

STORMWATER MANAGEMENT FEE STUDY

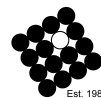
Prepared For

**BALDWIN BOROUGH
3344 Churchview Avenue
Pittsburgh, Pennsylvania 15227**

NOVEMBER 2020

**Advertised:
November 2020**

**Approved by Borough Council:
Ordinance No. 913 dated December 15, 2020**



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BALDWIN BOROUGH
STORMWATER MANAGEMENT FEE STUDY

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BALDWIN BOROUGH STORMWATER MANAGEMENT FEE STUDY

Executive Summary

Purpose

The purpose of this study is to develop an equitable, fair, and reasonable Stormwater Management Fee system to establish a dedicated revenue source for anticipated expenses associated with stormwater management infrastructure improvements and compliance with the Borough's regulatory requirements imposed by the MS4 NPDES Permit issued to the Borough by PADEP. A reasonable basis by which to establish the user fee system would be on the user's anticipated contribution of stormwater runoff to the MS4 system or surface waters. The methodology most commonly used in the industry relates to the amount of impervious area contained on a property.

Analysis of Property Types

The basis of the user fee was determined according to the present use of the parcel. For analysis, parcels were generally categorized into five groups as follows:

1. Single Family Detached Residential Property (A parcel containing an individual single family dwelling not attached to any other dwelling unit)
2. Single Family Attached Residential Property (A parcel containing an individual single family dwelling unit that is physically attached to another dwelling unit on another parcel)
3. Duplex Residential Property (A parcel containing an individual residential structure containing two attached dwelling units under common ownership)
4. Non Single Family Property (Any developed property that is not a Single Family Detached Residential Property, Single Family Attached Residential Property or a Duplex Residential Property, including, commercial and office buildings, public industrial and manufacturing buildings, multi-family dwellings (3 or more dwelling units), places of worship, parking lots or garages, schools and other educational facilities, etc.).
5. Vacant Land (Properties with fewer than 600 square feet of impervious area)

Assessment of Fees for Individual Properties

To equitably assess fees for individual properties, an Equivalent Residential Unit (ERU) was established to represent the typical amount of impervious area on a Single Family Detached Residential Property in the Borough. This value was based on a statistical sample size of selected parcels. The ERU was determined to be 2,200 square feet. The intent of analysis of Single-Family Residential Properties was to establish a reasonable, representative value of all such properties for use as the ERU. This ERU is to be used as the fee basis for all Borough properties as follows:

1. Single Family Detached Residential Property – 1 ERU
2. Single Family Attached Residential Property – 0.5 ERU
3. Duplex Residential Property – 1 ERU
4. Non Single Family Property - Determined based on actual impervious area proportionate to 1 ERU.
5. Vacant Land – No fee assessment.

Anticipated Expenses

Anticipated expenses were compiled in four categories for determination of revenues needed for the Borough Stormwater Management Fund.

Administration	\$58,062
Annual O&M	\$245,082
Capital Improvements	\$384,726
MS4 Permit Compliance	\$390,800
Total Annual Expense	\$1,078,670

Fee Recommendation

Distribution of anticipated annual expenses among the Borough's total properties results in a monthly per ERU fee of \$7.92, when accounting for anticipated credits. For implementation, a \$8.00/month/ERU fee is recommend. This equates to a \$96.00 annual fee per ERU and an annual gross revenue of \$1,090,056 collected for the Stormwater Fund, when accounting for anticipated credits.

BALDWIN BOROUGH STORMWATER MANAGEMENT FEE STUDY

SECTION 1

INTRODUCTION

Section 1.1 – Background

Baldwin Borough owns and operates a Municipal Separate Storm Sewer System (MS4) consisting primarily of a system of collection and conveyance infrastructure, with some facilities providing detention and treatment used to manage stormwater runoff. Infrastructure associated with the Borough's MS4 includes, but is not limited to inlets, catch basins, storm drains, conveyance pipes, channels, swales, roadway curbs, culverts, detention basins, infiltration practices, and other post-construction stormwater management (PCSM) Best Management Practices (BMPs). This infrastructure has been installed in accordance with state and federal law and must be maintained to manage impact of stormwater runoff and minimize the potential negative effect of runoff to public and private property for the public good throughout the Borough. To this effect, the Borough's MS4 should be considered a public utility serving each property owner, or user of the MS4, throughout the Borough. A property's impact and therefore the user's contribution of stormwater to the MS4 is typically evaluated based on the amount of impervious cover present on the property. As development occurs and pre-existing natural land cover is replaced with impervious cover, rates and volumes of runoff increase and as such must be managed by the MS4. Funding for operation, maintenance and improvement of the MS4 has historically been budgeted as part of the Borough's General Fund. However, as development progresses, flooding and stormwater quality concerns intensify and federal and state regulations increase, a dedicated funding source similar to that which has been previously established for sanitary sewer, should be established for the required sustainability of the MS4.

Section 1.2 – Purpose

The purpose of this study is to develop an equitable, fair, and reasonable MS4 user fee system that promotes that users and beneficiaries, of the Borough's MS4 pay a proportionate share of the costs of administration, operation, maintenance, repair, replacement and improvement of the MS4. A reasonable basis by which to establish the user fee system would be on the user's anticipated contribution of stormwater runoff to the MS4 system. It is also reasonable to establish criteria for credits or reduction in fees for those users who opt to implement Best Management Practices that serve their properties to lessen the impact of same on the Borough's MS4.

Section 1.3 – Definitions

DUPLEX RESIDENTIAL PROPERTY – A property containing a single, two family attached structure containing only two dwelling units, each of which are constructed on top of one another and divided by a common floor/ceiling structure with each dwelling unit having direct access to the outside or a property containing a single two family attached structure containing only two dwelling units each of which are entirely separated from the other by a continuous, common wall extending from the basement to the roof, each unit having independent access to the outside.

DWELLING UNIT – A single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

EQUIVALENT RESIDENTIAL UNIT (ERU) – The measure of impervious ground cover for a typical single-family residential Property used in assessing the fees for each parcel of Property, and which has been determined to be 2,200 square feet. Refer to Section 3.3 for additional information of the ERU calculation.

IMPERVIOUS SURFACE – Those hard surface areas that either prevent or impede the entry of water into the soil under natural conditions, pre-existent to development, or which cause water to run off the surface in greater quantities, or at an increased rate of flow than under natural conditions, pre-existent to development, including, without limitation, surfaces such as roof tops, asphalt, concrete, or any other material that has been compacted, engineered and intended for vehicular traffic or parking, including, but not limited to, driveways and parking lots, private streets, or other surfaces which similarly affect the natural infiltration or runoff of natural drainage patterns existing prior to development including, but not limited to, walkways, patio areas and storage areas. Compacted gravel or crushed stone surfaces are considered impervious surfaces for this analysis. In addition, any surface designed to be constructed of permeable, pervious or porous concrete, asphalt, or pavers are also considered to be an impervious surface for this analysis.

NON-SINGLE-FAMILY PROPERTY – Individual Properties not used as a Single Family Detached Property, Single Family Attached Property or Duplex Residential Property. These may include manufactured homes and mobile home parks, commercial and office buildings, public buildings and structures, industrial and manufacturing buildings, multi-family dwelling containing three or more dwelling units, lots with more than one detached single family house, places of worship, places of assembly, condominium units where individual units are not townhouses, parking lots or garages, schools and other educational facilities, storage buildings and storage areas covered with impervious surfaces, research stations, hospitals, convalescent centers, airports, agricultural, water reservoirs, water and wastewater treatment plants, and parcels with two or more single family detached dwellings.

OPERATION, MAINTENANCE AND CAPITAL COSTS – The associated costs for facilities, energy, manpower, materials, property acquisition, transportation and other

services and equipment required to collect, convey, detain, pump and transport stormwater.

PROPERTY or PROPERTIES – Each lot, parcel, or portion thereof containing 600 or more square feet of impervious surface. Lots or parcels containing less than 600 square feet of impervious surface shall be considered vacant land.

SINGLE FAMILY ATTACHED RESIDENTIAL PROPERTY – An individual property containing one dwelling unit that is designed for occupancy by one family located on one parcel of land that is attached to another dwelling unit. This does not include individual units in a Duplex Residential dwelling containing two units in which the individual dwelling units are located on a single parcel. This definition includes individual units in a condominium unit in which the subject lot includes only the extent of the individual condominium unit, with adjacent driveways, access roads, and open areas located on common ground only when condominium units are designed as Townhouses as defined herein. The inclusion of condominium townhomes as single family attached dwellings takes into account impervious area located in common areas.

SINGLE FAMILY DETACHED RESIDENTIAL PROPERTY – An individual property containing one dwelling unit that is designed for occupancy by one family located on one or more individual lots or parcels of land that is not attached to another dwelling unit. This does not include individual units in a mobile home community in which the subject lot includes only the extent of the individual mobile home, with adjacent driveways, access roads, and open areas located on common ground.

TOWNHOUSE – A building which contains at least three but no more than eight single family dwelling units, each of which are separated from the adjoining unit or units by a continuous, common wall extending from the basement to the roof, each unit having independent access directly to the outside and having no units above or below. For the

purpose of this definition each dwelling unit is located on an independent tax parcel containing no other dwelling units.

SECTION 2

ASSESSMENT OF STORMWATER UTILITY EXPENDITURES

Section 2.1 – Administrative Costs

Administration of the Borough MS4 and provision of the stormwater utility service to its users requires effort of many Borough departments and staff members, including the Borough Manager, Director of Municipal Services, Department of Public Works and administrative/billing/clerical staff.

Section 2.2 – Operation and Maintenance of Storm Sewer Infrastructure

Continued operation of Borough MS4 infrastructure requires routine annual maintenance and repairs. Expenditures associated with operation and maintenance activities primarily consist of labor, material and equipment costs of the Borough staff. Annual operation and maintenance activities typically involve cleaning and repair of collection and conveyance facilities, including, but not limited to, removal of debris from inlets, flushing of storm sewer lines, street sweeping, rebuilding deteriorating inlets, repair of roadway curbs and maintenance of collection channels and swales. Significant annual maintenance is also required for proper operation of post-construction stormwater management BMPs owned by the Borough, including mowing, debris and sediment removal, maintenance of plantings and vegetation, repair or replacement of the facility's infrastructure and repair of erosion areas.

Section 2.3 – Capital Improvement Projects for Storm Sewer Infrastructure

A long-term capital improvement program consisting of replacement and improvement of storm sewer infrastructure is needed for effective provision of the stormwater utility by the Borough. Storm sewer infrastructure deteriorates with age increasing potential for failure of the facilities and occurrence of flooding or other stormwater runoff issues.

Similarly, instances of undersized infrastructure lacking capacity throughout the Borough contribute to flooding and stormwater runoff issues. Expenditures for long term capital improvement programs are based upon the estimated replacement or improvement cost of the Borough's storm sewer infrastructure, including, inlets, conveyance piping, culverts, bridges and roadway curbs distributed over a 40-year period.

Section 2.4 – NPDES MS4 Permit Compliance

The Borough's MS4 is regulated by the Pennsylvania Department of Environmental Protection (PADEP) under the National Pollutant Discharge Elimination System (NPDES) established as part of the federal Clean Water Act administered by the Environmental Protection Agency (EPA). Compliance with the Borough's NPDES MS4 Permit, number PAG136128, requires implementation of a Stormwater Management Program (SWMP) designed to reduce the discharge of pollutants from the MS4 and protect water quality. Implementation of the SWMP requires compliance with six Minimum Control Measures, as follows:

1. Public Education and Outreach on Stormwater Impacts
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination (IDD&E)
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management (PCSM)
6. Pollution Prevention/Good Housekeeping

In addition, beginning with issuance of the MS4 NPDES Permit in March 2018, the Borough will have to comply with Pollutant Reduction Plan requirements for the surface waters within the Borough that are impaired for sediment or nutrients. Between 2018 and 2023, the Borough must implement and perpetually maintain new BMPs and/or retrofit BMPs to achieve minimum pollutant reductions established by PADEP.

SECTION 3

EVALUATION OF USERS/CONTRIBUTORS OF STORMWATER RUNOFF AND QUANTIFICATION OF FEE BASIS CRITERIA

Section 3.1 – Introduction

As described as part of Section 1.2 – Purpose, the intent of this study is to establish an equitable fee for each user of the Borough MS4, based, to the extent practicable, on the user's anticipated contribution of runoff to the Borough MS4. In determining the anticipated contribution of runoff to the MS4, the variable most reasonably associated with quantifying the relative contribution of runoff to the MS4 was determined to be impervious area. While land in a natural wooded or meadow state does contribute runoff to the MS4, the magnitude of runoff rate, runoff volume and the introduction of pollutants is greatly increased with the development of impervious surfaces. The basis of the user fee was determined to be based on the present use of the parcel. For analysis, parcels were generally categorized into five groups as follows, and as defined in Section 1.3:

1. Single Family Detached Residential Property
2. Single Family Attached Residential Property
3. Duplex Residential Property
4. Non Single Family Property
5. Vacant Land

Appendix A: Parcel Designations provides mapping showing the categorization of each parcel within the Borough. Parcel lines provided are based on Allegheny County tax parcel data, last updated January 2019. An overview drawing is provided in Appendix A as well as detailed map books overlain on available orthometrics.

Section 3.2 – Analysis of Single Family Residential Properties

Analysis of land cover conditions was completed using GIS software. The amount of impervious coverage and associated contribution of runoff to the MS4 is not expected to vary significantly between individual Single Family Detached Properties. Because of the apparent relative uniformity of use and magnitude of the number of single family residential parcels located in the Borough, establishment of the user fee based on the precise impervious cover on each parcel is not practical or necessary.

The intent of analysis of Single Family Detached Residential Properties was to establish a reasonable, representative value of all such properties for use as the Equivalent Residential Unit (ERU). This ERU is to be used as the fee basis for all Borough properties.

To determine a reasonable and equitable impervious cover value for an ERU and evaluate the representativeness of the ERU if applied to all Borough Single Family Residential Properties, a random sample of 100 parcels was selected for evaluation. Using GIS software, aerial photography dated January 2019 were traced and calculated for 100 single family residential parcels. Refer to Appendix A for identification of the randomly selected sample parcels.

Section 3.3 – Establishment of the ERU

Table B1 of Appendix B provides a summary of average impervious for the single family detached residential property. Based on this analysis one ERU for the Borough recommended to consist of 2,200 square feet of impervious area. Assessment of user fees will be based on this value, with each Single Family Detached Residential Property determined to be one ERU.

Table B2 of Appendix B provides a summary of average impervious area for the single family attached properties. Based on this analysis, the rate of 0.5 ERU is recommended as the average impervious area for the single family attached properties is approximately half the recommended 2,200 square feet of impervious area used for single family detached properties.

A subsequent review was conducted of the remaining residential property type category, Duplex Residential Dwellings. Upon review of impervious area on typical lots of each type, with respect to a typical Single Family Detached Residential, the fee assessment basis for a Duplex Residential Property is recommended as 1 ERU.

Section 3.4 – Analysis of Non-Single Family Properties

Determination of a single ERU value for Single Family Detached Residential, Single Family Attached Residential, and Duplex Residential Properties was based upon the conclusion of sample size analysis that impervious cover and therefore contribution of stormwater runoff to the MS4 does not vary greatly between properties of each type and as such a single uniform fee for each is reasonable. When evaluating the characteristics of Non-Single Family Properties within the Borough, the same conclusion cannot be made. Land use and impervious cover for Non-Single Family Properties varies significantly for the variety of property uses that fit within this category. Runoff contributions to the MS4 and use of this utility varies significantly and establishment of a uniform fee basis for Non-Single Family Properties akin to Single Family type use would not be equitable. Accordingly, to determine the relative contribution of stormwater runoff to the MS4 and establish a relative fee basis for these properties, the actual approximate existing impervious coverage of each lot was calculated. Impervious coverages were calculated using the same methodology as noted for the sample Single Family Residential Properties. Coverage for each parcel was determined using GIS tools and aerial photography dated January 2019. To determine the contribution of stormwater to the MS4 from each property and subsequently the basis of the assessment of the user

fee the actual measured impervious area was converted to its corresponding number of ERU's. Fractional ERUs were rounded to the next nearest half number. For example, a Non-Single Family Property containing 18,000 square feet of impervious area would be assessed in the amount of 8.0 ERUs ($18,000 \text{ sf} \div 2,200 \text{ sf/ERU} = 8.18 \text{ ERUs}$, rounded to 8.0 ERUs).

Section 3.5 – Vacant Land

For purposes of calculating user fees and assessing an equitable distribution among utility users, parcels containing no dwelling units and consisting of less than 600 square feet of impervious area were considered to not be significant contributors to the Borough MS4. Those parcels have been categorized as vacant land exempt from the user fee.

SECTION 4

ESTABLISHMENT OF RATE PER ERU

Section 4.1 – Determination of Total ERUs

Analysis of all properties within the Borough as described in Section 3 yielded the following summation of ERUs existing as of the date of this study:

- Non-Single Family (296 Properties) – 4,315 ERUs
- Single Family Detached Residential (6,957 Properties) – 6,957 ERUs
- Single Family Attached Residential (329 Properties) – 164.5 ERUs
- Duplex Residential (83 Properties) – 83 ERUs
- Totals – 11,519.5 ERUs

Totals presented are indicative of conditions as of the date of this report and the land cover conditions as noted above. ERU totals are subject to change with development currently in construction, development pending construction and future land use changes.

Section 4.2 – Determination of Stormwater Expenditures

Anticipated annual expenditures were calculated using information from the Borough's 2020 budget and supplementing additional costs for long term replacement and improvement of MS4 infrastructure. A budgetary estimate was included to account for the Borough's required compliance with the Pollutant Reductions Plan requirements of the 2018 NPDES MS4 Permit. Expenditures were categorized as generally described in Section 2, however, it should be noted that overlap inherently exists among expenditure categories, though tabulation of expenses avoided double-counting of these overlaps. For example, MS4 Permit Compliance requires the effort of many Borough staff members throughout each permit year. While labor and other associated costs for these Borough employees are not specifically included in the MS4 Permit Compliance value, they are

included in the Administration and Annual O&M values, as appropriate, and the tabulation assumes that implicit sharing of expenditures among noted categories avoids unreasonable inflation of total anticipated annual expenditure.

The following table provides a summary of annual anticipated stormwater expenditures. Refer to Tables C located in Appendix C for a complete breakdown of anticipated expenditures for each category.

Cost Summary

Administration	\$58,062
Annual O&M	\$245,082
Capital Improvements	\$384,726
MS4 Permit Compliance	\$390,800
Total Annual Expense	\$1,078,670

Section 4.3 – Establishment of Fee Reduction Credits

In assigning a user fee and developing an equitable distribution of stormwater utility costs, individual property owners, or users, should be given the opportunity to implement on-site post construction stormwater management best management practices (PCSM BMPs) to reduce the rate of runoff generated by the impervious area on their property. To receive credit, all PCSM BMPs must be designed, operated and maintained to control the peak rate of runoff, up to the 100-year design storm, from the developed property. PCSM BMPs that have not been maintained in accordance with their original design and operation and maintenance plan or the PADEP BMP manual will not be considered to be eligible for credit. Properties with such PCSM BMPs shall be eligible, upon review of the Borough, to receive up to a 50% reduction of the property's base fee. For example, a property calculated to contain 100 ERUs, as determined using the methodology noted in Section 3.4, shall be assessed a fee at the rate of 50 ERUs, if the PCSM was designed to serve the entire property. If the PCSM BMP was designed to serve only a portion of the

property and its impervious area, the credit shall be prorated for that portion of the billed ERUs only. For improvements installed based on the Borough's Small Project Development Stormwater Management Plan Application, properties shall be eligible for credit as follows. Projects proposing on-lot BMPs to associate with the construction of a new single-family home shall be eligible for credit up to 40% reduction of the property's base fee. Projects related to construction of improvements to an existing single-family home (i.e. construction of an addition, detached garage, barn, accessory structure etc.), shall be eligible for credit of up to a 20% reduction of the property's base fee.

Public Education and Involvement Credit may also be considered for users that have the capability to conduct, organize and implement public education or public involvement activities related to stormwater management or stormwater quality. This credit is based upon public participation and involvement requirements of Minimum Control Measures (MCM) No. 1 and No. 2 as part of the Borough's MS4 Permit. Groups and/or organizations that assist the Borough in completing its goals for MCM 1 and MCM 2 will be eligible for credit up to 10% of the annual fee, at the discretion of the Borough, based upon the proposed education or involvement. Eligibility for credit requires a minimum annual documented participation of 20 participant manhours associated with educational or involvement activities sponsored by the applicant. All activities must be approved for credit eligibility in advance. For receipt of credit, the applicant must provide written copies of educational curriculum or materials and/or written agendas and descriptions for involvement activities. Subsequent to completion of the educational activity the applicant must furnish to the Borough documentation of completed activities, to include, at a minimum, a written summary of the planning, implementation and results of the activity or event, a sign in sheet or roster identifying the participants and photographic documentation of the activity. This credit must be applied for, reviewed, and approved annually.

Section 4.4 – Determination of Fee per ERU

Anticipated expenditures calculated as part of Section 4.2 are based on present and projected future stormwater expenditures based on current conditions throughout the Borough. This includes the presence of existing PCSM BMPs throughout the Borough, and as such, anticipated fee credits must be incorporated in establishment of the base fee rate. If PCSM BMPs have been properly maintained, the property's impact on stormwater utility expenses are lesser than that of other uncontrolled, developed properties and accordingly these property owners or users will be immediately eligible for the fee reduction credit. Conversely, developed sites without PCSM BMPs, or with PCSM BMPs that have not been maintained to ensure proper operation have a greater contribution to the utility costs and should be expected to receive a higher distribution of the user fee costs. Base calculations as noted in Section 4.1 note 11,519.5 total ERUs. With anticipated credits, there is a total of 11,354.75 total ERUs

Distribution of anticipated annual expenses noted in Section 4.2 among 11,354.75 ERUs results in a monthly per ERU fee of \$7.92. For implementation, a \$8.00/month/ERU fee is recommended. This equates to \$96.00 annual fee per ERU and an annual gross revenue of \$1,090,056 collected for the Borough Stormwater Fund when accounting for anticipated credits.

APPENDIX A

PARCEL MAP OVERVIEW
AND MAP BOOK STORMWATER FEE

APPENDIX B

RESIDENTIAL SAMPLE PARCEL SUMMARY

**BALDWIN BOROUGH
STORMWATER MANAGEMENT FEE STUDY**

**TABLE B1
RESIDENTIAL SAMPLE PARCEL SUMMARY
SINGLE FAMILY DETACHED HOMES**

Sample Parcel	Parcel ID	Property Address	Impervious Area (sf)	Sample Parcel	Parcel ID	Property Address	Impervious Area (sf)
1	135-B-92	130 REVO RD, PITTSBURGH, PA, 15236	3172.48	51	316-L-150	4760 NORMA DR, PITTSBURGH, PA, 15236	2426.66
2	135-H-285	3976 CHURCHVIEW AVE, PITTSBURGH, PA, 15236	1427.68	52	316-R-99	4909 GARDENVILLE RD, PITTSBURGH, PA, 15236	1691.55
3	135-K-242	1214 IRENE LN, PITTSBURGH, PA, 15236	1508.99	53	316-S-116	548 JENNE DR, PITTSBURGH, PA, 15236	2405.89
4	136-A-175	3144 VERNON AVE, PITTSBURGH, PA, 15227	1327.68	54	388-A-18	913 FIDELITY DR, PITTSBURGH, PA, 15236	2177.49
5	136-B-20	742 LECHNER LN, PITTSBURGH, PA, 15227	2142.76	55	389-B-202	430 BALCONADE DR, PITTSBURGH, PA, 15236	2206.4
6	136-D-8	3415 CHURCHVIEW AVE, PITTSBURGH, PA, 15227	2488.84	56	389-D-22	729 IRWIN DR, PITTSBURGH, PA, 15236	2111.39
7	136-E-64	3234 CIRCLE DR, PITTSBURGH, PA, 15227	1333.87	57	389-F-172	465 HOLDSWORTH DR, PITTSBURGH, PA, 15236	1936.89
8	136-F-33	3412 HAZELHURST AVE, PITTSBURGH, PA, 15227	1473.64	58	389-G-149	498 LELAND DR, PITTSBURGH, PA, 15236	3154.7
9	136-G-36	1253 PLEASANTVUE DR, PITTSBURGH, PA, 15227	2154.54	59	389-L-60	416 GRACE ST, PITTSBURGH, PA, 15236	2112.73
10	136-H-287	110 NORINE DR, PITTSBURGH, PA, 15227	2377.78	60	389-N-216	5529 KEENAN DR, PITTSBURGH, PA, 15236	2243.12
11	136-J-234	565 BARBARA DR, PITTSBURGH, PA, 15227	1594.5	61	390-A-228	5220 MCANNULTY RD, PITTSBURGH, PA, 15236	2547.58
12	136-M-14	171 KATHLEEN DR, PITTSBURGH, PA, 15227	2601.12	62	390-B-44	5184 SCENIC DR, PITTSBURGH, PA, 15236	1826.75
13	136-M-80	3490 BRICKLEY DR, PITTSBURGH, PA, 15227	3626.32	63	390-D-182	15 SUNNY DR, PITTSBURGH, PA, 15236	2381.84
14	136-N-172	280 LAWNWOOD AVE, PITTSBURGH, PA, 15227	1755.08	64	390-F-118	5242 MEADOWCREST RD, PITTSBURGH, PA, 15236	2203.96
15	136-R-104	3648 WALLACE DR, PITTSBURGH, PA, 15227	1920.28	65	390-G-46	5217 COLEWOOD DR, PITTSBURGH, PA, 15236	1635.25
16	186-A-48	3855 LOUISA ST, PITTSBURGH, PA, 15227	2781.16	66	390-J-50	5404 MCANNULTY RD, PITTSBURGH, PA, 15236	2053.32
17	187-D-98-0-1	601 SONGO ST, PITTSBURGH, PA, 15227	2068.21	67	390-K-56	5342 BLOSSOM RD, PITTSBURGH, PA, 15236	2715.49
18	187-G-246	3784 GARY DR, PITTSBURGH, PA, 15227	1831.62	68	390-M-114	5337 BROWNSVILLE RD, PITTSBURGH, PA, 15236	4125.69
19	187-H-202	3986 DEERVUE DR, PITTSBURGH, PA, 15227	1819.59	69	390-P-218	5467 CURRY RD, PITTSBURGH, PA, 15236	1209.78
20	187-R-14	3922 BRENTWOOD RD, PITTSBURGH, PA, 15236	2081.78	70	390-R-74	5388 SAGEBRUSH DR, PITTSBURGH, PA, 15236	1435.39
21	246-A-156	1513 HOLLYWOOD RD, PITTSBURGH, PA, 15227	1197.24	71	391-C-20	636 JUDITH DR, PITTSBURGH, PA, 15236	1802.37
22	246-B-208	1641 CARMELLA DR, PITTSBURGH, PA, 15227	906.02	72	391-D-146	5202 CLELIA DR, PITTSBURGH, PA, 15236	2453.1
23	246-J-101	1444 SENIOR DR, PITTSBURGH, PA, 15227	1508.71	73	391-H-44	514 LUCY DR, PITTSBURGH, PA, 15236	2303.89
24	246-K-21	1673 BERYL DR, PITTSBURGH, PA, 15227	1621.88	74	473-D-105	5505 BROWNSVILLE RD, PITTSBURGH, PA, 15236	2161.41
25	246-L-170	1641 STREETS RUN RD, PITTSBURGH, PA, 15236	3078.66	75	473-G-53	5669 6TH ST, PITTSBURGH, PA, 15236	1615.1
26	246-P-300	5158 ELMWOOD DR, PITTSBURGH, PA, 15227	2111.01	76	58-J-22	1001 AGNEW RD, PITTSBURGH, PA, 15227	1649.38
27	247-H-314	4822 ELMWOOD DR, PITTSBURGH, PA, 15227	2540.48	77	58-N-35	1154 CLOVERFIELD DR, PITTSBURGH, PA, 15227	989.66
28	247-S-10	5013 LEONA DR, PITTSBURGH, PA, 15227	2500.32	78	59-C-40	657 PENN ST, PITTSBURGH, PA, 15227	2468.4
29	31-F-154	824 BECKS RUN RD, PITTSBURGH, PA, 15210	2004.85	79	59-F-105	461 DEBBIE DR, PITTSBURGH, PA, 15227	1889.43
30	31-F-191	13 SUSQUEHANNA ST, PITTSBURGH, PA, 15210	2236.91	80	59-G-132	625 LANE WAY, PITTSBURGH, PA, 15227	2666.71
31	31-G-66	995 BECKS RUN RD, PITTSBURGH, PA, 15210	1280.29	81	59-K-165	429 MIDDLE ST, PITTSBURGH, PA, 15227	5580.05
32	31-J-47	655 BECKS RUN RD, PITTSBURGH, PA, 15210	1323.23	82	59-M-218	738 LAFFERTY DR, PITTSBURGH, PA, 15227	2652.5
33	313-A-120	5152 RIDGE AVE, PITTSBURGH, PA, 15236	3151.06	83	59-R-122	630 CALVERT AVE, PITTSBURGH, PA, 15227	3399.78
34	313-B-140	5261 ELMWOOD DR, PITTSBURGH, PA, 15227	2675.68	84	59-S-90	2932 CENTER ST, PITTSBURGH, PA, 15227	1084.74
35	313-E-210	5218 MEADOW ST, PITTSBURGH, PA, 15236	2868.77	85	92-J-144	1517 EVELYN RD, PITTSBURGH, PA, 15227	2744.9
36	313-J-16	5201 SPRINGDALE DR, PITTSBURGH, PA, 15236	2888.02	86	92-P-138	3665 CHURCHVIEW AVE, PITTSBURGH, PA, 15236	1867.77
37	314-C-141	5030 DOLORES DR, PITTSBURGH, PA, 15227	2321.1	87	92-R-64	3837 CHURCHVIEW AVE, PITTSBURGH, PA, 15236	1560.87
38	314-D-98	5133 LEONA DR, PITTSBURGH, PA, 15227	2201.98	88	93-A-164	1117 MARLANE DR, PITTSBURGH, PA, 15227	3024.98
39	314-H-144	5185 DOLORES DR, PITTSBURGH, PA, 15227	1690.49	89	93-A-94	1153 CAMARTA DR, PITTSBURGH, PA, 15227	2064.21
40	314-L-50	920 NURNBERGER DR, PITTSBURGH, PA, 15236	2643.31	90	93-E-101	1022 JOSEPH ST, PITTSBURGH, PA, 15227	2516.55
41	314-R-328	834 MISSIONARY DR, PITTSBURGH, PA, 15236	2052.95	91	93-F-60	1220 CAMARTA DR, PITTSBURGH, PA, 15227	3030.1
42	314-S-180	5207 GERRY DR, PITTSBURGH, PA, 15236	3803.87	92	93-L-328	150 GREEN GLEN DR, PITTSBURGH, PA, 15227	1948.92
43	315-J-12	466 ROSEWOOD DR, PITTSBURGH, PA, 15236	2238.43	93	93-N-39	3126 SCHIECK ST, PITTSBURGH, PA, 15227	1689.27
44	315-K-98	377 JUNE DR, PITTSBURGH, PA, 15236	2396.49	94	93-P-164	157 WALTON RD, PITTSBURGH, PA, 15236	1826.44
45	315-L-227	5022 DEBRA DR, PITTSBURGH, PA, 15236	2589.95	95	93-R-190	64 HARTL LN, PITTSBURGH, PA, 15227	2666.94
46	315-N-190	450 ELAINE DR, PITTSBURGH, PA, 15236	1770.39	96	94-B-286	2733 CUSTER AVE, PITTSBURGH, PA, 15227	1479.76
47	315-N-216	385 CARMEN DR, PITTSBURGH, PA, 15236	2326.97	97	94-D-42	821 STEINER ST, PITTSBURGH, PA, 15227	1704.86
48	315-R-12	254 JEAN DR, PITTSBURGH, PA, 15236	1947.59	98	94-L-88	2969 MEADOWVUE DR, PITTSBURGH, PA, 15227	1929.61
49	316-G-54	4660 NIX DR, PITTSBURGH, PA, 15236	2486.76	99	94-P-378	308 RUTHWOOD AVE, PITTSBURGH, PA, 15227	1895.48
50	316-K-66	4634 GARDENVILLE RD, PITTSBURGH, PA, 15236	2776.25	100	94-S-160	3020 RUTHWOOD AVE, PITTSBURGH, PA, 15227	1725.86

Summary	
Average Area (sf)	2,196
Proposed ERU (sf)	2,200

**BALDWIN BOROUGH
STORMWATER MANAGEMENT FEE STUDY**

**TABLE B2
RESIDENTIAL SAMPLE PARCEL SUMMARY
SINGLE FAMILY ATTACHED HOMES**

Sample Parcel	Parcel ID	Property Address	Impervious Area (sf)	Sample Parcel	Parcel ID	Property Address	Impervious Area (sf)
1	136-A-10-5	305 PALACE CT, PITTSBURGH, PA, 15227	1077.97	21	389-A-110-373	373 MACASSAR DR, PITTSBURGH, PA, 15236	1806.5
2	136-A-13-4	610 PALACE CT, PITTSBURGH, PA, 15227	848.27	22	390-J-188	329 CEDAR ST, PITTSBURGH, PA, 15236	699.77
3	136-B-8-3	115 PALACE CT, PITTSBURGH, PA, 15227	837.48	23	390-J-190	331 CEDAR ST, PITTSBURGH, PA, 15236	631.66
4	246-K-224	105 MARC DR, PITTSBURGH, PA, 15236	786.82	24	390-P-356	5402 BROAD ST, PITTSBURGH, PA, 15236	1122.14
5	246-K-235	211 MARC DR, PITTSBURGH, PA, 15236	977.93	25	390-P-358	5400 BROAD ST, PITTSBURGH, PA, 15236	1036.57
6	246-K-239-2	703 TYLER DR, PITTSBURGH, PA, 15236	829.08	26	58-P-10-111D	1903 MICHAEL DR, UNIT 111-D, PITTSBURGH, PA, 15227	1567.65
7	246-K-242	505 TYLER DR, PITTSBURGH, PA, 15236	795.91	27	58-P-105-B	1202 TOWERVUE DR, PITTSBURGH, PA, 15227	1496.05
8	246-K-254	309 TYLER DR, PITTSBURGH, PA, 15236	876.92	28	58-P-107-C	2709 MICHAEL DR, PITTSBURGH, PA, 15227	1552.56
9	31-E-266	803 BECKS RUN RD, PITTSBURGH, PA, 15210	1379.18	29	58-P-14-109D	2307 MICHAEL DR, UNIT 109-D, PITTSBURGH, PA, 15227	1527.88
10	31-E-268	805 BECKS RUN RD, PITTSBURGH, PA, 15210	1349.28	30	58-P-22-105E	2208 MICHAEL DR, PITTSBURGH, PA, 15227	1266.43
11	31-F-134	848 BECKS RUN RD, PITTSBURGH, PA, 15210	1163.86	31	58-P-24-104C	2004 MICHAEL DR, UNIT 104-C, PITTSBURGH, PA, 15227	1479.76
12	31-F-136	846 BECKS RUN RD, PITTSBURGH, PA, 15210	989.77	32	58-P-26-103E	1808 MICHAEL DR, PITTSBURGH, PA, 15227	1480.89
13	313-F-210	1162 STREETS RUN RD, PITTSBURGH, PA, 15236	1502.51	33	58-P-30-101B	1402 MICHAEL DR, PITTSBURGH, PA, 15227	1354.62
14	313-F-212	1160 SPRINGDALE DR, PITTSBURGH, PA, 15236	1903.53	34	58-P-4-107E	2608 MICHAEL DR, PITTSBURGH, PA, 15227	1524.09
15	313-J-242	1144 BONI DR, PITTSBURGH, PA, 15236	680.11	35	58-P-6-113B	1511 MICHAEL DR, PITTSBURGH, PA, 15227	1487.83
16	313-J-244	1146 BONI DR, PITTSBURGH, PA, 15236	833.02	36	93-N-12-2	505 PALACE CT, PITTSBURGH, PA, 15227	815.35
17	389-A-110-207	207 MACASSAR DR, PITTSBURGH, PA, 15236	1635.62	37	93-N-14-6	706 PALACE CT, PITTSBURGH, PA, 15227	694.55
18	389-A-110-307	307 MACASSAR DR, PITTSBURGH, PA, 15236	1557.37	38	93-N-156-314	314 HAMLET CT, PITTSBURGH, PA, 15227	935.36
19	389-A-110-327	327 MACASSAR DR, PITTSBURGH, PA, 15236	1669.83	39	93-P-4-3	106 VILLAGE DR, PITTSBURGH, PA, 15227	778.99
20	389-A-110-349	349 MACASSAR DR, PITTSBURGH, PA, 15236	1818.81	40	93-P-6-4	105 VILLAGE DR, PITTSBURGH, PA, 15227	827.34

Summary	
Average Area (sf)	1,190
Proposed ERU (sf)	2,200

APPENDIX C

BREAKDOWN OF ANTICIPATED EXPENDITURES

**BALDWIN BOROUGH
STORMWATER MANAGEMENT FEE STUDY**

**TABLE C
ANTICIPATED ANNUAL EXPENDITURES**

ITEM NO.	POTENTIAL BUDGET ACCOUNT	QUANTITY	UNIT	UNIT COST	ITEM COST
Administration					
1	Executive/Admin	2020 Borough Budget - Typical Year Expenditure (10% Employee Expense)			\$26,586
2	Law - Solicitor Fees	2020 Borough Budget - Typical Year Expenditure (5% Employee Expense)			\$3,950
3	Code Enforcement	2020 Borough Budget - Typical Year Expenditure (10% Employee Expense)			\$27,526
Administration Total					\$58,062
Annual Operations and Maintenance					
1	Public Works Staff	2020 Borough Budget - Typical Year Expenditure (25% Employee Expense)			\$210,082
2	Storm Sewer Materials (Storm Sewrs & Drains)	2020 Borough Budget - Typical Year Expenditure			\$25,000
3	System CCTV and Cleaning	2020 Borough Budget - Typical Year Expenditure			\$10,000
Operation and Maintenance Total					\$245,082
Capital Improvements					
1	Storm Sewer Piping	214,781	LF	\$50.00	\$10,739,050
2	Inlets	1,550	EA	\$3,000.00	\$4,650,000
Maintenance Subtotal					\$15,389,050
Annual Cost over 40 year cycle					\$384,726.25
MS4 Permit Compliance					
1	Annual Tasks - Miscellaneous Expenditures - Training Seminars, Publications, Postage, Advertisements, Public Events, etc.	Anticipated Annual Costs for 2018 Permit			\$15,000
2	Annual Tasks - Engineering Support	Anticipated Annual Costs for 2018 Permit			\$15,000
3	PRP Plan Implementation	Anticipated Annual Costs for 2018 Permit (\$1.8M / 5 yrs = \$360,800)			\$360,800
MS4 Permit Compliance Total					\$390,800
		Anticipated Annual Stormwater Expenditures			\$1,078,670