deborah Masterson, Adam Corbeil, Jim Barton, David Lyons, Candace Young, Sophia Emperador, Ann Roosevelt,

Advisory Board Members Not in Attendance:
Jennifer Letourneau, Claudia Thompson and Susan Agger

Water Department in Attendance:
Sam Corda, Jamie O'Connell, Annie O'Connell and Vincent Falcione

Others in Attendance:
Dennis Carlone – City Councilor

Meeting opened at 6:10 pm
Meeting Minutes: S. Corda

Item 1: Review Agenda
No changes

Item 2: Meeting Minutes
Janet Burns moved, and Deborah Masterson seconded the motion to approve the minutes from the March 21, 2019 meeting as amended (fix typo). The vote was unanimous in favor of the motion.

Item 3: Annual Golf Course Landscaping Report
Adam Corbeil gave his annual golf course update. The golf course plans to increase its tree canopy, remove invasives near the first hole, and replant. He will provide a copy of the draft planting plan to the Advisory Board. Adam is expanding programs to bring more young people of diverse backgrounds to the Reservation to play learn and play golf and enjoy the Reservation's natural areas. A link to his presentation is below:

https://www.cambridgema.gov/~/media/Files/waterdepartment/freshpondreservation/advisoryboardagendasandminutes/2019freshpondgolfcourse.pdf?la=en

Item 4: Watershed Manager's Report and Project Updates
Dave Kaplan introduced Annie O'Connell as our new Watershed Management Assistant.
Landscape Maintenance Contracts: Purchasing has advertised for our first "Invasives Contract" to remove invasives

Landscaper Design Services Contract: The landscaper design services contract is out to bid using the Request for Qualifications process. We expect this process to be completed in June.

Upcoming Master Plan Projects: (1) Black's Nook assessment to determine strategies for an in-lake restoration. (2) Pine Forest existing conditions assessment.

Item 5: DCR/VHB Planting Plan & Rip-rapping of slopes
In response to many calls to the City following to MA DOT's contractor rip-rapping of the planted slopes slated for replanting along the DCR path behind the treatment plant, a meeting has been set for Monday May 20th. DCR's consultant, VHB, working with the Advisory Board presented in Sept 2017 a revised planting plan approved by the Advisory Board. The plan was not followed by DOT's contractor Onyx Corporation. Cambridge has given the DCR a 99 years easement for the path and a temporary construction easement. Onyx Corporation, DCR, DPW and CWD personnel will be in attendance to discuss plans to repair the slopes, reduce the rip-rap and provide for oversight by the City.

Item 6: Sustainable Landscape Management Plan for 2019-20 Master Plan Plant List
A draft of the soil ecosystem restoration section is attached and was briefly discussed. The latest version of the Master Plant List for Restoration Plantings was also handed out.

Item 7: Final Naming Recommendations for Completed Drainage/Community Garden Project Area
After a discussion and nominations for naming the completed drainage/community garden project area, Jim Barton moved, and Janet Burns seconded the motion to select "Harrington Pass" as option one.

Candace Young moved and Deb Masterson seconded the motion to recommend that two options be presented to the City Manager. The vote was unanimous, with one abstention, in favor of the motion.

Candace Young Moved and Deb Masterson seconded the motion to recommend "Harrington Pass" and "Harrington Gateway" to the City Manager as the new name of the Drainage and Community Garden Restoration area. The vote was unanimous in favor of the motion.

Note: The late Joseph Harrington was a long-time member and President of the Cambridge Water Board and president during the creation of the Master Plan.

Item 8: Sign up, Plan and Locations for Fresh Pond Day – Saturday June 15, 2019
A signup sheet was circulated for citizen Board members to work at the Advisory Board table on Fresh Pond Day. The Chair requested that tables for the Advisory Board, Friends of Fresh Pond, Conservation Commission, Consultant, and possibly the Water Board be grouped together in a semi-circle to visibly connect the groups working together on the Reservation ecosystem.

Item 9: Update on Pine Forest Lighting Issues
City Manager has put the lighting of the DCR Greenway in Cambridge on *hold*. There are *no* plans to have any public meetings in the foreseeable future. If and when this process is resumed the Water and Fresh Pond Advisory Boards will be involved with any such process.

Item 10: Advisory Board meeting Schedule 2019-2020
Meetings will continue to be held on the third Thursday of the month with the following proposed dates: September 19 and November 21, 2019; March 19 and May 21, 2020.

Deborah Masterson moved, and Candace Young seconded the motion to approve the meeting dates as proposed. The vote was unanimous in favor of the motion.

Item 11: Preliminary Agenda for September 2019 Advisory Board Meeting
Watershed Manager Report; Landscape Maintenance Report; Project Updates; Long Term Maser Plan Project Annual Update; Volunteer Annual Update; Effects of Mooney Street Development on Black's Nook; and Woodland Restoration Project tour.

Item 12: Public Comment
There was no public comment.

Jim Barton moved, and Candace Young seconded the motion to adjourn the meeting. The vote was unanimous in favor of the motion. The meeting was adjourned at 7:47pm.

[1.31] Native Soil Ecosystem Restoration and Management Concepts & Standards - Draft

Native NE soils are more acidic, fungal dominant and contain higher carbon (C) to nitrogen (N) ratios than cultivated soils. To successfully restore and preserve our native plant communities their soil biology as well as soil physical type and hydrology must also be present. These communities rely on above and belowground feedbacks systems where plants' roots exude sugars and other compounds to attract beneficial microorganisms which in turn respond with needed plant nutrients (including N, P [phosphorus], Ca [Calcium], Fe [iron]), root growth-promoting hormones, moisture retention and disease suppressing chemicals. Over fertilization and other incompatible soil amendments can promote the growth of invasive soil organisms that disrupt these complex systems and reduce their capacity to retain carbon.

Mycorrhizal fungi are crucial components of healthy native ecosystems. Their mycelia strands attach to roots extending their reach horizontally and vertically. They stabilize soils, transforming recalcitrant soil matter into plant usable chemicals and transport them along with water to roots. A single plant's root system may associate with multiple species of mycorrhizal fungi, some generalists, some highly specialized. Introduced mycorrhizal spores not native to a restored plant community may encourage the growth of invasive plants.

Three types of mycorrhizal associations support our native plant communities
Arbuscular mycorrhiza (AM) species dominate native meadow and wetlands plants. Non-native AM species promote non-native plants. Ectotmycorrhizal fungi (ECM) enable all our native conifers and many of our native deciduous trees to thrive in soils low in mineral nitrogen and calcium. ECM mycelial networks may connect multiple trees of the same or related species processing and distributing resources from areas of abundance to areas of deficit. Alder, Arborvitae, Aspen, Basswood, Beech, Birch, Chestnut, Hemlock, Hickory, Larch, Oak, Pine, Poplar, and Spruce are ectomycorrhizal. Introduction of AM species into an ectomycorrhizal forest encourages the growth of invasive plants whose exudates may in turn impair the growth of the native trees and understory. Ericoid mycorrhizal fungi (ErM) support important native, acid loving shrubs, including Azalea, Blueberry & Cranberry; mountain laurel associates with both ErM and ECM species.

Cautions: Adding bacteria-dominated compost—especially compost containing invasive worm cocoons—will damage tree stands and forests (including AM and ECM trees) as the worms and excess bacteria consume the mycelia and leaf mold protecting the soil surface and increase soil nitrogen, calcium and pH. Trees planted in soils high in mineral N and P will reduce their root exudates that support mycorrhizal fungi other beneficial organisms increasing the trees susceptibility to above and below ground diseases and dessication. As the ratio of bacteria to fungi increases the soil's capacity to retain carbon decreases.

Transitional Plant Zones and Soil Management

To protect native plant communities, soil amendments to support non-native plants and grasses should not be applied along the native plant root zones. Great care should be taken especially with ectomycorrhizal trees where a minimum area defined as the soil below the mature tree canopy where incompatible soil amendments should not be applied. Leaf mold applied to these areas may supply the best native soil protection.

Further Research

As additional studies of mycorrhizal and bacterial and invertebrate soil species key to the health of our native landscapes are refined more plant-specific soil ecosystem standards and products can be developed.

J. Snow