

Morristown is celebrated all over the state,  
and out of the state as well, for the purity  
and excellence of its water.

—*The Jerseyman*  
November 25, 1871

# The Morris Aqueduct Company

*New Jersey's First  
Water Company*

Part 2: 1860-1923

To Access Part 1:  
[http://gardenstatelegacy.com/files/The\\_Morris\\_Aqueduct\\_Company\\_Mierisch\\_GSL18.pdf](http://gardenstatelegacy.com/files/The_Morris_Aqueduct_Company_Mierisch_GSL18.pdf)

Arthur Mierisch



In 1799, an aquifer, a mile southwest of Morristown on Mount Kemble supplied water to the town.



Circa 1900 photo of the Morristown Lyceum erected in 1867, courtesy of the Morristown & Morris Township Public Library. The building located near the today's Provisi restaurant was a cultural center for the town. It contained a library, had classrooms and a playhouse

## Prolog—1869

The mid-day sun blinded Henry Pitney as he shuffled out of the Lyceum onto dusty South Street. Last spring he stood for hours watching the workmen complete the building. He admired the façade. “It’s a tribute to Greek and Roman architecture,” he thought. “Even Turkish. It’s hot inside! These walls can’t keep out the heat.” It was another year with little rainfall. “Our aquifer on Mount Kemble is just a trickle.”

Pitney, a respected attorney, looked distinguished at age forty-five. He was tall and had brown hair graying around the temples that complemented his tanned complexion. Newcomers to town mistook him for a person who worked outdoors and they were confused when seeing him dressed in tailored clothing and fine leather boots. Today, he didn’t feel well as he walked, head bent, with one hand shading his eyes from the glaring sun. Three months ago he strutted around town, shoulders back as if on a mission to resolve a dispute over an aqueduct lease or a complaint about the Morris and Essex Railroad’s right-of-way. To passersby he appeared tired and exhausted—the heat was bothering him. Going by Dr. Condict’s old house, he pulled a crumpled handkerchief from his jacket and wiped the perspiration from his brow. He thought “where can I go?” Suddenly a gust of wind erupted creating a spinning cloud of yellow grit engulfing him for seconds before it wandered down the street. “Oh, my eyes. When will the heat end? It’s so hot. No rain. I have to do something.”

Two blocks away a dog was barking.

“It’s that damn dog again. He’s always around the Green. Why can’t Fairchild tie him up?” Pitney thought, brushing the dust from his face and hair. “That dogs a menace” he said in a strained voice.

“What’s that Henry? I can’t hear you. Talk louder!” said John Voorhees walking towards him.

Voorhees jacket was soaked with perspiration. “You look terrible,” Pitney said shaking his head from side to side. “There’s no water again. Even the cisterns are dry. We need another reservoir.”

“I don’t know John. Can’t you think of something?” asked Voorhees. “Wait! Do you hear that? It’s coming from the Green!”

“It’s that dog, he’s gone crazy. He’s chasing—its Jefferson’s wagon,” said Pitney. “They’re coming this way John. He can’t stop them,” he managed.

Bob and Pete, two of Jefferson’s strongest horses pulled the wagon at full gallop. Their eyes were ablaze with fear as the dog ran alongside barking and trying to bite their legs. Sacks of grain and baskets of vegetables bounced off the wagon and disappeared into the



1900 Postcard of the Pitney family home at 127 Madison Avenue.

dust raised by the horse's hooves. "Kick him! Kick him!" yelled Voorhees.

"They're coming. I don't know what to do." Pitney looked desperate. "I can't move."

"Get out of the way Henry. You'll be killed!" yelled Voorhees.

Pitney's face paled as the horses raced towards him. They looked twenty feet tall. The muscles in his throat tightened. Fear was in his eyes. He tried to say "Help me" but couldn't.

"Hurry Henry!" shouted Voorhees.

Suddenly Pitney was pulled aside. He lost his balance and collapsed. The wagon roared by with the dog in hot pursuit. "Whoa! Whoa!" shouted Jefferson.

Pitney's eyes opened. Voorhees looking down at him said: "Henry I had to do it."

"I'm better now John. Help me up. Thank God you're here. I'm so hot. Help me to the Hotel."

Five minutes later Pitney, holding Voorhees arm, entered the American Hotel's tavern. Cornelius Hull, seated near the window, stood up sliding his chair back hard against the wall. He said in a loud voice "John! Henry! What happened? Bartender! Send over mugs of your best wine and a broom to dust off my friends!"

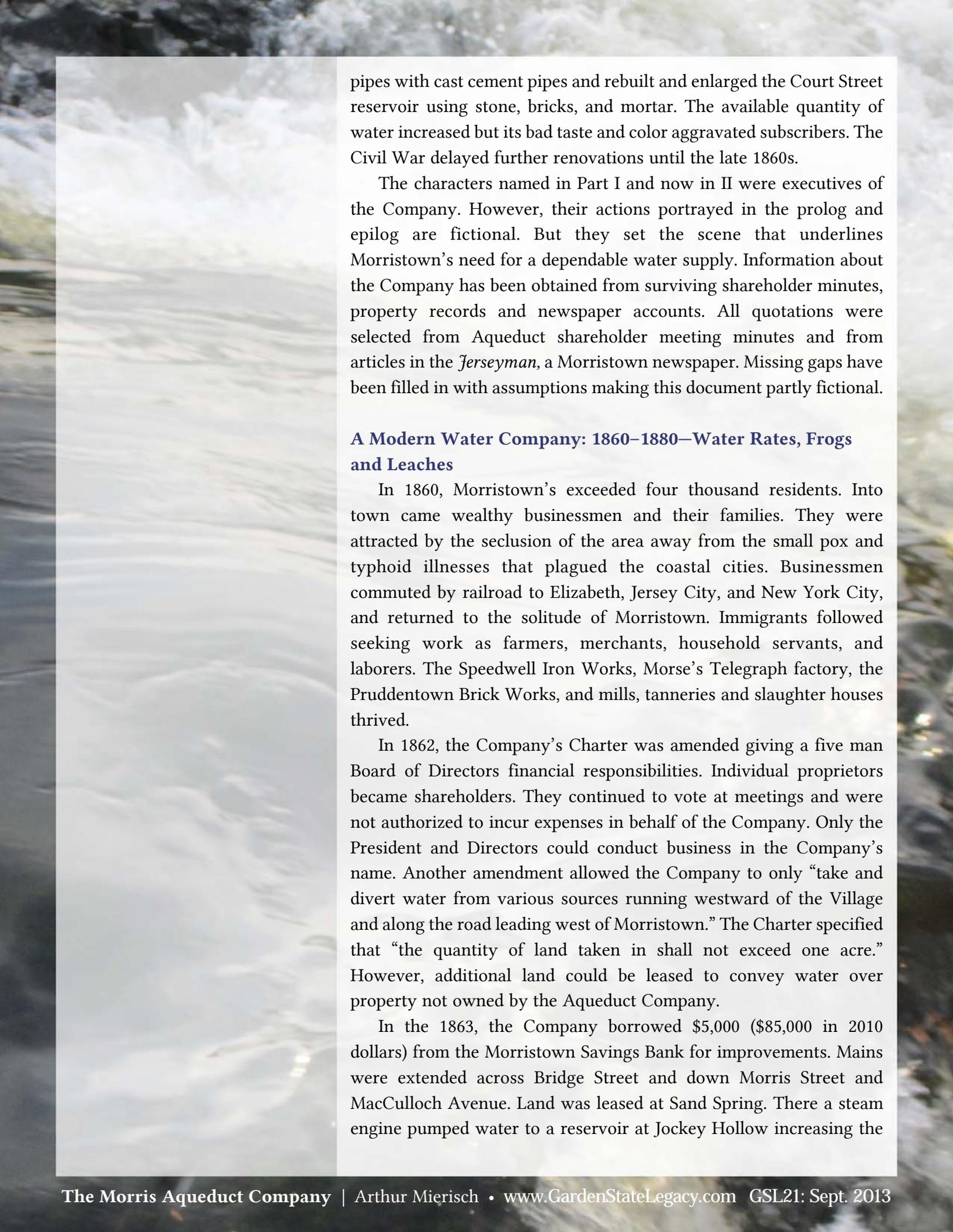
Pitney, managing a smile said, "After I drink I'll tell you. We've got to do something about that beast. We need water."

Cornelius interrupted. "Okay Henry we will but first listen to my plan. If we use larger iron pipes, a steam engine, and put in a new reservoir higher up, we'll have all the water we need, maybe more."

### **1799 Wooden Pipes**

The Morris Aqueduct Company began operations in 1799. Two miles of manually augured wooden pipes were buried in a ditch leading from an aquifer on Mount Kemble into Morristown. Water flowed downhill into a small wood and clay reservoir at the corner of Ann and Court Streets. It was distributed around the Green to South Street and Morris Avenue to subscriber's establishments. Originally sixty five Proprietors, owned stock valued at \$50 (\$800 in 2010 dollars) a share. Each participated actively in the operation of the company.

In 1823, the business fell on hard times when expenses overwhelmed income. James Wood bought the Company at auction for \$0.10 (about \$2.00 in 2010 dollars) a share. In 1832, he replaced rotted pipes with sturdy chestnut pipes. Seven years later, not able to make a profit, Wood sold controlling interest to John Voorhees, also for \$0.10 a share. At his own expense, Voorhees replaced the wooden



pipes with cast cement pipes and rebuilt and enlarged the Court Street reservoir using stone, bricks, and mortar. The available quantity of water increased but its bad taste and color aggravated subscribers. The Civil War delayed further renovations until the late 1860s.

The characters named in Part I and now in II were executives of the Company. However, their actions portrayed in the prolog and epilog are fictional. But they set the scene that underlines Morristown's need for a dependable water supply. Information about the Company has been obtained from surviving shareholder minutes, property records and newspaper accounts. All quotations were selected from Aqueduct shareholder meeting minutes and from articles in the *Jerseyman*, a Morristown newspaper. Missing gaps have been filled in with assumptions making this document partly fictional.

### **A Modern Water Company: 1860–1880—Water Rates, Frogs and Leaches**

In 1860, Morristown's exceeded four thousand residents. Into town came wealthy businessmen and their families. They were attracted by the seclusion of the area away from the small pox and typhoid illnesses that plagued the coastal cities. Businessmen commuted by railroad to Elizabeth, Jersey City, and New York City, and returned to the solitude of Morristown. Immigrants followed seeking work as farmers, merchants, household servants, and laborers. The Speedwell Iron Works, Morse's Telegraph factory, the Prudentown Brick Works, and mills, tanneries and slaughter houses thrived.

In 1862, the Company's Charter was amended giving a five man Board of Directors financial responsibilities. Individual proprietors became shareholders. They continued to vote at meetings and were not authorized to incur expenses in behalf of the Company. Only the President and Directors could conduct business in the Company's name. Another amendment allowed the Company to only "take and divert water from various sources running westward of the Village and along the road leading west of Morristown." The Charter specified that "the quantity of land taken in shall not exceed one acre." However, additional land could be leased to convey water over property not owned by the Aqueduct Company.

In the 1863, the Company borrowed \$5,000 (\$85,000 in 2010 dollars) from the Morristown Savings Bank for improvements. Mains were extended across Bridge Street and down Morris Street and MacCulloch Avenue. Land was leased at Sand Spring. There a steam engine pumped water to a reservoir at Jockey Hollow increasing the

### Old Pipes Found

While excavating for telephone conduits near Washington and Court Streets, a short length of chestnut water pipes were found. And on 4th street, two wagonloads of old cement and iron pipes have been unearthed. They are very crude affairs and illustrate the great advance made in methods of conveying water. Joints were made by binding them with an iron collar and cement.

*The Jerseyman 1897*

system's capacity to 800,000 gallons. In Morris Plains, steam engines drilled wells a hundred feet deep to obtain water.

All loans were repaid at 6% interest. The Company, operating at a profit, to the satisfaction of shareholders paid dividends of 3% in cash and stock. Subscribers, however, were not pleased. They believed that they were overcharged for water they thought contaminated.

In 1865, ditches in the middle of streets served as open-sewers. Homeowners along the Whippany River complained about slaughterhouses, rendering, and fertilizer plants emitting the dreaded "foul air." The residents knew that the odors were unhealthy. Businesses swept inedible and odorous parts of butchering and rendering into the open sewer. When it rained, some contaminants washed into the river and the remainder collected in stagnant puddles. In hot weather, these gave off nauseous fumes and were breeding places for insects. The Aqueduct Company extended a pipe to one of the slaughterhouses allowing remains to be flushed, instead of swept out of the building into an open sewer.

In 1867, Henry Pitney was elected President of the Aqueduct Company. Under his direction the Company achieved the goals of the original 1799 proprietors—a dependable and continuous water supply. For the next thirty years, the business expanded, shareholders were pleased with their dividends and the *Jerseyman* praised the Aqueduct water as being the purest in the state.

In 1870, hydraulic engineers were hired to build a large reservoir on the James Wood property near to the 1799 Springhouse. The reservoir, a semicircle having a 175-foot diameter had the curved side facing downhill. Large hammered stones shaped to fit close together were inserted into concrete to form the walls. The engineers, to compensate for water exerting the greatest pressure at the base of reservoir created a unique structure. The down-hill wall was 13 feet wide at the base that tapered to 1 foot at the top. Three thousand yards of dirt were removed leaving space for 1,200,000 gallons of water. When combined with the Court Street reservoir, over 2,000,000 gallons were available. The total capacity increased 150%. Filters were installed above the reservoir to keep out branches and stones.

Morristown was pleased with the Aqueduct—so said the *Jerseyman*. The newspaper supported the Companies assertions that the reservoirs contained more than enough water for the expanding population. Even during droughts, they were confident that the reservoirs would meet Morristown's needs. Nearing completion, the Company told the *Jerseyman*: "we shall have abundance, and under ordinary circumstances an inexhaustible supply of pure and excellent



c. 1900 photo possibly of the James Wood Reservoir, courtesy of the Morristown & Morris Township Public Library. Erected in 1867, along Chestnut Street near Western Avenue, the reservoir remained in operation into the 1900s. Built to last, it provided many years of service. Note the floating matter in the lower left quadrant. Is it organic?

spring water for all purposes, which must and greatly add to the health, and prosperity of the town.”

By 1880, Aqueduct pipes ran down every main and side street. The system resembled a web spun by a giant spider with the Green as the focal point. The Aqueduct now stretched along Washington, Speedwell, MacCulloch, Morris, and Madison Avenues, and into Normandy Park.

Horses and drivers worked hard carrying merchandise, produce, businessmen and shoppers around town. The Morristown Committee of the Common Council requested the Aqueduct Company to erect watering troughs for horses and a fountain for people around the Green. They also asked for fire hydrants along Morris and Washington Avenues. Henry Pitney installed eleven hydrants and two troughs. The Company charged 12 1/2 cents (over \$2.00 in 2010 dollars) per cubic foot for water. People continued to draw free water from a well in the center of the Green until one morning the *Jerseyman* reported: “The well in the Green has been contaminated with a foul odor.”

In the nineteenth century buildings were made out of wood, brick, and mortar. Logs provided heat for warmth and cooking, and candles and oil for lighting. A spark from an unattended fireplace or a falling candle ignited fires that spread from one building to the next. Morristown firemen needed a reliable supply of water to preserve life and property. Insurance Companies charged higher rates in areas where fire companies could not connect to hydrants. These provided a constant flow of low pressure water near the scene. Firemen, using a steam engine on a horse drawn fire wagon, connected a hose to a hydrant. The engine then pumped a high pressure stream into the blaze.

In 1879, Morristown’s Common Council decided to terminate their contract with the Aqueduct Company for fire hydrant water. They said that the Aqueduct rates were excessive. The *Jerseyman* criticized the Council for being politically motivated and challenged the Council for not inquiring about lower rates. They said this was an “ill-advised blunder and sure to result in serious complications for the town.” The Aqueduct Company served notice on the Council, saying that “if the contract for water is not renewed by January 1, the fire plugs and system connections will be disabled, and the right of the fire department to take water from them in case of fire will cease.”

Three months later, Pitney said that he would be happy to review the Aqueduct’s policy with the Council. However, he gave them no encouragement about reducing the rates. The Council responded by

Early this season, R. H. Clark, Esq. built a large cistern, but no rain came, and he employed John Den-man to fill it from Aqueduct Hy-drants at an expense of \$70. It all leaked out. Mr. Clark decided to put an Aqueduct pipe in.

*The Jerseyman, 1881*

**Before 1895**, steam engines, needing wood or coal powered low efficiency piston pumps. These were replaced with economical gasoline engines that powered high efficient rotary pumps. Operating engineers who ran pumping stations were paid \$700 a year (\$22,000 in 2010 dollars).

asking the Company to give its views in writing. Pitney declined and offered to meet with the Council. After setting a date, he issued a statement explaining how the Companies rates were determined. Pitney emphasized that Morristown's rates were lower than other towns and cities in the state. Exceptions were individually owned waterworks that charged higher rates than the Aqueduct. He added that "if the revenue from the town is cut off we will be obliged to increase our rates to individual subscribers." Pitney reminded the Council of their authority to take the property by appraisement. He expressed a wish for "some other capitalists more benevolent would take the company off of his hands." The *Jerseyman* responded reminding the Council that the town could not afford to purchase the Aqueduct and could not manage the works economically. Insurance companies attempted to mediate with the Council and Pitney—but neither side compromised. Two months later the Council rescinded. The contract was renewed and the town was saved from a catastrophe.

People, however, were never satisfied. In 1875, Pitney answered customer complaints about impurities in the water. He sent a letter to the *Jerseyman* saying that it was impossible to prevent leaves and dust from settling into the reservoirs. He claimed that water can contain suspended pieces of clay and vegetable matter. And that the particles held in suspension do not make the water unhealthy. He referred to the cloudy Missouri River claiming it was one of the healthiest waters in the West. He said:

*sewerage is the only poison to be avoided and this cannot be removed with any amount of filtration. The roots of plants and grasses coming in contact with the water furnishes the only known means of accomplishing the desired result.*

The Company took advantage of that year's drought to empty and repair the reservoirs (one at a time). Because of low water levels, sediment containing a mixture of large particles and a greenish brown sludge had been released into the pipes. This collected in town where water flowed from several directions into a central point. By releasing water from nearby hydrants for a day or two or until the water ran clear solved the problem.

Customers also complained about worms and leeches in the water. The Company responded:

*we have only to say that the presence of living things in water*

*is absolutely necessary to preserve the purity, and therefore we carefully stock our reservoirs with fish and frogs, and worms and leeches who have in their turn consumed flies and animalcules, and other forms of life which will invariably find a way from time to time into all springs, streams and the accumulations of water.*

Early this season, R. H. Clark, Esq. built a large cistern, but no rain came, and he employed John Denman to fill it from Aqueduct Hydrants at an expense of \$70. It all leaked out. Mr. Clark decided to put an Aqueduct pipe in.

*The Jerseyman, 1881*

**Filters were not required** in 1880. In 1881, water was independently tested for ammonia, oxygen, nitrates, chlorine, hardness, solids, and organic and inorganic matter. Water containing solid waste particles was considered acceptable.

The Company told the *Jerseyman* that “the water it uses is spring-water that first falls from the clouds to the surface and thence soaks through the earth into the fountains from which we get our supply, and in so doing comes in contact with the great variety of substances and objects, organic and inorganic, animate and inanimate. The practical problem is to get it to our doors in the purest condition practical. In this we think we have already achieved success, and feel encouraged in the belief that we can improve.”

The Aqueduct Company maintained a share price of \$50. In 1799, 65 shares were sold valuing the Company at \$3,250 (\$110,000 in 2010 dollars). By 1880, with 500 shares outstanding the business was valued at \$25,000 (\$552,000 in 2010 dollars). Pitney increased revenue and generated a positive net income—the Aqueduct for the first time was profitable!

The Company received cash from subscribers for the service and from investors from the sale of property. From 1871 through 1879, 3% dividends were paid every six months in stock and cash from earnings. In 1870, an extra \$2,000 (\$34,000 in 2010 dollars) cash dividend was paid.

### **1880–1900 Pumps and Contamination**

Morristown’s Gilded Age began in the 1840s when the Morris and Essex Railroad trains stopped at the DeHart Station on Railroad Avenue (now Maple Avenue). Wealthy men built homes and opened business in the town. Stores from New York City and Philadelphia sprang up around the Green and along South Street and Morris Avenue. Large homes were built along Maple and MacCulloch Avenues. Magnificent mansions on Normandy Parkway and Madison Avenue were noted for their beauty and elegance. The people who worked in the factories, businesses and mansions lived along Water and Spring Streets, Speedwell Avenue, and Mount Kemble Avenue. The Morris Aqueduct Company, responding to the increased demand for water located new sources south and west of the town. They built sturdy reservoirs, installed gasoline and steam driven pumping stations, drilled for water, laid more pipes in Morristown and expanded service into Morris Plains. It was a busy and lucrative era for the Company.

Six buildings burned near the U.S. Hotel on Washington Avenue along with 1 man and 22 horses.

*The Jerseyman*, July 1892



Circa 1900 photo of the Western Avenue Pumping Station courtesy of the Morristown & Morris Township Public Library. The station located on Chestnut Street was near the site of the 1799 Spring House.

Aqueduct subscribers used running water for cooking and sanitary needs. The town irrigated trees and grassy areas, and sprayed streets to control dust. Frequent droughts disrupted the tranquility of the town. In 1880, *The Jerseyman* reported “the drought in Morristown still continues. The water in the springs and streams was never known to be lower than now.” Even Pitney remarked:

*... the town is wasting water. The consumption of water in Morristown is exceedingly large in proportion to the number of inhabitants, and has increased by fifty percent within the last five years and one hundred percent in ten years.*

For ages, water bubbled out of the sandy ground near the old brick school house on Mount Kemble Avenue. In 1881, the Aqueduct Company leased property and built a pumping station at a site called Sand Spring. Water was pumped to the Upper Jockey Hollow reservoir atop Mount Kemble (on the James Wood property). From there pipes carried water past the old Spring House to the Court Street reservoir. Twenty five men labored eighteen months to erect the buildings for the steam pump, the operating engineer’s house, a barn, and a shed for wood and coal. It cost \$30,000 (\$1,200,000 in 2010). The Company operated the station during daylight hours believing that this was a sufficient time to keep the reservoir filled.

In 1890, service was improved with the erection of pressure tanks on the mountain and around town. A tank was erected on the Villa Walsh property (it can be seen today) near the Upper Jockey Hollow reservoir. Two pumps, one gasoline and the other steam powered, pumped water into town creating the Company’s first pressurized system. Other stations were erected in Morristown. Customer complaints eased when water stopped dribbling out of the faucets. Imposing six foot high barbed wire fences protected the reservoirs and pumping stations from animal and human intruders.

The Aqueduct Company employed fifty people. At the Company headquarters on Speedwell Avenue were offices for President, Vice President, Secretary, Treasurer, Directors, Engineer, purchasing agents, accountants, bookkeepers, and messengers. A stableman behind the building cared for the executive’s horses. Around town homes were leased for construction and maintenance supervisors and their families. Laborers lived in town and walked to work. Storage buildings for pipes, engines, tools and supplies were located near Bridge Street. Maintenance crews averaged from ten to fifteen men. Other laborers were hired for short term construction and repair projects.



Old Time Toilet with a Water Closet. Early D-type toilets let smells permeate into dwellings. The new S-type drain pipe provided a double seal eliminating the problem.

**Flush toilets** appeared in homes on the first floor in the 1860s. In the 1880s, as water pressure increased, pipes were extended to upper floors. Toilets consumed 2 to 3 gallons per flush. In 1883, the average household daily usage was:

9 gallons for kitchens

9 gallons for water closets

3 gallons for clothes

1 to 5 gallons for bathing

**22 to 26 gallons total**

(Servants used outside toilets and bathtubs.)

In 1892, the Company acquired leases and rights to lands drained by the Primrose Brook west of Sand Spring near Washington Avenue. Water from the Brook was piped into town along Early Street. A fenced pumping station erected in the Green pumped water up Morris Avenue past the Ford Mansion (Washington's Headquarters) to the Morris School (now the Beard School). In 1900, nearby residents were disturbed and sued the Company in the United States Circuit Court for diverting water from the Brook. They claimed that the Company denied them the water needed to irrigate their farms. Mr. Masters, the Company's attorney settled the claim outside of court. The Company paid \$500 to the plaintiffs and \$250 to the court.

In 1897, the Harmony Reservoir, built at the end of the Picatinny Valley, added 200,000 gallons of water to the system. The reservoir was 50-feet in diameter, 14-feet deep and the first to have a cement bottom and a roof to keep out debris. The sides were built of stone and lined with 9-inches of brick and cement. The reservoir situated 150-feet above the Court Street Reservoir connected to a pumping station, 70-feet below. A 40-horsepower steam engine pumped water two miles into town. F. C. Pitney, Civil Engineer, Henry Pitney's son directed forty workmen employed for the project.

In the 1880s, 8-inch pipes replaced 4- and 6-inch pipes. A larger 10-inch main was run from Sand Spring along Mount Kemble Avenue to the distribution point at Court Street. Recently invented rotary pumps replaced piston pumps. These supplied a uniform pressure throughout the system.

The Aqueduct became a big business. Several purchasing agents kept the Company supplied with materials. Pipes and connecting equipment were purchased from foundries and manufacturers in Newark and New York City. In 1890, the McNeal Pipe & Foundry Co. supplied car loads of 6-inch internal diameter pipe for \$0.95 a foot (\$30.00 in 2010 dollars). F. Stone & Co. made valves. R. D. Wood & Co furnished cast iron fire hydrants. Lucons Heast & Co supplied tons of lead to seal joints. A Stone & Co. of Newark, New Jersey furnished hubs and valves. Jafee Craft, of Water St., New York City sold rotary pumps.

In 1885, people believed that the *smell* from open sewers brought on illnesses. Next year the *germ* theory was blamed water for sicknesses. The Aqueduct Company in cooperation with the Morristown Sanitary Improvement Association engaged Professor Chandler of Columbia College, New York City to inspect all reservoirs, machinery, pipes, and equipment. The Professor took samples and said that he would "subject them to careful analysis, to



c. 1900. A horse has just taken water from a Morris Aqueduct Company trough on the north side of the Green.

In the 1890s, **Fire Alarm** boxes were seen along Morristown's streets. The person reporting a fire cranked a handle on the side of the box generating an electric current that sent an alert signal over wires to a firehouse. Firemen started a fire under the steam engine, hitched up the horses and at a gallop raced to the scene.

locate any *queer* taste.” He returned two weeks later with his findings:

*I have subjected the water to careful microscopic examination and found only organisms that are contained in natural [aquifers, streams, rivers] waters . . . Some animal and vegetable matter and freshwater algae were found. They are harmless and are probably the cause of the bad taste . . . I would simply say that the reservoirs are remarkably free from fish and that if present they might consume the vegetable matter and do away with the disagreeable tastes and odors.*

In 1882, Henry Pitney threatened to turn off the water at all hydrants. He refused to lower hydrant rates at the Council's request. He believed that it was “another attempt by the Council to appeal to voters just before the next election.” The Council countered by seeking an injunction. The Court denied the motion saying that the Aqueduct Company had the right to set rates for their service. Within days the town agreed to pay the “outlandish rates.” Pitney won the battle again.

In 1892, complaints about the availability of water persisted. The Council demanded an investigation of a fire that destroyed several buildings along Morris Avenue. When the hydrants were opened, only a trickle flowed. The firemen had to wait for over an hour for the water to be turned on. A jury determined that the loss was caused by a lack of water needed to fight the fire. A year later another jury reasoned that more pumping stations must be installed around town to compensate for the decrease in pressure caused by the installation of 10-inch pipes.

In 1799, Morristown residents envisioned the Green and streets shaded by tall oak and chestnut trees. In the 1880s the dream became a reality thanks to the Aqueduct Company. The town became known for its beautiful foliage and landscaping. Daily workmen were seen cutting grass, pruning and shaping trees and watering foliage. Other men watered the streets. Strollers and riders on velocipedes (bicycles with a large wheel in the front and a small wheel in the back) enjoyed the tranquility of the town.

In the mid-1880s, droughts reduced the amount of water coming from the aquifers. The mayor took action. All watering was stopped. Lawns dried, trees wilted, and dust storms harassed animals and people walking along the streets. The *Jerseyman* expressed the people's concern by its criticism of the Aqueduct Company for not

Would you want to be a **Road Overseer**? In 1899, the town appointed street watchman. They were responsible for reporting fires, robberies, vandalism, brawls, blocked sewers, and loose animals. Named that year were: W. H. Harter, Harter Road; M. G. Pearson, Columbia Road; J. T. Foote, New Vernon Road; L. M. Tuttle, Picatinny Road; C. F. Cutler, Kahdena Road. All were wealthy and influential residents.

maintaining an adequate supply. Henry Pitney responded saying: "The Company can maintain a three week supply of water by stopping all lawn and street watering." He also criticized residents for not shutting off their faucets, leaving the water running. He recommended the installation of meters so that customers would be aware of their water usage and make efforts to economize. Many customers complained saying that open faucets were needed to drain impurities from the pipes. Almost all believed that they would be overpaying for water that should be "free to all men." In 1885, the Company began installing meters. By 1900, hotels, boarding houses, dwellings, livery and private stables, and carriage houses had a meter. The installation was a success. People shut off faucets. More water was available and the pressure in the pipes increased. New subscribers were added without deteriorating the available water supply. Revenues and profits increased and the paying of dividends maintained.

It was a catch 22 when some customers complained about having too little water and others about having too much. In 1888, a resident on Ann Street appealed to the Council to influence the Aqueduct Company to "abate the nuisance inflicted by many years of overflow water coming from the Court Street reservoir and washing away the roadbed and gutters leading to Bank Street." Residents were angered when their dwellings flooded during storms. The Council appointed a Street Commissioner who appointed road overseers to bring complaints to his attention. Three months later, the Commissioner reported that the Aqueduct Company was "busy with other work and would not be able to put in a drain pipe and a pit at the base of Ann Street until next summer."

In 1886, the *Jerseyman* editorialized against contaminated Aqueduct water. The paper said: "the reservoir on Court Street has been cleaned out. In it was a small amount of earthy deposit and about twenty small live fish." The paper insisted that the Company clean the reservoir's pipes, the subscriber's waste pipes and the town's sewers. In 1887, a Sanitary Committee was appointed by the town to inspect the reservoirs and streets. They reported the water to be satisfactory. When asked to comment, Henry Pitney remarked "the water is abundant and satisfactory."

In 1882, Henry Pitney, at the request of the Common Council chaired a meeting with the Council and the Morris Telephone Company. Using telephonics, the town sought to reduce the time it took the fire department to respond to alarms. The *Jerseyman* reported that the meeting was:

*...not largely attended as we anticipated it would be, and comparatively little interest was manifested in the proceedings by those who were present.*

### **Streets Sprinkled**

The Aqueduct Company kept the dust down in Normandy Park and along Madison Avenue. Streets were sprinkled three times a day from April through September for \$1,000 (\$17,000 in 2010).

However, the meeting ended with all attendees in favor of the telephonic then in use in Orange, New Jersey. It was considered “safe and accurate for the present needs of Morristown.” They reasoned that the system would not incur a public debt and the town’s taxes would not increase. The cost of the system would be absorbed by the telephone subscribers through a tax levied on their telephone subscription. Pitney agreed to install additional hydrants and billed the town \$25 (\$425 in 2010) a year per hydrant.

Horses were used to transport people and goods around Morristown. In 1880, the Aqueduct Company, at the request of the New Jersey Society for the Prevention of Cruelty to Animals, installed a drinking fountain for animals on the east side of the Green. The Company charged the town \$25 a year for troughs.

In 1884, Henry M. Olmstead brought suit against the Company. He condemned the Aqueduct for diverting water from the Mills-Bailey brook away from his mill. The case was transferred from the Court of Errors and Appeals in Morristown to the Supreme Court in Trenton. Olmstead insisted that the Company’s charter was unconstitutional and that there was no necessity to take the water from outside corporate limits. The Court overruled the complaint deciding that the charter is constitutional and that “the Company is not confined to any particular territory for the acquisition of water.” The Court ruled that the needs of the public came before an individual’s need to protect his income. They said:

*In supplying water it is not confined within the corporate limits, but may lay its mains in any of the streets or roads in the neighborhood of Morristown, and that it is proper for the Company to provide liberally in advance for every possible want of the region to be supplied.*

Revenues increased from \$10,000 (\$1,500,000 in 2010 dollars) in 1890, to \$28,000 (\$3,200,000 in 2010) in 1900. Shareholders prospered receiving 3% dividends out of earnings and capital stock twice a year. On two occasions extra dividends of 33<sup>1/3</sup>% and 25% were paid from surplus earnings. Loans and mortgage rates increased to 8%.

In 1893, the Company’s moved from the two rooms in Henry

**1906 Rust**  
Complaints about rusty water were attributed to the iron storage tank on Western Avenue.

Pitney's office on Speedwell Avenue to the Bell-Law Building across the street. The new office space was leased for \$500 (\$8,500 in 2010) a year. Subscribers paid bills to tellers seated behind iron bars—bank type security.

In the 1890s, not every Aqueduct subscriber had a water meter. Quarterly bills were designed to include all possibilities. Establishments without meters were charged for each bath tub, toilet, and wash basin. Offices and stores were billed for each faucet. Stables owners were billed for the number of horses and carriages in use. Establishments with meters paid for water by the cubic foot plus a \$0.10 (\$2.00 in 2010) a month rental fee for each meter. A note on the bill stated that "Water is liable to be turned off if not paid within twenty days after presentation." If a payment was overdue, the subscriber was notified that "Unless the same is paid within FIVE DAYS the supply of water will be shut off from your premises."

In 1890, Pitney's \$500 (\$8,500 in 2010) a year salary increased to \$2,000 (\$34,000 in 2010). In 1894, the Board of Directors, now seven members, received \$5.00 (\$85 in 2010) for each meeting attended—a radical change from 1799, when shareholders were fined \$1 for each absence. In 1900, the Aqueduct was privately owned by 25 shareholders who controlled 2,871 shares of stock with a par value of \$50 per share.

"I want to retire," said aging Henry Pitney. In 1894, he felt exhausted. He had guided the Company for almost thirty years of rapid and prosperous growth. He was tired of defending the Company's rates and water quality. Every year he was troubled with rising costs and State taxes that increased the Company's debt. The Board of Directors persuaded him to stay on after giving him a \$1,000 (\$17,000 in 2020) bonus. He died four years later in the fall of 1898, one hundred years after the Morris Aqueduct Company was conceived. The Company continued as a private enterprise owned by members of Pitney's family, Cornelius B. Hull, Stephan Person, and Calculus Mc Alpin. All were aging and well into their sixties and seventies. Harris J. Hull, a long time friend of Henry C. Pitney became the next Aqueduct's President.

### **1900 to 1923**

At the beginning of the twentieth century the United States economy was booming. Teddy Roosevelt's Rough Riders had returned victorious from Cuba. Sputtering automobiles were scaring horses and travelers enjoyed the speed and comfort of transcontinental railroads. In 1903, the Wright brothers awed the world with the first powered

## 1910 Monthly Water Rates

### Usage:

\$0.25 per 100 cu ft up to 1,000 cu ft.

\$0.20 a cu ft for over a 1,000 cu ft.

A 10% reduction if bill exceeds \$4

### Meter Charge:

\$0.70 for 4" pipe

\$2.00 for 6" pipe

\$4.00 for 8" pipe

*Note: The property owner is  
responsible for damages to  
meters.*

flight and steamships carried immigrants to America's shores. Newcomers seeking work settled in towns along the Atlantic coast while others traveled inland and westward beyond the Mississippi River. Morristown, as in decades before continued to offer employment on farms, in factories and on estates. The Morris Aqueduct Company provided the drinking water necessary to maintain Morristown's increasing population.

In 1900, the Aqueduct Company supplied neighboring communities with water and made improvements to the system. Gasoline powered engines and rotary pumps replaced steam engines and piston pumps. In 1908, the town of Mendham agreed to build a pumping station on the high ground near the Brookdale section. A year later, Bernardsville granted the Company a \$5,000 (\$50,000 in 2010 dollars) a year lease to take water from a nearby brook. In Morristown, 12,000 feet of pipes were replaced with 10-inch and 12-inch mains. Smaller 2-inch and 4-inch pipes connected the mains to customers. Large volume users as the Ballantine and Foote estates received larger pipes. The Company also protected ground level reservoirs from the influx of surface water by digging a trench around the perimeter. Rain water flowing downhill entered the trench and was carried away from the reservoir diverting most of the ground contamination. In 1915, the Morristown Freeholders asked the Company to install a single pressure emergency fire system. Clyde Potts, the future Mayor of Morristown completed the project in 1926.

The Company set the price of water without the approval of Morristown's Council and the State Government in Trenton. In 1906, the Company agreed to provide Speedwell Avenue with water for six days a week to flush the sewers at a cost of \$1.00 (\$12.00 in 2010 dollars) per 1,000 per cubic feet. Two years later, the price increased 50% to a \$1.50 (\$18.00 in 2010 dollars).

In 1907, the *Jerseyman* announced the construction of an underground sewer. The system designed by Williams, Proctor & Potts and Engineers was heralded by the town Council as the most efficient way to dispose of liquid wastes. At the direction of the Morristown Sewer Authority, a trench, twenty-five miles long and five feet deep using manual labor was dug down the middle of the streets. Into the hole was buried 15-inch diameter concrete pipes. When completed, five hundred and forty-five manholes gave away the sewers underground path. In 1908, construction was halted while a County Court decided if the Whitehall Tract was an acceptable location for a waste processing plant. The Court decided in favor of the location and construction was completed in 1910.

In 1912, the Aqueduct Company struggled to remain in business. They were fighting a losing battle against increasing costs. The State of New Jersey passed a Franchise Tax on gross receipts that added \$1,800 (\$18,000 in 2010 prices) a year to fixed charges. Local taxes increased by \$400 (\$4,000 in 2010 prices) a year and operating expenses by \$1,500 (\$15,000 in 2010 dollars). State requirements required the Company to issue semi-annual and annual reports to shareholders increasing the accounting and publication expenses. The Morristown Trust Company raised the interest rate from 6% to 10% on all new debt. Also, \$500,000 (\$5,000,000 in 2010 dollars) in bonds paying a 6% dividend maturing in 1925, were sold to finance new construction. Dividends to shareholders stopped. However, bonuses to officers increased by 20%—a signal that something was wrong financially.

Vandals plagued the Company. In 1915, two shifts of guards patrolled four reservoirs. Others were posted at all pumping stations and water tanks. Buildings and residences were repaired, and worn out equipment replaced. The cost of property leases increased to 8%.

In 1916, the Aqueduct’s Executive Committee reported: “Unless revenue increases *at once* there would be a substantial deficit in coming years.” Harris Hull took action. He petitioned the Board of Public Utility Commissioners to raise rates. An increase of \$8.00 per year per customer was granted. The Company then valued the business at \$179,000 (less than \$2,000,000 in 2010 dollars) and began selling additional shares. The Morristown Trust, a lending institution, gave the Company a \$50,000 (\$500,000 in 2010 prices) mortgage at 5%.

Also in 1916, the Commissioner for the Board of Public Utilities heard a complaint from Morris Plains residents about the water pressure being too low for domestic use and fire fighting. The Commission dismissed the complaint reasoning that “the Company should not be expected to outlay a considerable amount of money to provide high pressure service unless the residents are willing to pay more for the service.” The residents decided against an increase believing the present rates excessive. The Company disregarded public opinion and built a pumping station and storage tank nearby. The water pressure was increased to the satisfaction of the residents and the Company increased rates to their satisfaction.

In 1921, Clyde Potts came to Morristown. He was revered for designing and overseeing the construction of Morristown’s underground sewage system. The residents thanked him for removing the stench from the streets and private property. He was encouraged to run for Mayor on a promise to improve the town’s water quality

### 1915 Jobs - Monthly Pay

Guards .....	\$50
Lower Skilled Labor .....	\$15
Public School Teacher .....	\$30



Clyde Potts born in 1876, died in 1950. As a renowned Civil and Sanitary Engineer, he designed and directed the construction of sewer projects around the world. He helped establish the New Jersey State Bureau of Child Hygiene. He worked to establish Jockey Hollow and Washington's Headquarters as part of the Morristown's National Historic Park System, and the creation of the Morristown Airport.

and reduce rates. He claimed that the Aqueduct Company was reporting revenue shortfalls and over-exaggerating losses. In 1922, after a short campaign he was elected. A year later the town took over the Morristown Aqueduct Company and paid the share holders the value of the pipes, equipment, and buildings and assumed its debts. The name was changed to the Morristown Water Company. The Company was now publically owned and operated by municipal employees. Potts reduced rates by 15% by not paying the Aqueduct Company's executive salaries and increasing the taxes on local businesses. In 1929, he constructed and operated the Clyde Potts Watershed. It contained a reservoir located west of the town near Picatinny Road and Dorothy Drive. It occupied 650 acres in Mendham and 350 acres in neighboring Randolph. The system supplied Morristown and adjacent towns with a higher quality water. The town now had a single source where water was filtered and purified. His promise of improved water quality was achieved. Potts left office in 1948.

By the 1940s, the demand for water spread to neighboring towns. It is rumored that Morristown was unable to tax these communities causing the Morristown Water Company to go bankrupt. The business was taken over by the Southeast Morris County Municipal Authority. SMCMA now services Morristown, Morris Township, Morris Plains and Hanover Township and parts of Mendham and Harding Townships. Much of the water comes from the Clyde Potts Watershed. The remainder is purchased from other sources.

### **Mortality Rates**

In the 1870s, the New Jersey Department of Health began publishing the *Annual Report of the Board of Health*. The Department collected statistics and calculated the mortality rates of the principle causes of death. This article has grouped mortalities into three categories: Waterborne, Airborne, and Other. Waterborne causes are diarrheal, typhoid, digestive, intestinal, and urinary diseases. Airborne causes are small pox, diphtheria, consumption, and lung illnesses. The Other category includes sexually transmitted diseases, heart attacks, fire, horse, carriage and automobile accidents, and all others.

The State, in the *Annual Report* advised and made recommendations to doctors and hospitals about conditions, medicines, and procedures that affected public health. This publication helped reduce mortality rates throughout the state. From 1880 to 1930, waterborne illnesses declined decreasing the mortality rate by 84%. The airborne mortality rate declined 55% and would have

A **Mortality Rate** is the number of deaths per 1,000 individuals per year.

Morristown Mortality Rates			
Disease	1880	1900	1930
Waterborne	13.2	7.5	2.1
Airborne	7.2	4.9	3.2
Decrease in Rates from 1880			
Waterborne:	43%	84%	
Airborne	31%	55%	

been lower if not for increases in pneumonia and tuberculosis cases. In the twentieth century Morristown was healthier. The water was purified, the streets were cleaned and foul smells disappeared.

### One Hundred and Twenty-Four Years: A Summary

In 1799, the Aqueduct's proprietors, guided by Pelatiah Ashley, a hydraulics expert from Boston laid the pipes for New Jersey's first privately owned water-company—The Morris Aqueduct Company. It became one of the longest held public companies in the state. The business remained privately owned for one hundred and twenty four years until taken over by Morristown. Founders as Jacob Arnold (a Colonel in the Revolutionary Army) and Doctor Lewis Condict (a town physician) wanted to supply the town with healthier and continuously flowing water from nearby Mount Kemble. They also expected the Company to earn a profit and pay dividends to investors.

The original pipes were made from twelve-foot sections of oak and chestnut trees manually augured to have a four-inch hole down the center. When joined with metal straps and sealed with tar, sap or cement a two mile long pipe carried water to Morristown subscribers. In 1803, experiments to improve the flow of water using leather, ceramic, and lead pipes failed when they leaked, cracked, and bent. In the 1830s, the Company replaced all pipes with cement pipes and in the 1860s, cast iron pipes became the standard. From 1825 to 1862, the Company was owned by James Wood followed by John Voorhees. In 1862, John C. Pitney became President. He revised the Charter and a Board of Directors took charge of the Companies operations.

After 1862, the Aqueduct Company built several reservoirs and storage tanks to increase the system's capacity. In the 1880s, the installation of steam and gasoline powered pumps increased the pressure in the system. Water pipes now extended above the first floor in multi story buildings. Houses were modified to include rooms named *bathrooms* and *toilets*.

Customers always complained about the water quality and rates. After 1900, the Aqueduct Company, burdened with debt and an aging management, was blamed for being unable to implement technological advances in water filtration and purification. In 1923, the Morris Aqueduct Company became the Morristown Water Company.

The Morris Aqueduct Company helped transform Morristown from a rural agricultural community into a business, commercial and cultural center. It was a private enterprise that sought to provide pure water to subscribers and to make a profit for its investors. However,

in the end it was the desire for profits and increased costs that closed the books on the dream once held by their 1799 founders.

### **The Last President**

As he walked out of the building on Speedwell Avenue, Harris J. Hull hung his Company's last sign on the heavy oak door. He turned towards the Green moving slowly as if his shoes were made of lead. He looked sad and tired. "I wish I wasn't leaving. It's been my life," he thought.

He remembered how it began. He thought about his father Cornelius Hull who years before convinced Henry Pitney to make him his assistant. Pitney taught him how to run the Aqueduct. He learned how to deal with the town Council and the public. "When Pitney passed away, I became President." He sighed.

Hull often had difficulty remembering. He did recall that five years ago something went wrong. "I can't stand Potts and the newspapers. I do know how to run a business. I do have initiative. I can get things done," thought Hull as he walked across the Green and started down South Street.

He was bald, rotund, and looked to be as wide as he was tall. He disliked having to look up to people. He began to sweat and wiped his brow after every three to four steps. "Martha told me to drive. It's only a short walk home. What's that noise?" he thought.

"Mr. Hull. You look awful," said Robert Voorhees, John Voorhees youngest son.

"I feel terrible. It's too hot. Do you hear that noise?" said Hull.

"It's the dog. He's always around the Green. He's chasing the tinker's wagon. Look at the pots bouncing off. You better get out of the way Mr. Hull. Get out of the way Mr. Hull!"

"I'm too tired to move Robert."

Suddenly Hull was pushed to the side. He fell onto the dusty street. The wagon went racing by. The dog barked louder.

"Whoa! Whoa!" shouted the tinker.

"I had to push you Mr. Hull."

"It's alright Robert. Help me up. I'll walk home. It's not far."

"But Mr. Hull. Your car is across the street near the old Condict house."

"My Car?"



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