

Analysis of 2024 Whitefish Impact Fees

December, 2023

TischlerBise (TB) performed an Impact Fee Update (Service Area Report) for the City of Whitefish that was approved by the City Council on Oct 16th, 2023. The report was written by Colin McAweeney of TischlerBise. The report has numerous errors that conflict with the enabling Montana statute 7-6-1602, specifically failing to calculate impact fees properly and proportionately.

The TischlerBise report provides insufficient documentation on projects used to compute fees. They simply took information provided by the City and put this into their calculation programs without independent analysis. It is impossible to determine if the City was mixing both impact fee eligible projects and those that do not qualify when determining project costs and calculating impact fees. One error stands out, however, and it affects nearly 68% of the 2023 impact fees, specifically the wastewater and water impact fees.

WASTEWATER IMPACT FEES

This report analyses both of these fees but goes into more detail on the wastewater impact fees. The same problem persists with the water fee and it is analyzed at the bottom of this report. **Note:** *calculations are based upon the latest credits assigned both water and wastewater, not those in place at the time TB produced its interim reports. This had minimal effect on the overall report results.*

Summary

- In Jan 2023, TB Colin McAweeney calculates wastewater impact fee using only one project, the new Wastewater Treatment Plant (WWTP). He states impact fee is “very small amount”. He asks Whitefish Public Works Director Craig Workman for more projects to boost the fee.
- Workman adds small piping project with cost of just \$178K that expands sewer collection capacity by **1 MGD** (million gallons per day). Cost of piping is **\$0.40 per gpd** using TB calculation method.
- Impact fee using both projects is only **\$730** using TB calculation method and **1 MGD** capacity.
- Workman changes the capacity of small piping project from **1 MGD** to **10K GALLONS** after prodding from McAweeney. Dimension of piping capacity changes from GPD (gallons per day) to simply GALLONS.
- McAweeney recalculates impact fee now at **\$4041**, with \$3345 from the small piping project.
- Cost attributed to \$178K small piping is **\$39.95 per gallon**, 3 times greater than **\$13.33 per gpd** cost of treatment plant! Capacity dimension (gallon) is “inconsistent” with demand (gpd) in impact fee equation, yielding meaningless impact fee (\$4041).
- Two projects (WWTP and Piping) are combined into one calculation, masking the problem.
- Breaking apart the calculation into two projects exposes problem. Projected fees collected for small piping project will exceed \$4M in just 5 years.
- Overcharge violates MCA 7-6-1602 (5) – fees charged cannot exceed costs.

Demonstrate The Problem

The first objective of this report is to demonstrate the problem with the wastewater impact fees charged by Whitefish.

The TB report recommends the City charge each new home \$4041 in wastewater impact fees. *This is the single highest component of the \$11,697 impact fees imposed on a typical new home.* TischlerBise uses just two projects to compute this fee. One is listed as a \$26.67M Wastewater Treatment Plant (WWTP). Using the TB methodology of computing impact fees, the maximum amount the City of Whitefish can charge for the wastewater treatment plant impact fee is just \$696 (Chart A).

The second project appears to be an afterthought and is simply described as “C2 Piping - Future Capacity Enhancements” and costs the City only \$400K to construct. According to the TischlerBise report, on page 57, only \$177,765 of this \$400K can be used to calculate impact fees because this project is correcting an existing deficiency in the Wastewater collection system. *The cost should actually be less since the City has already collected approximately \$85K in impact fees for this project the last 5 years (Note 2).* No description is provided for this project in the TischlerBise report but Whitefish Public Works describe it as a maintenance project replacing 1/3 mile of old sewer piping along Spokane Ave. The project had been listed in a Whitefish Wastewater CIP (Capital Improvements Program) since at least FY 2010 and was used to calculate impact fees in the 2018 FCS Impact Fee Update as well.

Of the **\$4041** wastewater impact fees charged each new homeowner, **\$3,344** is attributable to the C2 Piping project (Chart A). This same project was included in the 2018 FCS Impact Fee Update and cost each new homeowner just **\$68** (Note 2). \$3,344 is beyond unreasonable and fails the rational nexus test for an impact fee. For example, assuming 250 units built annually (Note 8) during the span of this five year update, the city would collect **\$4,180,000** in impact fees to pay for a simple **\$177,765** project!

As a result, a typical new home built in Whitefish will be overcharged \$3,311 in impact fees (See Corrected Wastewater Impact Fee chart on page 8). Commercial buildings and remodeled existing homes will likewise be overcharged by the City.

There is no rational nexus that the City and TischlerBise can justify to defend this excessive fee for such a small project. The City is in violation of MCA 7-6-1602 (5) “*The amount of each impact fee imposed must be based upon the actual cost of public facility*”. Charging fees 20 times more than the cost of a project in just 5 years clearly does not meet this requirement.

The problem with the wastewater impact fee is now clearly demonstrated.

The Source Of The Problem

The next objective of this report is to identify the source of the wastewater impact fee problem.

TischlerBise consultant Colin McAweeney drafted a preliminary impact fee update and determined that Whitefish would only see a “small amount (of) funding from impact fees” for its new WWTP. This was stated in an email on January 31, 2023 to Public Works Director, Craig Workman. This small amount of funding turned out to be **\$696** per typical new home. (Chart A). McAweeney asked Workman if there were other projects that TischlerBise might use to raise these fees. Workman provided a new project to add to the wastewater fee calculations called the C2 Piping project that was constructed to “Enhance Capacity” of a short stretch of sewer piping along Spokane Ave in Whitefish.

Gallons vs Gallons Per Day (Dimensional Inconsistencies)

McAweeney consistently interchanges gallons vs gallons per day without considering the mathematical consequences. Gallons is a static (volumetric) dimension. GPD (gallons per day) is a dynamic (flow rate) dimension. These distinct and different measurement dimensions cannot be used interchangeably in mathematical equations, yet McAweeney does this in numerous places in his report. For example, when calculating the impact fee for the WWTP, he defines the plant capacity as gallons, i.e. 2 million gallons. But the capacity of a WWTP is how many gallons per day (2 MGD) that can be processed, not how many gallons are stored or contained in the plant. He likewise refers to the demand placed on the WWTP by an individual household as 184 gallons, when in fact it is measured in terms of 184 gallons per day. By mixing gallons and gpd in his equations, the results of these calculations become meaningless.

Emails Show Confusion or Collusion between TischlerBise and Whitefish Officials

On Jan 31, 2023, McAweeney wrote an email to Workman that included the following:

- **Wastewater**
 - *We discussed possibly adding more projects or adjusting the growth-related portion of the projects in the CIP to expand the impact fee analysis. Currently, there is **just one project in the CIP with a very small amount funding from impact fee**, has that changed? **Workman response - We could easily attribute “C2 Piping Future Capacity Enhancements” to impact fees.***

McAweeney is warning Workman in this email that the wastewater impact fee is very small and asking Workman for more projects to beef up this fee. The “just one” project available for impact fee calculations is the WWTP itself. McAweeney is also asking Workman to change the CIP to accommodate the expansion of fees. Impact fees are supposed to be calculated from an existing CIP. McAweeney is asking Workman to manipulate the CIP instead to accommodate impact fees. Using McAweeney’s own impact fee calculations, the “very small amount” was **\$696** (Chart A) that represents the maximum amount the City can charge in wastewater impact fees before Workman added the Piping project.

The C2 Piping project replaces an aging 8” sewer line with a new 12” sewer lines. An 8” sewer line has a rated capacity of 2.304 MGD (million gallons per day) and a 12” sewer has a rated capacity of 6.768 MGD (Note 10). The capacity increase by replacing an 8” sewer line with a 12” sewer line is therefore 4.464 MGD. The capacity of the WWTP which is fed by this sewer line is between 2 MGD and 6 MGD.

On Feb 8, 2023, Workman wrote an email to McAweeney including the following:

*Colin, This is the best tracking sheet I could find for the water plant project. Sorry, it's not nearly as helpful as the tracking sheet for the WWTP. Regarding new gallons, I would use 2 MGD for water (from 4 MGD to 6 MGD) and **1 MGD for wastewater (from 1.25 MGD to 2.25 MGD)**.*

Workman informed McAweeney that the capacity increase for the C2 Piping project is 1 MGD. He refers to this as “new gallons”. Workman, just like McAweeney, confuses gallons vs gallons per day in the same sentence. The purpose of the new Piping is to enhance future capacity which is measured in terms of MGD. Although this is less than the difference between the 8” and 12” piping rated capacity (4MGD), it is consistent with prior impact fees calculated by FCS which used the WWTP capacity increase for collection (piping) capacity. The dimension (**MGD**) is consistent with the impact fee calculation which uses the individual demand of 184 gpd in the impact fee equation.

On Feb 24, 2023, McAweeney emailed Workman with the following:

*“Before next week’s meeting I wanted to send along draft fee results. Before that I want to confirm the capacity (gallons) of the **distribution projects** we’re including in the impact fee analysis. You mentioned that they were 2 MGD for water (from 4 MGD to 6 MGD) and **1 MGD for wastewater (from 1.25 MGD to 2.25 MGD)**. Those are very similar to the plant capacity, so just want to make sure wires didn’t get crossed.”*

McAweeney repeats what Workman provided him on Feb 8th. McAweeney consistently refers to capacity as (gallons), but the capacity of piping is measured in terms of (million gallons per day), which appears correctly in his next sentence where he refers to the wastewater piping capacity as “1 MGD”. **Sewer pipes collect and transport sewage and are not used to store sewage**. Piping capacity must be defined in terms of gallons per time period such as gallons per minute or gallons per day, per Brent Campbell (Note 4). The above numbers are consistent with how both collection (sewer) and distribution (water) capacity is defined and consistent with the prior 2018 FCS impact fee update (Note 5). They are also dimensionally consistent (Note 6) with the peak demand of a typical residence which is defined in terms of gallons per day (184) as well. Workman provided these numbers on Feb 8th and McAweeney wanted a confirmation. Using this capacity number (1 MGD), the wastewater impact fee increased very little from McAweeney’s previous calculation (Chart B below), \$696 to \$730. For such a small project, this increase is reasonable.

During this entire sequence, Workman and McAweeney define piping capacity in terms of gallons per day, i.e., how many gallons of sewage can be transported through piping to the WWTP per day. McAweeney recalculated the wastewater impact fees using the capacity data provided by Workman, 1 MGD. Using this data and the TB methodology, the maximum wastewater impact fee that the City could charge is **\$730** (Chart B). It is uncertain whether this number was presented at the meeting referenced in McAweeney’s last email.

At This Point McAweeney and Workman Switch Data

Between Feb 24th and March 2nd, a data switch occurred. No written record was provided to explain why McAweeney and Workman decided to switch data (both the values and dimensions).

On March 2, 2023, Workman provided McAweeney the following chart in an email.

Wastewater Collection

C2 Piping - Future Capacity Enhancements

Project Name	Existing Diameter (inches)	Proposed Diameter (inches)	Total Unit Volume (gal/ft)	Increased Unit Volume (gal/ft)	Project Length (feet)	Total Volume (gallons)	Increased Volume (gallons)
Spokane Ave	8	12	5.9	3.3	1,730	10,164	5,647

McAweeney inexplicably switches the collection piping capacity (**1 MGD**) to volumetric (storage) capacity (**10,164 gallons**) for the C2 Piping project. **But sewer pipes do not store sewage.** McAweeney used this number as the piping capacity in his calculations. The dimensional difference between these 2 numbers is obvious along with the huge difference in quantities.

On page 57 of the TischlerBise report, the following calculation is shown:

Cost Analysis	
Wastewater Collection Projects	
Total Costs	\$400,000
Gallons Added to System	10,164
Capital Cost per Gallon	\$39.35

Here are the calculations that McAweeney subsequently performed (above):

$$\text{Cost} = \$400,000 / 10,164 = \$39.35 \text{ per gallon}$$

By using the volumetric capacity rather than flow capacity, McAweeney calculates an unrealistic Cost for the Piping project. The City did not replace aging 8” sewer pipes for 12” piping so that it could store more sewage. \$39.35 is a totally unrealistic number for cost of this capacity increase.

Adjusting the cost / gallon and adding admin fees results in \$18.18 per **gallon** (see TischlerBise Chart, page 6). **184 gpd** represents the “demand” per household (amount of sewage placed into the sewer lines per day per typical household). McAweeney then calculates the wastewater impact fee:

$$\text{Impact fee} = \$18.18 \text{ per gallon} \times 184 \text{ gpd} = 3,345 \text{ ???}$$

Note the dimensional difference between the elements in this formula (gallons vs gpd) and the incredibly high cost of the small Piping project, \$39.35 per **gallon**, vs the cost of the actual wastewater treatment plant, \$13.33 per **gpd** (see TischlerBise Chart). **This should have immediately raised a red flag.** A small \$178K project was assigned a cost nearly 3 times that of the entire \$27M WWTP.

The dimensionally inconsistent data (**gallon vs gpd**) renders this equation and results meaningless. Using the apples and oranges idiom, the above equation is like multiplying the cost of apples by number of oranges and the result is just as ambiguous.

Engineering consultant Brent Campbell, who has expertise in municipal public works systems, determined that the TischlerBise water and wastewater calculations were flawed. Mr. Campbell wrote a report analyzing the TischlerBise impact fee update, stating that TischlerBise used data that was “dimensionally

inconsistent” (Note 6) when calculating water and wastewater impact fees (Note 7). The Brent Campbell report was submitted to the City of Whitefish through their attorneys.

The original number provided by Workman (1 MGD) was both consistent with prior impact fee updates and dimensionally consistent (cost per gpd multiplied by gpd) with the impact fee formula. The “future enhanced capacity” for the Wastewater Collection project was 1 MGD as originally stated by Workman. **Note, this report does not endorse or claim that 1 MGD is the correct Piping project capacity, only that this number is dimensionally consistent and is a reasonable capacity number relative to WWTP capacity.**

Future enhanced capacity = 1 MGD

Using this capacity, the following Impact Fee would be correctly calculated.

$$\text{Cost} = \$400,000 / 1,000,000 = \mathbf{\$0.40 \text{ per gpd}}$$

Adjusting the cost / gpd and adding admin fees results in \$.19 per gpd (per TischlerBise Chart).

$$\text{Impact fee} = \$0.19 \text{ per gpd} \times 184 \text{ gpd} = \mathbf{\$35}$$

TischlerBise Calculations

Using the two projects described above, TischlerBise simply adds the two net costs and then multiplies these by ERU (Equivalent Residential Unit) demand (184 gpd). By combining the two projects, the problem with McAweeney’s numbers is masked.

In Chart A below, the two projects can be separated and an individual impact fee is calculated for each project. The WWTP is the entire wastewater processing system. With a \$26.667M cost, it has a net cost per gpd of \$3.78 (plus 5%) which is multiplied by 184 gpd, resulting in an impact fee of **\$696**. Using the incorrect capacity identified by Workman in March, the net cost of the PIPING project is \$17.31 **per gallon**. This number (plus 5% admin fee) is multiplied by 184 gpd resulting in the impact fee for this project of **\$3345**.

To put **\$3345** in perspective, the 2018 FCS Update calculated the impact fee for this identical Piping project at **\$68** (Note 2). Using the FCS and HDR methods with 2023 data results in an impact fee for this project of only **\$33** (Note 3). The impact fee using piping capacity of 1 MGD is **\$35** (Chart B).

TischlerBise Chart on Page 60

Components	Cost per Gallon
Distribution Projects	\$39.35
Wastewater Treatment Plant	\$13.33
Gross Total	\$52.68
Credit for Other Distribution Revenues (56%)	(\$22.04)
Credit for Other WWTP Revenues (73%)	(\$9.73)
Administrative Fee (5%)	\$1.05
Net Total	\$21.96
Peak Average Gallons per EDU	184
Capital Cost per EDU	\$4,041

Chart A re-creates the TischlerBise chart above, breaking down the single column into two wastewater projects. The last 3 columns and 2 rows were added for analysis purposes. Since only two projects are used to calculate wastewater impact fees (the WWTP and the Piping projects), it is easy to separate them to isolate the problem. In Chart A, the Capital Cost per EDU is the same for both the original and separated charts (\$4041).

**Chart A - Wastewater Impact Fee Components
TischlerBise Report**

Wastewater Impact Fee Calculations		Individual Component Contribution		
Components	Cost per Gallon	PIPING	WWTP	Totals Check
Distribution Projects (PIPING)	\$39.35	\$39.35		\$39.35
Wastewater Treatment Plant (WWTP)	\$13.33		\$13.33	\$13.33
Gross Total	\$52.68	\$39.35	\$13.33	\$52.68
Credit for Other Distribution Revenues (56%)	(\$22.04)	(\$22.04)		(\$22.04)
Credit for Other WWTP Revenues (73%)	(\$9.73)		(\$9.73)	(\$9.73)
Administrative Fee (5%)	\$1.05	\$0.87	\$0.18	\$1.05
Net Total	\$21.96	\$18.18	\$3.78	\$21.96
Peak Average Gallons per EDU	184	184	184	184
Capital Cost per EDU	\$4,041	\$3,345	\$696	\$4,041
Project Eligible Cost	\$7,377,855	\$177,765	\$7,200,090	
Fees Collected (5 Years @ 250 ERUs a year)	\$5,051,250	\$4,181,400	\$870,000	\$5,051,250

The impact fee for the \$27M WWTP is **\$696**. The capacity value used by TischlerBise in its calculation for the WWTP impact fee was 2 MGD (the daily processing capacity of the WWTP), even though it is incorrectly listed as gallons. *The calculation that produces this number uses dimensionally consistent data (cost per gallon per day times gallons per day).*

Using historical Whitefish building data, 250 ERUs is projected for the annual number of residential and commercial building equivalent units that are charged impact fees (Note 8). The small Piping project has a cost of only \$177,765 but generates an incredible \$4,180,000 in the 5 year span of this report. Over the life of this project (20 years), the impact fees would exceed \$16.5M!

The total fee charged each new single family home is beyond excessive, is unreasonable and does not represent the fair and proportionate share of the wastewater impact fees. ***This is a violation of Montana statute 7-6-1602.*** No one at TischlerBise or Whitefish caught this problem. The source of the wastewater impact fee problem is **invalid capacity data** provided by Whitefish and used by TB to calculate these fees.

Correct Wastewater Impact Fees

The next part of this report corrects the invalid TB report calculations and collection charts using the correct capacity data provided by Whitefish originally on page 5. This is a simple process.

In the Tischler report, using the original capacity data provided by Workman, the increase in capacity from the \$400,000 Piping project is **1 MGD**. This is substituted for 10,164 gallons on page 57 of the Tischler report calculations. Using the corrected value, the cost per gallon/day of collecting wastewater through the new piping is just **\$.40** (as previously calculated above). This is computed by simply dividing the total cost of the Piping project (\$400,000) by the capacity increase (**1 MGD**).

$$\text{Cost} = \$400,000 / 1,000,000 = \mathbf{\$0.40} \text{ per gpd}$$

The new cost number \$0.40 per gpd is substituted in Chart A for the invalid \$39.95 cost per gallon producing the following Chart B.

**Chart B - Wastewater Impact Fee Components
Using Correct Piping Total Capacity**

Wastewater Impact Fee Calculations		Individual Component Contribution		
Components	Cost per Gallon	PIPING	WWTP	Totals Check
Distribution Projects (PIPING)	\$0.40	\$0.40		\$0.40
Wastewater Treatment Plant (WWTP)	\$13.33		\$13.33	\$13.33
Gross Total	\$13.73	\$0.40	\$13.33	\$13.73
Credit for Other Distribution Revenues (56%)	(\$0.22)	(\$0.22)		(\$0.22)
Credit for Other WWTP Revenues (73%)	(\$9.73)		(\$9.73)	(\$9.73)
Administrative Fee (5%)	\$0.19	\$0.01	\$0.18	\$0.19
Net Total	\$3.97	\$0.19	\$3.78	\$3.97
Peak Average Gallons per EDU	184	184	184	184
Capital Cost per EDU	\$730	\$35	\$696	\$730
Project Eligible Cost	\$7,377,855	\$177,765	\$7,200,090	
Fees Collected (5 Years @ 250 ERUs a year)	\$912,500	\$43,700	\$870,000	\$912,500

Chart B shows a significantly reduced Wastewater Impact Fee of just **\$730** per EDU vs **\$4041** calculated using the wrong capacity for the Piping project. Note the WWTP impact fee remains at \$696. Also note that the amount of impact fees collected in 5 years is \$43,700 and over the life of the project (20 years) is \$174,800. This very close to the original cost of this project, \$177,765. This confirms that the calculation method using the **1 MGD** demand is correct.

Comparison of Collection Charts

The following shows the old and new collection charts. The old chart is from the TischlerBise update and is found on Page 60:

Original TischlerBise Wastewater Collection Chart

Meter Size (Inches)	AWWA Capacity (gal)	Weighting Factor	Maximum Supportable Fee	Current Base Fee	Increase/ (Decrease)
3/4	30	1.00	\$4,041	\$3,223	\$818
1	50	1.67	\$6,748	\$4,834	\$1,914
1 1/2	100	3.33	\$13,457	\$8,058	\$5,399
2	160	5.33	\$21,539	\$16,115	\$5,424
3	300	10.00	\$40,410	\$25,784	\$14,626
4	500	16.67	\$67,363	\$48,345	\$19,018
6	1,000	33.33	\$134,687	\$80,575	\$54,112

By simply making one correction to the Piping project using the City's own capacity number with the correct dimension, the following collection chart would result:

Corrected Wastewater Collection Chart

Meter Size (inches)	AWWA Capacity (gpm)	Weighting Factor	Maximum Supportable Fee	2018 Base Fee	Increase/ (Decrease)	TischlerBise Base Fee	Tischler Overcharge
3/4	30	1	\$730	\$3,223	-\$2,493	\$4,041	\$3,311
1	50	1.67	\$1,219	\$4,834	-\$3,615	\$6,748	\$5,529
1 1/2	100	3.33	\$2,431	\$8,058	-\$5,627	\$13,457	\$11,026
2	160	5.33	\$3,891	\$16,115	-\$12,224	\$21,539	\$17,648
3	300	10	\$7,300	\$25,784	-\$18,484	\$40,410	\$33,110
4	500	16.67	\$12,169	\$48,345	-\$36,176	\$67,363	\$55,194
6	1,000	33.33	\$24,331	\$80,575	-\$56,244	\$134,687	\$110,356

WATER IMPACT FEES

Water Impact Fees are calculated incorrectly because of the same error introduced by TischlerBise and the Whitefish Public Works Director.

The TischlerBise report recommends the City charge each new home \$3903 in water impact fees. *This is the second highest component of the \$11,697 impact fees imposed on a typical new home.* The same error found in the Wastewater Impact Fee calculation appears in the Water Impact Fee calculation with the Cast Iron Water Main project. In this calculation, McAweeney uses the volumetric capacity (static gallons) of two water main replacement projects rather than the flow rate capacity (gpd). Brent Campbell pointed this out in his 21 July 2023 report, Page 4, Exhibit C (Note 4):

“In Figure 54 on page 49 TB shows values for “Total Gallons” which presumably is for water storage. **In my opinion there is no rational nexus to benefit for water storage in a cast iron water replacement project.** This storage number is then added to the storage capacity of the South Water Storage & production project to get a total “gallons added to the system” presumably gallons of storage capacity. The total cost of the two projects is then divided by this number to obtain a “capital cost per gallon” of \$17.31. **This appears to be a calculation of the capital cost to store water for the customer, not a cost to deliver water to the customer.** This value is then used in the calculation of the base impact fee for water contained in Figure 56 by applying this cost per gallon to the peak average water usage in gallons per day per EDU.”

On page 54 of the TischlerBise Impact Fee Update, the following calculation chart is used to create the current **\$3903** water impact fees for Whitefish:

Components	Cost per Gallon
Distribution Projects	\$17.31
Water Treatment Plant	\$5.50
Gross Total	\$22.81
Credit for Distribution Projects (48%)	(\$8.31)
Credit for Treatment Plan (23%)	(\$1.27)
Administrative Fee (5%)	\$0.66
Net Total	\$13.89
Peak Average Gallons per EDU	281
Capital Cost per EDU	\$3,903

Note the \$17.31 Cost per Gallon listed above for the Distribution Projects. This is very high number, similar to the problem identified in the wastewater impact fee calculation. Here is the original TischlerBise cost per gallon calculation on page 51:

Cost Analysis	
Water Distribution Projects	
Total Cost	\$18,450,000
Gallons Added to System	1,066,096
Capital Cost per Gallon	\$17.31

The **Gallons Added To System** number is comprised of two capacity quantities used by Tischler - 1,000,000 gallons or gpd (Note 9) for the South Water Storage and Production and **66,096** gallons for the Cast Iron Water Mains. The 66,096 number is the static (volumetric capacity) of water main piping. This is the same type of capacity used incorrectly by TischlerBise in the Wastewater impact fee error introduced above. This is incorrect, as noted by Brent Campbell, and should not be used to calculate costs per gpd. Water distribution capacity should only be measured in gallons per day to be dimensionally consistent with the demand (281) which is measured in terms of gpd. These dimensionally inconsistent numbers are added to obtain 1,066,096 "Gallons Added to System".

Emails between TischlerBise and Whitefish Officials

Here is the email exchange where the capacity for the water distribution projects are initially confirmed:

On Feb 8, 2023, Workman wrote to McAweeney

*Colin, This is the best tracking sheet I could find for the water plant project. Sorry, it's not nearly as helpful as the tracking sheet for the WWTP. Regarding new gallons, I would **use 2 MGD for water (from 4 MGD to 6 MGD)** and 1 MGD for wastewater (from 1.25 MGD to 2.25 MGD).*

On Feb 24, 2023, McAweeney wrote to Workman:

*"Before next week's meeting I wanted to send along draft fee results. Before that I want to confirm the capacity (gallons) of the **distribution projects** we're including in the impact fee analysis. You mentioned that they were **2 MGD for water (from 4 MGD to 6 MGD)** and 1 MGD for wastewater (from 1.25 MGD to 2.25 MGD). Those are very similar to the plant capacity, so just want to make sure wires didn't get crossed."*

The 2 MGD per day capacity of the distribution projects (Cast Iron Water Mains) is confirmed both by Workman and McAweeney back in February, 2023.

But later, Craig Workman, after prodding from McAweeney provided the following capacity number for the Cast Iron Water Main project.

On March 2, 2023 Workman wrote to McAweeney and provided the following chart:

Water Distribution
D1 Cast Iron Water Main Replacement

Project Name	Existing Diameter (inches)	Proposed Diameter (inches)	Total Unit Volume (gal/ft)	Increased Unit Volume (gal/ft)	Project Length (feet)	Total Volume (gallons)	Increased Volume (gallons)
Spokane Ave	6	18	13.2	11.8	3,600	47,589	42,301
O'Brien Ave.	12	18	13.2	7.3	1,400	18,507	10,282
Total =						66,096	52,583

Workman completely changed the capacity defined for the water piping projects. Just as he did with the wastewater capacity, he submitted numbers that were dimensionally inconsistent with the water impact fee equation which is now multiplying (cost / gallon) times (gallons / day). The value changed significantly as well from 2,000,000 gpd to only 66,096 gallons. The results of the water impact fee are therefore rendered meaningless.

Correct Water Impact Fees

Calculating the correct water impact fee using the TischlerBise method but with the correct Cast Iron Water Main capacity is a simple process. In the Tischler report, using the original Tischler calculation charts and data provided by Workman shown in the above emails, the increase in capacity for the Water Main project originally provided by Workman is **2 MGD**, not the 66,096 gallons used by McAweeney as provided by Workman.

Corrected Cost Analysis Chart

Cost Analysis	
Water Distribution Projects	
Total Costs	\$ 18,450,000
Gallons Added To System	3,000,000
Capital Cost per Gallon	\$ 6.15

2 MGD is substituted for 66,096 gallons on page 51 of the TischlerBise calculations and added to the South Water capacity of 1 MGD (Note 9) resulting in a "Gallons Added To System" of 3,000,000 gpd above. The cost per gallon/day of the water distribution systems is now **\$6.15**. Substituting this number for \$17.31 in the original TischlerBise water impact fee calculation chart results in the following chart:

Chart C - Water Impact Fee Components Using Correct Cast Iron Water Main Capacity

TischlerBise Water Impact Fee Calculations		Component Breakdown		
Components	Cost per Gallon	Distribution Projects	WTP	Totals Check
Distribution Projects	\$6.15	\$6.15		\$6.15
Water Treatment Plant (WTP)	\$5.50		\$5.50	\$5.50
Gross Total	\$11.65	\$6.15	\$5.50	\$11.65
Credit for Distrib. Non-Impact (48%)	(\$2.95)	(\$2.95)		(\$2.95)
Credit for Other WTP Revenues (23%)	(\$1.27)		(\$1.27)	(\$1.27)
Administrative Fee (5%)	\$0.37	\$0.16	\$0.21	\$0.37
Net Total	\$7.80	\$3.36	\$4.45	\$7.80
Peak Average Gallons per EDU	281	281	281	281
Capital Cost per EDU	\$2,193	\$944	\$1,250	\$2,193

Chart C shows a reduced Water Impact Fee **\$2,193** per EDU vs **\$3,903** calculated using the wrong capacity for the Cast Iron Water Main project. For a base ¾" water meter, the overcharge is **\$1,711**.

Comparison of Collection Charts

The following shows the old and new collection charts. The old chart is from the TischlerBise update and is found on Page 54:

Original TischlerBise Water Collection Chart

Meter Size (inches)	AWWA Capacity (gal)	Weighting Factor	Maximum Supportable Fee	Current Base Fee	Increase/ (Decrease)
3/4	30	1.00	\$3,903	\$2,874	\$1,029
1	50	1.67	\$6,518	\$4,311	\$2,207
1 1/2	100	3.33	\$12,997	\$7,185	\$5,812
2	160	5.33	\$20,803	\$14,370	\$6,433
3	300	10.00	\$39,030	\$22,992	\$16,038
4	500	16.67	\$65,063	\$43,110	\$21,953
6	1,000	33.33	\$130,087	\$71,850	\$58,237

Corrected Water Collection Chart

Meter Size (inches)	AWWA Capacity (gpm)	Weighting Factor	Maximum Supportable Fee	2018 Base Fee	Increase/ (Decrease)	TischlerBise Base Fee	Tischler Overcharge
3/4	30	1	\$2,192	\$2,874	-\$682	\$3,903	\$1,711
1	50	1.67	\$3,661	\$4,311	-\$650	\$6,518	\$2,857
1 1/2	100	3.33	\$7,299	\$7,185	\$114	\$12,997	\$5,698
2	160	5.33	\$11,683	\$14,370	-\$2,687	\$20,803	\$9,120
3	300	10	\$21,920	\$22,992	-\$1,072	\$39,030	\$17,110
4	500	16.67	\$36,541	\$43,110	-\$6,569	\$65,063	\$28,522
6	1,000	33.33	\$73,059	\$71,850	\$1,209	\$130,087	\$57,028

Note the significantly reduced impact fees (column 4) over the full scale of meter sizes and the extent that property owners would be overcharged in the last (red) column.

Combined Charts

Meter Size (inches)	Weighting Factor	Correct Water Fee	Correct WW Fee	Total Correct Fees	Whitefish Water Fee	Whitefish WW Fee	Total Fees	Whitefish Overcharge
3/4	1	\$2,192	\$730	\$2,922	\$3,903	\$4,041	\$7,944	\$5,022
1	1.67	\$3,661	\$1,219	\$4,880	\$6,518	\$6,748	\$13,266	\$8,387
1 1/2	3.33	\$7,299	\$2,431	\$9,730	\$12,997	\$13,457	\$26,454	\$16,723
2	5.33	\$11,683	\$3,891	\$15,574	\$20,803	\$21,539	\$42,342	\$26,767
3	10	\$21,920	\$7,300	\$29,220	\$39,030	\$40,410	\$79,440	\$50,220
4	16.67	\$36,541	\$12,169	\$48,710	\$65,063	\$67,363	\$132,426	\$83,717
6	33.33	\$73,059	\$24,331	\$97,390	\$130,087	\$134,687	\$264,774	\$167,383

ADDITIONAL TISCHLERBISE IMPACT FEE STUDY ERRORS

The basic method used by TischlerBise for calculating impact fees is flawed because it fails to account for many of the factors that are required by statute MCA 7-6-1602.

Missing Line Item Project Costs

Line item projects and costs used to determine the Capital cost of the Wastewater Treatment Plant (WWTP) are missing. The City Manager used the actual construction cost to build the new WWTP (\$19.8M). However, she added other costs to arrive at \$26.7M with little supporting documentation.

Of the projects listed in this document, very few if any of these costs appear to qualify for use in impact fee calculations. Per MCA 7-6-1602, only capital expenses for projects with a lifespan of at least 10 years can be used to calculate impact fees that are required by new development. Yet there is no supporting documentation that any of these additional costs meet this criteria.

Questionable City Hall Expansion Fees

TischlerBise added expansion of the City Hall as a major component of new impact fees for 2024. However, this project is loosely defined and the City admits that it will not likely expand City Hall for at least 10 years. In the past, the construction of this project was funded through various grants and resort taxes. None of this is reflected in the “costs” used by TischlerBise. Therefore, *level of service* varies significantly between the original construction of the City Hall and the cost allocated to Development. TischlerBise used a very simplistic cost analysis to arrive at a very expensive costing model imposed on new Development. Prior impact fees imposed during the last two impact fee cycles (5 years) are considerably less than the new fees imposed on Development.

Missing Credits

TischlerBise likewise provided little to no documentation in its report about the percentage allocation to development for each project used to calculate impact fees. No credits appear for external financing nor do any credits appear for previously collected impact fees.

For the past 5 years, the City has collected \$millions of impact fees for the WTP and the WWTP along with the South Water Reservoir project. Yet none of these fees are reflected as credits against the cost of these projects when calculating new fees. MCA 7-6-1602 specifically mentions that these prior fees must be accounted for when computing future impact fees. TischlerBise clearly violated the law by not doing so.

Inflated Costs (Pending Litigation)

The costs of certain projects such as the South Water Storage and Production are highly inflated and are currently being litigated. The use of this project in the TischlerBise report is highly questionable until this issue is resolved. As mentioned in Note 9, this project is so loosely defined that it could be either a water production project, water distribution project, or a water storage project. It is impossible for TischlerBise to categorize this with certainty as a water distribution project in their report.

Accounting Error WTP Capacity (Pending Litigation)

The Water Treatment Plant (WTP) capacity used to calculate water impact fees is also subject of current litigation. The City and TischlerBise are using 6 MGD as the capacity of the water production system, yet the new plant has a capacity of 8 MGD, along with the water source expansion, and the expanded expulsion of waste into the sewer. This is explicitly described in the City's Capital Improvement Plans. AE2S recommended all 8 MGD be made available, yet the City only turned on 6. Using GAAP accounting, the 8 MGD capacity needs to be accounted for when allocating costs to new development.

Missing Ineligible Projects

Tischler also failed to list water and wastewater capital projects that CANNOT be used in impact fee calculations as required by Montana statute. Without this information, it is impossible to accurately and legally assess impact fees. It is apparent that TischlerBise provided none of this information in its analysis and calculation of fees.

City Was Provided Ample Warning Of These Errors

Brent Campbell, an engineering consultant and expert in municipal public works systems, produced a report describing errors in the TischlerBise impact fee update. This report was presented to the City's Attorneys, yet the City administrators and politicians appear to have ignored the serious errors discovered in the TischlerBise impact fee calculations.

On Oct 16th, 2023, an Open Letter describing problems with the TischlerBise update was sent to the Mayor and City Council. At this Council meeting, errors were verbally presented to the City outlining the problems presented in this Open Letter. Prior to the meeting, two Council members were contacted requesting meetings to discuss these problems. Both meetings were declined. The Council rejected the recommendations in this Open Letter and unanimously approved the TischlerBise update with all of the errors intact. The warnings projected over \$5000 per new home in City overcharges. The Whitefish politicians refused to perform any due diligence by investigating these claims. They simply asked for the opinion of the City Manager, Dana Smith, who in turn did not understand or investigate these claims. She in turn recommended the City ignore most of these claims, after obtaining a mostly non-responsive letter from TischlerBise.

After the Oct 2023 Council meeting, the Mayor and 3 Council members wrote an inflammatory OP-ED in the local media demeaning the Open Letter contents and the author of this letter, in an obvious attempt to diminish the credibility of both.

NOTES

1. The Piping impact fee problem stems from the wrong capacity number (10,164 gallons, on page 57) provided by the Public Works Director Craig Workman and used by TischlerBise. No explanation is given in this report for why this particular capacity (volumetric) was used. Since this very small number is used in the denominator of the impact fee calculation formula, the resultant cost per gpd of \$39.35 is excessively high along with the resulting impact fee.

The difference between the capacity of the new 12" sewer pipe and the old 8" pipe is one measure of the additional capacity of the wastewater collection (distribution) Piping project. This was 6.768 mgd – 2.304 mgd = 4.464 mgd. TischlerBise, however, used the total volumetric capacity of the Piping project which is a meaningless number when used in the impact fee calculation because its equation used dimensionally inconsistent data (cost per gallon times gpd). Mr. McAweeney is using the wrong capacity and confusing dimensions in his report and does not understand what data (dimensions and value) should be used in this calculation. He relied exclusively on data provided by Craig Workman, who also did not appear to understand what data was needed by McAweeney.

The 2018 FCS report, pages 8 & 13, uses the actual Treatment Plant (both water and sewer) capacities in its Distribution and Collection impact fee calculations. In the TischlerBise update, Using the 1.0 mgd WWTP capacity increase and the 2.0 mgd WTP capacity increase would be dimensionally consistent with the FCS report when computing impact fees. In the Tischler report, if this capacity was used to compute wastewater impact fees, the capacity would be \$.40 per gpd for each typical new home. This is calculated by dividing the cost of the Piping project (\$400,000) by the Collection (Distribution) system capacity increase identified as 1.0 mgd. Because this was the number identified by Workman initially, it was chosen as the actual capacity used in the calculations of this report.

2. In 2018, FCS used a different method than TischlerBise in its Impact Fee update. FCS added all of the net costs associated with the wastewater impact fee eligible projects and after adjustments and offsets, calculated the impact fee by dividing this Total Cost by the #ERUs (typical new homes) that can be served using the existing and future capacity of the wastewater treatment plant. The Piping project net cost was simply removed from the Total Cost and the impact fee was recalculated. The difference between the original 2018 impact fee and the new fee was **\$68**. Using this fee and the estimated 1250 ERUs of construction in the previous 5 years, the City of Whitefish has already collected approximately **\$85,000** in impact fees for this Piping project which should be subtracted from the \$178,000 eligible cost of this project. TischlerBise did not account for this credit.
3. The methods used by both FCS and HDR (2007 HDR Impact Fee Report) for calculating wastewater impact fees are similar. Total cost is divided by #ERUs. Using 2023 TischlerBise WWTP increased capacity (1.0 mgd) and demand per ERU (184 gpd), #ERUs can be calculated $(750000 / 184) = 5435$. Dividing the impact fee eligible cost for the Piping project (\$177,765) by #ERUs (4076) determines the maximum allowable impact fee per ERU. The result is **\$33**.
4. 21 July, 2023, EXPERT WITNESS REPORT, BAC Consulting, author Brent Campbell. Mr. Campbell has 36 years of experience as a professional engineer with expertise in municipal public works systems, consultant, and CEO. In 2005, Mr. Campbell served in an advisory role to the state of Montana during the development of the original state enabling legislation, MCA 7-6-1601-1604. Mr. Campbell has been retained by the attorneys for the plaintiffs in the "Beck et al vs the City of Whitefish" Class Action lawsuit.
5. *2018 FCS Impact Fee Update*. On page 13, FCS uses the same capacity for both the Treatment plant and wastewater collections, referred to as the Collection plant.
6. "*Dimensionally Inconsistent*" is a physics term that describes a calculation where the elements in an equation have mismatched dimensions. For example, adding numbers with different dimensions like **Gallons** vs **Gallons/Day** would be dimensionally inconsistent and produce meaningless results. *Lumenlearning.com* – University Physics Volume 1, 1.4 Dimensional Analysis.
7. *Brent Campbell report dated 21 July, 2023*: In his analysis, Mr. Campbell discusses the TischlerBise Impact Fee report. On page 5, Exhibit C, when discussing the TischlerBise impact fee update and the wastewater calculation, he states:

"Figure 59 also shows a value of "total gallons" for Future Piping Capacity Enhancement projects to derive a "total gallons added to the system." The discussion included in the water section above applies here as well (See page 9 for this discussion). **Rational nexus and rough proportionality for a pipe capacity would be measured in a quantity per unit of time, for example, gallons per day which would be dimensionally**

consistent with wastewater production values of 184 gallons per day per EDU.” (*EDU, Equivalent Dwelling Unit, is equivalent to ERU*).

8. The 250 number of units (ERUs) used in the calculation of \$4,000,000 estimate starts with TischlerBise numbers. In the TischlerBise Impact Fee Update, a chart identifies an average of 206 new homes and condos that were built in Whitefish each year during the prior 5 years. A new home may represent a multiple of ERUs which could increase the total number of ERUs. Commercial permits and associated new ERUs were not included in the 206 number and need to be added. Home additions and remodels, which add ERUs, were not counted. Therefore 250 ERUs is a conservative estimate.
9. South Water Storage and Production: This project is listed in the Whitefish Capital Improvement Plans for nearly 20 years under various names and descriptions including a storage reservoir, a new well system, piping projects that increase capacity, etc. TischlerBise listed this project under the Distribution projects along with several Cast Iron Water Main projects. Distribution systems define capacity in terms of MGD, million gallons per day. It is unclear why Tischler mixes a storage project with 1 M gallons of storage capacity with other distribution projects. Since it is so loosely defined, the 1 MGD capacity is assumed. A storage tank capacity is in gallons and would not be consistent with water demand (gpd) whereas well production or piping capacity is defined in gpd and would be consistent with water demand (gpd). Using the simple gallons (storage) dimension in the impact fee calculation would produce a meaningless result since using demand in gpd times a cost / gallon is a dimensionally inconsistent calculation.
10. Water Purification Systems Inc., Updated Nov 16 2022, *Pipe Size and Flow Rate: Calculating Water Capacity in GPM or GPH*. Maximum flow must be converted from gpm to gpd by multiplying the gpm number by 1440 (24h x 60m).

Water Flow Capacity in Steel Pipes

Pipe Size	Maximum Flow (gal/min)	Velocity (ft/s)	Head Loss (ft/100 ft)
2"	45	4.3	3.9
2-1/2"	75	5.0	4.1
3"	130	5.6	3.9
4"	260	6.6	4.0
6"	800	8.9	4.0
8"	1,600	10.3	3.8
10"	3,000	12.2	4.0
12"	4,700	13.4	4.0
14"	6,000	14.2	4.0
16"	8,000	14.5	3.5
18"	10,000	14.3	3.0
20"	12,000	13.8	2.4
24"	18,000	14.4	2.1

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