City of Ketchum

November 4, 2019

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Recommendation to Adopt for First Reading Ordinance 1204 Establishing Wastewater and Water Connection Fees for New Development

Recommendation and Summary
Staff is recommending the council hold a public hearing and adopt for first reading Ordinance 1204 and adopt the following motion:

I move to adopt for first reading and read by title only Ordinance 1204

The reasons for the recommendation are as follows:

- To ensure new development pays its fair share of costs to support the wastewater and water system, connection fees will be collected for new development projects instead of impact fees.
- A comprehensive study was prepared by Galena Engineering to establish the methodology and connection fee amount
- Adoption of the proposed ordinance will simplify the collection and administration of wastewater and water fees associated with new development

Introduction and History
The City of Ketchum has historically collected development impact fees for new connections to the municipal water and wastewater systems. While this approach was the preferred approach in 2011, staff is recommending the City replace wastewater and water development impact fees with an alternative method for collecting fees from new development. The City of Ketchum hired Galena Engineering to calculate water and wastewater connection fees in place of development impact fees. Connection fees may be used for system replacement and expansion.

Police, Fire, Parks and Street impact fees will continue to be collected once the Council adopts a revised study and Capital Improvement Plan. The current methodology for establishing those fees is out of date. Before new impact fees can be established, the City must adopt a five- year Capital Improvement Plan and an Impact Fee Study identifying the fee methodology. Staff is preparing this information and will provide Council with recommendations in January.

Analysis
The methodology Galena Engineering used to calculate connection fees equates to a user purchasing a fiscal share of the value of the system when requesting a new hook up or the enlargement of an existing connection. The report prepared by Galena Engineering (Attachment A), includes a detailed description of the

methodology used to calculate the City of Ketchum connection fees. The City of Ketchum's Water Facilities Plan, by J-U-B Engineers Inc. dated March 2017, and Wastewater Treatment Plant Facilities Plan, by Pharmer Engineering dated August 2009 were referenced for water and wastewater system component information and figures.

The proposed fees are based on updated system and cost information. A comparison of the proposed fees to the impact fees and the connection fees established by the City of Hailey are in Attachment B. Staff is recommending the City Council conduct a first reading of the proposed ordinance establishing the connection fees. If Council approves Ordinance 1204, on November 18, 2019 staff will present a resolution adopting the fees in addition to second reading of Ordinance 1204.

Financial Impact

The amount of fees collected will depend on the level of development. The fees will ensure new development pays its share of the cost to connect and maintain the wastewater and water systems.

Attachments:
Attachment A: October 18, 2019 Galena Engineering Connection Fee Study
Attachment B: Comparison of Connection Fees
Attachment C: Proposed Ordinance 1204
Attachment D: Redlined Version of Ordinance 1204

GALENA ENGINEERING

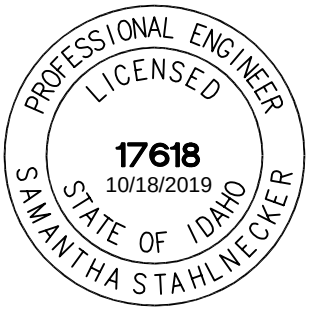
317 North River Street
Hailey, ID 83333
208.788.1705

Water and Wastewater Connection Fees

For

The City of Ketchum

October 18, 2019



ENGINEER OF RECORD
Samantha Stahlnecker

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Section 1: Introduction

The City of Ketchum has historically collected development impact fees for new connections to the municipal water and wastewater systems. Based on Galena Engineering's research, these development impact fees were most recently calculated in 2011 by determining the cost of anticipated system improvements to accommodate new development. A Water System Impact Fee Study by J-U-B Engineers, Inc. dated February 2011 states in Section 3.0 that "the purpose of an impact fee system is to properly accumulate revenues for the future replacement and expansion of major components of the water system for future growth which are not budgeted for replacement or expansion out of user fees collected throughout the life of the water system." It is Galena Engineering's understanding that the City of Ketchum desires to replace development impact fees with an alternative method for generating water and wastewater revenue. The City of Ketchum has tasked Galena Engineering with calculating water and wastewater connection fees to take the place of development impact fees. It is Galena Engineering's understanding that connection fees may be used for system replacement and expansion.

The methodology Galena Engineering used to calculate connection fees equates to a user purchasing a fiscal share of the value of the system when requesting a new hook up or the enlargement of an existing connection. This report includes a detailed description of the methodology Galena Engineering used to calculate the City of Ketchum connection fees. The City of Ketchum's Water Facilities Plan, by J-U-B Engineers Inc. dated March 2017, and Wastewater Treatment Plant Facilities Plan, by Pharmer Engineering dated August 2009 were referenced for water and wastewater system component information and figures.

Section 2: Connection Fee Calculation Methodology

2.1 Overview

Connection fees for both water and sewer were calculated by dividing the respective net system value by the equivalent connection capacity. The total net system value is calculated using Equation 2.1 below.

Equation 2.1: Net System Value

$$Net\ System\ Value = Depreciated\ Gross\ System\ Value - Remaining\ Bond\ Principal + Funded\ Depreciation$$

Each component of the above equation and the equivalent connection capacity for both water and wastewater are further detailed below.

2.2 Gross System Value

The gross system value is determined using a combination of the three methods below:

1. Updating the original construction cost of each major capital improvement to the system to current construction costs,
2. Updating the construction cost from an assumed reference year of each major capital improvement to the system to current construction costs, or
3. Calculating the construction cost using recent construction unit costs of each major capital improvement.

Methods 1 and 2 above are used to calculate the value of past improvements in current day dollars. Updating construction costs using these two methods is accomplished by determining the annual average engineering news record construction costs index ("ENR (CCI)") in the year the improvements were made, or an assumed reference year, and the year that the connection fee is being calculated. See Equation 2.2.

Equation 2.2: Updated Construction Value (using Methods 1 or 2)

$$Updated\ Construction\ Value = Original\ or\ Reference\ Year\ Construction\ Cost * \frac{Current\ Year\ ENR\ (CCI)}{Original\ or\ Reference\ Year\ ENR\ (CCI)}$$

Note that Galena Engineering used construction costs from the current year, 2019, for fiscal year (FY) 2020 connection fees, making the current year the assumed reference year. Therefore, for the sake of this report, method 2 was not utilized, but will be in the future as it is impractical to update all construction costs to the current year for every fiscal year update.

2.2.1 Water Distribution and Supply System

The water distribution gross system value was calculated using all three methods described in Section 2.2. First, Galena Engineering itemized and quantified significant water distribution system component's material type (if applicable), size (if applicable), quantity, and construction year. The City of Ketchum Water Department record maps and department personnel's recollection of construction history was utilized to quantify the aforementioned components. Once itemized, a majority of the distribution system component values were calculated using the recent construction costs. Current construction costs for some pipe materials no longer being used for construction were inaccessible, so original construction costs were scaled up using method 1 in Section 2.2 and utilized.

The water supply gross system value was calculated by itemizing significant components associated with the six existing well sites and one existing booster pump station and assigning the recent construction costs for each item. A map of the existing well and booster pump stations is included in the Water Facilities Plan.

Table 2.1: Water System Gross System Value Summary

System Component	Gross System Value
Water Distribution System	$20,122,770.00
Water Supply System	$11,983,180.00
Total:	*$32,105,950.00*

2.2.2 Wastewater Collection and Treatment System

Galena Engineering calculated the wastewater collection system gross system value similarly to the water distribution system. First, each collection system component's material, size, quantity, and construction year were determined using the City of Ketchum Wastewater Department's record maps and department personnel recollection of construction history. Next, each component's value was calculated using the recent construction costs or an adjusted original construction cost.

The wastewater treatment plant gross system value was determined by compiling original contractor bids and/or invoices on record at the City of Ketchum Wastewater Department. The wastewater treatment plant serving the City of Ketchum is also utilized by the Sun Valley Water and Sewer District. Past and current Wastewater Facilities Plans have noted that ownership/use of the plant is divided equally between both entities; and therefore, Galena Engineering also assumed a 50/50 value split.

Table 2.2: Wastewater System Gross System Value Summary

System Component	Gross System Value
Sewer Collection System	$9,870,995.00
Sewer Treatment System	$9,779,645.00
Total:	*$19,650,640.00*

2.3 Depreciated Gross System Value

Each system component's depreciation must also be subtracted from the gross system value. Galena Engineering assumed lifespans for all quantified components and reduced the gross system value by the utilized percentage of the item's lifespan. Tables 2.3 and 2.4 below summarize the calculated depreciated gross system values for both water and wastewater.

Table 2.3: Water System Depreciated Gross System Value Summary

System Component	Depreciated Gross System Value
Water Distribution System	$11,296,795.00
Water Supply System	$4,171,450.00
Total:	*$15,468,245.00*

Table 2.4: Wastewater System Depreciated Gross System Value Summary

System Component	Depreciated Gross System Value
Wastewater Collection System	$4,379,320.00
Wastewater Treatment System	$4,388,345.00
Total:	*$8,767,665.00*

2.4 Remaining Bond Principal

Galena Engineering requested remaining bond principal values from the City of Ketchum Treasurer. Because the city is currently committed to repaying these bonds to its residents, these remaining principals detract from the overall value of the system. Below is a summary and description of each remaining bond as of July, 2019.

Table 2.5: Water System Remaining Bond Principal

Bond Year and Description	Remaining Bond Principal
Water Revenue Refunding Bonds 2015 *To refund outstanding bonds from 2006-* *Ketchum Spring Line Conversion Per City of Ketchum Water Department Manager*	$2,230,000 Distribution System
Water Refunding Bond 2016 *To refund outstanding bonds from 1998-* *Storage Tank Construction Per City of Ketchum Water Department Manager*	$1,268,000 Supply System
Total:	*$3,498,000*

Table 2.6: Wastewater System Remaining Bond Principal

Bond Year and Description	Remaining Bond Principal
Wastewater Revenue Refunding Bonds 2014 *To refund outstanding bonds from 2004 and 2006-* *Treatment Plant Upgrades (UV and Electrical Upgrade, Aeration Basin, Effluent Filters, Collection System)*	$1,315,000 Split Evenly between Collection and Treatment Systems
Total:	*$1,315,000*

2.5 Funded Depreciation

The funded depreciation is the remaining capital in each department's account, excluding unused development impact fees. Galena Engineering obtained the remaining account balances for the water and wastewater departments, listed in Table 2.7, from the City of Ketchum Treasurer.

Table 2.7: Remaining Account Balance Summary

System Component	Remaining Account Balance
Water Department	$806,701
Wastewater Department	$1,252,984
Total:	*$2,059,685*

To determine if the account balances contain development impact fees, Galena Engineering reviewed a list of capital improvement project from 2012-2019. Those projects that contributed to the expansion of major components of the water or wastewater systems for future growth were confirmed as completed with the department manager and cross checked with water and wastewater asset records from the Treasurer's Department. Remaining development impact fees were deducted from the account balance.

Based upon this analysis, 0% of the water development impact fees collected from 2010 to 2019 appear to have been utilized. Wastewater development impact fees appear to have been partially utilized. Table 2.8 below summarizes this information.

Table 2.8: Development Impact Fee Summary

Water Department	
Development Impact Fees Collected	$479,893
Expansion Projects (Completion Year and Cost)	None
Remaining Development Impact Fees	*$479,893*
Wastewater Department	
Development Impact Fees Collected	$870,553
Expansion Projects (Completion Year and Cost)	*Recycled Water Project- Vertical Turbine Pump (2012, $37,000)* *Pump Station (2012, $131,000)* *Pump Station Building (2012, $84,170)*
Remaining Development Impact Fees	*$618,383*

The account balances shown in Table 2.7 include revenue from past development impact fees. The remaining development impact fees were deducted from the current account balances to determine the department funded depreciation values. Note that the account balances for both the water and wastewater departments were split evenly between the distribution/supply and collection/treatment systems.

Table 2.9: Funded Depreciation Summary

System Component	Funded Depreciation
Water Department *(Split 50%/50% between Distribution and Supply)*	$326,808
Wastewater Department *(Split 50%/50% between Collection and Treatment)*	$634,601
Total:	*$961,409*

2.6 Net System Value

The net system value is then calculated using Equation 2.1. Tables 2.8 and 2.9 summarize the net system value for the City of Ketchum water and wastewater systems.

Table 2.10: Water Net System Value Summary

System Component	Net System Value
Water Distribution System	$9,230,200
Water Supply System	$3,066,854
Total:	*$12,297,054*

Table 2.11: Wastewater Net System Value Summary

System Component	Net System Value
Wastewater Collection System	$4,039,119
Wastewater Treatment System	$4,048,146
Total:	*$8,087,265*

2.7 Equivalent Connection Capacity

Equivalent connection capacity is the number of connections the current system could accommodate while functioning at capacity. Galena Engineering utilized system capacities and user demand/production quantities from the Water Facilities Plan by J-U-B Engineers, March 2017, and the Ketchum/ Sun Valley Wastewater Treatment Plant Facilities Plan by Pharmer Engineering, August 2009 to calculate equivalent connection capacity.

2.7.1 Water Distribution System

The water distribution system equivalent connection capacity is calculated by dividing the system capacity by the demand per connection.

Calculation of the distribution system capacity is complex because any single system component could be perceived as defining the maximum capacity of the entire system, or alternatively, some assumed percentage of the entire system could represent capacity. Regardless, one thing is certain: the current distribution system can handle any peak hour demand previously required, and has additional capacity beyond that demand.

According to the aforementioned Water Facilities Plan, the highest recorded maximum day demand, per Figure 3-2, was 5.9 million gallons per day (mgd). Section 3.4.1 further defines a peak hour factor of either 1.25, peaking factor with only one year of data, or 1.5 for conservative planning practices. For the sake of this report, Galena Engineering selected the more conservative peaking factor of 1.5 per the Water Facilities Plan recommendations. The equivalent peak hour demand utilized is therefore 8.85 mgd.

Galena Engineering then calculated the maximum day demand per connection utilizing maximum day demand volumes per capita multiplied by the seasonal peak number of people per connection. According to Section 3.4.1 of the Water Facilities Plan, the maximum day demand per capita was 672 gallons per capita per day (gpcpd). This value was based upon the highest recorded maximum day demand of 5.9 mgd (2007) and the peak equivalent population of 8,783 residents per Table 3-2. The City of Ketchum has made a number of repairs to the distribution system, specifically on the Ketchum Spring Water Line, thereby reducing the amount of unmetered water, or water loss due to leaks in the system. Based upon water usage data received from the City of Ketchum Water Department for 2016-2019, the maximum day demand never exceeded 4.8 mgd. Given the downward trend shown in Figure 3-2 of the Water Facilities Plan and the supporting usage data from 2016-2019, Galena Engineering used a more appropriate, but still conservative, maximum day demand of 5.0 mgd to calculate the maximum day demand per capita of 569 gpcpd.

The number of people per connection was calculated by dividing the peak equivalent population mentioned above by the current number of water connections. In July of 2019, the City of Ketchum had 149 flat rate and 1,805 metered customers, for a total of 1,954 connections. Dividing the peak population by the number of connections results in 4.5 people per connection. Therefore, the maximum day demand per connection is 2,560 gpd.

Accepting the above listed values for the peak hour demand and maximum day demand per connection, the water distribution system equivalent connection capacity is 8.85 mgd / 2,560 gpd = +/- 3,460 connections.

2.7.2 Water Supply System

The water supply system equivalent connection capacity is calculated by dividing the supply capacity by the demand per connection.

The DEQ recommended supply capacity, or FIRM capacity, is defined as the total supply volume with the largest single source out of production. Per the Water Facilities Plan, Ketchum's FIRM capacity is 3.96 mgd (Table 4-1), whereas total supply capacity is 6.84 mgd (Table 4-1). Given that the City of Ketchum is operating above the FIRM capacity of the system, on average 5.0 mgd, Galena Engineering concluded that it is inappropriate to use the system FIRM capacity. The total supply capacity of 6.84 mgd was utilized to calculate equivalent connection capacity.

As described in Section 2.6.1 of this report, the maximum day demand per connection is 2,560.

Accepting the above listed values for the system supply capacity and demand per connection, the water supply system equivalent connection capacity is 6.84 mgd / 2560 gpd = +/- 2,670 connections.

2.7.3 Wastewater Collection System

The wastewater collection system equivalent connection capacity is calculated by dividing the system capacity by the flow production per connection.

Calculation of the collection system capacity is complex because any single system component could be perceived as defining the maximum capacity of the entire system, or as an alternative, some assumed percentage of the entire system could represent capacity. Regardless, one thing is certain: the current collection system can handle any Peak Month Wastewater volume previously produced, and has additional capacity beyond that demand.

Galena Engineering assumed that the 2006 observed dry weather inflow and infiltration peak month flow was the maximum flow conveyed by the collection system. This includes stormwater that enters the system from points of direct connection to the system (manholes, cleanouts, etc.) and groundwater that enters through cracks and leaks in the sewer pipes. The wet weather inflow and infiltration peak month flow was not utilized because of concerns that a majority of the water volume was entering the system through a minority of the pipe systems. Specifically, a majority of the water was entering pipes and structures submerged within the floodplain, while the remaining system capacity was left untested. Table 2.2 of the Wastewater Facilities Plan lists this flow as 1.38 mgd.

Galena Engineering utilized a residential per capita flow of 100 gpcpd per Section 2.3.1 of the Wastewater Facilities Plan. Because a majority of connections are fed by a 1" water meter, Galena Engineering has accepted the residential flow as equivalent to a 1" water meter.

The number of people per connection was calculated by dividing the peak equivalent population, 7906, per Table 1.4 of the Wastewater Facilities Plan by the current number of water connections. In July of 2019, the City of Ketchum had a total of 2044 connections; therefore, there are 3.9 people per wastewater connection in the City of Ketchum. Multiplying this by the flow per capita results in an equivalent flow per connection of 390 gpd.

Accepting the above listed values for the collection system capacity and flow per connection, the wastewater collection system equivalent connection capacity is 1.38 mgd / 390 gpd = +/- 3,568 connections.

2.7.4 Wastewater Treatment System

The wastewater treatment system equivalent connection capacity is calculated by dividing the treatment plant capacity by the flow production per connection.

Galena Engineering considered the design capacity of the wastewater treatment plant to the be most limiting component of the facility. Per Table E.3 of the Wastewater Facilities Plan, the Solids Handling-Aerobic Digester is the most limiting system component with a capacity of 1.75mgd. As previously mentioned, the City of Ketchum owns 50% of the wastewater treatment plant infrastructure; therefore, Ketchum's share of the plant design capacity is 0.875 mgd.

As described in Section 2.6.3 of this report, the equivalent flow per connection is 390 gpd.

Accepting the above listed values for the plant capacity and flow per connection, the wastewater treatment system equivalent connection capacity is 0.875 mgd / 390 gpd = +/- 2,260 connections.

Section 3: Proposed Connection Fees and Conclusions

3.1 Base Connection Fees

The base connection fee is the resultant of dividing the net system value by the equivalent connection capacity for each system component. Galena Engineering recommends the base connection fees listed in Tables 3.1 and 3.2 to the City of Ketchum for FY 2020.

Table 3.1: Calculated Water Connection Base Fee

System Component	Base Connection Fee
Water Distribution System	$2,668.78
Water Supply System	$1,147.31
Total:	*$3,816.00*

Table 3.2: Calculated Wastewater Connection Base Fee

System Component	Base Connection Fee
Wastewater Collection System	$1,132.10
Wastewater Treatment System	$1,789.47
Total:	*$2,921.00*

3.2 Scaled Connection Fees

Table 3-4 of the Water Facilities Plan shows that over 80% of connections in the City of Ketchum are 1" connections. Because a majority of the city's municipal connections are 1", Galena Engineering has assumed that the equivalent connection capacity for both water and wastewater are comparable to 1" connections. Any connection over 1" should be scaled up using a ratio of 1" connections to the meter size under consideration.

Galena Engineering obtained water meter capacities from the City of Ketchum Water Department to calculate meter size scale factors. These ratios are listed in Table 3.3 below.

Table 3.3: Water Meter Capacity Scale Factors and Related Proposed Connection Fees

Meter Size and Type	Operating Flow (gpm)	Base Connection Fee Scale Factor	Water Connection Fee	Sewer Connection Fee
1"- iPERL	55	1.0	*$3,816.00*	*$2,921.00*
1.5"- Sensus OMNI T2	200	3.6	*$13,737.60*	*$10,515.60*
2"- Sensus OMNI T2	250	4.5	*$17,172.00*	*$13,144.50*
3"- Sensus OMNI T2	500	9.1	*$34,344.00*	*$26,289.00*
4"- Sensus OMNI T2	1250	22.7	*$86,623.20*	*$66,306.70*
6"- Sensus OMNI T2	2500	45.4	*$173,246.40*	*$132,613.40*

Alternatively, the City of Ketchum may also choose to remain consistent with the scale factors previously used to calculate water development impact fees for all meter sizes. Scale factors per Appendix A of the Water System Impact Fee Study by J-U-B Engineer, Inc. dated February 2011 were based upon "the potential water use through the water meter and service line size used." The method used by JUB to calculate these ratios was not specified in their report. Table 3.4 calculates proposed connection fees using these ratios.

Table 3.4: Current Ketchum Scale Factors and Related Proposed Connection Fees

Meter Size	Base Connection Fee Scale Factor *Based upon February 2011 Impact Fee Study by J-U-B Engineers, Inc.*	Proposed Water Connection Fee	Proposed Sewer Connection Fee
1"	1.00	*$3,816.00*	*$2,921.00*
1.5"	2.25	*$8,586.00*	*$6,572.25*
2"	4.00	*$15,264.00*	*$11,684.00*
3"	9.00	*$34,344.00*	*$26,289.00*
4"	16.00	*$61,056.00*	*$46,736.00*
6"- Sensus OMNI T2	36.00	*$137,376.00*	*$105,156.00*

Though it is unclear exactly how J-U-B Engineering calculated these capacity ratios, it is Galena Engineering's recommendation to utilize the more conservative ratios historically used for development impact fees.

Given that there is a direct link between the water meter size and the potential for wastewater production flow, Galena Engineering recommends the same scale factors be used for sewer connections regardless of the size of the wastewater service pipe. For example, if a user is requesting a 2” water meter, the sewer connection fee shall be the base sewer connection fee multiplied by the above scale factor for a 2” water meter.

3.3 Ordinance Revision

The current City of Ketchum code references development impact fees in a number of ordinances. It is Galena Engineering’s understanding that the City of Ketchum desires to replace development impact fees with connection fees, and therefore, adoption of the connection fees described in this report will require redaction or revision of any ordinance referencing development impact fees and adoption of a new ordinance codifying connection fees as recommended by the city attorney. Galena Engineering has not identified which existing ordinances require redaction.

3.4 Connection Fee Update Process

If the city chooses to adopt and codify water and wastewater connection fees, those fees should be updated annually and adopted via resolution at the beginning of the fiscal year. Each year the net system value and number of existing water and wastewater connections shall be updated, and additionally, system capacities and usage data from updated Facility Plans shall be incorporated when applicable.

3.5 Conclusions

Any questions or additional information requests can be made through the office of Galena Engineering and the Professional Engineer of record listed on the cover of this report.

Appendix A: Water Connection Fee Calculation

City of Ketchum Water Connection Fee FY 2020

Connection Fee Calculations for: WATER SUPPLY AND STORAGE SYSTEM	
Total "Equivalent" Supply Connection Capacity See Appendix B	**2673**
Depreciated Gross System Value (from System Component List, 2019 Costs Utilitized)	$4,171,450
Remaining Bond Principal to be retired (per City Treasurer)	($1,268,000)
Funded Depreciation (Remaining Account Balance) (per City Treasurer)	$163,404
Net System Value	$3,066,854
WATER SUPPLY AND STORAGE SYSTEM Connection Fee (Net Value / Capacity)	**$1,147.31**

Connection Fee Calculations for: WATER DISTRIBUTION SYSTEM	
Total "Equivalent" Connection Capacity See Appendix B	**3459**
Depreciated Gross System Value (from System Component List, 2019 Costs Utilitized)	$11,296,796
Remaining Bond Principal to be retired (per City Treasurer)	($2,230,000)
Funded Depreciation (Remaining Account Balance) (per City Treasurer)	$163,404
Net System Value	$9,230,200
WATER DISTRIBUTION SYSTEM Connection Fee (Net Value / Capacity)	**$2,668.78**

TOTAL WATER SYSTEM CONNECTION FEE	**$3,816.00**

Appendix B: Water Equivalent Connection Capacity Calculation

Supply System

Supply Capacity with the largest single source out of production ("Firm Capacity") per the March 2017 Water Facilities Plan Table 4-1 is 3.96 mg/d**,** whereas total supply capacity is **6.84 mgd**. Given that the City is operating over the FIRM Capacity of the system (5.96 mgd recorded demand), the total capacity was utilized to calculate equivalent connection capacity. Average Day Demand is 475 g/d per capita from Table 3-2 of same report with a Maximum Day Demand of 672 gpcpd**,** Table 3-2. A maximum day demand of 569 gpcpd is used for the purposes of this task given the distribution system supply repairs to the Ketchum Spring Line and downward trend of usage in Figure 3-2 of the Water Facilities Plan. The report uses a 2017 population of 5,894 people with a peak equivalent population of 8,783 (Table 3-2). There are 1872 Equivalent Dwelling Units, EDU (Table 3-3), resulting in 3.1 people per connection and **4.6 people per connection** using the peak equivalant population. This results in 4.6*475 = 2,185 AVERAGE gallons/day/connection (meaning equivalent connection). The Supply Capacity of the system, based on Max Day Demand, is therefore 6.84E6 / (4.6*569)= **2673 equivalent SUPPLY connections**

INPUT Variables			
FIRM Supply Flow	2750	gpm	Per Water Facilities Plan, JUB Engineering, March 2017
Maximum Supply Flow	4750	gpm	Per Water Facilities Plan, JUB Engineering, March 2017
Total Supply Flow	6840000	gpd	Per Water Facilities Plan, JUB Engineering, March 2017
Avg. Day Demand	475	gpcpd	Per Water Facilities Plan, JUB Engineering, March 2017
Max. Day Demand	569	gpcpd	Based upon 5.0 mgd and peak population
Existing Number of Connections	1954		Per City of Ketchum, July 2019- consistent with Facilities Plan
Equivalent Dwelling Unit	1872		
Population			
Peak Equivalent (Seasonal)	8783		Per Water Facilities Plan, JUB Engineering, March 2017
Average Equivalent	5894		Per Water Facilities Plan, JUB Engineering, March 2017

Calculations	
People per connection	
Peak Equivalent	4.5
Average Equivalent	3.1
Equivalent Connection Capacity	2673

*Utilizes Peak Equivalent Population and Total Supply Capacity

Distribution System

Calculation of the Distribution System Capacity is complex because any single system component could be perceived as defining the maximum capacity of the entire system, or as an alternative, some assumed percentage of the entire system could represent capacity. Regardless, one thing is certain: the current distribution system can handle any Peak Hour Demand previously required, and has additional capacity beyond that demand. According to the afore mentioned report, the recorded **Peak Hour Factor of 1.5** (Section 3.4.1 page 20) multiplied by the **highest historic recorded Maximum Day Demand of 5.90 mgd** (Figure 3-2 for 2007 flow) results in a demonstrated **serviceable flow of 8.85 mgd**. Accepting this value as a design flow results in 8.85E6 / (4.6*569) = 3459 **equivalent DISTRIBUTION SYSTEM connections**.

INPUT Variables			
Maximum Day Demand	5900000	gpd	Per Water Facilities Plan, JUB Engineering, March 2017
Peak Hour Factor	1.5		Per Water Facilities Plan, JUB Engineering, March 2017

Calculations		
Servicable Maximum Day Flow	8850000	gpd
Equivalent Connection Capacity	3459	

*Utilizes Peak Equivalent Popoulation

Appendix C: Wastewater Connection Fee Calculation

City of Ketchum Wastewater Connection Fee FY 2020

Connection Fee Calculations for: WASTEWATER TREATMENT SYSTEM	
Total "Equivalent" Connection Capacity See Appendix D	**2262**
Depreciated Gross System Value (from System Component List, 2019 Costs Utilitized)	$4,388,345
Remaining Bond Principal to be retired (per City Treasurer)	($657,500)
Funded Depreciation (Remaining Account Balance) (per City Treasurer)	$317,301
Net System Value	$4,048,146
WASTEWATER TREATMENT SYSTEM Connection Fee (Net Value / Capacity)	**$1,789.47**

Connection Fee Calculations for: WASTEWATER COLLECTION SYSTEM	
Total "Equivalent" Connection Capacity See Appendix D	**3568**
Depreciated Gross System Value (from System Component List, 2019 Costs Utilitized)	$4,379,318
Remaining Bond Principal to be retired (per City Treasurer)	($657,500)
Funded Depreciation (Remaining Account Balance) (per City Treasurer)	$317,301
Net System Value	$4,039,119
WASTEWATER COLLECTION SYSTEM Connection Fee (Net Value / Capacity)	**$1,132.10**

TOTAL WASTEWATER SYSTEM CONNECTION FEE	**$2,921.00**

Appendix D: Wastewater Equivalent Connection Capacity Calculation

Treatment System

Design Capacity of Plant = 1.75mgd; 50% of plant flow comes from Ketchum, 50% comes from SVWSD; therefore, Ketchum's share of the design capacity of the plant = **0.875 mgd**. The residential per capita flow is 100gpd per capita from Facilities Plan by Pharmer Engineering dated 2009, Section 2.3.1. Utilizing the Peak Equivalent (seasonal) population, and the current number of connections per the City of Ketchum Water and Wastewater Department, the Peak number of people per connection is 3.9, resulting in a flow per connection of 100 gpd per capita x 3.9 people per connection = **390 gpd per connection**. Accepting this value as a design flow results in 0.875E6/(3.9*100) = **2262 equivalent TREATMENT SYSTEM connections**.

INPUT Variables			
Design Capacity of Plant-Total	1750000	gpd	Per Wastewater Facilities Plan, Pharmer Engineering, August 2009
Design Capacity of Plant-Ketchum ONLY (50%)	875000	gpd	Per Wastewater Facilities Plan, Pharmer Engineering, August 2009
*Plant is shared between City of Ketchum and SVWSD			
Residential per capita flow	100	gpcpd	Per Wastewater Facilities Plan, Pharmer Engineering, August 2009
Existing Number of Connections	2044		Billed Customers, Per City of Ketchum, July 2019
Population			
Peak Equivalent (Seasonal)	7906		Per Wastewater Facilities Plan, Pharmer Engineering, August 2009

Calculations	
People per connection	
Peak Equivalent	3.9
Equivalent Connection Capacity	2262

*Utilizes Peak Equivalent Population

Collection System

Calculation of the Collection System Capacity is complex because any single system component could be perceived as defining the maximum capacity of the entire system, or as an alternative, some assumed percentage of the entire system could represent capacity. Regardless, one thing is certain: the current collection system can handle any Peak Month Wastewater volume previously produced, and has additional capacity beyond that demand. The estimated dry weather Inflow and Infiltration Peak Month Flow observed in 2006 is assumed to be the maximum flow experienced by the collection system. This includes stormwater that enters the system from points of direct connection to the system (manholes, cleanouts, etc.) and groundwater that enters through cracks and leaks in the sewer pipes. This flow, 1.38 mgd, per Table 2.2 of the aforementioned facilities plan, divided by the residential flow per connection listed above yields the equivalent collection system connections: 1.38E6 / (3.9*100) = **3568 equivalent COLLECTION SYSTEM connections**

INPUT Variables			
Wet Weather I & I Flow	1380000	gpd	Per Wastewater Facilities Plan, Pharmer Engineering, August 2009

Calculations		
Equivalent Connection Capacity	3568	

*Utilizes Peak Equivalent Popoulation

	2019 Galena Calculations- Meter Capacity			2011 JUB Water System Impact Fee Study			City of Hailey		
Meter Size	Scale Factor	Water Connection Fee	Sewer Connection Fee	Scale Factor	ter Connection	Sewer Connection Fee	Scale Factor	Water Connection Fee	Sewer Connection Fee
3/4"	N/A	N/A	N/A	N/A	N/A	N/A	1	$ 4,431.90	$ 2,857.93
1"	1	$ 3,975.00	$ 3,144.00	1	$ 3,975.00	$ 3,144.00	1.7	$ 7,534.23	$ 4,858.48
1.5"	3.6	$ 14,310.00	$ 11,318.40	2.25	$ 8,943.75	$ 7,074.00	3.3	$ 14,625.27	$ 9,431.17
2"	4.5	$ 17,887.50	$ 14,148.00	4	$ 15,900.00	$ 12,576.00	5.3	$ 23,489.07	$ 15,147.03
3"	9.1	$ 35,775.00	$ 28,296.00	9	$ 35,775.00	$ 28,296.00	15	$ 66,478.50	$ 42,868.95
4"	22.7	$ 90,232.50	$ 71,368.80	16	$ 63,600.00	$ 50,304.00	25	$ 110,797.50	$ 71,448.25
6"	45.4	$ 180,465.00	$ 142,737.60	36	$ 143,100.00	$ 113,184.00	50	$ 221,595.00	$ 142,896.50

ORDINANCE NO. 1204

AN ORDINANCE OF THE CITY OF KETCHUM, BLAINE COUNTY, IDAHO, AMENDING TITLE 13 OF THE KETCHUM MUNICIPAL CODE BY AMENDING SECTION 13.04.130: SEWER CONNECTION CHARGE AND AMENDING SECTION 13.08.150: FEES AND CHARGES

Whereas, the City of Ketchum is authorized to amend the Ketchum Municipal Code pursuant to Idaho Code 67-6511;

NOW THEREFORE BE IT ORDAINED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF KETCHUM:

Section 1: **AMENDMENTS TO SECTION 13.08.150: SEWER CONNECTION CHARGE, Sections A. 1, 2a, 2b, 3a, 3b, 4, and 5 and B 1, 2, 3, BE DELEATED BE DELETED AND REPLACED WITH 13.08.150 A, B, C**: That Title 13 of the Ketchum Municipal Code be amended to

Section 2: AMENDMENTS TO SECTION 13.08.150 FEES AND CHARGES, SECTION A 1,2,3,4, and 5 BE DELETED AND REPLACED WITH SECTION A, B, AND C. That Title 13 of the Ketchum Municipal Code be amended to

Section 3: SAVINGS AND SERABILITY CLAUSE. It is hereby declared to be the legislative intent that the provisions and parts of this Ordinance shall be severable. If any paragraph, part, section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be invalid for any reason by a Court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance.

Section 4: REPEALER CLAUSE. All City of Ketchum Ordinances or parts thereof which are in conflict herewith are hereby repealed.

Section 5: PUBLICATION. This Ordinance, or a summary thereof in compliance with Section 50-901A, Idaho Code, substantially in the form annexed hereto as Exhibit C, shall be published once in the official newspaper of the City, and shall take effect immediately upon its passage, approval, and publication.

Section 6: EFFECTIVE DATE. This Ordinance shall be in full force and effect after its passage, approval and publication, according to law.

PASSED BY the CITY COUNCIL and APPROVED by the MAYOR of Ketchum, Idaho, on this _____ day of _____ 2019.

APPROVED BY the Mayor of the City of Ketchum, Idaho, this _____ day of _____ 2019.

APPROVED:

_____
Neil Bradshaw, Mayor

ATTEST:

_____
Robin Crotty, City Clerk

13.04.130: SEWER CONNECTION CHARGE

A. The owner or agent of any property connected to the Municipal water or wastewater system shall pay a water connection fee for the value of water service and a wastewater connection fee for the value of wastewater service. Such Fees shall be established by Resolution of the Ketchum City Council and shall be paid to the City on or before the issuance of a building permit.

B. All one-inch (1") water services shall be treated as one City standard base connection. All other size connections shall pay a connection fee based upon the size of the water service as determined by the City. The size of the water service shall be used as the determination of the wastewater connection fee.

C. Connection fees may be reduced to the cost of the meter at the discretion of the City Engineer or his or her designee.

13.08.150: FEES AND CHARGES

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C. Connection fees may be reduced to the cost of the meter at the discretion of the City Engineer or his or her designee.

~~For all other properties that were not assessed under LID 1A, there will be sewer connection charges based on either an equivalent length of the property's frontage line, which is that line of the property contiguous with the city right of way from which the connection will be made, or the charge will be based on the property's area. If both methods of computation for a given property are applicable, the method that produces the greatest charge will be used.~~

~~A. 1. For property owners that must, at their own expense, extend the present public sewer in order to serve their property, the connection charge will be known as the trunk line connection charge and shall be two dollars fifty cents ($2.50) per equivalent frontage foot, or if area is used, the charge will be $0.0168 times the area in square feet.~~

~~2. The equivalent frontage will be measured as follows:~~

~~a. For property whose sides are defined by only two (2) parallel or concentric lines, the extension of which does not touch or intersect any other part of the property, the equivalent frontage will be the actual frontage in feet.~~

~~b. For property whose sides are defined by only two (2) nonparallel lines, the extension of which does not touch or intersect any other part of the property within one hundred fifty feet (150') of the frontage line, the equivalent frontage will be the average width of the property in feet to a maximum depth of one hundred fifty feet (150').~~

~~3. "Average width" may be defined as:~~

~~a. The length, in feet, of a line or lines between the two (2) side lines halfway between the front and back property lines and/or halfway between the front and the one hundred fifty foot (150') depth line, whichever is less in depth;~~

~~b. The length, in feet, of a line or lines between the two (2) side lines parallel or concentric to the frontage line and at half the average depth of the property and/or at the seventy five foot (75') depth, whichever is less in depth.~~

~~4. If both definitions of "average width" could be applied to the same property, that definition which gives the greatest length shall be used.~~

~~5. Should the sides of the property be defined by more than two (2) lines, then the charge based on area shall be used. The area based charge shall be the area in square feet of the property within one hundred fifty feet (150') of the frontage line.~~

~~B. 1. For properties that have an existing public sewer adjacent to their property without direct cost to them, there shall be an additional connection charge. These properties will pay the trunk line connection charge as called for in subsection A of this section and, in addition, shall pay a lateral line connection charge of five dollars ($5.00) per equivalent frontage foot or $0.0336 times the property area in square feet. The equivalent frontage and area to a maximum depth of one hundred fifty feet (150') as defined in subsection A of this section also applies for the lateral line connection charge. This lateral line connection charge does not apply to properties that have an existing public sewer adjacent to their property provided by the subdivider of the property.~~

~~2. The size of the public sewer located in front of or adjacent to the property proposed to be connected to the sewer shall have no bearing as regards to the fee fixed for sewer connections, such sewer being adjacent to or in front of such property, for the purposes of this section, considered a lateral sewer line.~~

~~3. No person or persons shall be permitted to connect to any sewer line, whether lateral or trunk line, without having first paid the charges for such connection to be determined on the basis of this section, and the city is directed to set up all necessary procedures for collecting the charges. The sewer connection charges shall be collected by the city prior to or at the time a permit is issued for connecting the property to the public sewer. (Ord. 819 § 13, 1999)~~

13.08.150: FEES AND CHARGES

A. The owner or agent of any property connected to the Municipal water or wastewater system shall pay a water connection fee for the value of water service and a wastewater connection fee for the value of wastewater service. Such Fees shall be established by Resolution of the Ketchum City Council and shall be paid to the City on or before the issuance of a building permit.

B. All one-inch (1") water services shall be treated as one City standard base connection. All other size connections shall pay a connection fee based upon the size of the water service as determined by the City. The size of the water service shall be used as the determination of the wastewater connection fee.

C. Connection fees may be reduced to the cost of the meter at the discretion of the City Engineer or his or her designee.

~~A. Water connection fees shall be established by resolution of the city council. The fees so established shall be sufficient to reimburse the city for all connection costs, including the cost of the meter. Each fee, unless otherwise provided in this chapter, shall be a fixed amount representing the average cost incurred for performing the service for which reimbursement is sought. The following fees shall be established:~~

~~1. Charge for furnishing and installing the meter and box and connection from the city water service line to the private water service line;~~

~~2. Charge for tapping the public water main and constructing a city water service line;~~

~~3. Charge for processing applications and inspecting the construction of a fire line;~~

~~4. In cases where residential and/or commercial units are served by a common water meter, the user charges shall be determined by applying the average unit water usage to the water user rate schedule times the number of units served, and not on a single unit user rate. All owners applying for a general connection or fire permit shall pay the respective application fee. When city personnel or personnel under contract with the city are required, as provided in this chapter, to construct the water service line or fire line, the owner shall also pay the respective line fee;~~

~~5. There shall be established fixed fees for standard size connections. If a larger than standard size connection is required, the owner shall pay the fixed fee for the largest standard size connection, plus the cost of the larger size connection to include the extra cost of any larger size meter. If any rock excavation is required, the owner shall pay the cost of such excavation in addition to any other fees or charges.~~