

Aquetong Spring Park

Aquetong Spring Advisory Committee:
Annual Report to the
Solebury Township
Board of Supervisors
December 12, 2017



Presentation Overview

- Background and History
- Committee Highlights
- Progress Reports and Findings
- Recommendations

Membership

- **Barry Fetterolf**
(Environmental Advisory Committee)
- **Dan Dupont**
(Parks and Recreation)
- **Michael Zolkewitz**
(Aquetong Watershed Association)
- **Frank Nassetta**
(Aquetong Watershed Association and BC Trout Unlimited)
- **Michael Richardson**
(Historical Society)
- **Kevin Morrissey**
(Supervisor Liaison)



Aquetong Spring Advisory Committee

Brief History:

- ▶ Aquetong Lake was a 15-acre impoundment formed in 1870 by the construction of an earthen dam on Aquetong Creek
- ▶ A 2004 study funded by Bucks County Trout Unlimited concluded that the impoundment was negatively affecting downstream water quality, in particular water temperature (F.X. Browne, Inc., 2004)

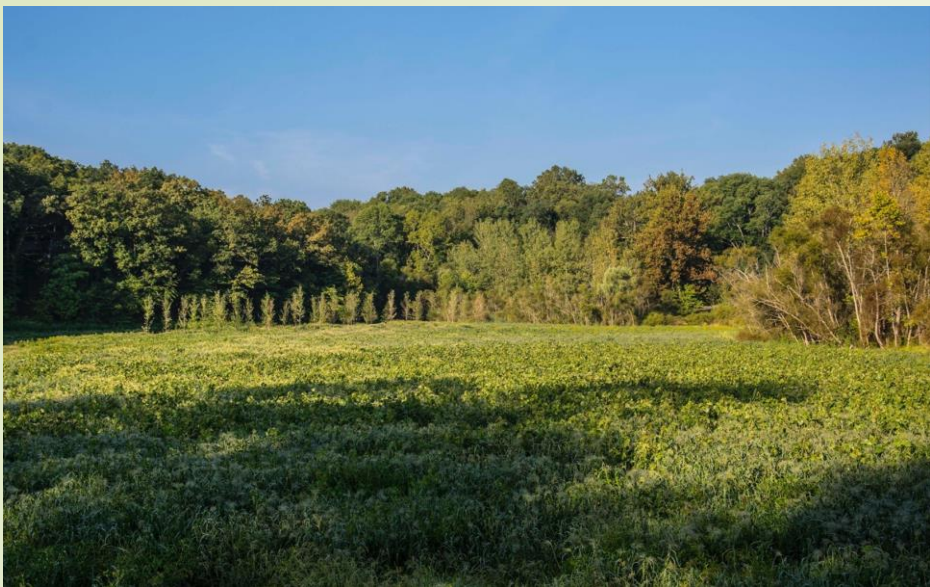
Brief History:

- ▶ Whether the dam should be repaired or removed was discussed at length by the BOS. Repairing the dam would be costly and might not be the best environmental choice.
- ▶ On July 16, 2013, the BOS voted to breach the dam completely.
- ▶ The dam was breached on July 21, 2015



Vision:

- ▶ **Aquetong Spring Park Project will restore Aquetong Creek as a cold water system while developing recreational opportunities.**
 - Solebury Township Parks and Recreation Plan (July 2014)
- ▶ **The Park will protect natural, historic, and scenic resources for future generations and expand park and open space through the introduction of new natural and recreational facilities.**
 - Solebury Township Comprehensive Plan (December 2014)



Summer 2015



Summer 2016



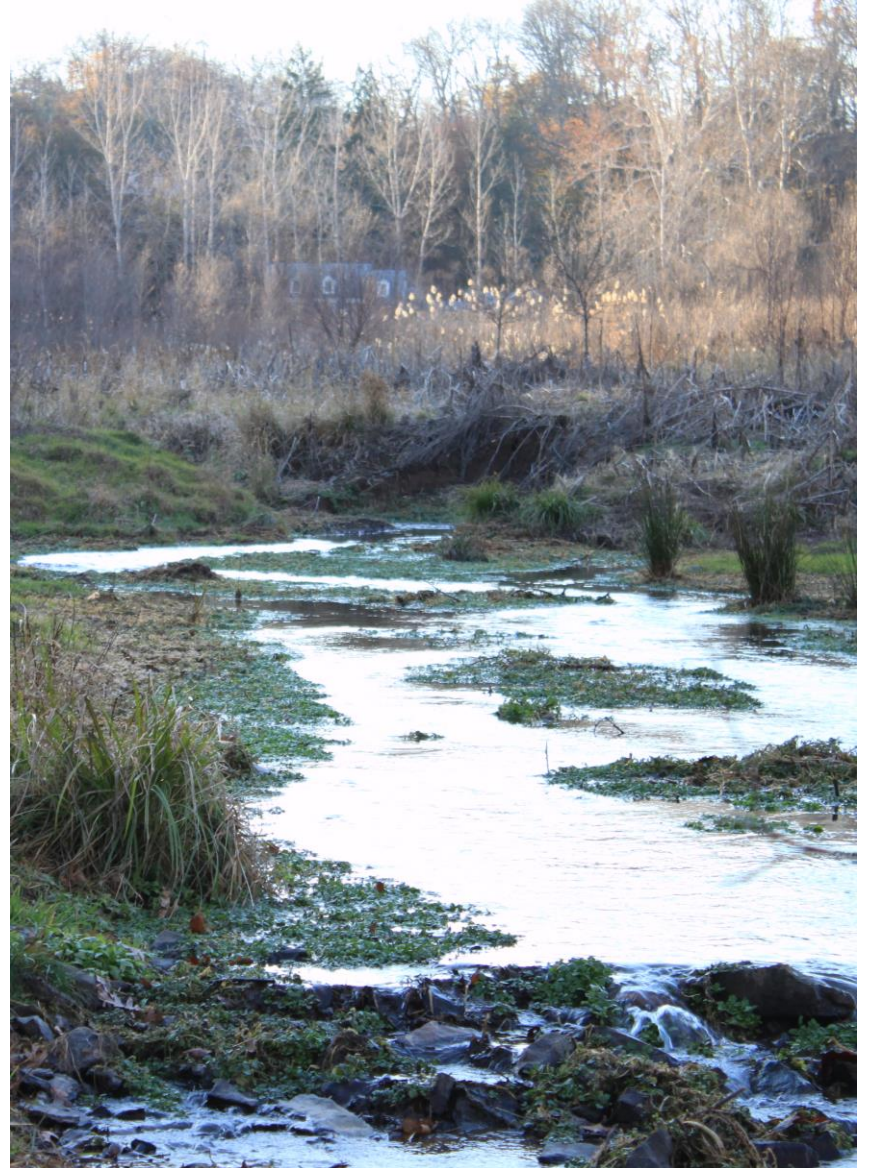
Fall 2016



Fall 2017



Fall 2015



Fall 2017



Committee Highlights:

- ▶ Per Resolution No. 2015-93 passed on 6-June-15:
 - ▶ The Aquetong Spring Advisory Committee formed and was charged with making recommendations to the BOS and Township Manager on how best develop Aquetong Spring, the former lake and surrounding open space into a passive park.
 - ▶ The committee serves to support the township in transforming the former lake into a passive recreational space for all of Solebury to enjoy.



Committee Highlights:

- Recommendations included:
 - Uses or demolition of existing buildings
 - New improvements
 - Reclamation of the former pond and dam area
 - Suggesting improvements such as, but not limited to, ideas for the entire area above and below the former dam, including walking trails, pavilion, parking location and size, picnic areas and permanent grills
 - Other passive uses for the area to be known as Aquetong Spring Park
 - Other ideas as directed by the Board of Supervisors



Committee Highlights:

- ▶ ASAC Members decided that any recommendations brought forth to the BOS with regard to park development must embrace the following priorities:
 - ▶ Preserve the water quality and restore the ecological integrity of Aquetong Creek and surrounding landscape,
 - ▶ Provide public use for both educational and recreational activities,
 - ▶ Create local and regional partnerships and catalyze community engagement.



Committee Highlights:

- ▶ Since its inception, the ASAC has met over 25 times.
- ▶ The ASAC has made over 5 joint site visits to the park, while individual members regularly visit the park to observe and monitor recovery.
- ▶ ASAC has engaged the Bucks County Chapter of Trout Unlimited, American Rivers, and Princeton Hydro to provide expert input.
- ▶ In addition to consults with other Township Committees, the ASAC has met with community leaders including those from the New Hope Solebury School District, The Solebury School, and Deer Camp.
- ▶ The ASAC will continue efforts to reach out to and engage community partners.



Progress Report:

- ▶ In Spring of 2016, ASAC was concerned with the path of ecological recovery being observed on the former lake bed and recommended to the township that resources be directed to restoration first before park design.
- ▶ The restoration of Aquetong Creek and its former lake bed must first address ongoing causes of stream degradation.
- ▶ The ASAC was concerned with ongoing creek down cutting and the fate of the legacy sediments.
- ▶ The ASAC presented their initial recommendations to the BOS in March of 2016.





Progress Report:

- ▶ The ASAC recommended that the BOS Appoint a licensed restoration practitioner who will:
 - ▶ Involve the skills and insights of a multi-disciplinary team.
 - ▶ Continue to work with the ASAC to adopt project guidelines and develop a restoration management plan
 - ▶ Analyze the depth and impact of the former lake's legacy sediments
 - ▶ Characterize the natural flood plane through hydrological surveys

Progress Report:

- Consequent to these recommendations, the Committee was asked by the Township to draft a RFP requesting a comprehensive ecological assessment be performed by a licensed restoration professional.



Request for Proposal

Aquetong Spring Park:
Aquetong Creek Restoration Project

RFP# 2016-01

May 31, 2016

Prepared by:
Aquetong Spring Advisory Committee
Solebury Township
Solebury, PA



Progress Report:

- ▶ Conduct an environmental assessment and provided recommendations to restore Aquetong Creek to a stable creek system characteristic of historic, modelled, or reference-based systems.
 - ▶ Wetland delineation and stream geomorphology studies
 - ▶ Biotic resource identification
 - ▶ Identification of appropriate creek design features
 - ▶ Extent of Legacy sediment
 - ▶ Control and removal of invasive and non-native plants
 - ▶ Stream-bank stability and erosion control
 - ▶ Stabilization and management of the stream channel
 - ▶ Construction cost estimate



Progress Report:

- In Fall of 2016, and with the input of the ASAC, the Solebury BOS of supervisors designated Princeton Hydro as the ecological professional to perform these studies.
- Studies included both an ecological snapshot of recovery and long term recommendation for restoration.



Progress Report:

- ▶ Princeton Hydro initial findings:
 - ▶ While Aquetong creek was showing signs of recovery, there was a limited amount of unstable sediment deposition on the former lake bed and evidence for continued downcutting through remaining legacy sediments.
 - ▶ Extensive colonization of noxious or invasive species.



Progress Report:

- ▶ Princeton Hydro recommended:
 - ▶ Limited and targeted excavation of unconsolidated sediments prone to erosion in the creek channel, mainly near where the dam was breached.
 - ▶ An aggressive invasive species management plan.
 - ▶ Prioritization of stabilizing the Route 202 tributary.



Progress Report:

- ▶ Princeton Hydro first developed an invasive species management plan that was thoroughly vetted through the Board of Supervisors, the Environmental Advisory Committee, the ASAC, and the AWA.
- ▶ Currently under contract to eradicate dense stands of Phragmites located near Judy House



Progress Report:

- ▶ Princeton Hydro Final Report:
 - ▶ Sufficient sediment had accumulated in the lake such that the meandering channel that re-formed following dam removal has initiated the process of channel incision or “downcutting”.
 - ▶ However, “the severity of downcutting, creek channel instability, and erosion of lake bottom has thus far been minimal... due to the consistent flow of the spring and the creek’s relatively small contributing watershed.



Princeton Hydro Final Report:

- The Township's reseeding and tree planting on the former lakebed helped facilitate the rapid establishment of pioneer plant species, which revegetated the floodplain and stabilized exposed lake sediments.
- However, parts of the creek channel are still unstable and underlain by additional erodible sediment, especially near the former dam and throughout the 202 tributary.



Princeton Hydro Final Report:

- ▶ The exposure of lake sediments following the dam breach allowed invasive species to colonize the formally unvegetated areas, negatively impacting the ecological functions and habitat qualities of newly exposed floodplain and upland areas.



Princeton Hydro Final Report:

- ▶ Proper modifications to the creek channel and exposed lake bottom, as well as proper control of the invasive plant species present on the site will foster the development of a creek that supports cold-water species, and an ecologically functioning riparian and upland area that can sustain a recreational park setting and natural community resource.



Princeton Hydro Final Report:

- ▶ “The layout of [any] trails, vistas, informational kiosks, etc. will need to be finalized after the former lake bottom stabilizes and final geomorphologic changes are made to the stream channel.”

















ASAC Recommendations:

- ▶ Solebury Township continues to engage an Ecological Restoration Professional to address the factors impairing the re-establishment of a cold water creek system in Aquetong Spring Park.
- ▶ The ASAC emphasizes the need to develop a Master Plan for Aquetong Spring Park.



ASAC Recommendations:

- Recognizing the need to further garner community support for this project, it is recommended that the Township coordinate a “soft” opening of Aquetong Spring Park to publicize recreational access of the park and raise awareness of its natural value for Solebury Township.



ASAC Recommendations:

- ▶ An “opening” of the park would include:
 - ▶ Installation of park signage,
 - ▶ Installation of a temporary parking lot near the Judy House as designed/recommended by engineering,
 - ▶ Installation of an interpretive loop trail with limited creek access and necessary tributary crossings highlighting the restoration of the former lake to a cold water creek system,
 - ▶ Installation of park tables near Judy House,
 - ▶ Fencing and/or barriers as deemed necessary.



ASAC Recommendations:

- ▶ In advance of this opening, the ASAC recommends the Township engage Princeton Hydro/Simone Collins to ascertain the following information:
 - ▶ The areas of the recovering landscape that should remain off limits to public access including those may be undergoing current pesticide treatment, areas that pose a safety risk to public (e.g. subsiding soils), or areas where foot traffic would impact and be detrimental to restoration efforts.



ASAC Recommendations:

- ▶ An “opening” of the park would include:
 - ▶ Installation of park signage,
 - ▶ Installation of a temporary parking lot near the Judy House as designed/recommended by engineering,
 - ▶ Installation of an interpretive loop trail with limited creek access and necessary tributary crossings highlighting the restoration of the former lake to a cold water creek system,
 - ▶ Installation of park tables near Judy House,
 - ▶ Fencing and/or barriers as deemed necessary.



ASAC Recommendations:

- To pre-empt the impact of diseased Ash trees within the park, it is recommended that an aggressive tree planting program be established, especially within the eastern portion of Aquetong Spring Park.
- While the ASAC has not resolved the intended future use of the Judy House the structure may serve as an an important asset for park infrastructure and should be maintained in its current condition until a master plan for the park is developed and infrastructure need are identified.



ASAC Recommendations:

- The installation of a permanent measurement station to monitor creek water quality
- Because a Master Plan for Aquetong Spring Park has not been developed, the ASAC can be a continued asset for the Board of Supervisors and the Solebury Community and recommend the ASAC resolution be extended through 2018.



Photo Courtesy of Solebury Township Historical Society