

**MUNICIPAL AUTHORITY OF THE  
TOWNSHIP OF SOUTH FAYETTE**

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Tapping Fee Calculation

December 2018

**KLH**



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**Municipal Authority of the Township of South Fayette**

**Tapping Fee Calculation**

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## **I. INTRODUCTION**

The Municipal Authorities Act 57 allows the Municipal Authority of the Township of South Fayette to charge a fee to new customers to connect into the sewer system. The Authority currently charges new residential customers a maximum of \$5,640.00 for this fee. Commercial, industrial and institutional customers are charged the standard tapping fee per EDU, where each EDU is defined as 225 gallons per day of water consumption. Credits are available when the Authority does not provide the point of connection and when more than one EDU is connected to a single lateral. This report updates the 2015 report and recalculates the tapping fee based upon all of the capacity related facilities constructed by the Authority since 2015.

## **II. COMPONENTS OF THE TAPPING FEE**

The following summary accounts for the most recent amendments of the Act. A tapping fee may be comprised of a number of different components, each to be described separately in a resolution by the Authority. The fee for each component cannot be more than the calculated fee. The Authority has the discretion to charge less than or equal to the calculated fee. The Act also states that a tapping fee cannot be more than the total project costs divided by the design capacity of the facilities. The following is a list of the fees the Authority is permitted to charge and the cost basis of the fees:

1. Connection Fee – The cost of the connection from the sewer main to the property line
  - a. Based upon the actual cost of the connection or an average cost of similar previously installed connections
  - b. Authority may require the property owner to construct the facilities
2. Customer Facilities Fee – The cost of facilities from the property line to the building to be served
  - a. Based upon the actual cost of the facility and can only be charged if the Authority installs the facilities
  - b. Authority may require the construction of those facilities by the property owner who requests customer facilities
3. Tapping Fee – The cost of the following four components:
  - a. Capacity Part – Includes the cost of the capacity related facilities, i.e. treatment, pumping, transmission, trunk, interceptor and outfall mains, sludge treatment or disposal and interconnection or other general system facilities, the cost shall be determined by one of the following three methods:

i. Existing Facilities

- (1) A facility contributed to the Authority or portions of facilities paid for with contributions or grants other than tapping fees cannot be included in the cost basis
- (2) The cost shall be based upon historical cost trended to current cost using published cost indexes or upon historical cost plus interest and other financing fees paid on debt financing such facilities
- (3) If historical costs are not ascertainable, costs may be based on an engineer's reasonable written estimate of current replacement cost
  - (a) The estimate must be based upon and include an itemized list of the components of the actual facilities for which historical cost is not ascertainable
- (4) Outstanding debt must be subtracted from the cost, as long as the debt is not from facilities that only serve new customers
- (5) For tapping fees or components initially serving exclusively new customers, the Authority may no more frequently than annually, and without updating the historical cost of or subtracting the outstanding debt related to such facilities:
  - (a) Increase the tapping fee by an amount calculated by multiplying the tapping fee by the weighted average interest rate on the debt related to such facility

ii. Facilities to be Constructed

- (1) Cost must not exceed a reasonable estimated construction cost
- (2) Cost must be part of an adopted annual budget or a five year capital improvement plan
- (3) The Authority must have taken at least two of the following actions towards construction of the facilities:
  - (a) Obtained financing
  - (b) Entered into a contract for construction
  - (c) Obtained a permit for the facilities

- (d) Obtained title to or condemned additional real estate upon which the facilities will be constructed
  - (e) Entered into a contract to purchase or acquire facilities owned by others
  - (f) Prepared an engineering feasibility study, which recommends construction within five years
  - (g) Entered into a design or construction contract or adopted a budget which includes the use of in-house resources for the design or construction of the facilities
- iii. In all cases, any grant or capital contributions must be subtracted from the cost of the facility. The resulting cost must be divided by the design capacity, to produce a cost per unit capacity
- iv. The Authority may apply the capacity related facility to certain geographical areas, i.e. the cost of a pump station is only applied to the area served by the pump station
- v. The Authority may charge different fees to different customer types, i.e. commercial, industrial
- b. Distribution or Collection Part – The costs are calculated the same as in the capacity part. Costs include facilities that distribute or collect flows, i.e. mains, hydrants or pumping stations
- c. Special Purpose Part – The special purpose fee applies to a facility constructed specifically to serve only a certain group of customers, i.e. booster pumping stations, fire service facilities, sewer mains, pumping stations and industrial wastewater treatment facilities. This fee is calculated separately for each group of customers, in the same way as the above mentioned parts
- d. Reimbursement Part – This fee is included to recapture the allowable portion of the cost of facilities to reimburse developers that construct facilities at their own cost
- e. When calculating a tapping fee the following limitations apply:
  - i. Cost can only be included in one part of the tapping fee
  - ii. No cost can be added to the fee for expanding, replacing, updating or upgrading facilities that serve existing customers to meet stricter efficiency, environmental, regulatory, safety standards, or to provide better service to, or meet the needs of, existing customers

- iii. No cost can be added to the tapping fee for maintenance and operation expenses
- iv. No cost can be added to the fee for reducing or eliminating groundwater infiltration or inflow, unless these costs or expenses result in and increase in system design capacity
- v. The design capacity required by a new residential customer used in calculating the tapping fee shall not exceed an amount established by multiplying 90 gallons per capita per day times the average number of persons per household as established by the most recent census data provided by the U.S. Census Bureau
  - (1) If the Authority's service area is entirely within a municipal boundary for which there is corresponding census data, the average number of persons per household shall be used, as established by the most recent census data provided by the United States Census Bureau
  - (2) If the Authority's service area is not entirely within a municipal boundary, but is entirely within a county or other geographical area within Pennsylvania for which the Census Bureau has provided the average number of persons per household, then that average shall be used, as established by the most recent census data provided by the United States Census Bureau
  - (3) If the Authority's service area is not entirely within a municipal, county or other geographic area, then the Pennsylvania average number of persons per household shall be used, as established by the most recent census data provided by the United States Census Bureau
- vi. Alternatively, the design capacity required for a new residential customer shall be determined by a study, but shall not exceed:
  - (1) The average residential water consumption per residential customer plus ten percent
    - (a) The average residential water consumption shall be determined by dividing the total water consumption for all metered residential customers over at least a twelve-consecutive-month period, within the most recent five years, by the average number of customers during the period
  - (2) The average sewage flow per residential customer determined by a measured sewage flow study

- (a) The study shall be completed within the most recent five years for the lesser of three or all subdivisions of more than ten lots, which have collection systems in good repair and which have been connected into the system within the most recent five years
  - (b) The study shall calculate the average sewage flow per residential customer by measuring actual flows over at least twelve consecutive months at the points where the developments connect to the sewer mains
- 4. An Authority may use lower design capacity requirements and impose lower tapping fees for multifamily residential dwellings than imposed on other types of residential customers.
- 5. Separate accounting for future facility costs:
  - a. Any tapping fees collected which, based on facilities to be constructed or acquired in the future, shall be separately accounted for and shall be expended only for that particular facility, or a substitute facility accomplishing the same purpose which is commenced within the same period.
  - b. Such accounting shall include, but not be limited to:
    - i. The total fees collected
    - ii. The source of the fees collected
    - iii. The amount of fees expended on specific facilities
  - c. The proportionate share of tapping fees based upon facilities to be constructed or acquired in the future shall be refunded within 90 days of the occurrence of the following:
    - i. The Authority abandons its plan or apart there of to construct or acquire a facility or facilities which are the basis for such fee
    - ii. The facilities have not been placed into service within seven (7) years
    - iii. For an Authority, which provides service to five (5) or more municipalities, the facilities have not been placed into service within fifteen (15) years, after adoption of a resolution
      - (1) Any refund of fees held for fifteen (15) years shall include interest for the period the money was held.

6. Fee must be adopted or revised at a public meeting with the detailed calculations indicating how the fee was calculated

### **III. CALCULATION OF THE TAPPING FEE**

The current tapping fee was derived from the tapping fee calculation report performed by KLH Engineers in November 2006 and August 2015. The historical information gleaned from that report formed the basis for this updated calculation. In order to prevent from being redundant, the methodology/backup from the previous report was not repeated in this calculation. However, the previous report is available as a reference source if questions arise.

The bulk of the allowable costs were captured in the previous report. Since then, most of the Authority’s expenditures have been primarily to replace, update, or upgrade the existing facilities. Unfortunately, those costs are not permitted to be included in the tap fee calculation. This report does, however, include the costs for the recently completed Millers Run Interceptor Sewer Improvements project, a portion of which are eligible costs.

#### **A. CONNECTION FEE**

The connection fee includes the cost of the labor and material required for the installation of a service line from the sewer main to the property line, which are shown in Table I. The Authority requires the property owner to construct the service line from the property line to the resident. Therefore, the only costs incurred by the Authority are for inspection and administrative processing and cost to install sewer to the property line. The average cost per connection is shown in Table II. The unit price per hour used in the table is equal to the average hourly rate plus benefits.

**Service Line Connection Fee  
Table I**

<b>BASED ON AVERAGE CURRENT COST ESTIMATES</b>	
<b>6" Service Connection Fittings</b>	\$300.00
<b>6" Diameter Service Sewer 20 LF/House @ \$55/LF</b>	\$1,100.00
<b>Special Backfill 2 CY @ \$42/CY</b>	\$84.00
<b>Restoration 11 SY @ \$35 SY/Property</b>	\$385.00
<b>Total Connection Fee</b>	<b>\$1,869.00</b>



**Authority Connection Component  
Table II**

Item	Unit Price Per Hour	Total Hours	Cost
Cost of Inspection - Preliminary	\$ 60.00	1.5	\$ 90.00
Cost of Inspection - Final	\$ 60.00	3.0	\$180.00
Administrative Cost	\$ 80.00	2.0	\$160.00
Equipment Cost	\$ 75.00	2.0	\$150.00
<b>Total Allowable Connection Fee</b>			<b>\$580.00</b>

**B. COLLECTOR FACILITY/CAPACITY COMPONENT FEES**

Table III, attached as Appendix A, shows the calculation of the capacity and capacity components of the tapping fee. The endnotes explain in more detail the derivation of Table III and are also attached in Appendix A.

**IV. RECOMMENDATIONS AND APPLICATION OF ALL FEES**

It is recommended that the Authority adopt tapping fees as calculated within this document to recover allowable costs that have been spent on capital expenditures. The Authority may adopt any fee up to and including the amounts calculated. These fees are subject to change and should be reviewed on an annual or biannual basis to insure compliance with the Municipality Authorities Act.

The maximum allowable total tapping fee is as follows:

Service Line Connection Fee	\$ 1,869.00
Authority Fee	\$ 580.00
Collector & Capacity Components	<u>\$ 4,445.05</u>
<b>Total Allowable Tapping Fee</b>	<b>\$ 6,894.05</b>

The Authority is not required to adopt any of these components or methods outlined above. The fees represent the maximum allowable charges, and what KLH Engineers, Inc. believes to be the most appropriate application of the Act to insure the fairest equity collection.

## APPENDIX A

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Table III - Collector & Capacity Components Calculation and Endnotes

**Tapping Fee Calculation  
Collector & Capacity Components**

**Table III**

Description	Alcosan Capacity *	Capacity B *	Collector Components *	Feasibility Study	(a)		(b)	Footnotes
					Chartiers Creek Pump Station Upgrade	Steen Hollow Sewer Extension	Millers Run Interceptor Sewer Improvements	
In Service Date	Nov-06	Nov-06	Nov-06	2013	2014	2015	2018	
Flows								
Design Capacity MGD	2.40			NA	NA	NA	NA	1
Final Construction Costs								2
Actual Historical Costs (+)								
Treatment Interceptor					1,187,938		404,057	
Collector						11,661		
Non Utilized Equipment (-)								3
Change Orders (+)								4
Total Construction Costs	1,893,077	6,708,508	23,516,377		1,187,938	11,661	404,057	5
Project Cost (Engineering, Legal, etc.) (+)				130,432	214,773	17,845	361,466	6
Total Net Project Costs	1,893,077	6,708,508	23,516,377	130,432	1,402,711	29,506	765,523	7
Project Grants (-)								8
Capital Contributions (-)								9
Total Project Costs	1,893,077	6,708,508	23,516,377	130,432	1,402,711	29,506	765,523	10
ENR Index @ Report Date	7883	7883	7883	9579	9866	10039	11186	11
ENR Index @ December 2018	11186	11186	11186	11186	11186	11186	11186	
Ratio ENR Index	1.42	1.42	1.42	1.17	1.13	1.11	1.00	12
Total Trended Project Costs	2,686,282	9,519,392	33,369,808	152,314	1,590,384	32,877	765,523	13
Cumulative Net Trended Project Cost	2,686,282	12,205,674	45,575,482	45,727,795	47,318,179	47,351,056	48,116,580	14

\* Totals were taken from the November 2006 Tap Fee Calculation

(a) Pulled out Boys Home trended costs since it was abandoned upon completion of this project.

(b) Construction costs based on projected final contract value. Pulled out portion of sewers eliminated as a result of this project. Calculated percentage of project attributable to capacity for future development (20%).

Outstanding Debt		
Available Surplus (+)	2,095,841	15
Total Outstanding Debt (-)	2,798,605	16
Allowable Project Cost Basis	47,413,816	17
Collector & Capacity Components		
Treatment Facility Fee Calculation		
Allowable Project Cost Basis	47,413,816	17
Current Design Capacity (GPD)	2,400,000	18
Cost Basis per GPD	19.76	19
Current Customer Contribution (GPD)	225	20
Maximum Tapping Fee Chargeable	\$4,445.05	21

**Municipal Authority of South Fayette  
Tapping Fee Calculation**

**1 Design Capacity**

Determined from Authority’s historical data.

**2 Final Construction Costs**

Determined from the financial records of the Authority, including Annual Reports, Auditor’s Reports, Act 339 Applications and final construction requisitions.

**3 Non-Utilized Equipment**

The cost of the major equipment or processes no longer used, equipment removed or abandoned because of facility upgrading. None considered in this report.

**4 Change Orders**

The amount of the change orders could not be determined from the Authority documents. It was assumed that the reported construction costs were the final costs, which would include the cost of the change orders.

**5 Total Construction Costs**

The sum of the construction costs and the change orders, minus the cost of the non-utilized equipment.

When the Steen Hollow Sewer Extension went into operation, the Boys Home Pump Station was abandoned. Therefore, the Boys Home Pump Station costs, which were part of the Capacity B component must be trended forward to the date of the Steen Hollow Sewer Extension and removed. The calculation is:

Boys Home Pump Station Costs @ 6/1/90	\$136,552
ENR Index @ Nov. 2015	10039
ENR Index @ 6/1/90	4732
Ratio ENR Index	2.12
Boys Home Pump Station Trended Costs	\$289,427
Steen Hollow Sewer Extension Costs	\$301,088
Less Boys Home Trended Costs	<u>(\$289,427)</u>
Net Steen Hollow Costs	\$11,661

Portions of existing trunk line sewers were eliminated as a result of the Millers Run Interceptor Sewer project. Therefore the costs of these sewers in today's dollars must be removed from the project cost. The calculation, assuming average depth of 12-16', is:

3,606 LF of 18" sewer @ \$100/LF	\$360,600
1,061 LF of 15" sewer @ \$90/LF	\$95,490
120 LF of 10" sewer @ \$57/LF	\$1,200
122 LF of 8" sewer @ \$55/LF	\$6,710
22 manholes @ \$3,500/EA	<u>\$77,000</u>
Total	\$541,000

Only 20% of the capacity of Millers Run Interceptor Sewer project is attributable to future development, thus only 20% of the remaining project cost is eligible.

## **6 Project Costs (Engineering, Legal, etc.)**

Actual project costs were used where available.

## **7 Total Net Project Costs**

Equal to the sum of the total construction costs and the project costs, minus the sum of the expansion and upgrade/replace/betterment costs allocated to existing customers.

## **8 Project Grants**

The amount of grant funding received by the Authority taken from past Authority Annual Reports and tap fee calculations. None considered in this report.

## **9 Capital Contributions**

The Capital contributions received from sources outside of the Authority taken from previous tap fee calculations and final construction requisitions. None considered in this report.

## **10 Total Net Project Costs**

Equal to the total project costs minus the sum of the project grants and the capital contributions.

## **11 ENR Index @ Report Date & ENR Index @ December 2018**

Construction cost index factors for the previous tap fee report date and for December 2018 are from the published Engineering News Record (ENR) index factors.

## **12 Ratio ENR Index**

Equal to the ENR Index @ Bid Date divided by the ENR Index @ December 2018

**13 Total Trended Project Costs**

Equal to the total net project costs times the ratio ENR index

**14 Cumulative Net Trended Project Cost**

Equal to the sum of the total net trended project costs of all of the previous projects.

**15 Available Surplus**

The total available surplus was reported in the Authority’s Financial Statements as of December 2018.

**16 Total Outstanding Debt**

The Authority’s outstanding debt was also taken from the above-mentioned Financial Statements.

**17 Allowable Project Cost Basis**

Equal to the sum of the cumulative net trended project cost and the available surplus minus the total outstanding debt.

**18 Current Design Capacity**

Equal to the design capacity of the treatment plant. It was assumed this was the limiting factor within the system.

**19 Cost Basis per GPD**

Equal to the allowable project cost basis divided by the current design capacity.

**20 Current Customer Contribution (GPD)**

Based on the Municipality Authorities Act, current customer contribution is calculated by the number of people per household (2.50, based on 2013-2017 American Community Survey 5-year Estimates) in South Fayette Township multiplied by 90 Gallons per person per day.

**21 Capacity Component A**

Equal to the cost basis per GPD times the current customer contribution.