



Lower Allen Township

# STORMWATER FEE RATE STRUCTURE

September 17, 2018



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## ACRONYMS AND ABBREVIATIONS

BMPs	Best Management Practices
ERU	Equivalent Residential Units
GIS	Geographic Information System
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
PIN	Parcel Identification Number
SFR	Single-Family Residential

## 1 PURPOSE

The purpose of this technical memorandum is to document the recommended Stormwater Fee rate structure for Lower Allen Township. The rate structure is intended to generate revenue for managing the Stormwater Management System at the selected level of service while providing a fair and equitable allocation of costs to property owners.

## 2 BACKGROUND

Inadequate management of Stormwater could pose significant threats to the public's health and safety. Such threats include flooding, erosion, and water quality degradation. To avoid these situations, Lower Allen Township maintains a Stormwater Management System of sewers, drains, basins, infiltration and filtration facilities, inlets, manholes, ditches, outfalls and other infrastructure to collect, convey and manage Stormwater. This System protects and preserves the Township streams and other water bodies.

In order to effectively implement a comprehensive Stormwater Management program and comply with the Township's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit, the Township has decided to assess a Stormwater Fee on all parcels within the Township.

Lower Allen Township currently bills residential and non-residential properties for sanitary sewer service on a quarterly basis. Residential customers pay a flat rate for sewer service. Some non-residential wastewater customers pay varying amounts for sanitary sewer service based on water consumption. The Township also bills residential customers for trash collection on a quarterly basis.

## 3 DEFINITIONS

1. **BEST MANAGEMENT PRACTICES (BMPs)** – Methods, procedures and analyses specified in the Pennsylvania Stormwater Best Management Practices Manual to reduce flooding potential and control the volume, flow rate and water quality of Stormwater.
2. **BILLED PARCEL** – Any parcel located in the Township, except Township-owned parcels and common area parcels (i.e. parcels without dwelling units) owned by homeowner associations.
3. **EQUIVALENT RESIDENTIAL UNIT (ERU)** – The measure of impervious ground cover for a typical single-family residential Property used in assessing the fees for each Billed Parcel, and which has been determined to be Three Thousand One Hundred Fifteen (3,115) square feet.
4. **LOWER ALLEN** – Lower Allen Township, Cumberland County, Pennsylvania.
5. **IMPERVIOUS SURFACE** – A surface that prevents the infiltration of water into the ground. Impervious surfaces (or areas) shall include, but are not limited to, roofs, additional indoor living spaces, patios, garages, storage sheds and similar structures, and any new streets and sidewalks. Any surface area proposed to initially be gravel or crushed stone shall be assumed to be impervious, unless designed as an infiltration BMP. For the purpose of this Stormwater fee

rate structure, the following are not measured as Impervious Surface: water surface area of a swimming pool and sidewalks adjacent to and parallel to public streets.

6. **NON-RESIDENTIAL PROPERTIES** – All Billed Parcels other than Single Family Residential Properties, including multi-family properties such as apartments and mixed-use parcels (i.e. parcels with both residential and commercial use). Non-Residential Properties also include mobile home parks, commercial, institutional, governmental and industrial parcels.
7. **OWNER** – Any person, firm, corporation, individual, partnership, company, association, organization, society or group owning real Property in Lower Allen.
8. **PARCEL IDENTIFICATION NUMBER (PIN)** – A discrete identification number for each lot, parcel, building or other structure within Lower Allen.
9. **PROPERTY** – Each lot, parcel, building or portion thereof, separately established by a discrete PIN by Lower Allen.
10. **SINGLE FAMILY RESIDENTIAL (SFR) PROPERTIES** – Billed Parcels containing single family residential homes, attached homes, townhouses, condominiums, duplexes and row homes. Billed Parcels may be classified as “SFR” despite the presence of incidental structures associated with residential uses such as garages, carports or small storage buildings. “SFR” shall not include Billed Parcels containing: (a) structures used primarily for non-residential purposes, (b) mobile homes located within mobile home parks, or (c) apartment buildings or agricultural properties. A Billed Parcel which does not contain a dwelling unit (e.g. it contains a garage, shed, driveway, parking area or other impervious area) will be classified as SFR if the parcel is zoned as a residential parcel.
11. **STORMWATER** – Runoff water from all precipitation events, snowmelts, and springs.
12. **STORMWATER MANAGEMENT SYSTEM** – The system of runoff avoidance, infiltration, collection and conveyance, including storm sewers, pipes, conduits, mains, inlets, culverts, catch basins, gutters, manholes, ditches, channels, basins and detention ponds, streets, curbs, drains and all devices, appliances and Stormwater BMPs, such as infiltration and filtration facilities, used for collecting, conducting, pumping, conveying, detaining, infiltrating, reducing, managing, avoiding the generation of, and treating Stormwater, which is owned, operated or maintained by Lower Allen Township. The proposed Stormwater Fee revenue will be used to maintain this system.

## 4 CLASSES OF RATE PAYERS

The classes of rate payers for Stormwater management will consist of SFR Properties and Non-Residential properties as defined above. Although condominiums are included as SFR Properties, the common areas associated with the condominiums will not receive a Stormwater Fee. Apartment buildings are included in the Non-Residential Properties grouping because they typically have less impervious area per dwelling unit than the SFR Properties and are typically rental properties.

All Billed Parcels in Lower Allen Township will be assessed a Stormwater Fee.

## 5 RATE STRUCTURE

The Stormwater Fee will be billed on a quarterly basis. The proposed rate structure is described below:

### 5.1 Single-Family Residential (SFR) Properties

The average impervious surface area per SFR property (or ERU) considering all types of SFR properties is estimated to be 3,115 square feet. Although there are variations in the amount of impervious surface among residential parcels, a Stormwater Fee consisting of a flat rate per ERU for SFR dwelling units is recommended over an individualized rate or a tiered rate system for the following reasons:

1. A flat rate structure is equitable for all SFR properties and it is easy to administer, requiring minimal cost and effort to implement and oversee compared to other billing options. This will allow more of the collected funds to be used for projects, and the operation and maintenance of the Stormwater Management System.
2. All property owners benefit from the community-wide Stormwater Management System that manages Stormwater from roads and properties.
3. A flat rate structure is least likely to be appealed for incorrect surface area or dwelling type in the database.
4. Lower Allen will have to invest a significant amount of money and time to collect additional impervious surface data for the existing geographical information system (GIS) in order to bill each residential customer for its amount of impervious surface. Because the changes to the amount of the fee would be small for the majority of residential parcels, it is not recommended to individually calculate the rates for residential parcels. A recent survey of Stormwater utilities in the United States showed that only 6% of the utilities calculate the fees individually for residential areas (67% have uniform flat rates and 28% have flat tiered rates).
5. Residential customers pay a flat rate for wastewater and trash service (even though the amount of trash or wastewater generated by each property varies). The Stormwater Fee will take a similar approach and will facilitate consistency with these utility fees.

### 5.2 Non-Residential Properties

The Stormwater Fee for Non-Residential Properties will be based on the actual impervious surface area of each property and will be calculated as a whole number multiple of the ERU. The impervious surface area for each Non-Residential Property will be divided by the impervious surface area of one ERU and will be billed based on the multiple of ERUs calculated, rounded to the nearest ERU. The Stormwater Fee for Non-Residential Properties will be calculated by multiplying the number of ERUs times the flat rate per ERU. The minimum fee for all Billed Parcels will be one ERU.

Non-Residential Properties are eligible for Stormwater Fee credits as described in the Lower Allen Township Stormwater Fee Credit and Adjustment Policy (to be developed).

## 5.3 Stormwater Fee Rate Calculation and Stormwater Program Budget

### 5.3.1 ERU Calculation

The ERU is the average Impervious Area of SFR properties (includes buildings, sheds, driveway, interior walkways, patios and other impervious area within the parcel boundary). The impervious area of 18% of the SFR properties has been fully digitized and was used as a representative sample to calculate the ERU as defined in Section 5.1.

### 5.3.2 Estimate of Total ERUs

The total number of ERUs that will be billed is equal to the number of SFR Properties plus the number of ERUs from Non-Residential Properties plus the number of undeveloped properties, less approved credits.

Table 1 Calculation of Total ERUs

Property Type	ERUs
Single Family Residential	5,354
Single Family Residential Credits	-268 [5%]
Non-Residential/Multi-Family*	12,458
Non-Residential/Multi-Family Credits	-1,246 (10%)
Undeveloped/Condos under Construction	287
<b>Total Net ERUs</b>	<b>16,585</b>

\* - Does not include 2,700 ERUs associated with the Pennsylvania Turnpike and PennDOT due to uncertainty regarding the credits that may be issued to these entities and total ERUs for which revenue may be collected.

### 5.3.3 Stormwater Fee Rate Calculation

The Stormwater Fee Rate is determined by calculating the total required revenues for managing the Stormwater Management System and dividing it by the total anticipated number of net ERUs. Arcadis performed a 5-year projection of revenues and expenses to establish the Stormwater Fee Rate. The Stormwater Fee Rate was calculated assuming the rate would be held constant for five years and that SFR Properties would achieve 5% approved credits on average and Non-Residential Properties would achieve 10% approved credits on average. Annual growth rates of ERUs was set to 0%. The following additional assumptions were used to calculate the Stormwater Fee Rate:

- Collection rate = 97%
- Inflation rate for all expenses = 3%

- Interest earned on cash balance = 0%
- Repair/replacement cost for sewers = \$81.25/LF
- Inspection and assessment of sewers = \$3.00/LF
- System Pole-camera screened annually = 50% (2019 & 2020), 20% thereafter
- System televised annually = 0% (2019), 5% thereafter
- Annual rate of Stormwater pipe renewal/replacement = 1.5% (1,600 LF) [2019-2023], may need to raise to 2.5% (5,530 LF) thereafter
- Cost of future BMP annual maintenance = 1% of capital cost
- Street cleaning level of service is unchanged.
- Leaf collection is not included.

Using these assumptions, the initial Stormwater Fee Rate was calculated to be \$19.00 a quarter. Table 2 shows a 5-year projection of revenues and expenses. Table 3 and Figure 1 show a breakdown of the Stormwater Program Budget over the next 5 years. The detailed program budget can be seen in Appendix A.

**Table 2 Projection of Stormwater Revenues and Expenses**

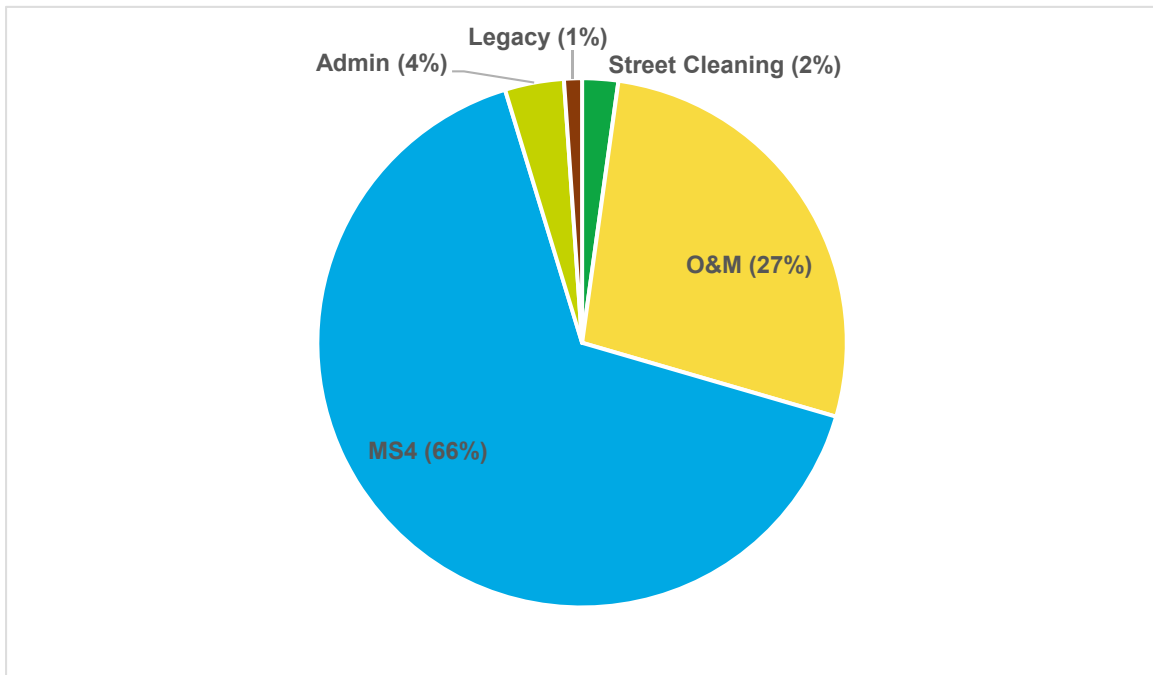
	2019	2020	2021	2022	2023
ERU Rate Change	N/A	0%	0%	0%	0%
ERU Rate (\$/qtr)	19.00	19.00	19.00	19.00	19.00
Net ERUs	16,585	16,585	16,585	16,585	16,585
Total Billed Revenue (\$)	1,260,460	1,260,460	1,260,460	1,260,460	1,260,460
Revenue Collected (\$)	1,226,175	1,226,175	1,226,175	1,226,175	1,226,175
Budgeted Expenses (\$)	665,074	1,128,630	1,612,537	1,271,010	1,285,553
Net Revenue (\$)	561,101	97,546	(386,362)	(44,834)	(59,378)
<b>Year End Cash Balance (\$)</b>	<b>561,101</b>	<b>658,647</b>	<b>272,285</b>	<b>227,451</b>	<b>168,073</b>
Cash Balance (% of Annual Budget)	84%	58%	17%	18%	13%

**Table 3 Projection of Stormwater Expenses**

Expense Category	2019	2020	2021	2022	2023
Street Cleaning	\$24,481	\$25,215	\$25,971	\$26,751	\$27,553
Operations & Maintenance	\$304,724	\$331,466	\$321,371	\$331,012	\$340,942
MS4 Permit Compliance*	\$185,870	\$726,649	\$1,234,586	\$887,170	\$890,198
Administration/billing	\$85,000	\$45,300	\$30,609	\$26,077	\$26,860
Legacy Transaction Costs	\$65,000	\$0	\$0	\$0	\$0
<b>Total Budget</b>	<b>\$665,074</b>	<b>\$1,128,630</b>	<b>\$1,612,537</b>	<b>\$1,271,010</b>	<b>\$1,285,553</b>

\* – 88% of MS4 Permit Compliance costs are associated with implementing new BMPs. This cost is anticipated to drop in 2024.





**Figure 1** Stormwater Program Budget (5-year average)

# APPENDIX A

## Lower Allen Township 5 Year Stormwater Program Budget



### Lower Allen Township Stormwater Management Budget – PRELIMINARY

Lower Allen Stormwater Program Budget - Preliminary									
Budget Category		2016	2017	2018	2019	2020	2021	2022	2023
<b>LABOR</b>									
Engineer-25%	OM	\$ 32,048	\$ 33,010	\$ 34,000	\$ 35,020	\$ 36,071	\$ 37,153	\$ 38,267	\$ 39,415
Engineering Technician-30%	OM	\$ 22,622	\$ 23,301	\$ 24,000	\$ 24,720	\$ 25,462	\$ 26,225	\$ 27,012	\$ 27,823
MS4 Coordinator-100%	MS4	\$ 82,006	\$ 84,466	\$ 87,000	\$ 89,610	\$ 92,298	\$ 95,067	\$ 97,919	\$ 100,857
Support Staff (finance, clerical)	OM	\$ 23,565	\$ 24,272	\$ 25,000	\$ 25,750	\$ 26,523	\$ 27,318	\$ 28,138	\$ 28,982
Other New Labor	OM				\$ 18,889	\$ 19,456	\$ -	\$ -	\$ -
<b>STREET CLEANING</b>									
Street Cleaning Labor, Fuel, Sweeper Maint	SS	\$ 17,000	\$ 17,000	\$ 17,510	\$ 18,035	\$ 18,576	\$ 19,134	\$ 19,708	\$ 20,299
Street Sweepings Disposal Costs	SS	\$ 12,031	\$ 5,761	\$ 6,000	\$ 6,180	\$ 6,365	\$ 6,556	\$ 6,753	\$ 6,956
Street Cleaning Water	SS	\$ 250	\$ 250	\$ 258	\$ 265	\$ 273	\$ 281	\$ 290	\$ 299
<b>MS4 SYSTEM O&amp;M</b>									
Storm Drain & MH Cleaning/Repairs	OM	\$ 43,000	\$ 24,000	\$ 60,000	\$ 61,800	\$ 63,654	\$ 65,564	\$ 67,531	\$ 69,556
Maintenance of Future BMPs	MS4				\$ -	\$ 3,904	\$ 13,730	\$ 19,565	\$ 27,169
Vehicles/Equipment	OM				\$ 2,000	\$ 2,060	\$ 2,122	\$ 2,185	\$ 2,251
Pole Camera Inspection Program	OM								
Seneca Ave Pump Station	OM	\$ 1,414	\$ 1,456	\$ 1,500	\$ 1,545	\$ 1,591	\$ 1,639	\$ 1,688	\$ 1,739
Stormsewer system clean, TV, assessment - Public	OM	\$ -	\$ -	\$ -	\$ -	\$ 17,600	\$ 18,128	\$ 18,672	\$ 19,232
Stormsewer system clean, TV, assessment - Easements/private	OM	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Stormsewer System Long-term Repair&Replacement-Public	OM	\$ -	\$ -	\$ -	\$ 130,000	\$ 133,900	\$ 137,917	\$ 142,055	\$ 146,316
Stormsewer System Long-term Repair&Replacement-Easements/private	OM	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other MS4 Permit Admin Costs	MS4	\$ 283	\$ 291	\$ 300	\$ 1,500	\$ 1,545	\$ 1,591	\$ 1,639	\$ 1,688
MS4 Permit Req'd BMPs Design/Permitting	MS4				\$ 94,760	\$ 238,490	\$ 141,617	\$ 184,583	\$ -
MS4 Permit Req'd BMPs Construction	MS4	\$ -	\$ -	\$ -	\$ -	\$ 390,411	\$ 982,580	\$ 583,464	\$ 760,484
<b>MISC</b>									
Legacy Costs	Legacy				\$ 65,000				
Misc Mtrls and Supplies	OM				\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628
Accounting/Audit	A				\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628
Legal Services	A				\$ 35,000	\$ 10,000	\$ 5,000	\$ 5,150	\$ 5,305
Consulting Services	A				\$ 40,000	\$ 25,000	\$ 15,000	\$ 10,000	\$ 10,300
Portion of Twp Billing Costs	A	\$ -	\$ -	\$ -	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628
<b>Subtotal</b>		<b>\$ 234,219</b>	<b>\$ 213,807</b>	<b>\$ 255,568</b>	<b>\$ 665,074</b>	<b>\$ 1,128,630</b>	<b>\$ 1,612,537</b>	<b>\$ 1,271,010</b>	<b>\$ 1,285,553</b>