

**GLENWOOD MUNICIPAL UTILITIES
GLENWOOD, IOWA**



PART 1

**RESOLUTIONS, ADOPTIONS, APPROVALS
AND HISTORY OF
WATER AND SEWER SERVICES**

PART 2

**POLICIES, PROCEDURES & REQUIREMENTS
FOR
WATER AND SEWER SERVICES**

PART 3

**STANDARD SPECIFICATIONS
FOR
WATER AND SEWER CONSTRUCTION**

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STANDARD CONSTRUCTION DETAILS

April, 2017 Edition

POLICIES, PROCEDURES & REQUIREMENTS
FOR
WATER AND SEWER SERVICE
AND
STANDARD SPECIFICATIONS & DETAILS
FOR
WATER AND SEWER CONSTRUCTION

GLENWOOD MUNICIPAL UTILITIES
7 NORTH VINE STREET
GLENWOOD, IOWA 51534



DEPARTMENT OFFICIALS

APRIL, 2017

CHAIRMAN:	DOUG MEGGISON
MEMBERS:	DICK DAVIS LONNIE MAYBERRY VONNIE ESTERLING MARCIA CAIN
SUPERINTENDENT:	DAVE MALCOM
SECRETARY:	WENDY ENSLEY
ENGINEER:	JAMES J. OLMSTED, P.E.



Prepared By:
OLMSTED & PERRY CONSULTING ENGINEERS INC.
10730 Pacific Street, Suite 232
Omaha, Nebraska 68114-4700

I hereby certify that this plan, specification or report was prepared by
me or under my direct personal supervision and that I am a duly
Registered Professional Engineer under the laws of the State of Iowa and
that I am competent to prepare this document.

Date: 4/17/17
James J. Olmsted
Reg. No. 8642

009601 17A.62L PW12.42

GLENWOOD MUNICIPAL UTILITIES

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PART 1

RESOLUTIONS, ADOPTIONS, APPROVALS AND HISTORY OF WATER AND SEWER SERVICES

PART 1

RESOLUTIONS, ADOPTIONS, APPROVALS, AND HISTORY OF WATER AND SEWER SERVICES

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RESOLUTION # 600-17

RESOLUTION ADOPTING POLICIES, CONSTRUCTION SPECIFICATIONS
AND STANDARD CONSTRUCTION DETAILS.

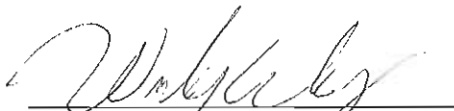
BE IT RESOLVED BY THE GLENWOOD MUNICIPAL UTILITIES BOARD OF
TRUSTEES OF GLENWOOD, IOWA HEREBY ADOPTS

1. The Glenwood Municipal Utilities Board of Trustees adopts the March 2017 Edition of the Policies of Glenwood Municipal Utilities, General Conditions, General requirements, Materials Specifications, and Construction Standards for Water and Sewer Constructions.
2. These policies, specifications and details apply to all new and existing public and private water and sewer construction within the Glenwood Municipal Utilities water and sewer services area.

DULY PASSED AND APPROVED THIS 15th DAY OF MARCH, 2017

ATTEST:

GLENWOOD MUNICIPAL UTILITIES
BOARD OF TRUSTEES OF
GLENWOOD, IOWA



Wendy Ensley
Executive Secretary



Doug Meggison
Utilities Board Chairperson



September 07, 2017

GLENWOOD MUNICIPAL UTILITIES
ATTN DOUG MEGGISON
7 N VINE ST
GLENWOOD IA 51534

Subject: Standard Specifications and Construction Details for Water and Sewer Construction
PWSID No.: IA6525090
Project No.: W2017-0411

Dear Honorable Mayor and Council:

We have completed our review of the standard specifications submitted for your water system ("**Standard Specifications and Construction Details for Water and Sewer Construction**", sections **02250-Trench Excavation and Backfill, 02600-Water Mains and Appurtenances, 02650-Boring and Jacking, and 02655-Horizontal Directional Drilling**) and determined these standard specifications for water mains are in accordance with our current rules. Therefore, these specifications are approved for use for future projects relating to water main construction submitted for Glenwood.

When making submittals for water main projects, the engineer must state on the plans and appropriate DNR schedule that the construction shall be in accordance with the approved standard specifications currently on file with this Department. Also, if there are any deviations in the specifications as they apply to a particular project, such deviations can be covered through additional provisions and must be submitted with the project.

Our review of these standard specifications has considered only material standards and installation methods as outlined by the requirements of this Department. Any major changes in current policies may require the updating of these standard specifications.

If you have any questions, please contact Lanie Boas via e-mail at Lanie.Boas@dnr.iowa.gov or by telephone at (515) 725-8445.

Sincerely,

Gabe Lee, PE
Water Supply Engineering



cc: **Olmsted & Perry Consulting Engineers Inc.; Attn: James Olmsted;**
10730 Pacific Street, Suite 232; Omaha, NE 68114-4700

- Field Office No. 4 - Atlantic
- Files: PWSID No. IA6525090

STATE OF IOWA
DEPARTMENT OF NATURAL RESOURCES
HENRY A. WALLACE BUILDING
DES MOINES, IOWA 50319-0034

STANDARD SPECIFICATION APPROVAL

Glenwood Municipal Utilities
Attn: Mr. James J. Olmsted, P.E.
7 North Vine Street
Glenwood, IA 51534

File: Glenwood Standard Specifications
Subject: Sanitary Sewers

We have completed our review of the Policies, Construction Specifications and Standard Construction Details for City of Glenwood, Iowa prepared by Olmstead & Perry Consulting Engineers Inc. and forwarded to this department. These standard specifications for sanitary sewers are in accordance with our current policies. These specifications will be retained on file with this department for reference to future projects submitted by the City of Glenwood.

The City may submit applications for gravity sanitary sewer extensions referencing these approved standard specifications when utilizing the following pipe materials (excluding sanitary sewer service lines):

- Ductile Iron Pipe (DIP)
- Polyvinyl Chloride Pipe (PVC)
- High Density Polyethylene Pipe (HDPE) for directional drilling and force main applications

Specifications for residential grinder pump units were also included in this document, but are not within the allowed scope of standard specifications approvals.

When making submittals for sanitary sewer extensions, the engineer must state on the plans and the appropriate DNR schedule that the construction shall be in accordance with the standard specifications currently on file with the department. Also, if there are any deviations in the specifications as they apply to a particular project; such deviations can be covered as special provisions and must be submitted with the project.

Please note that this approval is for gravity sanitary sewer and force main construction only. For projects including a wastewater pumping station complete project plans and specifications must be submitted for review. Requirements for aerial crossings and inverted siphons were not included in the specifications submitted for review. If the proposed project includes these features, separate specifications must be submitted.

Our review of the standard specifications has considered only material standards and installation methods as outlined by the requirements of this department. Any major changes in current policies may require the updating of these standard specifications.

Please contact Marty Jacobs at (515) 725-8419 with any questions or comments.

FOR THE DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

By 
ENVIRONMENTAL SERVICES DIVISION

Date: April 21, 2017

cc: Field Office #4 (letter only)

GLENWOOD MUNICIPAL UTILITIES

HISTORY OF WATER AND SEWER SYSTEMS

Note: John Dean served on the Board of the former Glenwood Water Department and current Glenwood Municipal Utilities for 60 years. He served as Chairman of the Board of Trustees for much of that time, and retired from the Board in December of 2016. Prior to John's retirement, he prepared a history of the water and sewer departments which is summarized in the following document.

Glenwood Municipal Utilities ♦ Utilities

Office
7 North Vine Street
Glenwood, Iowa 51534
♦
Phone (712) 527-4868
Fax (712) 527-9856

GLENWOOD WATER HISTORY:

The City of Glenwood in Mills County, Iowa did in the year 1888 hold an election to establish a municipal water works in and for the City of Glenwood residents.

The City of Glenwood Water Works originally obtained water from a deep well in 1891 and was drilled to 200 feet in depth at the Keg Creek site, 101 Sharp Street and pumped to a small ground steel riveted water tower, later adding a second small ground tower, then upgrading to a short steel riveted elevated tower at the 906 Third Street site. In 1928 a 150,000 gallon taller steel riveted elevated water tower was built beside the short elevated tank. The short elevated tower was abandoned after 1928 and was moved to the Cogley ice plant west of town at 1406 Sharp Street where it was used for many years storing water for ice, drawn from Tinkle Branch Creek and remained until it was sold for scrap in the mid 1990's. The first mains and hydrants were between the plant site and the tower, located along Sharp Street and north on Vine, Walnut and Hazel Streets. A second deep well was obtained in 1925 and was drilled to 220 feet in depth, both wells were low capacity and proved to be unsatisfactory and abandoned after 1930.

A surface water treatment plant was built in 1930 at 101 Sharp Street where water was drawn from Keg Creek. A small dam was installed in the channel and is still there today. Water was pumped from an intake line and was stored in a sediment basin on the west end of the Glenwood Lake. The basin allowed sediment to settle and then clear water was piped into the lake for storage until needed and then drawn to the treatment plant. This was abandoned in the depression, due to cost of operations and the basin was later used as a swimming pool. All the water in the Glenwood Lake was and still is pumped in. Water was then taken directly from Keg Creek to the treatment plant where it was cleaned, chlorinated and then pumped into town.

In 1953 the Glenwood Utilities (Water) Utilities Board of Trustees was formed to help in bonding for water system improvements. Bonding required that water revenue and city taxes be separated and no longer co-mingled. All operation, management and controls of the City's water system were transferred to the Board of Trustees and they changed the City of Glenwood Water Works to the Glenwood Water Department. Under the Board, all water revenue is for water related use only and the water department receives no tax revenue. The Mayor of Glenwood originally appointed three Board Members for staggered six (6) year terms of service with a salary based on per attended board meeting. On April 1, 2006, the Mayor of Glenwood appointed two (2) additional utilities Board members to the Board of Trustees for a total of five (5) members to govern at a current city set salary of \$40.00 per meeting attended.

When Roth Packing was operating the packing plant, it was strictly kosher cattle kill for the east coast. The 1930 water plant was able to provide for the water needs of Glenwood and the packing plant through the 1960's. Roth Packing was bought by Glenwood Packing, who wanted to double the cattle kill and add a pork kill, which would triple employment. The Glenwood water plant did not have enough water available. The Board sought other sources for expansion. The State School for Mentally Retarded, later Glenwood State Hospital School and then Glenwood Resource Center located at 711 South Vine Street in Glenwood drilled 2 wells on the south side of Keg Creek in 1897 and 1907 with rather poor results and was abandoned in 1910. The State School drilled wells, built and ran their own system at 21482 Kane Avenue (formally

State of Iowa Highway 385), east of Pacific Junction since prior to 1910. At this site in the existing brick barn was a twin cylinder steam driven pump that pushed water to the State School thru an 8" CIP main along the currently abandoned CB&Q railroad ROW. In 1965 a treatment plant was built and for their needs ran about 5 hours daily. The Board made a complete cost analysis of the State plant, if it would operate serving the State and the Glenwood Water Department growth needs. This showed that the State of Iowa could purchase water for about one half of what it was currently costing them to produce water. After meeting with the State of Iowa in Des Moines, the Glenwood Water Department Board purchased the plant and grounds from the State of Iowa to help supply water for Glenwood Packing's expansion in Glenwood. In return for the deed; the Glenwood Water Department sold water to the State School at a discounted rate for a set number of years and sold water to the packing plant at an agreed upon rate for a set number of years, regardless of their operating or not. With this purchase done the packing plant was able to increase production and employment. At this time both the Pacific Junction and the Glenwood water treatment plants were jointly in operation. The Glenwood treatment plant was providing water to Glenwood customers and the existing Glenwood Packing, with the Pacific Junction treatment plant providing water to the State School (Glenwood Resource Center) and to the Glenwood Packing expansion.

The Iowa Highway Department owned approximately 60 acres of farmland next to the Pacific Junction treatment plant, which the Board purchased for future well fields and paid them half the crop for 10 years. So far the Board had a plant and well field at little to no cost to the water department.

When Swift Packing was looking at buying Glenwood Packing and wanted an even greater supply of water, the Board looked into Federal Government grants being given to small towns for water treatment plants. It was agreed upon where Swift would pay a water expansion amount for a set number of years even if they were not operating and the Board would obtain the grant. In 1972 construction began on a new water treatment facility attached to the 1965 plant. The Board needed this commitment from Swift to help pay off bonds for the new plant addition that the grants did not cover. After the 1973 plant was completed, the 1930 plant was retired from service. Upon the disposal of the property, the grant received and the long-term agreement with Swift, the Board was able to borrow a much smaller amount than originally expected.

In 1973 the City of Pacific Junction installed a PVC water system thru FMHA and Glenwood Water provided and sold bulk water to the City of Pacific Junction until Glenwood Water franchised their water system in 1993. A non-voting representative of Pacific Junction is appointed by the mayor of Pacific Junction to attend each board meeting and receives a current salary of \$40.00 per board meeting attended, from the Glenwood Water / Municipal Utilities. Upon Swift Packing closing and Cintas, formally Unitog, closing the Glenwood facility, the Glenwood Water Department could currently over double water production allowing great growth potential. In 2000, a 175 KW standby generator was acquired with a 25% grant assistance, capable of supplying electrical power during outages to the 1965 and 1973 water treatment facilities.

Following treatment, water flows by gravity into an approximate 100,000 gallon clearwell (underground tank), located below the (1973) treatment plant at 21482 Kane Avenue where chloramine disinfection occurs and fluoride is added. From the underground tank called a "clearwell" water flows by three (3) sixty (60) horsepower high service pumps to the 650,000 gallon (1974) above ground storage reservoir located at 400 Ebaugh Street by Highway 34 and delivers water to the Pacific Junction distribution network of underground pipelines also known as the lower pressure zone. Two (2) booster pumps at the reservoir tower site booster station then deliver water to the Glenwood distribution network of underground pipelines also the middle

pressure zone. Additional storage in the Glenwood distribution system is provided by the 150,000 gallon (1928) elevated storage tower at 906 Third Street, the 600,000 gallon (1956) above ground storage standpipe at 1402 Gateway Drive. Also in 1999 improvements were made consisting of installing two (2) 150 horsepower booster pumps at the reservoir tower site booster station that deliver water through the Hickory Ridge subdivision, 220th Street, Goode Road and 221st Street 12" mains to the 750,000 gallon (1999) hydropillar above ground elevated storage tower at 55980 221st Street (formally US Highway 275) also the upper pressure zone. This supplies the above listed area as well as further north to Woodfield and Lake Ohana subdivisions with a reserve supply of water for fire protection and for balancing high daytime water usage with low demands at night back through a pressure reducing valve installed at 1005 Sixth Street which formally housed the 24/7 pressurizing pumps for north booster line prior to the hydropillar tower. This north booster line was originally installed by the residents served forming the North Township Rural Booster Line Association in 1968, a private owned waterline and included the newly formed Glenwood trailer park. The area served started at the Glenwood Cemetery, 221st Street original tap and booster pit location west across private easements to tee at 225th Street with lines to the south and north to follow 221st Street to Goode Road. In 1989 the north booster line was dedicated to GMU. In 1992 the sixth street booster pump station pit was put on line and the original north booster station pit was abandoned. Also a new eight inch water line was installed on Sixth and 225th Street to tie in with the existing north lines. Low pressure problems with the East Florence Street, Louise Avenue area was also solved by pipe valve changes within the system and adding 1 block of main to connect this area to the higher pressure upper zone. The reservoir tower site booster station improvements in 1999 also included a transfer switch which allows for a portable or future permanent standby generator at site and allowed the existing pump direct drive gas motor to be relocated to well house pump number two (2). In 2005, Lake Ohana subdivision developer and Glenwood Municipal Utilities installed 12 inch ductile and 8 inch PVC mains, north from the hydropillar tower on 221st Street, Elrod Avenue, 222nd Street, Devore Road, 230th Street and within the Lake Ohana subdivision and is dedicated to the Utilities Board at no cost with a agreed upon water service connection fee payback to developer for a set period. In 2007, Mills County financed through tax increment financing an installation of a 12" water main for the 190th Street corridor and dedicated to GMU at no cost. The Woodlands Benefited Water District was formed to install a water main in 1989 from the existing City limits west to the booster pit which was dedicated to GMU at no cost. Also installed was a 6" PVC main through Woodlands subdivision and west along Hawley Road. This is a private main and private booster station pit with two pumps to maintain constant pressure without fire protection and also known as the Woodlands pressure zone.

GLENWOOD SEWER HISTORY:

The first sanitary sewer system was started in Glenwood in the 1930's to 40's. A wastewater treatment plant was built at 58800 Railroad Avenue across from the Swift Packing plant in 1964 and was operated and managed by the City of Glenwood. This plant consisted of grit separation, primary clarification, primary and secondary anaerobic digestion, a trickling filter, and final clarification. The main operations / digester building was renovated into a pumping lift station and bar screen facility after the current wastewater treatment facility built in 1983 was completed at 60506 Kesterson Road, South of Glenwood along Keg Creek. Within the lift station building is a 160 KW emergency generator capable of handling electrical outages and the three (3) fifty (50) horsepower variable frequency drive pumps that were installed in the main building and sized to pump a peak flow of 4.33 MGD (million gallons per day) to the 1983 facility. Also housed within, is a mechanically cleaned bar screen which removes large material from the wastewater

entering the pump station.

The wastewater from this station is pumped through 2 ½ miles of 16" force main, along Keg Creek to the 1983 treatment facility. The facility contains an anaerobic digester and rotating biological contact (RBC) media units. The City operated and managed the wastewater treatment facility until 1989 then contracted a private company, People Service, an affiliate of Peoples Natural Gas Company, to operate and manage the wastewater treatment facility and lift station. Later in 1995 the company separated from Peoples Natural Gas and became incorporated, named Peopleservice, Inc.

In November 2002 an election within Glenwood was held to convey the control and management of the Glenwood wastewater system and facilities from the City of Glenwood to the Glenwood Utilities Board of Trustees, governing the Glenwood Water Department. The Glenwood Water Department was renamed Glenwood Municipal Utilities and the Glenwood Municipal Utilities Board of Trustees formally assumed control and management of the wastewater facilities and system, effective January 1, 2003. The wastewater distribution system operations was transferred from the City public works department after a six (6) month co-managed operation between Glenwood Municipal Utilities and the City public works department personnel. The wastewater treatment facility operation was continued by contract with the private company, Peopleservice, Inc., which the Utilities Board revised from an all-inclusive contract to be just operations from July 1, 2003 thru June 30, 2006. In 2006, Woodfield subdivision developer installed gravity subdivision mains and a pressurized six (6) inch sewer PVC main along 221st Street to Glenwood with a lift station including standby generation and dedicated all to the GMU Board at no cost. In 2007, Mills County financed through tax increment financing an installation of a pressurized sewer main and lift station for the 190th Street corridor and dedicated to GMU at no cost.

PRESENT OPERATION and DISTRIBUTION:

In addition to approximately 2100 homes and businesses in Glenwood with a population of 5,358 and approximately 230 homes and businesses in Pacific Junction with a population of 548 and service areas outside the city limits of each city, such as the 190th Street corridor west of PJ, the Woodfield subdivision and the Lake Ohana subdivision north of Glenwood. Water service is also provided to private systems such as the Glenwood Resource Center at 711 South Vine Street, Woodlands Benefited Water District located primarily on Hawley Road west of Glenwood and the Glenwood Mobile Home Park.

Sewer service is provided to approximately the same Glenwood homes and businesses and a few services outside the city limits such as the 190th Street corridor west of PJ, the Woodfield subdivision north of Glenwood. As well as providing treatment services for private systems such as the City of Pacific Junction, Glenwood Resource Center at 711 South Vine Street, Glenwood Mobile Home Park off 225th Street.

Pacific Junction water distribution system consisting of mostly PVC mains ranging from 6" to 2" with 12" ductile iron from the water treatment plant thru the city West to Mid American Motorplex and 190th Street and 12" ductile iron main running North to the Interstate 29 and Highway 34 interchange, then 8" DIP and 6" PVC north to the rest areas along Interstate 29. Also 6" DIP South from PJ, along 195th Street.

The average single family home in Glenwood and Pacific Junction uses approximately 5,000 gallons of water each month.

The water system consists of cast iron, ductile iron, and PVC piping of sizes from 18" to 2".

The sanitary sewer system is mainly gravity with some pressure system and consists of clay tile, orangeburg piping, and PVC piping from 36" to 4". The wastewater flows thru the Glenwood

system grid work to the 1964 old treatment site at 506 Railroad Avenue, converted into a lift station in 1983 to pump waste along the east side of Keg Creek to the 1983 wastewater treatment facility at 60506 Kesterson Road.

Revenue from water and sewer customers pays all costs of the water and wastewater utilities, including the replacement construction needed in the systems to keep pace with our growing communities. No tax funds are used for any part of the Glenwood Municipal Utilities operation. Any development areas are expanded by the developer and lines dedicated to the Utilities Board of Trustees upon completion and GMU assets these lines values to depreciate over their expected life and accumulate a partial replacement allocation.

WATER SUPPLY:

The current Glenwood water supply is pumped from 3 wells 96 feet to 98 feet deep. These wells draw from an alluvial aquifer which is a fluvial-glacial aquifer underlying the Missouri River valley. As it is pumped from the wells, the raw water has three undesirable qualities, which require treatment.

- 1 - **Iron and Manganese**, which leaves rust and black colored stains on clothing, sinks, tubs, etc.
- 2 - **Hardness**, dissolved minerals which decrease the effectiveness of soap and cause "scale" in water heaters, boilers, etc.
- 3 - **Dissolved Gases**, principally carbon dioxide and hydrogen sulfate, which can contribute to taste and odor problems.

WATER TREATMENT:

The Glenwood water treatment facility provides a physical / chemical process designed to improve the water quality and provide a safe, palatable drinking water to the Cities of Glenwood and Pacific Junction and surrounding service areas. Hardness in water is reduced by adding lime (calcium oxide), which combines with the dissolved minerals. This results in the formation of compounds such as calcium carbonate and magnesium hydroxide, which will settle out with the help of a coagulant (aluminum sulfate) during the treatment process. The well water has a hardness of approximately 400 ppm. This is reduced by treatment to less than 190 ppm, a practical limit of a medium-scale lime softening process of this type.

1. **Aeration** – This enclosed water cascade is designed to vent undesirable gases to the atmosphere. Also, oxygen in the air reacts with dissolved iron and manganese to form visible particles, which are removed in later treatment stages. Iron removal begins here with its conversion from the soluble (ferrous) form to the insoluble (ferric) form.
2. **Lime** – Lime is delivered to the plant in a bulk crushed rock form called granular lime. This is mixed with water in a lime slaker to form slurry and is added to the mixing zone of the 1973 up flow clarifier. Storage capacity of granular lime is over 40 tons. Lime is also delivered in bagged powdered hydrated lime form, which is already slaked and added to the 1965 up flow clarifier. The lime combines with hardness minerals to form solid particles that settle out in later treatment stages.
3. **Aluminum Sulfate** – Aluminum Sulfate (alum) is added as a coagulant aid to the mixing zone of the up flow clarifier to aid in flocculation and enhance settling in the later treatment stages.
4. **Mixing Zone** – From the aerator, the water flows into the mixing zone of the up flow clarifier where a motor driven recirculating propeller combines raw water with the lime for softening and alum for coagulation. Detention time in the zone is less than five minutes.

5. **Reaction Flocculation Zone** – During mixing and flocculation, the particles attach to one another to form larger solids that will be settled and removed during a later treatment stage.
6. **Return Zone** – Combined solids and water are recirculated by returning a portion of the mixture to the mixing zone to enhance particle development.
7. **Separation Zone** – The water then flows to a quiet settling zone, where previously formed particles settle to the bottom as lime sludge. Flow through time here is approximately 1 to 3 hours. Part of this sludge is returned to the return zone, the remainder is drawn off or blown down at a preset rate to holding ponds or lagoons.
8. **Filtration** – Following the softening process, the water still has a slightly cloudy appearance caused by fine suspended particles too small to settle out. Filtration through media beds (filter sand) removes these particles and produces clean, clear water. After approximately 50 hours of service, the amount of fine solids trapped in a filter becomes so great that the media must be cleaned. This is done by “backwashing” – a 10-minute process of forcing clear water up through the bed, washing away the particles, and leaving the sand clean and ready to use again. The backwash water flows to holding ponds or lagoons for storage and dewatering.
9. **Sludge Storage / Disposal** – The lime sludge which collects in the bottom of the clarifier is scraped away and drawn off or blown down. Some of this sludge is returned to the mixing zone to enhance particle development; the remainder flows to the lagoons for storage and dewatering. The lime sludge is removed and stored on site for future agricultural land application.
10. **Disinfection** – To ensure bacteriological safety of the water supply throughout the system, a predetermined amount of chlorine is added before filtration and ammonia is added following filtration to form chloramine disinfection.
11. **Fluoridation** – Fluoride has been added at American Dental Association recommended levels since the 1950’s to help build strong teeth and reduce tooth decay.

SEWER TREATMENT:

The Glenwood wastewater treatment facility provides a physical / biological process designed to improve the wastewater quality and provide a final effluent discharge to the river that meets or exceeds State of Iowa NPDES permit requirements and the stabilized wastewater solids which are applied to agricultural land.

1. **Influent Grit Removal and Aeration** – The water enters the main site through a parshall flume where the volume of flow is measured and then passes into the grit removal basins where the sand and other heavy abrasive materials are removed by settling. Aeration provides the rolling motion necessary to maintain the lighter solids in suspension and freshens the wastewater by adding dissolved oxygen. Grit that settles in the grit chamber is pumped as a slurry to the screw-type grit washer where the grit is separated, washed of excess organic materials and discharged to a container for final disposal at the land fill.
2. **Primary Clarification** – Those solid particles that will settle are removed from the wastewater at the two 40 foot diameter primary clarifiers. The combined volume of these clarifiers is 131,596 gallons. Detention (settling) time at the design average flow of 1.43 MGD is 2 hours 14 minutes. The highly organic solids are collected at the bottom of the clarifiers, and solids which float are skimmed off the top by a rotating sweep. All solids are pumped to the anaerobic digesters.
3. **Rotating Biological Contactors** – Biological secondary treatment is provided by eight 100,000 square foot RBC’s. All eight units have been covered with fiberglass housings to

the sampling analysis from 1983 until 2008 followed by out sourcing more lab analysis. The treated water following the final stage of treatment is released into the Missouri river.

METERING / BILLING / COLLECTION:

Water usage of each customer is metered. The water department owns and maintains each meter. Each customer pays an initial fee for each meter, which provides for perpetual maintenance and repair. The meters are routinely tested or changed out to ensure meter accuracy and accountability. The sewer billing is based on water consumption and for residential is determined by the three winter months water usage of December, January, and February to set a sewer average for the remainder of that years billing.

Utilities billing and collection for water and sewer is handled by Glenwood Municipal Utilities personnel, with a utilities office, formally 107 ½ South Locust Street, was relocated at 7 North Vine Street within Glenwood City Hall. In addition the Glenwood Municipal Utilities also bills and collects the sewer for Pacific Junction and has collected recycle fees for the City of Glenwood. Utilities Board meetings are held on the third Wednesday of each month in the council chamber room of Glenwood City Hall at 8:00 AM.

SECURITY:

All access to Glenwood Municipal Utilities public water supplies and facilities is restricted to authorized personnel only. Areas posted notifying trespassers that it is a federal offence to tamper in any way with a water facility. All buildings have security lights and remain locked at all times with entrance drives gated. All water tower site grounds are chain link fenced with all access locked.

All access to Glenwood Municipal Utilities public waste water facilities is restricted to authorized personnel only. Areas are posted notifying trespassers that it is a federal offence to tamper in any way with the facility. All buildings have security lights and remain locked at all times with entrance drives gated. Grounds are chain link fenced with all access locked.

RESOLUTION # 637-19

RESOLUTION SETTING RATES CHARGED FOR WATER AND SEWER USE AMMENDING GMU RESOLUTION # 633-18

BE IT RESOLVED by the Glenwood Municipal Utilities (GMU) Board of Trustees that the rates charged for water use shall be as follows:

1. CUSTOMER CHARGE

- a. Inside City Limits (Glenwood & PJ) \$5.00 per month
- b. Outside City Limits \$10.00 per month

2. COMMODITY CHARGE

Volume	Monthly Cost
0 to 2,000 Gallons/month	\$9.30 minimum
Over 2000 Gallons/month	\$4.45 per 1,000 Gallons
(All above rates	Add Sales Tax)

Said fees shall be billed on the last day of every month with all current GMU penalty and collection procedures in effect. Rate change will be effective for usage starting December 18, 2018.

WHEREAS, the Glenwood Municipal Utilities Board of Trustees hereby states that the following scale shall be used for the purchase of approved metered hydrant water and plant bulk water sales:

0 to 2,000 Gallons \$15.00 minimum bill

This minimum charge will be billed for each tanker unit purchase of 2,000 gallons or less as well as monthly for hydrant meters in use for 2,000 gallons or less.

All over 2,000 Gallons \$5.00 per 1,000 Gallons above minimum.

The above rate with minimum will be billed for each tanker unit purchase above 2,000 gallons as well as hydrant meters in use above 2,000 gallons per month.

(All above rates Add Sales Tax)

Said fee shall be billed the last day of every month with all current GMU penalty and collection procedures in effect. Effective date of rate for any hydrant or bulk water sales will be September 30, 2010. Rates are in addition to fire hydrant meter rental fees and deposit amounts set.

BE IT RESOLVED by the Glenwood Municipal Utilities (GMU) Board of Trustees that the rates charged for sewer use shall be as follows:

3. CUSTOMER CHARGE

- c. Inside City Limits (Glenwood only) \$6.15 per month
(City of PJ rates billed by GMU for PJ)
- d. Outside City Limits \$11.15 per month

4. COMMODITY CHARGE

Volume	Monthly Cost
0 to 2,000 Gallons/month	\$16.12 minimum
Over 2000 Gallons/month	\$7.56 per 1,000 Gallons

5. Special Rate – City of Pacific Junction (One entry point)

- e. Customer Charge: \$30.00 per month

- f. Extra Strength Charge: \$210.00 per month
- g. Commodity Charge: \$6.75 per 1000 gallons
- 6. Special Rate – Glenwood Resource Center (2 entry Points)
 - h. Customer Charge: \$60.00 per month
 - i. Extra Strength Charge: \$280.00 per month
 - j. Commodity Charge: \$7.56 per 1000 gallons

For residential customers, the monthly charge for the 12-month period following April 1 of each year shall be computed from average water consumption during the preceeding months of December, January, and February for that property based on water-meter readings. Until consumptive history is properly established, the precharge shall be based on a annually reviewed end of fiscal year monthly actual average, rounded up to the next 1,000 gallons.

For residential customers - consumptive history is established by one of the following:

- must complete all three months of averaging period – December, January, February.
- if a seasonal disconnect customer which is shut off during winter months – the previous years full usage months are used as consumptive history and will be totaled and divided by number of months to obtain average sewer base.
- in cases of non recurring high usage, (water leakage) during averaging months of December, January, and February where a consistant prior usage had been established and where the new established consumptive sewer history average is 100% or more, higher than the previous consumptive sewer history average - the three (3) months previous to the high usage month will be used for the consumptive sewer history and establishing the sewer average.
- in cases of non recurring high usages during averaging months and new established consumptive history average is less than 100% and customer is requesting an adjustment – Board will review and any adjustments must have Board approval.
- if moving from one GMU customer address to another GMU customer address within a 30 day period – previous consumptive history average will follow to new address until next 3 month period history average established.
- if moving from one GMU customer address to another GMU customer address outside of a 30 day minimum period – the precharge shall be based on a annually reviewed end of fiscal year monthly actual average, rounded up to the next 1,000 gallons until next averaging period.
- if consumptive history during 3 month averaging period is under 500 gallon and when water usage following averaging exceeds 500 gallons per month by 100% for a three (3) month period - the consumptive history can be re-evaluated for a new adjusted average until the next averaging period.
- any exceptions not falling under the above provisions will have Board approval.
- For new home residential construction - the sewer billing rate is set as residential, with a base sewer average per home, based on a annually reviewed end of fiscal year monthly actual average, rounded up to the next 1,000 gallons.

- For permanent multi-family residential units served by a single water meter, such as mobile home parks, shall have the sewer computed from yearly average water consumption for that property based on water-meter readings March to February of following year. To be readjusted following single family residential average period.

Commercial Sewer Use Charges shall include commercial, business, governmental customers, and landlord in service properties between renters, which shall be computed from the actual water consumption for each month based on water-meter readings.

Commercial, businesses may request Board review of actual water consumption relating to sprinkler water and request for consideration of sewer average calculation similar to residential. Board to review on case by case basis. Allowable example case is commercial business that has a sprinkler system, not metered separately and Board approved consistent monthly usages to allow average calculations. To be reviewed annually during average calculation for usage changes, which may cancel this option.

The Glenwood Resource Center charges shall be based on monitoring of total waste discharge flows as determined at GRC monitoring structures located such that the total waste discharge passes through sites A (main facilities flows) and B (residential units flows) as measured by each sites flow meters or other flow-measuring devices, all to be measured, recorded and maintained by GRC. When determined by GMU the Glenwood Resource Center is responsible for sampling done in strict compliance with procedures outlined in Standard Methods for the Examination of Water and Wastewater, to verify compliance with domestic strength wasteload parameters.

The City of Pacific Junction charges shall be based on actual sewage flows as measured by the PJ sewerage-flow meter or other flow-measuring devices, all to be measured, recorded and maintained by GMU. When determined by GMU the City of Pacific Junction flows will be sampled in strict compliance with procedures outlined in Standard methods for the Examination of Water and Wastewater, to verify compliance with domestic strength wasteload parameters. Security for each structure shall be required, however, GMU shall at all times have access to all sampling structures and all records compiled from monitoring at the structures.

The above rate shall be for waste-water-strength characteristics equal to, or less, than normal, domestic-strength waste water (i.e., 200 mg/l CBOD, 240 mg/l TSS, and 100 mg/l grease). For other than domestic strength waste water, a surcharge rate shall be added in addition to customer charge and applied to the monthly use charge.

Flat Residential / Commercial Rate

- For residential customers that have sewer service without GMU metered water service. The set flat rate per month shall be calculated using the Customer Charge of \$6.15 inside City Limits or \$11.15 outside City Limits per unit served. Plus the Commodity Charge usage shall be computed based on a residential annually

reviewed end of fiscal year monthly actual average, rounded up to the next 1,000 gallons times the Commodity rate per 1,000 gallons per month.

- For commercial customers that have sewer service without GMU metered water service. The set flat rate per month shall be calculated using the Customer Charge of inside or outside City limits per unit served. Plus the commercial usage computed by using a similar or like business, reviewed annually or a usage computed, based on a annually reviewed end of fiscal year residential monthly actual average, rounded up to the next 1,000 gallons times the commercial rate per 1,000 gallons per month, whichever is greater.

- Where exceptions allow multiple unmetered services fed into one sewer tap – there will be a customer charge for each unit served and the Commodity usage charge for each unit served, based on above types.

- A \$150.00 residential deposit is required for sewer flat rate accounts.

- A commercial deposit is required for flat rate accounts based on like or similar business with a \$150.00 minimum requirement.

- Payment failure of sewer flat rate accounts may result in disconnection of service and lien filing against property.

A. Surcharge Rate

1. Surcharges for high strength wastes, or for sewer flows greater than agreements allow, may be added to the monthly sewer charges. The determination will be verified by random or scheduled sampling by the GMU if it is suspected that strength or flow violations are occurring.

2. For sewer customers, monitoring of wastes may occur at any time by the GMU. Should waste strengths exceed the baseline, the following surcharges shall occur: (i.e. excluding Pacific Junction and the Glenwood Resource Center except during compliance review)

Flow: Two times the normal rate, in excess of normal.

BOD: \$0.58 per lb. of BOD, in excess of the 200 mg/l normal strength.

T.S.S.: \$0.40 per lb. of total suspended solids, in excess of the 240 mg/l normal strength.

Grease: \$0.30 per lb. of grease, in excess of the 100 mg/l normal strength.

pH: \$200.00 per unit, outside the normal 6.0 to 11.0 range.

3. In the case of Pacific Junction and the Glenwood Resource Center, where the incidence of high strength wastes and high flows occur routinely, surcharges will be made on a fixed amount of \$210.00 per month for Pacific Junction and \$280.00 per month for the Glenwood Resource Center. These surcharge rates were determined by an engineering study of the previous 19 months of waste sampling and testing from each monitoring station. These rates will be reviewed every five years by GMU per section Commercial Sewer Use Charges. However within this period either party may sample, test, and monitor waste strengths and flows to verify compliance and surcharge amounts. GMU Board may adjust fixed amounts if compliance review warrants.

4. Additional limitations and surcharges may be required as determined for industrial contributors.

5. Discharge of toxic, harmful wastes or incompatible substances, as defined in the Regulation of Sewer Use Ordinance, into the system will also be considered a violation and subject to enforcement actions which may include requiring pay for all costs associated with the nuetrialization, cleanup, removal, and/or disposal of said toxic or harmful wastes and any and all fines levied by the Environmental Protection Agency and/or Iowa Department of Natural Resources related to the toxic or harmful waste discharge.

6. All provisions of the Regulation of Sewer Use Ordinance as may be amended and not in conflict with the terms of this Resolution shall be applicable.

B. Bulk Transport Sewage Disposal Service Charge

Domestic Septic Tank Waste Treatment Charge per transport tanker disposal = \$20.00 base rate includes 500 gallons. Additional Charge: \$2.00 per 100 gallons over base. Discharges shall be kept in a log by customer and submitted to GMU monthly detailing date, time, and amount of disposal.

Only discharges with waste-water-strength characteristics equal to, or less, than normal, domestic-strength waste-water will be allowed. No discharge of toxic, harmful wastes or incompatible substances.

Said fees shall be billed on the last day of every month with all current Glenwood Municipal Utilities penalty and collection procedures in effect. Rate change will be effective for usage starting February 16, 2018 unless stated differently per section.
DULY PASSED AND APPROVED THIS 16th DAY OF JANUARY, 2018.

ATTEST:

Doug Meggison
Utilities Board Chairman

Wendy Ensley
Executive Secretary

RESOLUTION # 650-19

**A RESOLUTION DEFINING AND ESTABLISHING FEES, CHARGES AND PROCEDURES
ASSOCIATED WITH THE SANITARY SEWER AND WATER CONNECTION'S AND
ABANDONMENT'S FOR GLENWOOD MUNICIPAL UTILITIES
Amending resolution # 472-12**

WHEREAS, the Glenwood Municipal Utilities is established and operated pursuant to the provisions of chapter 388 of the Iowa Code and is governed by the Board of Trustees of Glenwood Municipal Utilities; and

WHEREAS, the Glenwood Municipal Utilities operates, maintains, and regulates the City of Glenwood's sanitary sewer system and water services within the city limits of Glenwood, Iowa and associated surrounding areas; and

WHEREAS, the Board of Trustees of the Glenwood Municipal Utilities desires to define and establish fees, charges and procedures associated with the sanitary sewer and water connection's and abandonment's and that the terms and conditions of this resolution should supersede and replace any conflicting provisions of previously adopted resolutions.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF GLENWOOD MUNICIPAL UTILITIES AS FOLLOWS:

1. It is hereby established and resolved that the following definitions shall be incorporated and utilized by Glenwood Municipal Utilities as concerns associated sanitary sewer and water connection fees:
 - a. “Whole water connection” shall mean the connection of the water service line from the water main unit thru the metering unit;
 - b. “Partial water connection” shall mean the connection of the water service line from the water main to the curb stop valve at a point equivalent to the dwelling property right-of-way;
 - c. “Remainder water connection” shall mean the remainder of the water service line from the curb stop through the metering unit;
 - d. “Whole sewer connection” shall mean the connection of the sewer service line from the sewer main to the dwelling unit or structure;
 - e. “Stub out” shall mean the connection of the sewer service line from the main sewer line to a point equivalent to the dwelling property right-of-way;
 - f. “Remainder sewer connection” shall mean the connection of the sewer service line from the property right-of-way or equivalent to the dwelling or structure;
 - g. “Capital improvement fee” or “Impact fee” shall mean the fee imposed by Glenwood Municipal Utilities to recapture the cost of existing capacity;
 - h. “Connection fee” shall mean the fee charged for allowing connection of the service line to the main line;
 - i. “Pioneering fee” shall mean the fee charged to recapture private invested capital, normally containing terms and limits;
 - j. “Assessed costs” shall mean costs assessed to individual properties in a predetermined area.
 - k. “Development” shall mean the construction of multiple dwellings or structures on contiguous real property not previously constructed upon and for which a whole water connection and whole sewer connection did not previously exist.
 - l. “Non-Permanent” seasonal or part time intended occupancy
 - m. “Apartment” all units one owner, not individually owned.
 - n. “Condominium” units individually owned.

2. It is hereby established and resolved that prior to connection or tapping of any sanitary sewer or water main or line, applicant must request a quote for services from Glenwood Municipal Utilities. Requests will be reviewed by Glenwood Municipal Utilities and a quote issued. Quotes will be valid for thirty (30) days from date issued.
3. It is hereby established and resolved that the connection fees charged by GMU shall be based upon the classification of property involved and upon the diameter of the service size tap involved.
4. It is hereby established and resolved that a **sanitary sewer capital improvement fee** is imposed for the purpose of offsetting the costs of the impact on existing treatment and pumping infrastructure from the additional demands for connection to the sewer system. Such capital improvement fee, (commonly referred to as impact fee) shall be due and owing prior to installation of a whole sewer connection or to an existing sewer stub out. Exception as set in section 12. Such fees are established as follows:

<u>User Type Classification</u>	<u>Sanitary Sewer Capital Improvement Fee</u>
<u>Single Family Residential Dwelling, Commercial, Multi-Family Residential Dwelling</u> (Example – condominium, apartment, mobile home park) <u>Non-Permanent Multi-Dwelling</u> (Example – motel, hotel or RV court)	
(Based on separate 5/8" to 3/4" water meter size each dwelling)	\$1,500.00
Flow capacity 10 – 15 gpm flow ratio 1	
(Based on 1" water meter size)	\$2,500.00
Flow capacity 25 gpm flow ratio 1.5	
(Based on 1 1/2" water meter size)	\$5,000.00
Flow capacity 50 gpm flow ratio 2.5	
(Based on 2" water meter size)	\$8,000.00
Flow capacity 80 gpm flow ratio 8	
(Based on 2" water turbo meter size)	\$16,000.00
Flow capacity 160 gpm flow ratio 16	
(Based on 3" water compound meter size)	\$16,000.00
Flow capacity 160 gpm flow ratio 16	
(Based on 3" water turbo meter size)	\$35,000.00
Flow capacity 350 gpm flow ratio 35	
(Based on 4" water compound meter size)	\$25,000.00
Flow capacity 250 gpm flow ratio 25	
(Larger or different types - to be determined by GMU)	(to be determined)

5. It is hereby established and resolved that a **sanitary sewer connection fee** is imposed for the purpose of regulation and inspection of each sanitary sewer service connection to an existing or dedicated sanitary sewer main or manhole. Such sewer connection fee shall be due and owing prior to the inspection conducted by or on behalf of Glenwood Municipal Utilities. Exception as set in section 12.

<u>User Type Classification</u>	<u>Sanitary Sewer Connection Fee</u>
<u>Single Family Residential Dwelling:</u>	
(Based on 3/4" to 1" water service size tap)	\$150.00 each
(Based on 1 1/2" water service size tap)	\$250.00 each
(Based on 2" water service size tap)	\$350.00 each
<u>Multi-Family Residential Dwelling:</u>	
(Based on 3/4" to 1" water service size tap)	Same as a single-family dwelling, per unit
<u>Nonpermanent Multi-Dwelling:</u>	
(Based on 3/4" to 1" water service size tap)	Same as a single-family dwelling per unit
<u>Single Commercial</u> user: (3/4" to 1" service line)	
	\$200.00 each
<u>Single Commercial</u> user: (1 1/2" service line)	
	\$300.00 each
<u>Single Commercial</u> user: (2" service line)	
	\$400.00 each
<u>Single Commercial</u> user: (3" service line)	
	\$500.00 each

<u>Single Commercial user: (4" service line)</u>	\$600.00 each
<u>Commercial complexes/multiple business:</u>	Same as single commercial user, but on a per unit basis
<u>All others:</u>	-To be determined by GMU Board of Trustees

6. It is hereby established and resolved that a **water capital improvement fee** is imposed for the purpose of offsetting the costs of the impact on existing treatment and storage infrastructure from the additional demands for connection to the water system. Such capital improvement fee, (commonly referred to as impact fee) shall be due and owing prior to installation of a whole sewer connection or to an existing sewer stub out. Exception as set in section 8 and section 12. Such fees are established as follows:

<u>User Type Classification</u>	<u>Water Capital Improvement Fee</u>
<u>Single Family Residential Dwelling, Commercial, Multi-Family Residential Dwelling</u> (Example – condominium, apartment, mobile home park) <u>Non-Permanent Multi-Dwelling</u> (Example – motel, hotel or RV court)	
(Based on separate 5/8" to 3/4" water meter size each dwelling)	\$1,500.00
Flow capacity 10 – 15 gpm flow ratio 1	
(Based on 1" water meter size)	\$2,500.00
Flow capacity 25 gpm flow ratio 1.5	
(Based on 1 1/2" water meter size)	\$5,000.00
Flow capacity 50 gpm flow ratio 2.5	
(Based on 2" water meter size)	\$8,000.00
Flow capacity 80 gpm flow ratio 8	
(Based on 2" water turbo meter size)	\$16,000.00
Flow capacity 160 gpm flow ratio 16	
(Based on 3" water compound meter size)	\$16,000.00
Flow capacity 160 gpm flow ratio 16	
(Based on 3" water turbo meter size)	\$35,000.00
Flow capacity 350 gpm flow ratio 35	
(Based on 4" water compound meter size)	\$25,000.00
Flow capacity 250 gpm flow ratio 25	
(Larger or different types - to be determined by GMU)	(to be determined)

7. It is hereby established and resolved that a **water line connection fee** is imposed for the purpose of regulation and inspection of each water service connection to an existing or dedicated water main. Such water connection fee shall be due and owing prior to the inspection by or on behalf of Glenwood Municipal Utilities. Exception as set in section 12. Such fees are established as follows:

<u>User Type Classification</u>	<u>Water Connection Fee</u>
<u>Single Family Residential Dwelling:</u>	
(Based on 3/4" to 1" water service size tap)	\$150.00 each
(Based on 1 1/2" water service size tap)	\$250.00 each
(Based on 2" water service size tap)	\$350.00 each
<u>Multi-Family Residential Dwelling:</u>	
(Based on 3/4" to 1" water service size tap)	Same as a single-family dwelling, per unit
<u>Nonpermanent Multi-Dwelling:</u>	Same as a single-family dwelling per unit
<u>Single Commercial user: (3/4" to 1" service line)</u>	\$200.00 each
<u>Single Commercial user: (1 1/2" service line)</u>	\$300.00 each
<u>Single Commercial user: (2" service line)</u>	\$400.00 each
<u>Single Commercial user: (3" service line)</u>	\$500.00 each
<u>Single Commercial user: (4" service line)</u>	\$600.00 each
<u>Commercial complexes/multiple business:</u>	Same as single commercial user, but on a per unit basis
<u>All others:</u>	To be determined by GMU Board of Trustees

8. It is hereby established and resolved that the **water line connection fees** as set for Hickory Ridge Subdivision for water shall continue until current development is completed. Such water line connection fees as set forth in the agreement between Craig Nakamoto and GMU will continue as long as the agreement is in effect.
9. It is hereby established and resolved that a **pioneering fee** may be imposed for the purpose of recapturing private capital investment to designated areas, when applicable. Such pioneering fee shall be due and owing prior to tap connection to the water main or sewer main as applicable. Exception as set in section 11.
10. It is hereby established and resolved that water and/or sewer extension costs and internal distribution systems may be **assessed** to benefited properties or developments per Glenwood Municipal Utilities policy entitled "Main Extension Procedures within a developed area" adopted April 20, 1994 and as revised August 16, 2006.
11. It is hereby established and resolved that **expenses and costs** incurred by Glenwood Municipal Utilities and the inspection, installation, or maintenance of any tap shall be due and owing to Glenwood Municipal Utilities prior to the installation, maintenance repair, or connection.
12. It is hereby established and resolved that the sanitary sewer capital improvement fee (as set forth in paragraph 4), the sanitary sewer connection fee (as set forth in paragraph 5), the water capital improvement fee (as set forth in paragraph 6), the water line connection fee (as set forth in paragraph 7), and the pioneering fee (as set forth in paragraph 8) (only if terms and limits of applicable pioneering agreement allow development exception) shall be due and owing for a **developer/lot owner** at the time of application of building permit. All other fees and costs for any development shall be due and owing as provided in this resolution.
13. It is hereby established and resolved that Glenwood Municipal Utilities' **abandonment procedures** is hereby imposed and shall include the following:
 - a. Any owner or developer replacing a water or sewer main or service line shall be required to properly abandon the existing main or service line, as applicable, at the tapping or tee connection with the Glenwood Municipal Utilities' main or manhole;
 - b. Any owner abandoning an existing private water or sewer main or service line shall abandon the existing main or service line at the tapping or tee connection with the Glenwood Municipal Utilities' main or manhole;
 - c. All abandonment of sewer service lines shall require a water tight seal disconnection at the gravity sewer main or manhole, or shall require a watertight shut off at the corporation valve in the pressurized main, shall require disconnection of the service line, and shall require the installation of a water tight connection seal capped at the corporation. Alternately, and upon approval of the Glenwood Municipal Utilities, a complete tap material removal with an approved water tight clamp covering the tap opening and main or replacement main piping installed;
 - d. Liability and responsibility of any abandonment remains with the property owner, and any such abandonment shall be inspected and approved by Glenwood Municipal Utilities;
 - e. Where a structure is removed from the property, the water and sewer services shall be properly abandoned, unless there is a valid request and approval for disconnection for reuse;
 - f. Any water or sewer service lines requested for disconnection for reuse and granted approval for disconnection for reuse and approved for future reuse by Glenwood Municipal Utilities shall be considered temporary unused services and shall remain the responsibility of the property owner, including all maintenance, repair, and any resulting damages which may be caused thereby. To remain approved for future reuse by Glenwood Municipal Utilities, the unused water or sewer service line shall be in good condition and meet any current specifications

imposed by Glenwood Municipal Utilities and other applicable law, and all valves must be operational and in an off position with the exception of the main tap corporation. Open ends shall be properly capped with water tight seal and the end of line shall be staked;

- g. No sewer capital improvement fee and connection fee for service lines shall be imposed in the event there shall exist an inactive sewer or water service tap, to serve a similar or like service, and the property owner requests to reuse the existing sanitary sewer or water service tap providing it meets current specifications;
- h. In the event a property owner requests a upsize or upgrade in the service tap, a prorated capital improvement fee and connection fee shall be required equal to the upsize fee less the fee for the existing size. Proper abandoning shall be required of the existing services;
- i. Glenwood Municipal Utilities, or its representatives, must be present and on sight during each tap connection or inspection of existing service. Connections and inspections are to be performed during Glenwood Municipal Utilities regular hours. Glenwood Municipal Utilities reserves the right to charge extra fees in the event of any inspection or connection performed during Glenwood Municipal Utilities' non-regular hours. If the inspection of connection involves only a sewer connection, such fees shall be determined by Glenwood Municipal Utilities.

14. It is hereby established and resolved that the fees, terms, and conditions set forth in this resolution shall supersede and replace the fees, terms, and conditions of any previous resolutions which may be in conflict herewith. Iowa sales tax & local option taxes will apply as required.

EFFECTIVE DATE SEPTEMBER 18, 2019

DULY PASSED AND APPROVED THIS 18 DAY OF SEPTEMBER, 2019

Doug Meggison
Chairman of Board of Trustees

ATTEST:

Wendy Ensley
Executive Secretary