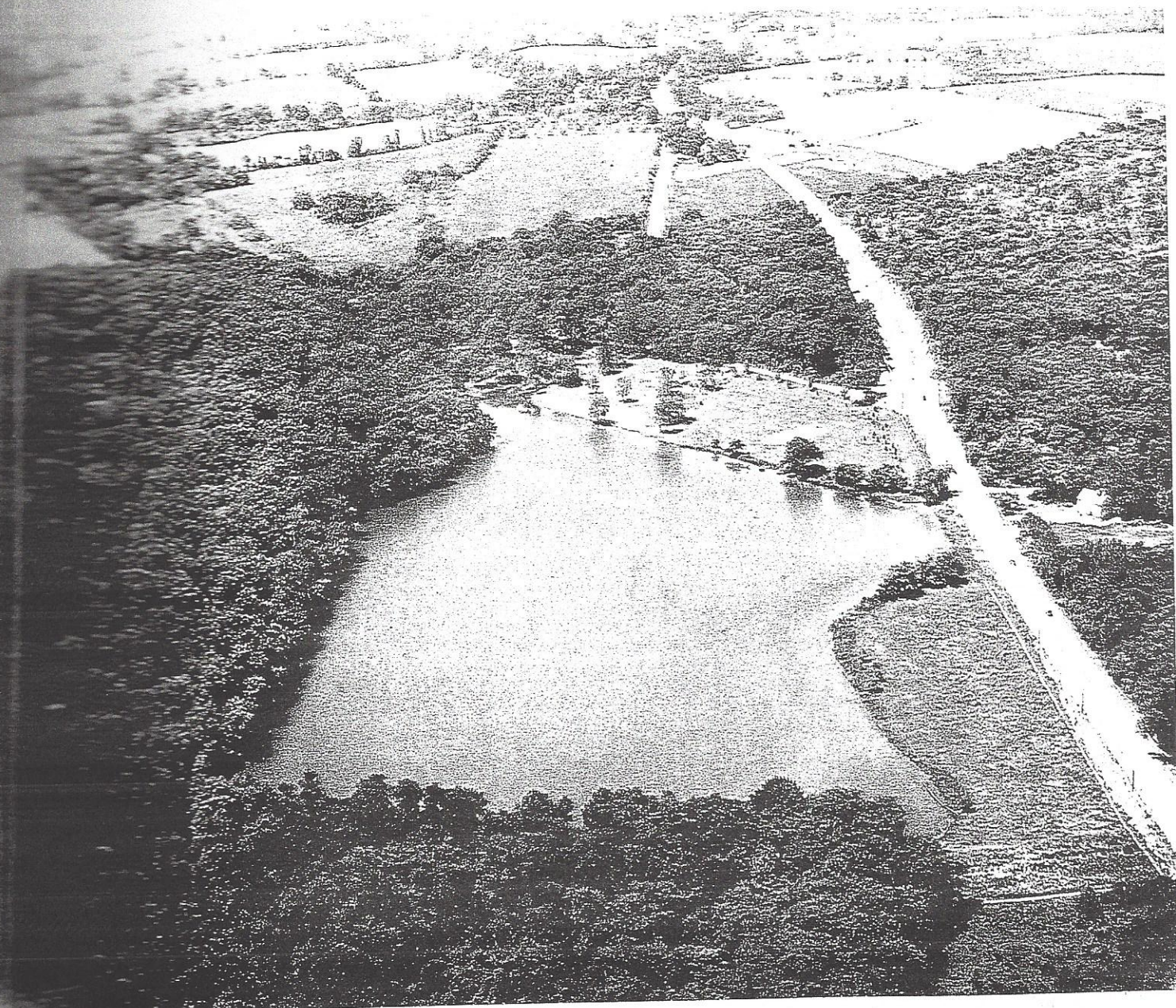


Ingham

1995

Spring...



DRAFT Master Plan

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DRAFT MASTER PLAN

INGHAM SPRINGS PROPERTY, SOLEBURY TOWNSHIP, BUCKS COUNTY

Ingham Springs Background:

The Ingham Springs property is a 48.22-acre Pennsylvania Fish and Boat Commission owned property located in Solebury Township, Bucks County. The property is located along U.S. Route 202, approximately two miles west of the town of New Hope. New Hope Borough, Solebury Township, Bucks County and many private individuals have had an interest in the property for some time. This is supported by the press articles that are included in the appendix.

The Commission bought the eastern 22.5 wooded acres of the property in 1966. The acquisition of the remaining acreage including a spring, a 15-acre lake, and a number of structures occurred in 1993. The lake is created by a 450-foot earthen dam that is fed by Ingham Spring, a smaller adjacent spring and a 244-acre watershed area. The structures on the property include a stone house built in the early 1900s by a noted area architect. At the current time the Fish and Boat Commission has invested more than \$1 million in this unique and valuable resource.

The Spring (historically known as Aquetong Spring) flows year round at a median rate of approximately 2,000 gallons per minute. This rate makes it the largest coldwater limestone spring in the five county region surrounding Philadelphia. The spring's cold flow forms the headwaters of the Aquetong Creek which travels two miles east to the Delaware River.

In addition to being a valuable natural resource, the Spring has a rich historical and cultural heritage. The heritage includes being the source for the hydro power that facilitated the industrial development of New Hope. There are also the remains of a kiln on the property below the dam. Going further back in time, the Leni Lenape Native American People have a historic presence at the Spring. There is evidence that they had a village near the Spring as early as 1647. Descendants of the Leni Lenape Indians of the Delaware tribe have planted a memorial tree and regularly perform a spiritual ceremony consecrating the Spring in spite of the fact that they abandoned it at some point because they believed it to be the source of a small pox epidemic.

The property's unique aquatic and terrestrial resources are located in the middle of one of the most densely populated areas in Pennsylvania. Located just a short 45-minute drive from the inner city of both the Philadelphia and Allentown/Bethlehem metropolitan areas. In this location the site can effectively serve a large urban audience.

The recreational, interpretive and educational potential of the site is not yet fully realized. To date the property has experienced limited usage from wildlife watchers, birders, universities and others. With renovation, appropriate programming and some enhancement of the property, it is anticipated that usage and appreciation for the property will increase substantially.

There is excellent potential for linking this resource with others in the area. The property is bordered by a youth summer camp, it is in close proximity to a number of environmental education centers and has a physical connection with the Delaware River through the uninhibited flow of the Aquetong Creek. The property is also identified in the

Delaware and Lehigh Canal National Heritage Corridor and State Heritage Park Management Action Plan as a natural feature with high interpretive potential. As mentioned previously, the site also has historical and cultural interpretive potential.

Because of the natural amenities and historical and cultural significance of this site, protecting this resource and promoting its recreational, educational and interpretive potential is critical.

Needs and Objectives:

The Ingham Springs property was purchased by the Fish and Boat Commission to address two needs:

1. To provide an area close to one of the Commonwealth's major population centers from which educational programs could be facilitated.
2. To protect the significant aquatic resource that the Spring represents.

The objectives which justified the acquisition of the property are threefold:

1. To provide a central location from which volunteer education personnel can be trained to serve the resource education needs of the largest urbanized region of Pennsylvania.
2. To provide reasonable public access to both additional fishing waters and the aquatic resources needed to carry out educational programs.
3. To protect the uniqueness of the aquatic resource provided by the coldwater limestone spring, 15-acre impoundment and the headwaters of Aquetong Creek.

Initial management strategies conceived for the site prior to acquisition included:

1. To establish a self-sustaining wild trout population in Aquetong Creek below the lake.
2. To provide reasonable access to the lake to provide an area for warmwater fishing and a place to conduct angler skills classes and aquatic education.
3. To take advantage of the 2-mile proximity to the Delaware and utilize the property for aquatic resource education and comprehensive watershed education efforts.
4. To provide protection for the spring and other site resources and manage them appropriately; highlighting the uniqueness that they represent and protecting them from degradation.
5. To provide office space for the aquatic resource education specialist and to provide for offsite aquatic resource education program activities for 1,500-2,500 students per year.

Since the time that the property was acquired, the Commission has been moving forward with some of the above management strategies which have helped move the agency towards its ultimate objectives.

Plans for the Future

The plan for the property in the near term is to develop a shared vision for the protection and enhancement of this property with a consortium of interested parties and implement projects to achieve this vision. It is anticipated that the consortium may consist of universities, colleges, the local school district, county and local conservation, recreational, and historical agencies, as well as other interested, public-minded groups like native Americans, senior citizens, under privileged youth, etc. State agencies, Solebury Township, Bucks County, and local conservation and environmental education interests will have key roles to play in future efforts as well as the Fish and Boat Commission.

Preliminary conversations with interested parties have generated the following thoughts for protection, enhancement and programming at the site consistent with the interpretive, educational and recreational potential that exist there:

Protecting Existing Resources:

Take appropriate measures to ensure the long-term stability, safety and quality of existing resources and structures at the site.

Enhancing Recreational Potential:

Provide safe and appropriate access to the site for recreation purposes, including access for physically challenged users.

Take appropriate actions to ensure the safety of future users.

Enhance the natural productivity of the fishery at the site and ensure sustainability of the resources that are enhanced.

Enhance and develop interpretive programs for the spring, the lake and the natural, historic and cultural amenities of the property.

Provide both physical and interpretive linkages to people, environmental resources, local educational facilities and to the historical and cultural heritage of the site.

Enhancing Educational Potential:

Provide educational and interpretive programming consistent with the recreational, natural and historic aspects of the property.

Select Features of Ingham Springs

History ^{A1}:

Pre- 1682

The Leni Lenape Indians are the earliest known inhabitants of the area surrounding the spring. Their name for it was "Aquetong" meaning "spring (Aque-) in the bushes" (-tong). The Leni Lenapes blamed the spring for an outbreak of smallpox and abandoned it at some point.

1682

William Penn, founder of Pennsylvania, acquires the spring under the terms of the Great Treaty.

1701

Penn gave the property containing the spring to his secretary and trusted friend, James Logan. Logan created the "Loganian Rights" which held that anyone using the water from the spring for mill purposes would have to pay him a tax. These rights were finally canceled in the 1930s.

1747

Jonas Ingham, an English immigrant who arrived in New England in 1705, bought the spring from Logan in 1747. His son, Jonathan, inherited the spring. Jonathan died after helping Philadelphians struck by the yellow fever epidemic in 1793. Prior to this, Jonathan had tended to Washington's troops as they waited to cross the Delaware to attack the Hessians at Trenton. During this time period the spring came to be known as "Ingham Springs."

Jonathan's son Samuel inherited the spring. Samuel is a prominent person in both New Hope's and the nation's history. Besides building the Delaware Canal and the first bridge to cross the Delaware River from Pennsylvania to New Jersey, Samuel was President Andrew Jackson's Secretary of Treasury after serving many terms as a U.S. Congressman. He resigned from the post in 1831 and turned down an offer to become the minister to Russia to return to New Hope and Ingham Springs. Samuel died in 1860.

1860

The Ingham estate began to be sold off upon Samuel's death. Ingham Springs was sold to the Beaumont family. The Ingham Springs property being sold to Horatio Nelson Beaumont and the Deer Park property being sold to his brother, Andrew Jackson Beaumont.

1867

The spring and surrounding property was sold to Dr. V. Mattison. In 1870 the dam was built at the east end of the property which created the Aquetong Lake. In 1871 a fish hatchery was built by two Philadelphia men, James Thompson and H. C. Tagg. The T & T hatchery, as it was known, eventually contained 100,000 shad, 60,000 brook trout and smaller numbers of terrapin turtles. The public could view the operation for a quarter (25¢).

^{A1} C3 through C4, This historical "thumb-nail sketch is through the courtesy of Mike Roush.

1936

Dr. Perry Bond and his wife Helen bought Ingham Springs from the Mattison Estate for a recorded price of \$11,500² in 1936. By this time the property had fallen into disrepair and by all accounts was nothing more than a dumping ground. Over the next 39 years, the Bonds preserved the lake and spring and built the residence that stands today. It is to these two people that we owe the fact that Ingham Springs is a pristine and natural haven for fish and fowl alike.

1975

The Bonds sold Ingham Springs to Helen's brother, Dr. Judy. The Bonds had become too old to take care of the property and retired to Iowa. Dr. Bond lived to 104 years. The Judys made few changes and maintained the property much as it was when they purchased it.

1993

The Pennsylvania Fish and Boat Commission acquired Ingham Springs in 1993. It is at present the office and home of Michael Roush, the Area Boating Programs Specialist for the eastern half of Pennsylvania.

The Land

Geology:

The geology of the site is relatively straight forward. In laymen's terms it consists of three layers of rock, a layer of limestone, sandwiched between two layers of red shale. These layers are inclined in relation to the surface and are covered with no more than three feet of red and tan clays that are the result of the degradation of the underlying rock strata. This is the reason for the presence of the springs.

When comparing the history of the site with its geology, the statement was made by the investigating geologist that he had never before seen a site where the geology had been the prime mover in the determination of its uses throughout its history. Otherwise the geology is unremarkable. More detailed information can be obtained in the appendix of this report under Geology and Soils.

Ecosystem and Biota

Wetlands³:

All of the land below the embankment, with the exception of the filled area around the "Kate Smith Cottage" is wetland. This area is a valuable contributory asset should the site be considered for wildlife and/or conservation education.

² C47, The Bucks County Gazette; New Hope, Pa.; Thursday, January 2, 1969.

³ S1 through S3.

Other Insect Taxa:

| <i>Common Name</i> | <i>Scientific Name</i> |
|--------------------|---|
| Aquatic beetles | Coleoptera Elmidae genus Hemiptera; Corixidae |

Non-Insect Taxa:

| <i>Common Name</i> | <i>Scientific Name</i> |
|--------------------|------------------------------|
| Leeches | Hirudinea |
| Aquatic sowbugs | Isopoda |
| Scuds | Amphipoda |
| Crayfish | Decapoda Cambaridae genus |
| Univalves, snails | Gastropoda |
| Bivalve clams | Pelecypoda Hydracarina |

Cultural Resources

Archeological⁵:

Even though this site has had an historically interesting and significant past, there is only a remote possibility of the earth harboring artifacts or other historical evidence. It is known that the Delawares had a significantly sized village adjacent to the spring around 1650. However, because the spring is the headwater, the chance of sedimentation covering historical evidence are practically nonexistent. While there is a possibility of subsurface information such as fire pits or post hole forms, the thin soils would most likely negate the need for indepth investigation. In addition, any surface traces have long ago been disrupted by the construction of mills, residences, dredging and filling, and the construction of the dam, whose borrow area was indubitably the lake bottom. There could be some remaining areas of interest in the wetlands which lie below the embankment as the surface evidence reveals a somewhat extensive waterworks indicative of mills run by waterpower. This will have to await the completion of the more detailed report of the area's history, which is underway and will become a part of the appendix of this report.

⁵P1 through P7 & G1 through G4.

Historical⁶:

This land, because of the spring, has been an important part of local history since it was first inhabited by native Americans. Because of it being located so near the historically significant areas concerning the birthplace of this nation, most of the history has been recorded, and this site has played an important part both because of the fame of its previous owners and the water resource the spring provided for the settlement and industrial development of the region. Some of this history is detailed in the appendix.

In the far southeastern corner of the Commission's property lies the remains of an old kiln, with twin ovens. The kilns most likely date back to the last century. Presently it is thought to have been used to produce hydrated lime for agriculture use on farmers' fields. However, evidence of brick scattered about and several shards of simple pottery lead us to suspect that it also served at least on a part time basis as ovens for the firing of clay. Both limestone and red clay are available in the immediate vicinity. This may be the lime kiln once operated by the Navlor and referred to by Harry Van Horn in *The New Hope Gazette*, November 12, 1959, and reprinted July 7, 1977⁷.

Integrity and Safety of the Dam⁸:

Ingham Springs Dam had been inspected in 1980 as part of the National Dam Safety Program. The dam was inspected in the field in December of 1980 and a report was published in April of 1981. The condition of the dam was listed as fair, and the report is bound in the corresponding Yellow jacket.

The Ingham Springs Dam is classified as "small" in size, and "significant" in regard to hazard. The hazard classification could be elevated to "high" should the "Heritage Condominiums" which were constructed in the summer of 1981, after the report was issued, be found to be located in the area of inundation as determined by the Corps Of Engineers HEC computer programs. Should a hazard rating of "High" be imposed, the standards which the dam will be required to meet would substantially increase, as it would have to meet the criteria for ½ to a full PMF (Probable Maximum Flood). Currently the "Significant" rating only requires that the 100-year flood criteria be used.

The Department of Environmental Protection (DEP) has conducted annual inspections of the Ingham Springs Dam since 1981 with the exception of 1994 (last year). The last inspection was April 7, 1995. DEP has repeatedly pointed out a number of deficiencies with the dam. They include the following areas of concern:

1. Hole beside spillway (evidence of underground erosion, and/or undermining of concrete spillway structure.
2. Inadequate spillway.

⁶ P1 through P7.

⁷ C13.

⁸ O1 through O11 & Phase I Inspection Report, National Dam Inspection Program, O'Brien & Gere Engineers, Inc., Philadelphia, PA, April 1981.