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The Story of BHNPS

The past, the present, and the future matter to society and the environment. It is socially and civically responsible to teach society about the past, the Lenni Lenape Indians, the Europeans, and the local summer vacationers that established my hometown, Berkeley Heights. The present New York City commuters and middle class residents need to understand the impact of their use of public transportation and decisions on the environment will affect its future. For a sustainable future, the government needs to create regulations, reduce emission and pollution levels, and ensure communication through the local environmental commission. New Jersey's Union County suburbs of Berkeley Heights, New Providence, and Summit (BHNPS) previously inhabited by Algonquin Indians, started as the permanent English settlement, Elizabethtown in 1664, eventually settling into separate townships by the 1900s. This region deals with constant transportation and industrial revolutions; while in the future, these cities aspire to maintain the Passaic River, the Great Swamp, and the local tree canopy through ecosystem services.

I. Overview of Geography and Environmental Condition during Pre-settlement

Over 200 million years ago, the Upper Triassic Period gave way to a diversity of rocks, physiographical areas, and flora such as the Brunswick formation, Watchung Basalt, Piedmont region, and domination of tree coverage. The Brunswick formation was found near valleys of brooks and rivers. It was used as a type of siltstone to form thick solid red-colored limonite and utilized to build brownstone homes, flagstones, and grave markers (The Historical Society of Berkeley Heights [HSOFBH], 1977, p. 1-2). When this rock was mined, its clay was utilized for massive brick production (HSOFBH, 1977, p. 5). The Watchung Basalt was located in residential areas which today are considered part of Berkeley Heights and Long Hill. This rock

resulted from the spilling of molten lava from Earth's core, as the continents of North America and Africa started to split. Cooper started to form in this area from the hot solutions that came from the cooling of the lava (HSOFBH, 1977, p. 3).

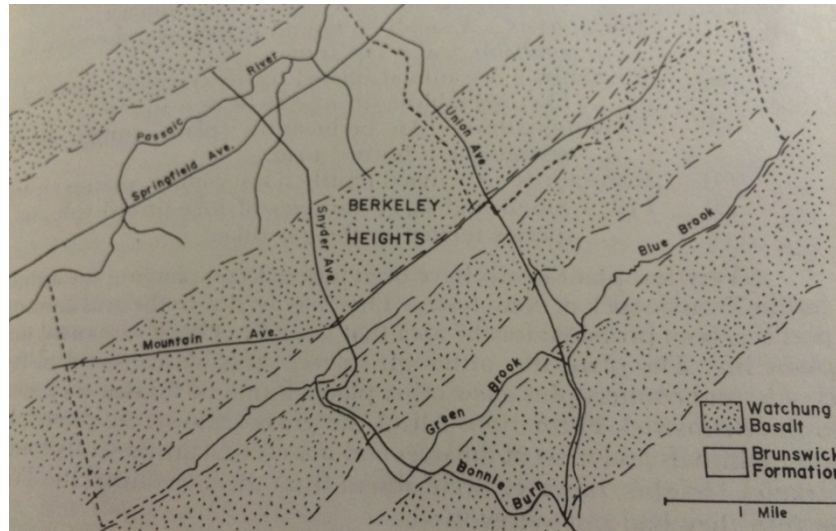
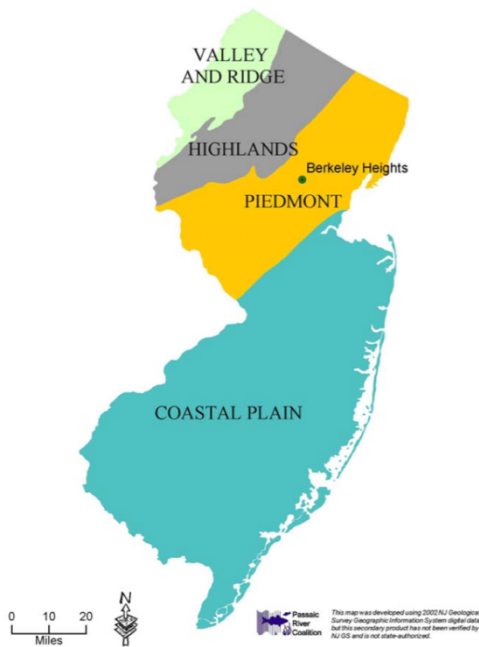


Figure 1. Geological Map of Berkeley Heights illustrating the distribution of the Triassic Brunswick Formation and the Watchung Basalt (HSOFBH, 1977, p. 1)



Various types of physiographic regions existed in New Jersey at the time, including the Atlantic Coast Plain, Piedmont, the Highlands, and Ridge and Valley areas. The Inner and Outer Coastal plain consisted of three fifths of New Jersey (Wacker, 1975, p. 8). The Piedmont, plateau of small hills, separated by valleys was another fifth on New Jersey; it formed during the Pleistocene or Ice Age when agricultural potential had diminished (Wacker, 1975, p. 10). Therefore, this area was south of the deposits of sand that formed the southern edge of the ice sheet (HSOFBH, 1977, p. 4).

Figure 2. Physiographic Provinces of New Jersey. The coastal plain, piedmont, and the valley and ridge regions of New Jersey contain different rock formations created during the Triassic and Jurassic periods (Berkeley Heights Environmental Commission [BHEC], 2010, p. 6).

Unknowingly, this region blocked by ice would become the site of Lake Passaic, the current Passaic River (Raftis, 1996, p. 4-5). Further north, the Highlands, a New England extension of rock, elevated one thousand feet above sea level can be found. To the farthest northwestern region, an access to the Delaware Water Gap known as the Ridge and Valley region exists, made out of rich sandstone and limestone ridge and lowlands that encompass only one twelfth of New Jersey (Wacker, 1975, p. 11).

The vegetation and flora consists of a forest of oak, elm, and hickory trees along with eleven types of soil that contributed to the distribution of plants and drainage. North of the Piedmont area was mostly the sugar maple, the American chestnut, and oak trees. A mixed oak forest dominated the Coastal Plain; it would have continued, but manmade fires favored the

pinus creating the present day Pine Barrens. Open meadows existed due to Indian settlements that cleared the area for hunting and productive agriculture were extinguished after European settlement that exported and imported goods and services to and from Great Britain and the Netherlands (Wacker, 1975, p. 12; HSOFBH, 1977, p. 8-9).

The Lenni Lenape tribe, referred to by settlers as the Delaware Indians situated their Minsi and Unalachtigo division in the BHNPS area, until dying at the end of the 1700s. The Native Americans were named the Delaware by the Europeans, due to the proximity to the Delaware River (Raftis, 1997, p. 7-9). The Minsi were the people of Stony Country in the north, symbolizing a wolf's footprint. The Unalachtigo people lived near the southern ocean, utilizing the turtle as a symbol for the whole anima. The Unami people, down the river in the central part of New Jersey were the turkey, the foot of a person, and did not board my hometown. The Lenni Lenape's population, originally 10,000 decreased because of European Disease (HSOFBH, 1977, p. 15). The tribe utilized all resources efficiently by planting gardens, the men cleared the land to produce fertilizer, while the women planted and harvested corn in April, beans in May, later planting squash, sunflowers, and tobacco. It was common place to spend the summer at the shore collecting seafood for the cold seasons ahead. The Passaic Valley and the Watchungs surrounding towns were utilized to transport these goods. These Watchung Mountains, Wach Unk, the Indian meaning for high hill were also used for winter shelter (HSOFBH, 1977, p. 17-18). The population declined due to the spread of the European disease and effects of the fur trade on migration, leading to the creation of the Indian reserve in Cranbury, New Jersey in the mid-1700s. A permanent Indian settlement was made in New Jersey called Brotherton (HSOFBH, 1977, p. 19). Before the Indians eventually moved to New York State, they signed away their land to the English because only two thousand people were living in New Jersey at

the time, the descendants of the Algonquin family also known as the Lenni Lenape's of New Jersey and the Raritan's of Staten Island, New York. This treaty or "grant included all of the present-day Union County and much of Morris and Somerset counties" (Thayer, 1964, p. 9-11).

II. Human Habitat Effects on the Environment from Colonization to Present Settlement

The Berkeley Heights of 1664 was a portion of the Elizabethtown purchase, later divided into multiple surnames and branches, until its official name of 1952, the Berkeley Heights Township. After fighting and winning against the Dutch in 1664, the English conquering of Elizabethtown led to later town divisions (HSOFBH, 1977, p. 20). To understand the human habitation of Berkeley Heights, I will take you on a journey of the boundary lines and the evolution of various town names.

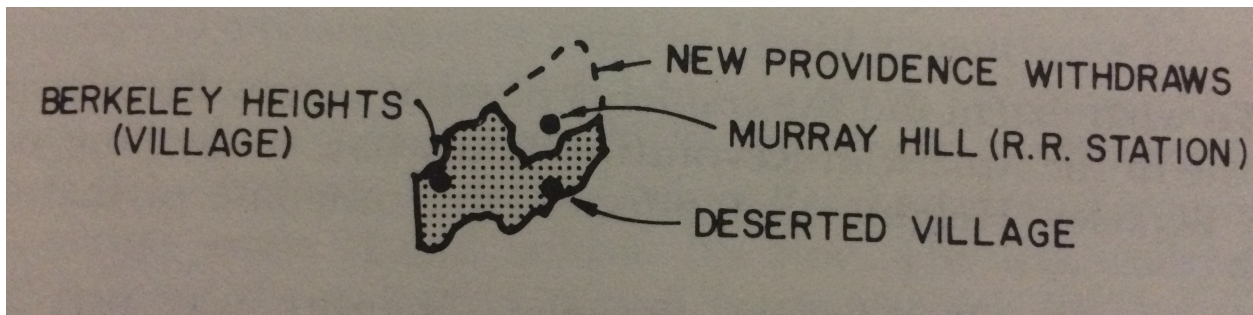


Figure 3. A map of when the New Providence Township changed its name to the Township of Berkeley Heights in 1952 (The Historical Society of Berkeley Heights, 1977, p. 31).

In 1750, the unofficial name of Turkey changed to New Providence Borough, later seceding from Elizabethtown to join the formation of Springfield Township in 1794. During the year of 1809, New Providence Borough became a separate township, then Springfield, which would consist of Summit, New Providence, and Berkeley Heights (HSOFBH, 1977, p. 26). This year of 1809 is the official date that appears on all township founding documents and the celebration of its 200th Anniversary in 2009. Later in 1869, Summit would form its own town to leave New

Providence Township, as well as the separation of the New Providence Borough from the township. For a while, Berkeley Heights was left without a specific name. We developed the nickname of Peppertown for downtown when Italians settled and were seen with significant amounts of pepper drying during harvest season (HSOFBH, 1977, p. 27). The descendants of the original Italian families that created this name, the Del Duca and Delias still live in town (HSOFBH, 1977, p. 51). In 1952, my town adopted the name of Berkeley Heights, likely established from Lord John Berkeley, one of the founders and proprietors of the area, along with Sir George Carteret who dealt with the purchase of Elizabethtown (Little, 1949, p. 15; Thayer, 1964, p. 32-33; HSOFBH, 1977, p. 20-21).

The rural, sedentary lifestyle of Blue Brook Valley, Feltville, Glenside Park, the Deserted Village and Free Acres contributed to farming in the community, established vacation spots, and secluded people from the temptations of the city that were so easily accessible. The Thoreau-like communities were the Walden Pond of BHNPS. Feltville was a small oasis and village just as its founder David Felt envisioned “of a complete community for his workers away from the danger and temptations of city life” (Raftis, 1996, p. 76-77; Troeger, 1997, p. 74). Two hundred people lived there from 1845 to 1860 until it was sold to six different enterprises, unsuccessfully leading to its status as a Deserted Village (Troeger, 1997, p. 74). One of these attempts was a family resort called Glenside Park, now Glenside Avenue; it ultimately failed because the invention of the automobile led to other vacation spots, such as Green Brook. Free Acres, founded by the principles of Henry George, is one of a few single land tax unincorporated communities, left in the United States today, where many writers and poets lived (Troeger, 1997, p. 80).

With the 1837 arrival of the railroad, the real estate market started booming and BHNPS became a commutable suburbia. By 1854, direct New York City commuting was easily

accessible due to the Morris and Essex railroad and New Jersey Railroad lines being connected, so real estate boomed (Martin, 2013, p. 9). In 1868, the Morris and Essex line leased to the Delaware, Lackawanna, and Western railroad company, allowing people to get to New York City through a ferry terminal in Hoboken. A few years later, the new New Jersey West line helped commuters travel from Gladstone to Newark, but the track between Gladstone to Summit was not officially finished until later (Martin, 2013, p. 17). The Berkeley Heights original 1872 train station Ellendor was on Snyder Avenue. By the 1890s, there were thirteen times more New Jersey commuters, than those from areas in other parts of New York; Elizabeth, New Jersey alone had 3,300 commuting monthly (Martin, 2013, p. 47). Then, New Jersey had ample first-class railroad accommodations and New York did not. Today, NJ Transit is known as one of the least successful railroad companies in the northeast. The Ellendor station in Berkeley Heights was replaced by the 1888 station on Plainfield Ave that the wealthy Cornelius Runkle had built (Troeger, 1997, p. 93). The first electrical-powered trains arrived from the Delaware, Lackawanna, and Western line, with high hopes, but resulted in the untimely present day schedule of NJ Transit (Troeger, 1997, p. 95). Finally, the reputation of Berkeley Heights had been established by 1942, as “‘A Convenient Healthful, and Delightful All Year Home Community.’ With 100 trains daily and 18,000 residents, [the BHNPS area] had completed its transformation from a summer destination to a fully developed suburb” (Martin, 2013, p. 105).

The population surge emerged in the beginning of the 1900’s as an industrialized Summit, the “Hill City” and New Providence Borough; after the Second World War, this surge continued with the implantation of Bell Laboratories into present-day Berkeley Heights. Between 1850-1872 the population of Summit went from 275 to 1,300, from 1880 to 1890, the city had grown from 1,190 to 3,502 residents, and the population by 1898 when Summit became

its own city, reached over 5,000 residents (Martin, 2013, p. 17, 35, 47). The Hill City continued to grow and doubled in population during the next decade, growing from 5,302 to 7,500 residents (Martin, 2013, p. 67, 91). The year of 1916 brought an increase of building activity such as the Prospect Hill and Canoe Brook Estates. By the beginning of the 1930s, population growth had stabilized to 14,556, while today's population is estimated to be over 22,000 (Martin, 2013, p. 105). Once a resort and refuge in New Jersey, Summit had become an urban town with easy commuting distance.

The transformation from summer haven to livable city was not only associated with the 1800's transportation boom, but with the creation of silk mills and the 1940's Bell Labs. These silk mills, huge industries in Summit were extremely profitable, but the horrible working and environmental conditions led to numerous strikes and the foreclosure of many mills (Raftis, 1996, p. 141-143). If it were not for the realization of the environmental concern of the silk mills in Summit, New Jersey from the beginning of the 1800s until the 1920s, perhaps I would have not been born. My maternal great-grandfather worked as a silk weaver in the early 1900s, participating in strikes, until the foreclosure of the mills, forcing him to move to Brooklyn, taking my grandfather, who would later meet and marry my 88-year old grandmother, Elizabeth Kalagassy, known to me as Tete. It was not until I was born in 1997 that my family returned to the same community where my grandfather, Charles Kalagassy was born on Weaver Street, next to the mills. Bell Labs created by Alexander Graham Bell, later as AT&T, moved to New Jersey in the 1940s, and still stands today as part of Nokia. Bell Labs established in BHNPS as a research lab for telecommunications and the development of new electronic devices has won numerous Nobel physics awards and developed the C programming language. It assisted in the environmental necessities of Berkeley Heights because its researchers, massive property tax, and

work with the local community provided environmental assistance in water retention, sewage control, exterior lighting, physical appearance and air pollution projects. No longer was Berkeley Heights, New Providence, and Summit unknown, rather they were the star populous towns of New Jersey (Troeger, 1997, p. 43-47).

Around the same time, the Passaic River a major source of human exploitation towards rivers, had already undergone many challenges by the 1950s. Some of these uses were industrial, agriculture waste, wood debris, and other man made causes (Brydon, 1974, p. 6). The news came “PLANS JETPORT IN MORRIS COUNTY”, this angered many locals inciting them to fight to preserve the Great Swamp, a part of the Passaic River path, later establishing the Great Swamp National Wildlife Refuge (Brydon, 1974 p. 246).



Figure 4. A map of the Great Swamp National Wildlife Refuge from when it was established in 1960, Courtesy of the Bureau of Sport Fisheries and Wildlife (Brydon, 1974, p. 255).

The creation of the Flood Control Committee for the Passaic River determined the area should be used for conservation and as a reservoir because the amount of floods along the river was staggering. After the protest of the Jersey Jetport Site Association and residents journeying to Trenton, civil engineers surveyed the area ending the reign of the potential airport and while a reservoir was originally going to be implemented, people felt it would disenfranchise its ecosystem (Brydon, 1974, p. 256). Eventually, after much political strife, the jetport initiative ended and the refuge became an “outdoor laboratory where the Thoreaus of tomorrow would be able to study the minutiae of nature of depth” (Brydon, 1974, p. 258).

III. An Assessment of my Hometown Today and the Future

My hometown area is known as a suburban hub with easy access transportation to New York City, along with a high population density. It is a bedroom community consisting majorly of a mixture of ranches, colonial style houses, and some apartments near the train station. Berkeley Heights prides itself on public transportation that connects directly to the New York City train line. The mostly white, middle class population in the town consists of young families with children aging 6 months to 5 years old and a huge senior population, but is lacking in millennials. Our activity spaces include a baseball and soccer field at Snyder Park, a Senior Center at the Mount Carmel Society, the oldest running society in the area since the 1800s, and a recreation department in town hall which created a PAL (Police Athletic League) for young children to play sports. A swap expected to be completed by 2020 between Berkeley Heights’ current town hall and neighboring Little Flower Church will bring further economic and environmental development to the town. According to Berkeley Heights’ Director of Communication, Nicholas Schiavo [my Dad], deems the exchange of property necessary because “to attract businesses and new families into the town which will lead to a vibrant community”

(personal communication, Thursday, April 14, 2016). No wonder, everyone wants to live in Berkeley Heights, it was named by *CNN Money*'s America's Fifty Top Small Towns of 2013, the sixth best small town to live in the United States (Berkeley Heights Township, 2016).

The quality of water and air, vegetation, and wildlife resources is a growing concern. With the influx of climate change, there is a concern about the increase in temperature which could produce droughts and decrease rainwater. Even with the global warming response, the Clean Air and Clean Water Act, carbon dioxide emissions are increasing to twenty-five percent more in 2020 from 1990, along with other General Circulation Models. Out of the six pollutants specified in the Clean Air Act's National Ambient Air Quality Standards (NAAQS), Berkeley Heights believes nitrogen dioxide and the ozone, still pose the biggest threat (BHEC, 2010b). Nitrogen oxide is a risk due to the effects of acid rainfall leading to river water that causes algae issues. The escalating level of public transportation and roads in the area, such as Interstate highway 78 and Route 24 are a main cause for concern.

The current goals of the Berkeley Heights Environmental Commission (BHEC) are to address transportation issues, energy conservation, water use, green building practices, solid waste and recycling, the tree canopy and open space, and green purchasing (BHEC, 2010a). Berkeley Heights' Sustainable Plan to increase Sustainable Jersey Bronze status to Silver status is (BHEC, 2009):

1. Transportation
 - a. Reduction of fuel use through increased fuel efficiency
 - b. Decrease emissions and promote a healthy and active lifestyle

2. Energy Conservation
 - a. Reduce current greenhouse gas emissions
 - b. Increase usage of renewable resources improving energy productivity
3. Water Use
 - a. Be more cognizant of the surrounding Passaic River
 - b. Community education of water saving principles
4. Green Building Practices
 - a. Reduce new greenhouse gas emissions
 - b. Educate town council members of a better sustainable infrastructure
5. Solid Waste
 - a. Reduce waste and expand recycling
6. Tree canopy and open space
 - a. Preservation of green areas
 - b. Support healthy forests
7. Green Purchasing
 - a. Buy recycled and alternative environmentally friendly products

Currently, my hometown, Berkeley Heights Township has worked with middle and high school environmental clubs, the Greening Union County program, and the Downtown Beautification Committee to establish a level of environmental awareness in the community (BHEC, 2014). Further sustainable issues include the protection of the tree canopy, maintaining the abundant red oak forest, and creating a tree survey to replace the tree loss from Hurricane Sandy (BHEC, 2011). Desnagging of rivers, also known as the removal of the river bank floor and other wood-like debris will help protect the Great Swamp and Passaic River.

The 21st century hopes to bring more compostable products to the town, as well as expanding Passaic River cleaning efforts through walking and biking paths. While the town has attended meetings in regards to the Pilgrim Pipeline, a pipeline that will allow the northeastern coast access to fuel sources, other than by river barges, Berkeley Heights is part of the Coalition Against the Pilgrim Pipeline (CAPP). In coming years, I hope my town's ideology towards the pipeline will change, as it can reduce greenhouse gas emissions by over twenty percent and eliminate the pollutants that affect water through existing routes in New York, New Jersey, and eastern Pennsylvania (Pilgrim Pipeline, 2016).

In order to maintain the sustainability plan, put forward by the chairman of the Berkeley Heights Environmental Commission, Richard Leister, Berkeley Heights needs to:

- a. Met further green certification and sustainability standards
- b. Reduction of the carbon footprint and expansion LED standards
- c. Creation of a garbage disposal, recycling, and compost center
- d. Addition of rain gardens like the existing one at Standford Drive (BHEC, 2010a)

In the past and during the industrialized revolution, the perception of Berkeley Heights was a rural setting, a summer resort, and a healthy refuge for the wealthy fleeing city life. In the 19th century, families flocked to the area with the emergence of the Morris and Essex railroad's direct train line to New York City. By the 20th century, Berkeley Heights, while preserving its environment made a complete transformation to a suburban community. Today, the imprint and infrastructure of Berkeley Heights is relatively the same, but serves as a blueprint for its future. Progress is necessary. In the next 100 years, Berkeley Heights residents must be held accountable to maintain the Passaic River, Great Swamp, and embrace Berkeley Heights' Sustainable Plan to protect the environment.

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