



CELEBRATING
125
YEARS
OF SERVICE
TO HARLAN



EST. 1891

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My eternal gratitude goes to Leo Mores, co-publisher of the Harlan Newspapers 1939 - 2004, for the



Chatburn Ave. and College Place, circa 1979.

extensive coverage of the utilities during his time as owner and publisher. His news stories and editorials during his tenure provided understanding of different eras, events and milestones of HMU as well as 'of the time' thoughts and feelings of the Harlan Community. His work was especially helpful toward the writing of the history of the electric and gas utilities.

Finally, my deepest and humble appreciation to all employees of the electric, gas, water, telecom and administrative offices over the past 125 years for their efforts to keep the lights on, the water safe, our homes warm and Harlan connected to the world 24 hours a day, seven days a week, 365 days of the year and for over 125 years. Without you, HMU could not exist. I regret I am unable to acknowledge all of you by name for your, and your family's, contribution to the utilities, the City of Harlan and the history of HMU.

Doug Hammer, 12/2016

Introduction

By all accounts, it was cold. By all accounts, it was a typical mid-January day in Iowa. By all accounts, the cold did not dampen the excitement. On that day, 304 voters decided the future for the rest of Harlan and all that would follow. They made a fateful and long ranging decision based on trust and a murky concept they knew not the ramifications. Based on a concept yet to be fully developed, they made a decision knowing they would be the ones to launch Harlan into the 20th century with modern industry and the jobs that would follow. They would be the ones tempting an influx of population that would grow the bucolic burg into a self-sustaining and viable community of profitable commerce, churches, schools and a sense of community.

Electricity. No one person can be credited with discovering, harnessing or applying a natural occurrence into a force that now powers the world. By January, 1891, the names of Joule, Morse, Maxwell, Brush, Edison and Tesla and their works in the field of electricity and the potential it showed were well known. Thomas Edison is credited with creating the first viable incandescent light bulb in 1879. That same year arc lights powered by Brush generators were lighting up Cleveland, Ohio and the California Electric Company began selling electricity to customers.

In 1882, Edison opened the Pearl Street Power Station in New York City using Direct Current (DC) to energize up to 5,000 lights. That same year, Edward Johnson began a holiday tradition by placing electric lights on a Christmas tree. By 1888, Nikola Tesla demonstrated the concept of Alternating Current (AC) electricity.

It's difficult to sit in a well-lit and warm modern office surrounded by computers, telephones, printers, fax machines, cell

phones and a myriad of other devices powered by electricity and imagine a world 125 years ago without light except for oil lamps, candles or firelight. A cold world heated by coal, corn cobs, wood and layers of blankets. A hot world where the only relief from the blistering summer heat was the shade of an elm tree or a breeze at night. A world with wood stoves for cooking and underground cellars for cooling. A world with no radios, no TVs, no movie theaters or night sporting events for entertainment. A world without a telephone, let alone a cell phone, Internet, e-mail or texting for communication. A world without many things made possible by the future advancements in electricity and its applications.

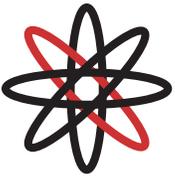
The weather may have been clear on that cold day in January, but the future was not. Matching the weather was the clear vision of that 304 in establishing the Electric Light and Power Utility of Harlan, Iowa.

Writing a detailed history of the Harlan Municipal Utilities was challenging. No first person interviews regarding the establishment of the Electric, Gas or Water divisions could be conducted. No history of the utilities seems to have been published during the last 125 years. Formal City Council or various utility Board minutes contain actions but little context. We can know what happened but not the why. What we can draw on is newspaper articles and snippets pulled from local general history books. Through the newspaper accounts and editorials, we can establish time frames for Harlan Municipal Utilities benchmarks as well as contemporary thinking. Through these written accounts we can surmise certain things but are rarely able to confirm our thinking with supporting information. The following is one person's attempt to place events of the last 125 years of the Harlan Municipal Utilities into a time frame that may be of use to today's reader as well as the reader 125 years into the future when HMU celebrates its 250th anniversary.

Establishment of the ELECTRIC UTILITY



Corner of 5th and Court.



The movement toward an electrified America quickly gained momentum in the 1880's as research and inventions harnessed the natural power of electricity. Electric lighting was becoming

common in urban areas across the country. By the end of the decade, it was abundantly clear electric power was the next step necessary in the development of commerce and modern conveniences. The question was: who would provide the power to propel Harlan into the 20th Century?

Harlan City Council records show that on December 1, 1890, a petition signed by 27 residents requested the City Council call a special election and put forth to the town two resolutions. One resolution would establish an electric utility and one would establish a municipal water works. Both would be the property of and overseen by the town via the City Council. The Council agreed with the petitioners and, on December 10th, approved a resolution calling for a special election on January 20, 1891.

The measures passed easily with 304 voting for establishing a municipal light plant and 29 against. A committee to oversee the feasibility and construction of the power and water plant continued their work throughout the late winter and early spring of 1891.

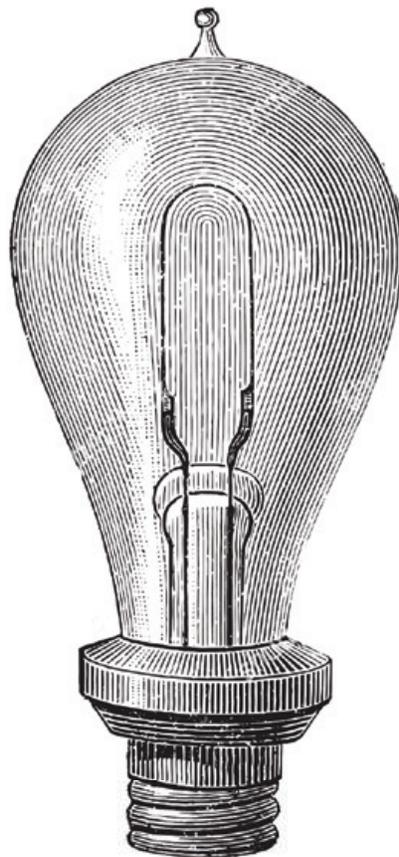
Initial estimated costs for building the facilities were \$18,000. Factoring in the cost of inflation and the value of the dollar over time, the project would cost about \$20 million if constructed in 2016. It was a significant financial undertaking for a town of about 2,100 people.

April of 1891 was a busy month for the committee and the City Council. Rates for service were established and revenue bonds were issued. E.P. Noble was hired, at a salary of \$50 a month, to act as Superintendent of the public works and to oversee the construction and operations of the plant. On April 20th, the City purchased six lots between Third and Fourth Streets on the north side of Victoria Street as a site for the new light plant. Contracts for additional construction and materials, such as the boilers, generators and water pumps, were issued throughout the spring and summer. Contracts for coal to fire the boilers were signed. E.A Kinsie was hired as Plant Engineer at a salary of \$60/month.

Electric service became a reality on August 22, 1891, just over seven months after the January vote. The Shelby County Republican newspaper reported "F.E Cook & Co. drugstore had the honor of being the first business house in Harlan illuminated by electricity." When service began, there were four arc lights, one at each corner of the downtown square, illuminating downtown Harlan as well as incandescent lights. It is not known how long the arc lights were in service, or how practical they were as area illumination, but additional incandescent street lights were added to downtown area side streets over the next several years.

The original power plant was a coal fired, steam boiler system with two dynamos, as they were called at the time, generating Direct Current (DC) electricity. The capacities of the dynamos and the use of DC power limited the type and amount of devices that could be powered. It is doubtful there were many electric motors in service at the time. Many appliances and conveniences (i.e. refrigerators, air conditioners,

vacuum cleaners, electric coffee pots and even radios) we take for granted today were still decades away from wide spread use. About the only practical application the light plant could support in 1891 was simple lighting and even then only in select use for business or for general illumination around the town square in the evening. As supporting a limited number of lights was about the only purpose of the light plant, electricity was only available for certain times

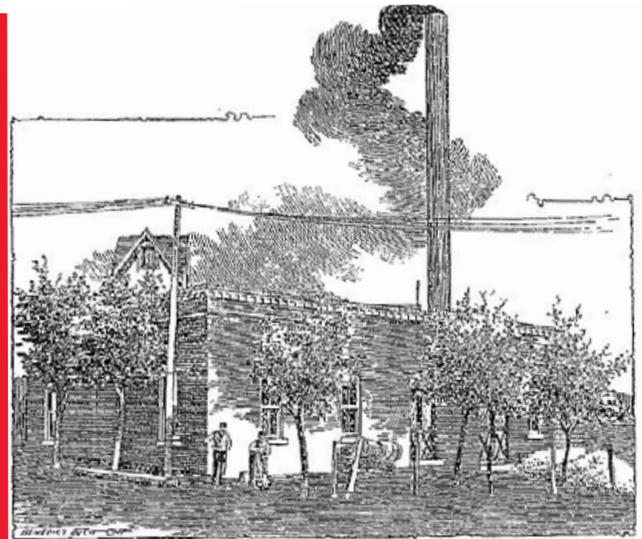


during the day. One reference suggests power was generated during morning twilight, generally from 5-7 AM during the winter, and again in the evenings until midnight when the light plant was shut down until the next morning.

What we take for ordinary in 2016, the world of 1891 took for extraordinary. In January, 1891, no house or business was wired for electricity. During the first year the plant was in service, it was necessary to add wiring, switches, and lamps in every building and on every downtown street corner in order to take advantage of the new source of power.

By 1919, the population of Harlan had grown to a little over 2,800 residents. Sources indicate the light plant was capable of generating 210 kilowatts (KW) or enough power to light 2,100 one hundred watt light bulbs or about one bulb per resident.

This line drawing from the August 18, 1892 Harlan Industrial American shows the original light plant built at the corner of 4th and Victoria. Coal fired boilers generated steam that turned the Direct Current (DC) dynamos. It was in service from 1891 until 1928.



1936. A generator added in 1939 was rated at 2,000 horsepower. According to Fulton Iron Works of St. Louis, Missouri, the manufacturer, this engine was the largest four cycle mechanical injection engine in the US. This addition gave Harlan its rank as the largest municipal diesel powered light plant in Iowa. Eventually, the light plant would house eight engines and associated generators with a rated capacity of just under 3 megawatts.

The residents of Harlan weren't the only ones served by the plant. By 1940, the recently formed Nishnabotna Valley Rural Electric Co-op purchased wholesale electricity for its customers from the Municipal Light Plant. Wholesale

For the first 38 years of its existence, the light plant supplied DC voltage to customers. By the 1920s, further advancements in the transmission and distribution of Alternating Current (AC) had made it the clear choice for widespread use and applications. In late 1928, the movement began to replace the original DC light plant with a modern AC generating plant. There was little conversation or opposition to the proposed upgrade. Construction bids were accepted in May of 1929. Construction of a new light plant on east Chaburn Ave. began in early June with the first AC power provided on Tuesday, October 15, 1929. The price of the new light plant and conversion costs was about \$242,000.

Initially, the new light plant held two diesel powered generators with a rating of 1,125 horsepower (HP). In December of 1929, a third diesel generator, rated at 625 HP, was added and a fourth generator rated at 1,000 HP and providing 1,500 kilowatts, was brought on line on September 1,

electricity was sold to the towns of Shelby and Tennant. New electric powered devices, such as refrigerators, vacuum cleaners and electric washing machines were becoming prevalent and electricity was needed to power them. The Municipal Light Plant in Harlan was the local source.

Post World War II growth brought a boom of new homes and electric devices to fill them. The expansion of commerce required more electricity to fuel the growth. Technology and resources changed. It was apparent that additional low cost electricity would be necessary to support increasing demand. Construction of dams on the Missouri River in South Dakota during the 1950's meant low cost hydropower was becoming available to the Midwest region. Needing a new source of electricity, the City opted into a contract with the Western Area Power Administration (WAPA), federal managers of the power generated by the dams, in 1957 to receive electricity.

The signing of the WAPA contract also meant the end of the light plant as a primary source of electricity for Harlan. While the generators had admirably served Harlan for many years, the town, and area, had simply out grown the ability to use on site generation. External hydroelectric power was less costly to generate and transport. The generators were used as supplemental power during the late 50's and 60's. Through the 70's, the use of the generators declined due to increasing operation and maintenance costs and the availability of lower cost electricity generated elsewhere. In 1980, HMU purchased 0.08 of 1% of the Louisa Generation coal fired plant in Muscatine, Iowa in order to obtain access to more electricity. Having two sources of low cost base load generation, WAPA generated hydro-power and Louisa coal fired generation, meant a decrease in the need for electricity generated locally. These, and other factors, lead to the removal of the generators in the late 1980's. They were sold for salvage.

Concurrent with the addition of external sources of power were the upgrades to the local distribu-

tion system to handle the growing load. When HMU began taking power from WAPA in the late 50's, it was necessary to build a tie to Northern Iowa Power Company (NIPCO), a provider of transmission service. When HMU opted into the Louisa Generation Station in 1980, a 69kV transmission line running from Harlan to Avoca, mainly along Highway 59, was built to tie the J11 switch station, south of the office at 405 Chatburn Ave., into a substation near Avoca. The East Substation on Exchange Street south of Victoria Street, was added in the mid 70's. The North Substation, at 8th Street and Cyclone, was built in 1956 and upgraded from 4.16 kV to 12.47 kV in 2005 as part of the 10th Street overhead to underground rebuild project. The West Substation at Cheyenne Ave. and Chatburn Ave. was built in 1967.

In order to meet increasing summer peak demand, two diesel generators with a rated capacity of 1.6MW each were placed on the 405 Chatburn property. During the 2000's and 2010's, several projects placed overhead lines underground as well as increasing the voltage on some circuits.

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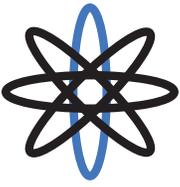


As the demand for electricity grew, new diesel powered generators were added to the plant. An addition was added to the south end of the plant. Compare the length of the plant to the left to the original layout above. The light plant was used for storage after the generators were removed in the late 1980's.

Establishment of the WATER UTILITY



Water tower on north 12th Street.



A municipal 'water works' was formally established by the same election in 1891 that approved a light plant. Yet, the early history of water service is not as documented as electric service.

The first city well was dug in the spring of 1880, less than a year after the City was incorporated. It is believed the well was in the area of what was then the city hall and fire station at 8th and Durant. In 2016, the Harlan Library occupies this property. The primary purpose of the well was to provide water for fire protection in the downtown area. Maps from the late 1890's show four 250 barrel cisterns on the inside property of the downtown square, the same property occupied by the courthouse, with a total storage capacity of about 4,000 gallons. There were two additional cisterns located under the intersections of 6th and Market and 7th and Court.

A special election was held on January 20, 1891. In what was described as a large turnout, the measure to establish a municipal water works passed 283 to 52. The maps from the 1890's show a city pumping station on the west bank of the Nishnabotna River south of where Highway 44 crosses the river at the east edge of Harlan. The maps also show an 8 inch water main ran along Chatburn Ave then turned north on 6th and 7th streets to feed the town.

In 1929, a new water filtering plant was constructed slightly west of the river, east of the newly constructed light plant and on the south side of the highway. The new water treatment plant

tapped into the 8 inch water main running along Chatburn Avenue discussed above as a source of raw water. There is no reference to water treatment between 1891 and 1929. Six wells on the west side of the Nishnabotna were in service at this time but it is not known if those wells were sunk before the treatment plant was built or as part of the construction of the new treatment plant. There were also wells on the east side of the river that fed the plant.

The original stand pipe was constructed in 1891 on property in the 1400 block of Durant Street. In the early 1920's a new 100,000 gallon water tower was built, at the time in the middle of a field, on the current property of 1417 Victoria. This tower stayed in service until 1991 when it was razed and the property sold for residential use. A 500,000 gallon water tower on north 12th Street was completed in 1961. A 100,000 gallon clear well was built as part of the plant built in 1929. A 300,000 gallon

clear well south of the water treatment plant was added in 1939.

By 1965, it was estimated that water use in Harlan would double from one million to two million gallons per day by 1980. The treatment plant, in use since 1929, was nearing capacity. Ten wells (seven on the east side and three on the west side of the river) near the treatment plant were in service and running at capacity. Total treated water storage, including the 500,000 gallon 12th Street water tower, the 100,000 gallon water tower on Victoria Street, a 300,000 gallon clear well built in the 1930s south of the treatment plant and the original 100,000 gallon clear well attached to the treatment plant, was one million gallons. The first step in planning for projected demand was to increase well capacity.

In February, 1965, test wells



were dug on the east side of the Nishnabotna River as well as south of the Harlan Dump on Industrial Ave. Throughout 1965, HMU purchased the south property, new wells were dug, and infrastructure was connected to the water plant. This area became known as the south well field.

In the 1970's, it was time to review the condition and capability of the treatment plant. The original water plant constructed in 1929 was nearing 50 years old and was starting to exceed its useful life and capacity. Now that the water capacity issue had been addressed by the new well field, it was time to turn attention toward water treatment. A new water plant was constructed in 1978 adjacent to the east side of the original treatment plant. This plant used lime softening via a spiractor to soften and treat water. It was capable of treating one million gallons a day. A second spiractor was added in 1989 doubling capacity and meeting the 1965 target of two million gallons per day.

Geographically and historically, the water treatment plants and infrastructure were next to the Nishnabotna River and, therefore, in a flood plain. A flood in 1993 shut down the water plant for three days. It was apparent additional storage for treated water, especially for emergency use, was necessary. A 750,000 gallon clear well was built in 1995 on the 405 Chatburn property south of the administrative building as a way to supplement storage of the 12th Street water tower. At the same time, a dike system was built at the north, east and south sides of the HMU property to mitigate the impact of future floods on the HMU campus.

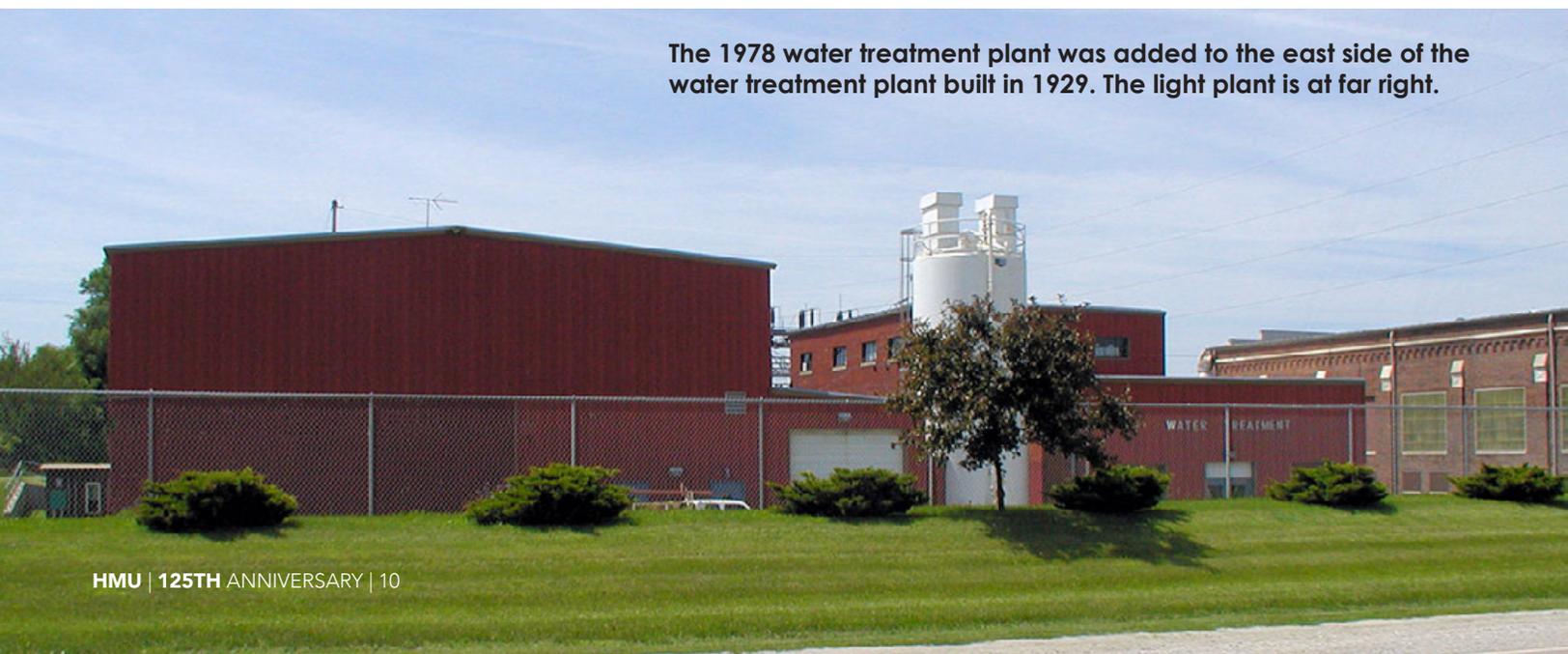
Acquisition and treatment were now on track to

meet demand use. The next issue was to address water pressure differences across the city. Over the years, Harlan had grown from east to west starting near the river and up an incline. The water treatment plants and towers had been in the lower elevation central and northern part of town. Commercial and residential development in the southwest part of the city, especially once the new highway 59 was built in the late 60's at the western edge of the city, was higher in elevation meaning water pressure in the area was less than in the older parts of the city.

Arrangements were made with the Harlan Community School district and in 1999, construction began on a new 500,000 gallon water tower at the corner of Hwy 59 and Cyclone. This tower came on line in late July of 2000 and brought much needed water pressure to the western part of the city. Total storage capacity of the two water towers and three clear wells increased to two million gallons.

Acquisition, storage and pressure were now resolved. It was time to revisit the site of the treatment plant. The plant built in 1978 was nearing 30 years old. Operational costs of older technology, age, condition and the ongoing threat of flooding meant HMU needed to consider building a new water treatment plant. The property for both a new water plant and operations center was purchased in 2006. Construction of the new water plant at 2400 Southwest Ave. began in the spring of 2012 with the plant coming on line in August of 2013. The plant employed reverse osmosis technology with the capability to produce 1,320 gallons per minute.

The 1978 water treatment plant was added to the east side of the water treatment plant built in 1929. The light plant is at far right.



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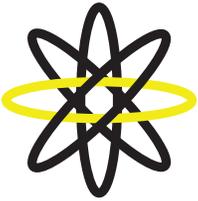


The original water treatment plant was built and placed in service in 1929. The light plant, also built in 1929, is in the background. Compare the picture of the original treatment plant to the picture at left to see expansion over time.



Establishment of the NATURAL GAS UTILITY





A series of fortuitous events helped in the establishment of the Gas Utility and one initiative almost prevented it.

1) Expansion of the Northern Natural Gas (NNG) service territories and pipelines in Iowa. 2) Post war improvements in metallurgy, equipment and construction techniques lowered intrastate pipeline installation costs. 3) The ability to convert the municipal Electric light plant diesel generators to natural gas.

Natural gas had been used as a source of fuel for municipal lighting since about 1785 when communities in Britain began using natural gas produced from coal in street lamps. The main constraint against widespread use of natural gas was the lack of transport and delivery pipelines capable of delivering the gas from the wellfields to the premise.

Northern Natural Gas Company (NNG) was founded in 1930 as a holding company for 10 subsidiaries whose individual scope ranged from gas acquisition to transport to delivery. Throughout the 1930's and 40's, NNG expanded its Midwest operations by adding additional pipelines, storage and capacity.

By the early 50's, NNG was well poised to add more towns to its portfolio of customers. The use of natural gas for cooking, heating and industrial processing was becoming wide spread. Harlan was eager to tap into this new, low cost energy source not only for residential and commercial applications but for a low cost alternate fuel for the diesel engines powering the electric plant.

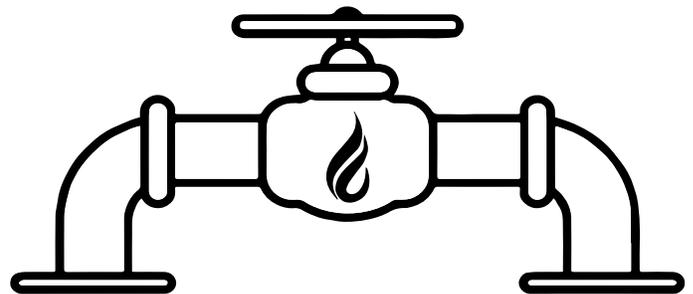
Establishing a Gas utility to compliment the Electric and Water utilities was not without controversy or delay. The election to establish a Gas utility was held on December 16, 1952, and passed 621 for and 178 against. At the time, natural gas providers had to apply to the Federal Power Commission in Washington, D.C. for a gas allocation. In early 1954, City Attorney Lee White was tasked by the City Council to represent Harlan in Washington D.C. and request an application. The application was granted by early April of 1954. Plans for Harlan to offer bids for the construction of the distribution system continued. Submission of

final bids was scheduled for the May 17, 1954 City Council meeting.

For several years before the 1952 election that established the Gas utility, private companies, like Iowa Power and Light Company (IPALCO), had approached the City about obtaining a franchise to serve Harlan. They were rebuffed each time. In late November or early December of 1953, IPALCO approached the Harlan City Council and requested a new election be held and voters allowed to determine if Harlan would proceed with building its own gas system or grant a franchise to an outside party. This request for a special election was denied. Petitions were circulated within Harlan seeking enough signatures to force another special election.

On April 26, 1954, IPALCO submitted a Petition for Special Election to Harlan Mayor, J.H. Frederickson, calling for a new vote on gas service to Harlan. The ballot question would be whether or not residents would, essentially, reconsider and repudiate the election of 1952 and the establishment of a municipal utility or grant IPALCO a 25 year franchise to provide natural gas to Harlan. The special election was scheduled for May 27, 1954.

April 26th was also the same day that customers could start signing up for gas service.



C.F. Sorenson is listed as the first applicant for service. All applications accepted could be subject to change due to the special election scheduled for May 27th.

In late April and early May of 1954, residents, who had overwhelmingly approved establishing a municipal natural gas utility in 1952, were, again, debating the pros and cons of a municipal gas utility versus a private provider. At the same time, residents were signing up for gas service. Presumably, natural gas would be provided by the City owned and operated system. The

HMU employees installing gas main along the east side of Hwy. 59 in 2008.



In 1961, a building designed to serve as the office for the Gas Department, house trucks, and for storage was built on Chatburn Ave. west of the light plant.



The town border station east of the Nishnabotna River on Highway 44 was constructed in 1954 as a way to tie into the main Northern Natural Gas pipeline near Marne, Iowa.



City Council, acting under a mandate of the 1952 election, was preparing to let bids for the construction of the system two weeks before the special election would be held. The possibility existed that customers were signing up for a municipal gas system that could be voided by a new vote. The City Council could approve a construction bid on May 17th for a gas system that, after May 27th, the City no longer controlled. IPALCO could be granted a franchise to build and manage a gas system for the next 25 years. All of these scenarios were a possible result of the May 27th special election. Several editorials and ads advocating both Yes and No votes appear in the Harlan newspapers through May 14th.

On May 17th, IPALCO called off the special election citing "It now develops that our Mayor and City Council and a considerable number of citizens would prefer to have their gas service handled by the municipality. This is your privilege and the Iowa Power and Light Company has no desire to oppose the people of Harlan if that is their desire." Also on May 17th, the City Council awarded the bid for construction of the gas distribution system to Midstates Construction of Mount Vernon, Illinois.

On May 18, 1954 the path was finally clear. Harlan would move forward with a Municipal Gas utility. Public enrollment for gas service continued through the rest of the spring and summer of 1954 with a total of 732 names listed by September 15th. Service lines were installed to applicants throughout the spring and summer of 1954 and ended around October 1st.

While sign ups continued, the next steps for the City Council were to hire a qualified supervisor to oversee the construction and launch of the new system, pass ordinances related to gas service, establish rates and appoint a three man commission to oversee the utility. In June of 1954, Everett "Bud" Denny of Neligh, Nebraska, was hired as City Gas Engineer and in July began overseeing service installations. Service rules and rates were enacted by the City Council in September. In November, the Council approved the new gas commission. H. W. 'Bill' Heilman, manager of Harlan Rendering Company, was appointed to a six year term and, later, Chairman of the commission.

Eugene Sornson, partner in the Harlan Clothing Company, was appointed to a four year term

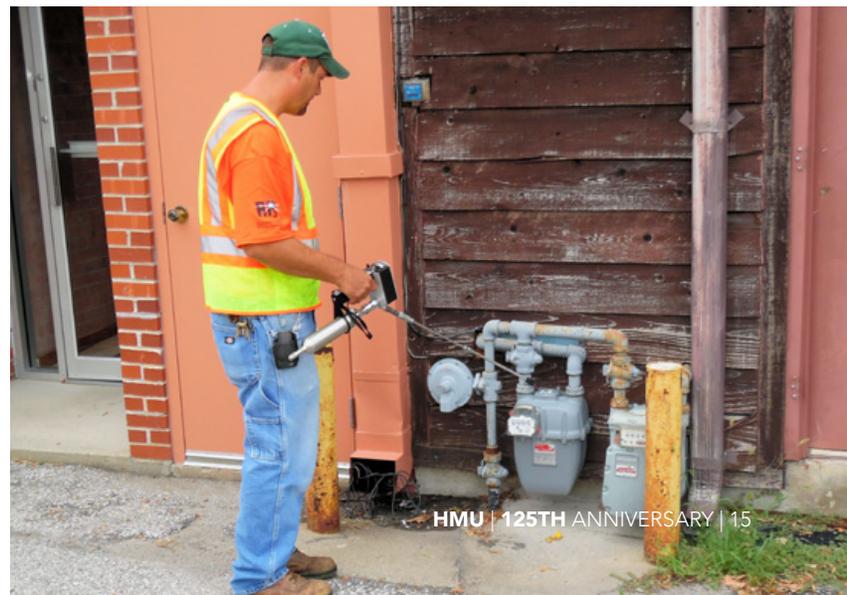
and Barrie Christianson, a partner in Chambers & Christianson Hardware, to a two year term.

Northern Natural Gas was responsible for construction of the 19.6 mile pipeline from the main gas pipeline near Marne to HMU's town border station east of Harlan. This pipeline was installed between late September and mid-October 1954. Concurrent with the installations of service lines and construction of the pipeline were the efforts of local hardware stores and plumbers to convert furnaces and appliances from fuel oil to natural gas or sell new gas appliances. Harold Benoit, 1002 Hill Street, and George Weber, 511 Durant Street, along with 24 other unnamed customers, are listed as being the first gas customers in service on Wednesday, October 27, 1954.

There is some evidence that at least one of the diesel engines used to generate electricity was converted to natural gas as an alternate fuel but there is no report of all of the engines being converted nor how successful the conversion actually was. The signing of the contract with Western Area Power Administration, providers of hydroelectric power from the Federal dams in South Dakota, in 1957 made total conversion unnecessary as the diesel engines would no longer be the primary source of electricity in Harlan.

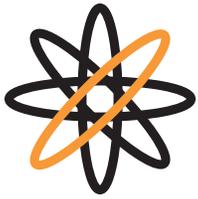
In 1961, a building designed to serve as the office for the Gas Department, house trucks, and for storage was built on Chatburn Ave. west of the light plant. In 2012 the gas department office, along with the electric, telecommunications, and meter operations, moved to a new building at 2412 Southwest Ave.

Troy Doonan performing gas safety check.



Establishment of the TELECOM UTILITY





In the 1880's, a new magical technology was sweeping the nation. While complete understanding, control and application of the magic was still years away, there was an inherent intuition as to what it might be able to accomplish. With that intuition and hopefulness of commerce enhancing applications and inventions that would ease daily lives, Harlanites voted in 1891 to establish an electric light plant and provide the wonder of electricity to Harlan.

Similar discussion surrounded telecom services in the 1980's and early 1990's. Delivery of cable TV via coax was well established in the 1970's. Yet, cable TV service was typically delivered to small towns by ever expanding large regional and national providers. The consolidation of the cable TV industry meant the end user was becoming further and further removed from the provider by miles, regions or even across country. Fewer and fewer dollars were trickling down to upgrade

and maintain aging systems in these small towns leading to a degradation of service and lengthy outages. Emerging ancillary services were not keeping up with consumer demand. Service techs

were expected to service more customers in a wider geographic area. Customers in Harlan were dissatisfied with their quality of Cable TV service and costs. The question "Could we do it better ourselves?" was raised.

There was also a new term floating around: "The Information Superhighway". The world was beginning to envision a global network whereby everyone would be linked together as a way to interact and exchange information. The world was becoming 'digital'. Not all the pieces were in place but, like the concept of electricity 100 years before, people were starting to envision the business and economic potential to a digital network: Remote work sites, work from home applications, digital medicine, efficiency and immediacy of transporting governmental records, remote learning opportunities and more were already in the infancy stages of becoming reality through a digital world.

Part of the new digital world was the ability to interact with electric, gas and water infrastructure

in real time. Technologies such as automated meter reading, remote disconnect and activations of service and supervisory control and data acquisition (SCADA) would enhance and improve utility operations.

The question was not whether the Information Highway would be built with or without municipal involvement. It would be built. The question was if Harlan would take the bold steps and follow the same path it took in 1891. Would the residents establish a telecommunication utility managed by Harlan Municipal Utilities to ensure Harlan would not get left on a side road of the Information Highway and to provide a modern standard of cable television or would it sit by and wait for someone to do it for them?

Discussion by the HMU Board of Trustees regarding a municipal telecom system began in earnest in late 1990 and early 1991. Several regulatory and feasibility hurdles stood in the way. Congress was considering new cable TV regulations. Later they would pass the Cable Act of 1992 which helped open the door for municipal ownership of a cable TV system. The Code of Iowa would need to be modified to allow municipal utilities to provide cable TV service. The HMU Board of Trustees needed to know how the public felt about HMU entering the cable business and would enough customers sign up for the service. How would construction be financed?

After four years of discussion, studies and surveys, a special election was held on May 16, 1995 with the question "Shall the City of Harlan, Iowa, establish a municipal broadband cable communication as a City Utility?" as well as whether or not the management and control of the utility be placed under the HMU Board of Trustees. The first measure passed with a 72% "Yes" vote and the second passed with 68% approval. The stage was set for HMU to offer broadband cable TV and Internet service.

Design and construction of the system continued through the remainder of 1995 and into 1996. The initial system was a Hybrid Fiber Coax configuration where content was sent from the headend via fiber to various nodes in the delivery area where it was then transported to the customer via a coaxial cable. Concurrent with the installation of the HFC system was the installation of a fiber ring, a Metropolitan Area Network (MAN), throughout the town. Various government,

educational and medical buildings were connected to the MAN including the Shelby County Courthouse, the Shelby County engineer's office, the Harlan Community School District buildings, Myrtue Medical Center, and City Hall. The MAN allowed these entities to communicate between themselves at high speeds as well as access the Internet.

Customer signups continued through 1996. Cable TV and Internet service were rolled out in early fall of 1996.

Once cable TV and Internet services were launched, it was time to look at additional services. Discussions regarding telephone service were held during 1999 and in early 2000, the decision was made to add telephone as a third telecom service. Telephone service began in the summer of 2001.

The decade of 2000-2010 saw a rapid expansion of technology. The number of Internet customers grew steadily as well as the capacity required to support new services such as online video and audio streaming, interactive gaming and rich content websites. Additional cable TV channels were added and the middle of the decade saw the emergence of High Definition television.

During 2007, negotiations were held with Walnut Communications of Walnut, Iowa, to provide shared services. HMU would provide cable TV services to Walnut and its customers. Walnut would provide wholesale Internet and telephone switching to HMU. A fiber tie was constructed between Harlan and Walnut. On August 1, 2007, HMU began providing video services to Walnut Communications and they began providing wholesale Internet and telephone switching services to HMU.

By the end of the decade, the original HFC system had been in place over 20 years. Operation and maintenance costs were climbing and the capacity of the original system was not going to be able to keep up with future Internet demands. It was apparent that fiber to the premise technology would be required to meet future broadband requirements.

In 2006, HMU purchased property on Southwest Ave. with the intention of building a new operations center, administrative office and water plant. An electric overhead to underground conversion project was scheduled for the northwest portion of town during 2011. It was decided to proceed with the first phase

of the fiber to the premise installations at the same time of the electric conversion project and to have all of the fiber terminate at the new operations center. The first fiber to the premise customers were placed in service in the summer of 2012 at about the same time the offices were moved from the 405 Chatburn address to the new building at 2412 Southwest Ave.

In 2012, HMU reviewed the condition and capability of the video headend. A new all-digital headend with expanded High Definition capability was installed during 2014. Enhanced and expanded video services were launched in June of 2015. The 2016/2017 fiber to the home project expanded the fiber footprint to include all areas south of Chatburn Ave. and an area between Cyclone Ave. and Chatburn Ave. to the north and south and areas west to College Place and west Baldwin Street.

Local broadcast TV station signals from Omaha and Des Moines are captured via a 300 foot tower on the 405 Chatburn property.



HMU installed a new digital capable headend in 2014 at the 2412 Southwest Ave. location replacing the original analog headend at 405 Chatburn.



Dishes to capture satellite delivered cable TV signals were erected south of the 405 Chatburn building in 1995. New dishes were erected at the 2412 Southwest Ave building in 2014.

Beginning in 2012, HMU installed direct fiber to each property to enhance energy services and data capability.



GOVERNANCE



City Hall circa 1922

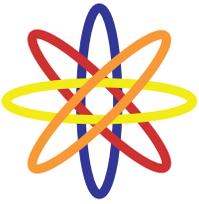
Beginning in 1891, the utility offices, with associated billing and administrative functions, were housed within City Hall. Following an audit recommendation that utility functions be separated from City functions, on September 1,

1965, the Utility offices moved from City Hall, then at 8th Street and Court Street, to an office at 1018 and 1020 6th Street. The south part of the 6th St. building served as the main office and the north side was used for storage and product display.



In 1981, a new office building was erected at 405 Chatburn Ave. This building was designed to replace the Utility office downtown and act as the new administrative facility. Moving the office put the administrative functions closer to the light

and water plant as well as the gas office. The new office was connected via a hallway to the Gas utility office built in 1961. The building was reconfigured in 1995 to house the new cable television headend and Internet services.



From the time they were established in 1891 until 1920, the electric and water plants were overseen by the Harlan City Council. In September of 1920, the Harlan City Council passed a resolution stating a special election would be held on

October 11, 1920 with voters deciding whether or not the plants would be governed by a three

member Board of Trustees. The proposition of a Board to oversee the light plant passed 226 to 146 and Board control of the water plant passed 223 to 151. While administered as separate units, the same three men sat on both the Electric and Water Board. A three member Board to oversee the Gas utility was established in 1954. The three separate Boards were combined into one Board of Trustees, thereby creating the united Harlan Municipal Utilities, in 1961.

BOARD OF TRUSTEES FOR ELECTRIC LIGHT PLANT AND WATER

YEAR

Nov 1920	H.P. Dowling	A.C. Clapp	Morris Frederickson
July 1937		J.J. Norgaard	
Nov 1941		Vern Parker	
Jan 1951	Elmer Potter		
Jan 1959			Harold Boysen
Board ended November 1961			

GAS UTILITY BOARD MEMBERS

YEAR

Established Dec 1954	Bill Heilman	Eugene Sornson	Barrie Christianson
Jan 1959	Alvin Krogstad		
Board Ended November 1961			



By the early 2010's, more room was needed for operations and administration. The entire HMU property saw damage from the flood of 1993. There was always a threat that critical telecom and administrative functions would be jeopardized by keeping those functions at the building and in the flood plain. As part of an overhead to underground rebuild project,

HMU also embarked on deploying fiber to the home and needed a new facility that could act as a central fiber connection. In 2012, the HMU administrative, electric, gas and telecom offices, along with associated department operations and stores room, moved from various buildings on east Chatburn Ave. to 2412 Southwest Ave.

BOARD MEMBERS OF THE HARLAN MUNICIPAL UTILITIES

THREE MEMBER BOARD 1961-1978

FIVE MEMBER BOARD BEGINNING IN 1978

YEAR

Nov 1961		Robert Booth	Elmer Potter	Eugene Sornson	
Jan 1964			Spence Vanderlinden		
Dec 1965				Dean Frederickson	
Nov 1967		Phil Phelps			
Feb 1977		Jim Noble			
Nov 1978	Richard Burmeister	Jim Noble	Spence Vanderlinden	Dean Frederickson	Allen Burchett
Nov 1980	Martin Zaccone	Sheldon Howerter			
Oct 1982			JC Salvo		
Nov 1985		Donald Blakely			
Dec 1987		Terry Bails			
Nov 1989				Ron Holm	
May 1990			Kathleen Kohorst		
Nov 1992	Tom Ludwig				
Aug 1993				Craig Kroger	
Nov 1994					Charles Hoffnagle
Nov 1997		Pete Horne			
Nov 1998	Pat Pattison				
Nov 1999					Bert Hillers
Nov 2000					Allen Burchett
Aug 2004		Bill Campbell			
Nov 2004	Randall J. Doran				
Dec 2005			Amy Keast		
Mar 2006		Mike Hansen			
Nov 2007				Mike Jones	
Dec 2008		Todd Argotsinger			
Nov 2010	Mary Johnson				
Nov 2011			David Tyrrel		
Aug 2012					Nella Seivert
Jan 2013		Terry Arentson			
Nov 2016	Connie Wees				

GENERAL MANAGER/CEO

YEAR

Sept 1, 1965 - Jul 1973	Donald Bragg - General Manger
Aug 1973 - Dec 1973	Elmer Potter - Interim GM
Dec 1973 - Jan 1991	F. James Kalal
Jan 1991 - May 1996	Jack VanDenBerg
May 1996 - Jul 2001	Gerald Quick - CEO
Jul 2001 - Jun 2012	Tom Gaffigan
Jul 2012 - Feb 2014	Darrel Wenzel
Oct 2014 -	Ken Weber



TERRY ARENTSON
Board Chair



MIKE JONES
Vice-Chair



DAVID TYRREL



NELLA SEIVERT



MARY JOHNSON



KEN WEBER
CEO



Aerial shot of HMU campus circa 1977.



North side of square, downtown Harlan, 1911.





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69 KV Riser Pole on West Chatburn Avenue.