PENNSYLVANIA
AMERICAN WATER

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July 3, 2014

VIA e-File

Rosemary Chiavetta, Secretary
Commonwealth of Pennsylvania
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Petition of Pennsylvania-American Water Company Wastewater Operations for Approval of Long Term Infrastructure Improvement Plan and Approval to Establish and Implement a Distribution System Improvement Charge

Docket No. P-2014-_____

Dear Secretary Chiavetta:

Enclosed for filing is a Petition of Pennsylvania-American Water Company Wastewater Operations. This document is permitted to be filed electronically.

A copy of the Petition has been served upon the parties listed on the enclosed Certificate of Service. Please contact me if you have any questions.

Respectfully submitted,

Susan Simms Marsh

Susan Simms Marsh

Enclosures

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PETITION OF PENNSYLVANIA-AMERICAN WATER COMPANY WASTEWATER OPERATIONS FOR APPROVAL OF LONG TERM INFRASTUCTURE IMPROVEMENT PLAN AND APPPROVAL TO ESTABLISH AND IMPLEMENT A DISTRIBUTION SYSTEM IMPROVEMENT CHARGE	:	**DOCKET NO. P-2014-_____**

PETITION OF PENNSYLVANIA-AMERICAN WATER COMPANY WASTEWATER OPERATIONS

Pursuant to Section 1352 of the Public Utility Code[1] (66 Pa.C.S. § 1352), Pennsylvania-American Water Company ("PAWC" or the "Company") hereby files this Petition seeking the Pennsylvania Public Utility Commission (the "Commission") approval of its Long Term Infrastructure Improvement Plan ("LTIIP" or "Plan"). Pursuant to Section 1353(b) of the Public Utility Code (66 Pa.C.S. § 1353(b)), PAWC hereby files this Petition seeking the Commission approval to establish and implement a distribution system improvement charge ("DSIC"), as authorized by 66 Pa.C.S. §§ 1350-1360. As described in this Petition, PAWC, over the years, acquired several wastewater collection systems. The DSIC will permit the Company to initiate the timely recovery, outside of a base rate case, a return on and a return of capitalized costs related to eligible property constructed or installed to rehabilitate, improve and replace portions of its wastewater collection system in accordance with its LTIIP.

[1] Hereafter, all section references are to the Pennsylvania Public Utility Code unless otherwise noted.

As explained below, this Petition and the accompanying Plan, testimony and exhibits contain all of the elements, and provide all of the information, required by Sections 1352, 1353(b) and the Commission's *Final Implementation Order*[2] for the Commission to approve the LTIIP and to grant PAWC approval to establish and implement a DSIC pursuant to the DSIC Tariff. Accordingly, PAWC respectfully requests that the Commission approve PAWC's LTIIP and proposed DSIC to be effective January 1, 2015.

I. INTRODUCTION AND BACKGROUND

1. Act 11 of 2012 ("Act 11"), which was signed into law on February 14, 2012, amended Chapters 3 and 13 of the Public Utility Code by, among other things, adding Sections 1350-1360 to the Public Utility Code, which authorize electric, natural gas and wastewater utilities to implement a distribution system improvement charge DSIC or, in the case of wastewater utilities, a DSIC[3] – comparable to the form of DSIC that had previously been approved for water utilities in former Section 1307(g).

2. On August 2, 2012, the Commission entered the *Final Implementation Order*, which sets forth procedures and guidelines for implementing Act 11.

3. As part of the *Final Implementation Order,* the Commission adopted the requirements established in Section 1352 and provided standards for the LTIIP.

4. As part of the *Final Implementation Order*, the Commission promulgated a Model Tariff that contains the terms and conditions that must be incorporated in a tariff or tariff supplement filed by an eligible utility to establish a DSIC.

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2 *Implementation of Act 11 of 2012 – Final Implementation Order*, Docket No. M-2012-2293611 (August 2, 2012) ("*Final Implementation Order*"), p. 22.

3 *See Final Implementation Order*, Model Tariff, p. 1.

5. PAWC is a Pennsylvania public utility that, as of February 28, 2014, provided service to approximately 648,977 water and 16,803 wastewater customers in approximately 400 communities located in 36 counties in Pennsylvania. As a Pennsylvania public utility, the Company is subject to the regulatory authority of the Commission. In addition, the Company must comply with drinking water, environmental and other operational standards established by the Pennsylvania Department of Environmental Protection ("DEP") and the federal Environmental Protection Agency ("EPA").

6. PAWC wastewater systems include Blue Mountain Lake, Lehman-Pike (Saw Creek Estates), Pocono Country Place, Claysville, Coatesville, Clarion, Franklin (Cashtown/McKnightstown Sewage Treatment Plant), Koppel and Marcel Lake (Clean Treatment). Since acquiring the wastewater systems, PAWC made improvements and/or undertaken system evaluations. Capital additions continue to be needed to rehabilitate, improve and replace elements of the collection systems in order to maintain adequate, efficient, safe, reliable and reasonable service and to comply with existing and evolving regulatory standards imposed by agencies of the state and federal governments. Of particular importance, consistent, ongoing rehabilitation, improvement and replacement of the collection systems are necessary to avoid increases in and, to the extent possible, to reduce, infiltration and in-flow ("I&I").[4] Accordingly, PAWC is committed to making capital investments in its wastewater collection systems both currently and for the foreseeable future.

[4] I&I increase the volume of the wastewater stream that must be processed and treated and, therefore, increase treatment costs. High levels of I&I can also drive the need to add treatment capacity.

II. LONG TERM INFRASTUCTURE IMPROVEMENT PLAN

7. The Final Implementation Order, on pages 12 and 18, requires the LTIIP to include the following elements:

(a) Types and age of eligible property;

(b) Schedule for planned repair and replacement;

(c) Location of the eligible property;

(d) Reasonable estimate of the quantity of property to be improved;

(e) Projected annual expenditures and measures to ensure that plan is cost effective;

(f) Manner in which replacement of aging infrastructure will be accelerated and how repair improvement or replace will maintain safe and reliable service; and

(g) A workplace management and training plan.

8. PAWC is simultaneously filing the LTIIP, which can be found at Appendix B, for Commission approval with its requests to the Commission to approve the DSIC. The Plan includes a listing of the Company's wastewater systems, areas served and the number of customer connections as of February 2014. The condition of the Company's wastewater systems varies, depending on the age, local conditions and quality of the initial design or installation. Some the collection systems require significant capital investment to maintain efficient, safe and reliable service to existing customers. There is aging infrastructure and significant I&I from rainwater and groundwater.

9. The LTIIP is for the five-year period from 2015 to 2019. The LTIIP establishes how the Company plans to implement, if approved, the DSIC to rehabilitate, improve and replace aging infrastructure at an accelerated pace.

10. The LTIIP includes a discussion of the types and age of property eligible for DSIC recovery; schedule for its planned rehabilitation and replacement; location of eligible property; reasonable estimate of the quantity of property to be improved; projected annual expenditures; manner in which the replacement of aging infrastructure will be accelerated; workforce management plan to ensure work is performed in a cost effective, safe and reliable manner; and description of outreach to other utilities to minimize the disruption to customers.

III. SECTION 1353(B) AND THE FINAL IMPLEMENTATION ORDER

11. Section 1353(b) provides that a petition requesting Commission approval to establish a DSIC must include:

a. An initial tariff that conforms to a Model Tariff adopted by the Commission containing the minimum requirements specified in Section 1352(b)(1);

b. Testimony, affidavits, exhibits or other evidence that demonstrate that DSIC is in the public interest and will facilitate the utility's compliance with Section 1501, the Commission's regulations and orders and the requirements of state and federal law as each relates to the utility's provision of adequate, efficient, safe, reliable and reasonable service;

c. A long-term infrastructure improvement plan that conforms to the requirements of Section 1352; and

d. Certification that a base rate case has been filed within five years of the date the petition is filed and, if not, the utility must file a base rate case to be eligible to implement a DSIC.

12. In the *Final Implementation Order*, the Commission incorporated the terms of Section 1353(b) and, as required by Section 1353(b) (1), adopted a Model Tariff. The *Final Implementation Order* (pp. 22-24) also provided guidance on the form of notice that would be required to establish a DSIC and for quarterly changes in the charge. *Id.* at 24-26.

IV. PAWC'S REQUEST TO ESTABLISH A DSIC FOR ITS WASTEWATER OPERATIONS SATISFIES ALL OF THE REQUIREMENTS SET FORTH IN SECTION 1353(B) AND THE FINAL IMPLEMENTATION ORDER

A. Initial Tariff (Section 1353(b)(1))

13. Appendix A to this Petition is proposed Supplement No. 4 to Tariff Wastewater PA P.U.C. No. 15 that conforms to the Model Tariff adopted by the Commission in the *Final Implementation Order* and complies with the requirements of Section 1353(b)(1). In particular, the description of eligible property in Section 1 of the Wastewater DSIC Tariff has been adopted from the description of eligible property for wastewater utilities in the Model Tariff.

14. PAWC proposes the DSIC become effective on January 1, 2015 and requested an initial DSIC rate of 0%.

15. The DSIC will be calculated consistent with proposed Supplement No. 4. The initial DSIC, effective April 1, 2015, shall be calculated to recover the fixed costs of eligible plant additions that have not previously been reflected in the Company's rates or rate base and will have been placed in service between January 1, 2015 through February 28, 2015.

16. The DSIC will be updated on a quarterly basis to reflect the eligible property that is placed in service during the three month period ending one month prior to the effective date of the DSIC update, as provided for by Section 1357.

17. Proposed Supplement No. 4 to Tariff Wastewater No. PA P.U.C. 15 provides for customer safeguards which include the following:

a. 5% cap of the amount

b. Annual reconciliation

c. Audit at intervals determined by the Commission

d. Customer notice

e. DSIC reset at zero upon application of new base rates

B. Testimony, Affidavits, Exhibits or Other Evidence (Section 1353(b)(2))

18. Accompanying this Petition, PAWC is submitting direct testimony explaining its DSIC Tariff and addressing the topics specified in Section 1353(b)(2), as follows:

> **PAWC Statement No. 1** is the direct testimony of John Cox, who is the Manager of Rates and Regulation for PAWC. Mr. Cox discusses the DSIC Tariff, the procedures PAWC will employ to calculate the DSIC, and the provision of notice of DSIC changes.
>
> **PAWC Statement No. 2** is the direct testimony of David R. Kaufman, PAWC's Vice President of Engineering. Mr. Kaufman discusses the Company's wastewater systems, LTIIP and how PAWC plans to address the replacement of property over the next five years.

C. Long-Term Infrastructure Investment Plan (Section 1353(b)(3))

19. As noted in Paragraph No. 8 above, PAWC is simultaneously filing for Commission approval the LTIIP.

D. Certification That A Base Rate Case Has Been Filed Within Five Years (Section 1353(b)(4))

20. PAWC filed a combined water and wastewater base rate case on April 30, 2013, docketed at R-2013-2355276. Complaints and interventions were submitted in connection with that rate filing, which resulted in its suspension, by operation of Section 1308(d). As a result, the case was assigned to the Office of Administrative Law Judge for hearings and a recommended decision. Thereafter, a Joint Petition for Settlement was executed, which was approved by the Commission in its final Order entered December 19, 2013, with rates effective January 1, 2014.

Accordingly, PAWC hereby certifies it has filed a base rate case on behalf of the wastewater operations within five years of the filing of this Petition.

V. NOTICE TO CUSTOMERS

21. Section 1354 requires utilities to provide notice to customers "in bill inserts or through other means as prescribed by the Commission" for each of the following: (1) a utility's submission to the Commission of a proposed DSIC and its initial tariff; (2) the Commission's disposition of the utility's proposed DSIC and initial tariff; (3) quarterly changes in the DSIC; and (4) any other information, as the Commission may require.

22. In the *Final Implementation Order*, the Commission considered various comments on the notice requirements and held as follows:

> NFGD, First Energy and EAP all suggest that the Final Implementation Order should follow the straightforward language from the proposed model tariff, which required a bill insert on the initial filing of the DSIC and a bill message on subsequent changes. We agree and clarify that the notice requirement set forth in the proposed model tariff governs.

Id. at 26.

23. In accordance with Section 1354, PAWC wastewater customers will receive notice of the initial filing of the proposed DSIC through bill inserts beginning July 7, 2014 and continuing throughout a 30-day billing cycle.

24. PAWC will subsequently provide an appropriate bill message on the bills of all wastewater customers to notify them of the implementation of a DSIC and of each quarterly change in the DSIC. These bill messages will conform to the bill messages that PAWC provides to its water customers for quarterly changes in its water DSIC.

VI. CONCLUSION

PAWC has satisfied the requirements set forth in Sections 1352, 1353 and the Commission's *Final Implementation Order* to establish and implement a DSIC for its wastewater systems in conformity with the terms of the DSIC Tariff provided at Appendix A to this Petition. Accordingly, the Commission should enter an Order granting this Petition, thereby approving the Long Term Infrastructure Improvement Plan and authorizing PAWC to establish and implement a DSIC for its wastewater systems and approving the DSIC Tariff to be filed on one day's notice to become effective for bills rendered on and after January 1, 2015 or such other date as the Commission determines appropriate based on the date of entry of its Order in this case.

Respectfully submitted,

Susan Simms Marsh

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For Pennsylvania-American Water Company

July 3, 2014

APPENDIX A

Supplement No. 4 to
Tariff Wastewater PA P.U.C. No. 15

Pennsylvania-American Water Company
Wastewater Division
(Hereinafter referred to as the "Company")

D/B/A

Pennsylvania American Water

RATES, RULES AND REGULATIONS GOVERNING THE FURNISHINGS OF WASTEWATER COLLECTION AND DISPOSAL SERVICE IN CERTAIN MUNICIPALITES AND TERRITORIES LOCATED IN ADAMS COUNTY, BEAVER COUNTY, CHESTER COUNTY, CLARION COUNTY, MONROE COUNTY, PIKE COUNTY AND WASHINGTON COUNTY.

ALL IN THE COMMONWEALTH OF PENNSYLVANIA

Issued: **Effective:** January 1, 2015

By: Kathy Pape, President
Pennsylvania-American Water Company
800 West Hersheypark Drive
Hershey, PA 17033

LIST OF CHANGES

Changes

This tariff supplement includes the addition of a Wastewater Distribution System Improvement Charge (DSIC), calculations, definitions, and rules to the existing tariff pursuant to Act No. 11 (Amending Title 66 - Public Utilities), for the recovery of the cost of the distribution system improvement projects.

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DISTRIBUTION SYSTEM IMPROVEMENT CHARGE

In addition to the net charges provided for in this Tariff, a charge of 0.00% will apply consistent with the Commission Order dated _____ __, 2014 at Docket No. _____ approving the DSIC.

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE

1. General Description

Purpose: To recover the reasonable and prudent costs incurred to repair, improve, or replace eligible property which is completed and placed in service and recorded in the individual accounts, as noted below, between base rate cases and to provide the Utility with the resources to accelerate the replacement of aging infrastructure, to comply with evolving regulatory requirements and to develop and implement solutions to regional wastewater problems. The costs of extending facilities to serve new customers are not recoverable through the DSIC. Utility projects receiving PENNVEST funding or using PENNVEST surcharges are not DSIC eligible property to the extent of the PENNVEST funding or surcharge.

Eligible Property: The DSIC-eligible property will consist of the following:

- Collection sewers, collecting mains and service laterals, including sewer taps, curb stops and lateral cleanouts installed as in-kind replacements for customers; Accounts (360, 361 and 363)

- Collection mains and valves for gravity and pressure systems and related facilities such as manholes, grinder pumps, air and vacuum release chambers, cleanouts, main line flow meters, valve vaults and lift stations installed as replacements or upgrades for existing facilities that have worn out, are in deteriorated condition or are required to be upgraded by law, regulation or order; Accounts (360, 361, 364 and 365)

- Collection main extensions installed to implement solutions to wastewater problems that present a significant health and safety concern for customers currently receiving service from the wastewater utility; Accounts (360, 361 and 363)

- Collection main rehabilitation including inflow and infiltration projects; Accounts (360, 361 and 363)

- Unreimbursed costs related to highway relocation projects where a wastewater utility must relocate its facilities; and

- Other related capitalized costs.

Effective Date: The DSIC will become effective for bills rendered on or after January 1, 2015.

2. Computation of the DSIC

Calculation: The initial DSIC, effective April 1, 2015, shall be calculated to recover the fixed costs of eligible plant additions

that have not previously been reflected in the Company's rates or rate base and will have been placed in service between January 1, 2015 through February 28, 2015. Thereafter, the DSIC will be updated on a quarterly basis to reflect eligible plant additions placed in service during the three-month periods ending one month prior to the effective date of each DSIC update. Thus, changes in the DSIC rate will occur as follows:

Effective Date of Change	Date to which DSIC-Eligible Plant Additions Reflected
April 1	February 28
July 1	May 31
October 1	August 31
January 1	November 30

Determination of Fixed Costs: The fixed costs of eligible distribution system improvements projects will consist of depreciation and pre-tax return, calculated as follows:

Depreciation: The depreciation expense shall be calculated by applying the annual accrual rates employed in the Utility's most recent base rate case for the plant accounts in which each retirement unit of DSIC-eligible property is recorded to the original cost of DSIC eligible property.

Pre-tax return: The pre-tax return will be calculated using the statutory state and federal income tax rates, the Company's actual capital structure and actual cost rates for long-term debt and preferred stock as of the last day for the three-month period ending one month prior to the effective date of the DSIC and subsequent updates. The cost of equity will be the equity return rate approved in the Company's last fully litigated base rate proceeding for which a final order was entered not more than two years prior to the effective date of the DSIC. If more than two years shall have elapsed between the entry of such a final order and the effective date of the DSIC, then the equity return rate used in the calculation will be the equity return rate calculated by the Commission in the latest Quarterly Report on the Earnings of Jurisdictional Utilities released by the Commission.

Application of DSIC: The DSIC will be expressed as a percentage carried to two decimal places and will be applied to the total amount billed to each customer for distribution service under the Company's otherwise applicable rates and charges, excluding amounts billed for the State Tax Adjustment Surcharge (STAS). To calculate the DSIC, one-fourth of the annual fixed costs associated with all property eligible for cost recovery under the DSIC will be divided by the Company's projected wastewater revenue for the quarterly period during which the charge will be collected, exclusive of revenues from the STAS.

Formula: The formula for calculation of the DSIC is as follows:

$$DSIC = \frac{(DSI \times PTRR) + Dep + e}{PQR}$$

Where:

DSI = Original cost of eligible distribution system improvement projects net of accrued depreciation.
PTRR = Pre-tax return rate applicable to DSIC-eligible property.
Dep = Depreciation expense related to DSIC-eligible property.
e = Amount calculated under the annual reconciliation feature or Commission Audit, as described below.
PQR = Projected quarterly revenues for wastewater service from existing customers plus netted revenue from any customers which will be gained or lost by the beginning of the applicable service period.

Quarterly Updates: Supporting data for each quarterly update will be filed with the Commission and served upon the Commission's Bureau of Investigation and Enforcement, the Office of Consumer Advocate, and the Office of Small Business Advocate at least ten (10) days prior to the effective date of the update.

3. Customer Safeguards

Cap: The DSIC is capped at 5% of the amount billed to customers under otherwise applicable rates and charges.

Audit/Reconciliation: The DSIC is subject to audit at intervals determined by the Commission. Any cost determined by the Commission not to comply with any provision of 66 Pa C.S. §§ 1350, *et seq.*, shall be credited to customer accounts. The DSIC is subject to annual reconciliation based on a reconciliation period consisting of the twelve months ending December 31 of each year. The revenue received under the DSIC for the reconciliation period will be compared to the Company's eligible costs for that period. The difference between revenue and costs will be recouped or refunded, as appropriate, in accordance with Section 1307 (e), over a one year period commencing on April 1 of each year. If DSIC revenues exceed DSIC-eligible costs, such over-collections will be refunded with interest. Interest on the over-collections and credits will be calculated at the residential mortgage lending specified by the Secretary of Banking in accordance with the Loan Interest and Protection Law (41 P.S. §§ 101, *et seq.*) and will be refunded in the same manner as an over-collection.

New Base Rates: The DSIC will be reset at zero upon application of new base rates to customer billings that provide for prospective recovery of the annual costs that had previously been recovered under the DSIC. Thereafter, only the fixed costs of new eligible plant additions that have not previously been reflected in the Company's rates or rate base will be reflected in the quarterly updates of the DSIC.

Customer Notice: Customers shall be notified of changes in the DSIC by including appropriate information on the first bill they receive following any change. An explanatory bill insert shall also be included with the first billing.

All customer classes: The DSIC shall be applied equally to all customer classes.

Earning Reports: The DSIC will also be reset at zero if, in any quarter, data filed with the Commission in the Company's then most recent Annual or Quarterly Earnings reports show that the Company will earn a rate of return that would exceed the allowable rate of return used to calculate its fixed costs under the DSIC as described in the Pre-tax return section.

PENNSYLVANIA
AMERICAN WATER

APPENDIX B

PENNSYLVANIA-AMERICAN WATER COMPANY

WASTEWATER

LONG-TERM INFRASTRUCTURE IMPROVEMENT PLAN

2014

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Introduction

In accordance with the requirements of 66 Pa. C.S. §1350 - §1360 and the Public Utility Commission's Final Order for the Implementation of Act 11 of 2012 (Public Meeting of August 2, 2012, Docket No. M-2012-2293611), Pennsylvania-American Water Company (PAWC) is submitting this Wastewater Long-Term Infrastructure Improvement Plan (LTIIP) for the establishment of a Wastewater Distribution System Improvement Charge (DSIC).

PAWC is a wholly owned subsidiary of American Water Works Company, Inc. and provides public water and wastewater service to residents in Pennsylvania. PAWC owns and operates nine wastewater collection systems located in seven Counties across the State, and serving about 16,803 customer connections (customer count as of 2/28/2014), including five bulk municipal customers. Provided in Table 1 is a list of all wastewater collection systems owned and operated by PAWC.

Table 1 - List of PAWC Wastewater Systems

Name of Wastewater System	Areas Served	Number of Customer Connections as of 2/28/2014
Blue Mountain Lake	Monroe County. Portions of the Townships of Smithfield and Stroud.	663
Lehman-Pike [c]	Monroe County: Portions of the Townships of Middle Smithfield, Smithfield and Stroud. Pike County: Portions of Lehman Township.	2,634
Pocono Country Place	Monroe County. A portion of Coolbaugh Township.	3,552
Claysville	Washington County. Claysville Borough and portions of the Townships of Donegal.	513
Coatesville	Chester County. The City of Coatesville, the Borough of Parkesburg and portions of the Borough of South Coatesville and portions of the Townships of Caln, East Fallowfield, Highland, Sadsbury, Valley, West Caln, West Sadsbury.	6,257 [a]
Clarion	Clarion County. Clarion Borough and portions of the Townships of Clarion and Monroe.	2,210 [a]
Franklin [d]	Adams County. Portions of Franklin Township.	287 [b]
Koppel	Beaver County. Koppel Borough.	348
Marcel Lake [e]	Pike County. Portions of Delaware Township.	339
TOTAL		16,803

[a] Caln, Sadsbury, Valley, and West Brandywine Townships (Coatesville system), and Strattanville Borough (Clarion system) are bulk municipal customers that own and maintain their own wastewater collection systems. Each is counted as a single customer.

[b] Does not include 74 customers from the Hamiltonban system, which is expected to be interconnected to the Franklin System in 2015.

[c] Also known as "Saw Creek Estates"

[d] Also known as "Cashtown / McKnightstown Sewage Treatment Plant"

[e] Also known as "Clean Treatment"

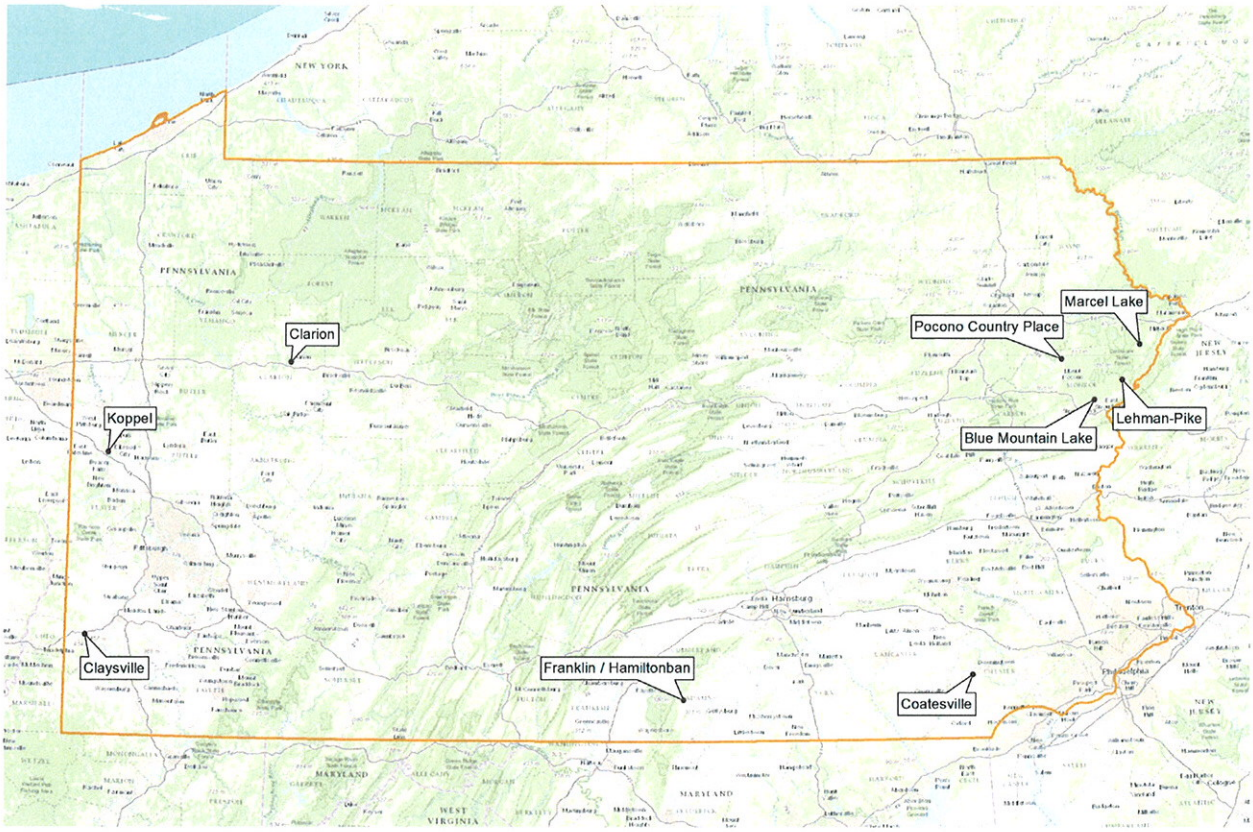

Figure 1 - Location of PAWC Wastewater Systems

The condition of the wastewater systems varies, depending on age, material, local conditions and quality of initial design or installation. Some collection systems require significant capital investment to maintain efficient, safe, and reliable service for existing customers. PAWC has acquired its wastewater systems from prior ownership in various states of disrepair. Many systems have aging infrastructure and significant inflow and infiltration (I&I) from rainwater and groundwater.

During dry-weather conditions, the impact of I&I varies. Some collection systems have minimal impact from I&I during dry weather, while other systems experience high I&I even in dry weather conditions. For example, a collection system with a high-groundwater table can be significantly impacted by infiltration in dry weather conditions. In wet weather conditions, the impact of I&I is amplified. Flow entering a wastewater treatment plant can increase significantly due to the influx of groundwater, rainwater, and/or snowmelt. This may cause a sanitary sewer overflow (SSO) to occur if flow exceeds the plant's peak hydraulic capacity. Similarly, lift

stations can become hydraulically overloaded if the inflow of sewage mixed with groundwater and rainwater exceeds the pumping capacity, causing raw sewage to be released to streets or a local waterway. In addition, the influx of rainwater and groundwater can fill up pipes and manholes in the collection system, causing manhole lids to be lifted and raw sewage to be released into the environment. Hydraulically overloaded pipes and manholes can also cause sewer backups into homes and businesses. SSO's and sewer backups due to I&I pose a public health risk and may violate many local and federal environmental regulations.

I&I has multiple causes, many of which are related to aging infrastructure. Rainwater inflow can enter the wastewater collection system in various ways, such as storm sewer cross connections, uncapped cleanouts, below-grade manhole lids, or roof drain cross connections. Groundwater inflow can enter the collection system through cracks in sewer pipes, faulty lateral connections, cracks in manhole walls, or deteriorated pipe joints. Groundwater can also enter the collection system through broken service laterals, root intrusion into a lateral pipe, or cracks in the walls of customer-owned grinder pump pits. However, privately owned infrastructure is beyond the scope of this LTIIP. Customers are responsible for maintaining the customer-owned portion of the service lateral. PAWC is responsible for maintaining the portion of the service lateral from the sewer main to the customer-owned service lateral at the edge of the right-of-way or actual property line.

I&I has been a problem for several of PAWC's collection systems, especially for older systems with aging infrastructure. Therefore, the focus of this LTIIP is on replacement of aging infrastructure and reduction of I&I.

This LTIIP establishes how PAWC plans to implement the wastewater DSIC ratemaking mechanism to rehabilitate, improve, and replace aging infrastructure (hereinafter referred to as property) at an accelerated pace. Discussed in this LTIIP are the types and age of property eligible for wastewater DSIC recovery; schedule for its planned rehabilitation and replacement; location of eligible property; reasonable estimate of the quantity of property to be improved; projected annual expenditures; manner in which replacement of aging infrastructure will be accelerated; workforce management plan to ensure work is performed in cost-effective, safe and

reliable manner; and description of outreach to other utilities to minimize disruptions to customers.

Section 1 – Types and Age of Eligible Property

An inventory of all eligible property, as defined in 66 Pa. C.S. §1351 (4), is provided in this Section. PAWC has developed and is applying Geographic Information Systems (GIS) as the spatial component of its Enterprise Asset Management (EAM) Program. Wastewater assets, such as collection mains, manholes, and lift stations are spatially located and attributed with critical information about PAWC systems. GIS data will be updated continually to include system changes, such as replacement of old pipes or expansion of the wastewater collection system. GIS data was used to assist in identifying types and age of eligible property. To supplement any missing data in GIS, paper maps, consultant studies, and other applicable data were utilized. Additionally, for some recently acquired systems, there is limited information on the wastewater properties. For each system, all data sources were analyzed and the best available information was used to quantify the types of eligible property.

PAWC owns the following types of sewer collection systems:

Gravity – In a gravity collection system, customer service laterals connect to a sewer main usually located in an alley or street. Sewer mains and collection sewer mains (also referred to as "trunk lines") form a branched network that generally follows street layout, and can be accessed from the street through manholes. Service laterals can be accessed through lateral cleanouts. Gravity collection systems either convey sewage directly to a treatment plant or to a lift station. PAWC owns the portion of the customer service lateral from the sewer main to the edge of the right-of-way or actual property line. The customer owns the service line extending from the end of the Company service line or connection to and within the customer's premise. PAWC owns approximately 847,282 LF of gravity main and 3,814 manholes. Gravity main and manhole material generally depends on installation date. Newer mains are polyvinyl chloride (PVC) and

older mains are mostly vitrified clay pipe. Newer manholes are pre-cast or cast in place concrete and older manholes are brick.

Force Main – A force main is a pressurized discharge pipeline from a lift station. A force main pipeline may contain in-line flow meters, valve vaults, air and vacuum release chambers. Force mains can convey sewage directly to a treatment plant or to a manhole in the gravity system. PAWC owns and operates 47 lift stations and approximately 103,973 LF of force main. In general, force main material is cast iron for older pipes, ductile iron or PVC for newer pipes.

Low Pressure – In a low-pressure collection system, individual customer sewage collects in a grinder pump and pit installation. Sewage is pumped from the pit through a customer service lateral into a low pressure force main. Depending on topography and layout, some low pressure collection systems include lift stations to boost pressure. A low pressure force main may contain in-line flow meters, valve vaults, air and vacuum release chambers. A low pressure system can convey sewage directly to a treatment plant, a lift station, or a manhole in the gravity system. PAWC owns the portion of the customer service lateral from the low pressure main to the edge of the right-of-way or actual property line. The customer owns the service line extending from the end of the Company service line or connection to and within the customer's premise. With the exception of about 5 grinder pump and pit installations in the Blue Mountain Lake wastewater system, all grinder pump and pit installations are owned and maintained by the customers. PAWC owns approximately 456,574 LF of low pressure main.

Table 2 is a summary of eligible properties for each wastewater system. A breakdown of eligible property by type and diameter is provided in Table 3.

Table 2 - Types and Age of Eligible Property by Wastewater System

	Gravity Main (LF)	Force Main (LF)	Low Pressure Main (LF)	Manholes	Lift stations	System Age
Blue Mountain Lake	0	0	67,825	0	0	>1990
Lehman-Pike	0	0	268,484	0	13	>1980
Pocono Country Place	150,591	5,407	94,265	657	2	>1975
Claysville	62,126	1,100	0	343	1	>1983
Coatesville	331,017	85,826	0	1,564	16	>1930s
Clarion	200,901	11,640	0	903	5	>1930s
Franklin [a]	47,906	0	0	165	0	2004
Koppel	24,041	0	0	85	0	>1920s
Marcel Lake	30,700	0	26,000	97	10	>1960
TOTAL	847,282	103,973	456,574	3,814	47	

[a] Does not include eligible property from Hamiltonban system, which is expected to be interconnected to the Franklin System in 2015.

Table 3 – Pipe Length by Diameter for each PAWC Wastewater System

	Diameter (inch)	Blue Mountain Lake	Lehman-Pike	Pocono Country Place	Claysville	Coatesville	Clarion	Franklin	Koppel	Marcel Lake	Total	Percent of Total
Gravity Main (LF)	Unknown	0	0	0	0	0	12,908	0	0	0	12,908	1.52
	4	0	0	1,606	0	0	1,250	0	0	0	2,856	0.34
	5	0	0	0	0	0	0	0	5,439	0	5,439	0.64
	6	0	0	0	0	3,672	17,824	1,400	3,212	0	26,108	3.08
	8	0	0	127,638	52,974	280,110	119,664	37,777	11,833	30,700	660,696	77.98
	10	0	0	8,545	9,152	9,089	15,570	8,729	384	0	51,469	6.07
	12	0	0	2,259	0	3,376	19,956	0	804	0	26,395	3.12
	15	0	0	6,835	0	15,668	6,940	0	2,369	0	31,812	3.75
	16	0	0	735	0	138	0	0	0	0	873	0.10
	18	0	0	1,637	0	9,155	4,280	0	0	0	15,072	1.78
	20	0	0	0	0	210	0	0	0	0	210	0.02
	24	0	0	863	0	4,909	2,509	0	0	0	8,281	0.98
	30	0	0	473	0	2,408	0	0	0	0	2,881	0.34
	36	0	0	0	0	998	0	0	0	0	998	0.12
	42	0	0	0	0	1,284	0	0	0	0	1,284	0.15
	Total	0	0	150,591	62,126	331,017	200,901	47,906	24,041	30,700	847,282	100
Force Main (LF)	1.5	0	0	0	0	2,157	0	0	0	0	2,157	2.07
	2	0	0	0	0	4,756	0	0	0	0	4,756	4.57
	3	0	0	0	1,100	0	0	0	0	0	1,100	1.06
	4	0	0	1,603	0	28,023	2,097	0	0	0	31,723	30.51
	6	0	0	3,804	0	14,299	0	0	0	0	18,103	17.41
	8	0	0	0	0	26,764	7,516	0	0	0	34,280	32.97
	10	0	0	0	0	9,827	0	0	0	0	9,827	9.45
	12	0	0	0	0	0	2,028	0	0	0	2,028	1.95
	Total	0	0	5,407	1,100	85,826	11,640	0	0	0	103,973	100
Low Pressure Main (LF)	Unknown	0	0	0	0	0	0	0	0	26,000	26,000	5.69
	2	25,277	43,251	51,065	0	0	0	0	0	0	119,593	26.19
	3	27,961	81,158	19,747	0	0	0	0	0	0	128,866	28.22
	4	4,162	81,060	8,966	0	0	0	0	0	0	94,188	20.63
	6	10,425	30,950	14,487	0	0	0	0	0	0	55,862	12.24
	8	0	24,005	0	0	0	0	0	0	0	24,005	5.26
	10	0	8,060	0	0	0	0	0	0	0	8,060	1.77
	Total	67,825	268,484	94,265	0	0	0	0	0	26,000	456,574	100

Section 2 – Schedule for Planned Rehabilitation and Replacement of Eligible Property

PAWC recognizes the importance of continuous renewal of aging infrastructure in order to ensure and maintain adequate, efficient, safe, and reliable service to existing customers. This Section provides an overview of the planning process for replacement of aging collection system infrastructure. Planning related to collection main extensions due to increase in number of customers is not included, except those projects that implement solutions to wastewater problems for existing customers. Planning for wastewater treatment plant improvements is not included in this Section, as treatment plant improvements are not DSIC eligible.

The first step of the planning process is to conduct a macro-level overview of each wastewater system. GIS tools may be used to help identify and prioritize groups of wastewater properties that are likely candidates for replacement or rehabilitation. GIS tools are not the sole determinant for identifying groups of wastewater assets. Other data that may be applied includes, operational knowledge / records, condition of lift stations, number and location of sanitary sewer overflows, and recorded flows into the wastewater treatment plant.

Properties may be divided into general categories based on the following:

- Systems that are currently or projected to be hydraulically or organically overloaded as defined by 25 Pa. C.S. §94.1
- Known problem areas based on operation and maintenance records
- Sewer collection basins with high I&I
- Material and age; for example, old terra cotta pipes and deteriorated brick manholes are potential candidates for replacement / rehabilitation, while lift stations and PVC sewers less than 20 years old are less likely to need replacement

Using these general categories, areas of concern can be identified which may contain properties in need of replacement. The macro-level planning process helps identify groups of assets which are potential candidates, and it helps to identify groups of assets that are unlikely to need near-term replacement. This allows resources required for micro-level planning to be more efficiently targeted to those areas most likely to contain aging infrastructure in need of rehabilitation or replacement.

The next step in the planning process is to conduct a more detailed, micro-level planning analysis. A comprehensive sewer system evaluation study is conducted, which is a systematic approach to identify specific properties to be rehabilitated or replaced. This study may include:

- Continuous flow monitoring
- Rainfall monitoring
- Hydraulic modeling
- Smoke testing
- Dye testing
- Closed circuit TV (CCTV) inspection of mains and service laterals
- Manhole inspection
- Lift station inspection / monitoring
- Subbasin analysis / prioritization

During the micro-level planning process, specific properties are identified as candidates for replacement or rehabilitation. Focusing on replacement of aging infrastructure and reduction of I&I, improvements identified in the micro-level planning process can be grouped in the following categories:

Manhole replacement / rehabilitation – Work may include frame and cover replacement, internal grouting, lining, or complete replacement. Manhole lining can be used for structural reinforcement, reduction of groundwater infiltration, or protection from corrosive gases. Whether replacement or rehabilitation is best depends on various factors, such as location, structural integrity, and manhole depth. For example, replacement cost may be similar to

rehabilitation cost for shallow manholes. In such cases, replacement is likely the best option. For manholes located in areas that are difficult to excavate, lining may be the best option. For each individual project, all factors are considered to select the most prudent and cost-effective method.

Pipe replacement / rehabilitation – Work may consist of complete replacement, partial replacement, or trenchless rehabilitation (such as cured-in-place lining, slip lining, pipe bursting, horizontal directional drilling using fused high-density polyethylene (HDPE) pipe or fused PVC pipe). Work could include replacement of air and vacuum release chambers, valves, and flow meters. Pipe replacement / rehabilitation could be part of a relocation project due to highway construction, I&I project, or other project that addresses aging infrastructure. In some cases, projects may include main extensions installed to implement solutions to wastewater problems that present a health and safety concern for existing customers. For low pressure sewers and force mains, which have a shallower installation than gravity mains, replacement is often the best method. For gravity sewers, trenchless rehabilitation is often most cost-effective; however, replacement may be the best option in cases where the pipe is misaligned or has lost its structural integrity. Another option is to combine partial replacement with cured in place liner, such that ground disturbance is minimized to only those sections of pipe in need of replacement. PAWC has embraced trenchless technologies that allow underground infrastructure to be rehabilitated without the need for excavation. In general, trenchless rehabilitation is the preferred method to address aging infrastructure. For each individual project, all factors are considered to select the most prudent and cost-effective method.

Service lateral replacement / rehabilitation – Work may consist of replacing gravity or low pressure sewer laterals, including taps, curb stops, and cleanouts. A cured-in-place liner is a trenchless alternative that may be best for service laterals that are difficult to excavate. Depending on the condition and number of connections, service lateral replacement may be combined with main line replacement / rehabilitation. Only the portion of the service lateral owned by PAWC is included in the scope of replacement / rehabilitation. The customer is responsible for maintaining the customer-owned portion of the service lateral.

Lift station replacement / rehabilitation – Lift stations are evaluated on a case by case basis. Necessary improvements can usually be completed by full or partial rehabilitation. Replacement may be the best option for older and outdated lift stations.

Once specific properties are identified as needing replacement or rehabilitation, the final step in the micro-level planning process is prioritization. To better understand and evaluate the complex characteristics of its properties and the various drivers for improvements, PAWC plans to apply a prioritization model to score capital improvement projects which will be funded through the wastewater DSIC program. The prioritization model for wastewater DSIC will be similar to models already in use by PAWC for evaluating other capital programs and employs a scoring system based on the following main criteria:

- Provides reliable service / prevents disruption
- Improves customer satisfaction
- Environmental sustainability / efficiency
- Attains regulatory compliance
- Enhances public safety

In general, preference will be given to those systems with high I&I, and older systems with aging lift stations, brick manholes, and vitrified clay pipe. The scoring system will have flexibility by allowing adjustment in how each criterion is weighted, and accounting for special circumstances which may be difficult to quantify. The prioritization model will serve as a tool that helps PAWC develop a schedule for planned rehabilitation and replacement of eligible property in order to maintain safe, reliable service to existing customers.

Section 3 – Location of Eligible Property

Blue Mountain Lake

Blue Mountain Lake (BML) wastewater system is located in Monroe County and currently provides wastewater collection and treatment service to approximately 663 mainly residential customers in portions of Stroud and Smithfield Townships. PAWC purchased the assets of the BML system in 2005.

The BML collection system consists of about 67,825 LF of low pressure sewer main, and does not contain any gravity or force main. The low pressure main was installed in 1990 or later, and consists of PVC main ranging in diameter from 2-inch to 6-inch.

The system contains one wastewater treatment plant (WWTP) with a permitted annual average flow of 0.183 MGD. The plant is operated under NPDES permit PA-0062464. The 2013 annual average daily flow into the plant was 0.0829 MGD, and the ratio of 3 consecutive month maximum to annual average flow was 1.036. The WWTP is not currently nor expected to be hydraulically or organically overloaded in the next five years.

The collection system is in relatively good condition and experiences little to no I&I. PAWC plans to continue to assess the condition of the system, and complete selected / limited rehabilitation work as needed.

Lehman Pike

Lehman Pike (LP) wastewater system serves portions of the Townships of Middle Smithfield, Smithfield, and Stroud in Monroe County, and portions of Lehman Township in Pike County. LP provides wastewater collection and treatment service to approximately 2,634 mainly residential customers, mostly in Pike County. PAWC purchased the assets of the LP system in 2002.

The LP collection system consists of approximately 268,484 LF of low pressure main, and does not contain any gravity or force main. The low pressure main was installed in 1980 or later, and consists of PVC main ranging in diameter from 2-inch to 10-inch. Each customer owns and maintains their own grinder pump and pit installation. The system includes thirteen lift stations. One of the lift stations owned by PAWC is located at an aerated equalization basin, which receives flow from the Timothy Lakes Campground. The Campground maintains its own collection system.

The system contains one wastewater treatment plant (WWTP) with an NPDES permitted discharge of 0.75 MGD. The plant is operated under NPDES permit PA-0060640. The WWTP has an average day design flow capacity of 0.532 MGD. The 2013 annual average daily flow into the plant was 0.197 MGD, and the ratio of 3 consecutive month maximum to annual average flow was 1.154. The WWTP is not currently nor expected to be hydraulically or organically overloaded in the next five years.

The LP collection system is in relatively good condition and experiences low I&I. Since the acquisition in 2002, PAWC has completed rehabilitation and replacement work at most of the lift stations. PAWC plans to continue to assess the condition of the system, and complete selected / limited rehabilitation work as needed.

Pocono Country Place

Pocono Country Place (PCP) wastewater system is located in Monroe County and provides wastewater collection and treatment service to approximately 3,552 mainly residential customers in the Pocono Country Place residential development within Coolbaugh Township. PAWC purchased the assets of the PCP system in 1995.

The PCP collection system consists of approximately 150,591 LF of gravity main, ranging in diameter from 4-inch to 30-inch; 5,407 LF of 4-inch and 6-inch diameter force main; and 94,265 LF of low pressure main, ranging in diameter from 2-inch to 6-inch. The collection system was

installed in 1975 or later. The system includes two lift stations. The force mains are ductile iron; the majority of low-pressure and gravity mains are PVC; and the approximately 657 manholes are concrete.

The system contains one wastewater treatment plant (WWTP) with a permitted annual average flow of 1.256 MGD, which is the basis for the plant's hydraulic capacity. The plant is operated under NPDES permit PA-0060097. The 2013 annual average daily flow into the plant was 0.534 MGD, and the ratio of 3 consecutive month maximum to annual average flow was 1.15. The WWTP is not currently nor expected to be hydraulically or organically overloaded in the next five years.

An aggressive I&I abatement program has been implemented. In 2012, PAWC televised 25,272 LF of gravity main, and inspected 310 manholes. Based on the inspection results, PAWC rehabilitated 2,200 LF of gravity main, primarily utilizing trenchless rehabilitation methods, and rehabilitated over 130 manholes through pressure testing, grouting, and lining. Work completed has corrected numerous deficiencies in an effort to reduce I&I. However, the PCP collection system still experiences I&I due to high groundwater, aging grinder pump systems, roof drain cross connections, and cracks of the collection system mains and service laterals. PAWC plans to maintain an accelerated I&I abatement program, and to continue to assess the condition of the system.

Claysville

Claysville wastewater system is located in Washington County and currently provides wastewater collection and treatment service to approximately 513 mostly residential customers in the Borough of Claysville and portions of Donegal Township. PAWC purchased the assets of the Claysville system in 2008.

The Claysville collection system consists of approximately 62,126 LF of gravity main, 8-inch and 10-inch diameter; and approximately 1,100 LF of 3-inch force main. The majority of the collection system was installed in 1983, with two small extensions installed since that time. All

mains are PVC, and all of the approximately 343 manholes are concrete. The system includes one lift station which serves the I-70 highway rest stop along with a few residential connections.

The system contains one wastewater treatment plant (WWTP) with a permitted annual average flow of 0.16 MGD, which is the basis for the plant's hydraulic capacity. The plant is operated under NPDES permit PA-0093165. The 2013 annual average daily flow into the plant was 0.086 MGD, and the ratio of 3 consecutive month maximum to annual average flow was 1.27.

A sewer system evaluation study was conducted in 2008. Based on the results of this study, it was determined that the collection system is in relatively good condition. Some defective areas were identified and corrective actions were completed. After corrective actions, I&I has been reduced but remains an issue. A wet weather storage tank is currently being constructed at the WWTP to minimize sanitary sewer overflows due to I&I. In 2013, there was one bypass event at the headworks of the WWTP. The Claysville WWTP is currently hydraulically overloaded as defined in 25 Pa. C.S. §94.1. The WWTP is not currently nor projected to be organically overloaded in the next five years. PAWC plans to continue to assess the condition of the system, and complete selected / limited rehabilitation work as needed.

Coatesville

Coatesville wastewater system is located in Chester County and provides wastewater collection and treatment service to approximately 6,257 customers, comprised of 5,876 residential, 356 commercial, 4 industrial, 17 municipal, and 4 bulk municipal customers. The collection system serves the City of Coatesville, the Borough of Parkesburg and portions of the Borough of South Coatesville and portions of the Townships of Caln, East Fallowfield, Highland, Sadsbury, Valley, West Caln, West Sadsbury. The system includes the following bulk municipal customers: Caln, Sadsbury, Valley, and West Brandywine Townships. PAWC purchased the assets of the Coatesville system in 2001.

The Coatesville collection system consists of approximately 331,017 LF of gravity main, ranging in diameter from 6-inch to 42-inch; and approximately 85,826 LF of force main, ranging in

diameter from 1.5-inch to 10-inch. The collection system was installed in the 1930s or later. The system includes 16 lift stations. The approximately 1564 manholes are brick or concrete. The system includes clay, PVC, and ductile iron gravity main. Force main material includes ductile iron and PVC.

The system contains one wastewater treatment plant (WWTP) with a permitted annual average flow of 7.0 MGD, which is the basis for the plant's hydraulic capacity. The plant is operated under NPDES permit PA-0026859. The 2013 annual average daily flow into the plant was 4.00 MGD, and the ratio of 3 consecutive month maximum to annual average flow was 1.060. The WWTP is not currently nor expected to be hydraulically or organically overloaded in the next five years.

PAWC maintains a regular program of monitoring collection system conditions. An aggressive I&I abatement program has been implemented to minimize extraneous flows in the system. The collection system is divided into ten basins, from which additional sub-basins are identified and prioritized for the I&I monitoring and abatement program. Trenchless technologies, such as cured-in-place liners, have been an important tool to complete the rehabilitation work in a cost-effective, safe and reliable manner. Work has continued in the high priority basins since the mid 1990's. PAWC plans to maintain an accelerated I&I abatement program and continue to assess the condition of the system.

Clarion

Clarion wastewater system is located in Clarion County and provides wastewater collection and treatment service to approximately 2,210 mainly residential customers. The collection system serves Clarion Borough, and portions of Monroe Township, Clarion Townships, and Strattanville Borough. Strattanville Borough is a bulk municipal customer that owns and maintains its own wastewater collection system. PAWC purchased the assets of the Clarion system in 2008.

The Clarion collection system consists of approximately 200,901 LF of gravity main, ranging in diameter from 4-inch to 24-inch; and approximately 11,640 LF of force main, ranging in

diameter from 4-inch to 12-inch. The collection system was installed in the 1930s or later. The system includes 5 lift stations. Most of the approximately 903 manholes are brick, and the remaining ones are concrete. Most of the gravity collection mains are clay, and the remaining ones are PVC. The 12-inch force main (2,028 LF) is ductile iron; the 4-inch (2,097 LF) and 8-inch (7,516 LF) are PVC.

The system contains one wastewater treatment plant (WWTP) with a permitted annual average flow of 1.75 MGD, which is the basis for the plant's hydraulic capacity. The plant is operated under NPDES permit PA-0029491. WWTP improvements are currently being implemented and are expected to be completed in 2015. The improvements will increase the WWTP capacity to 2.9 MGD. The 2013 annual average daily flow into the plant was 1.527 MGD, and the ratio of the 3 consecutive month maximum to annual average flow was 1.138. In 2013, the system experienced 29 sanitary sewer overflows (SSOs). The SSOs occurred at the WWTP bypass, Liberty Street Lift Station, and in the collection system. The system is currently hydraulically overloaded as defined in 25 Pa. C.S. §94.1. The WWTP is not currently nor projected to be organically overloaded in the next five years.

Since the 2008 acquisition, PAWC has conducted numerous I&I evaluation studies. PAWC has implemented an aggressive I&I abatement program to correct defects in priority subbasins of the collection system that were potential sources of I&I. Work has included main line, manhole, and lateral rehabilitation, as well as upgrades to lift stations. Trenchless technologies, including cured-in-place liners and pipe-bursting, have been an important tool to complete the rehabilitation work in a cost-effective, safe and reliable manner. Currently major improvements to the gravity collection system are being completed, which includes the replacement of approximately 7,728 LF of undersized segments (ranging from 8-inch to 36-inch) and abandonment of parallel sewers many of which are known sources of I&I. In addition, improvements at the WWTP (scheduled to be completed in 2015) and at Liberty Lift Station (scheduled to be completed in 2014) should reduce the number of sanitary sewer overflows. I&I remains an issue in high priority basins in the collection system as well as several other basins, which will need to be addressed to prevent future hydraulic overload conditions. PAWC plans to

maintain an accelerated I&I abatement program and continue to assess the condition of the system.

Franklin

Franklin wastewater system is located in Adams County and provides wastewater collection and treatment service to portions of Franklin Township. The system consists of approximately 287 mostly residential customers. PAWC purchased the assets of the Franklin system in 2013.

The Franklin collection system consists of approximately 47,906 LF of PVC gravity main, ranging in diameter from 6-inch to 10-inch. The collection system was installed in 2004 or later. Based on the system age, it is assumed that all of the approximately 165 manholes are concrete.

Included in the above footages of gravity main is a stand-alone area known as the "sand mound," which serves 14 homes and was installed in 2004. The sand mound area consists of 6-inch PVC gravity mains that discharge into two 1,500 gallon septic tanks with an 1,800 gallon final settling tank, a pump station, and a 10,000 square-foot elevated sand mound. At this time, there are no plans to connect the sand mound area to the Franklin collection system.

The system contains one wastewater treatment plant (WWTP) with a permitted annual average flow of 0.2 MGD, which is the basis for the plant's hydraulic capacity. The plant is operated under NPDES permit PA-00248088. The 2013 annual average daily flow into the plant was 0.0475 MGD, and the ratio of 3 consecutive month maximum to annual average flow was 1.097. Since the Franklin system was recently acquired, the conveyance capacity of the collection system needs to be further evaluated. However, the WWTP and collection system seem to be adequately sized and are not expected to be hydraulically or organically overloaded in the next five years.

The Franklin collection system is in good condition and experiences little I&I. PAWC plans to continue to assess the condition of the system, and complete selected / limited rehabilitation work as needed.

In 2014, PAWC expects to finalize the acquisition of the Hamiltonban collection system, which serves about 74 customers in Hamiltonban Township. After the acquisition, PAWC plans to interconnect the Hamiltonban system to the Franklin system, and institute a proactive I&I monitoring and abatement program in the Hamiltonban system.

Koppel

Koppel wastewater system is located in Beaver County and provides wastewater collection and treatment service to approximately 348 mostly residential customers in Koppel Borough. PAWC purchased the assets of the Koppel system in 2013.

The Koppel system consists of approximately 24,041 LF of gravity main, ranging in diameter from 5-inch to 15-inch. The system was installed in the 1920s or later. Most of the gravity main is vitrified clay, with some PVC. Based on system age, most of the approximately 85 manholes are assumed to be composed of brick.

The system contains one wastewater treatment plant (WWTP) with a permitted annual average flow of 0.240 MGD, which is the basis for the plant's hydraulic capacity. The plant has a wet weather capacity rating of 0.9 MGD. It is operated under NPDES permit PA-0023434. The 2013 annual average daily flow into the plant was 0.137 MGD, and the ratio of 3 consecutive month maximum to annual average flow was 1.15. The WWTP is not currently nor expected to be hydraulically or organically overloaded in the next five years.

The Koppel system is influenced by I&I. PAWC is currently undertaking a sewer system evaluation study to identify sources of I&I. PAWC plans to implement an accelerated I&I abatement program.

Marcel Lake

Marcel Lake wastewater system is located in Pike County and provides wastewater collection and treatment service to approximately 339 residential customers in the Marcel Lake Estates development in Delaware Township. In 2013, PAWC purchased the assets of the Marcel Lake system from the Clean Treatment Sewage Company.

The Marcel Lake collection system consists of approximately 30,700 LF of 8-inch PVC gravity main, and approximately 26,000 LF of PVC low pressure main, ranging in diameter from 1 ¼ inch to 6-inch. The gravity collection area includes 10 lift stations and approximately 97 manholes. The collection system was installed in the 1960s or later.

The system contains one wastewater treatment plant (WWTP) with a permitted annual average flow of 0.100 MGD, which is the basis for the plant's hydraulic capacity. The plant is operated under NPDES permit PA-0060313. The system is currently in hydraulic overload condition. On multiple occasions over the last three years, the effluent flow meter at the plant recorded peak daily flows that exceeded the plant's peak flow capacity of 0.2 MGD. The system has experienced numerous SSOs at the WWTP and in the collection system, which has resulted in a PA DEP connection moratorium. PAWC has hired a consultant to further evaluate the WWTP. The 2013 average daily flow into the WWTP (measured since PAWC acquired the system in August, 2013) was 0.043 MGD, and the single highest daily flow was 0.129 MGD.

The low pressure portion of the collection system appears to be in relatively good condition. The gravity portion of Marcel Lake experiences excessive I&I and sewer overflows. The gravity collection system was inspected by closed circuit TV (CCTV) in 2013. It appears that the gravity system is in extremely poor condition. It was poorly constructed and installed without minimum slope requirements. The lift stations are in poor condition, and have not been modified or improved since construction in the early 1970s. Instead of discharging into a force main, the lift stations pump directly into the gravity system and provide hydraulic jetting action to overcome the head of the gravity system. When the pumps shut off, much of the flow that was pumped flows back to the lift station through the gravity mains.

PAWC is in the process of completing an inspection and evaluation of the system, which includes flow and rainfall monitoring to determine the hydraulic capacity of the low pressure and gravity collection systems, and it includes cleaning, closed circuit TV (CCTV) inspection (completed in 2013), and manhole inspections of the entire gravity collection system to document system deficiencies. Most of the improvements are expected to be related to the gravity collection system. A value engineering analysis will be completed to evaluate alternatives. These may include rehabilitation of the gravity system, replacing the gravity system with a low pressure system, or a combination of these alternatives.

Section 4 – Estimate of the Quantity of Property to Be Improved

The estimated quantities of property to be improved are listed in Table 4 below. To compile these estimates, the best available information was used regarding the infrastructure needs for each wastewater system. Actual quantities and scheduling may change depending on the outcome of sewer system evaluation or other planning studies, as described in Section 2 of this LTIIP.

Table 4 – Projected Eligible Properties to Be Replaced / Rehabilitated for 2015 - 2019

Year	Gravity Pipe (LF)	Manhole (ea)	Lateral (ea)	Low Pressure Main (LF)	Force Main (LF)	Lift station (ea)
2015	12,400	80	219	1,100	200	1
2016	6,000	60	150	15,400	200	0
2017	9,800	75	177	15,600	400	0
2018	15,400	93	349	1,400	400	0
2019	14,700	95	308	1,200	0	0
Total	58,300	403	1,203	34,700	1,200	1

Section 5 – Projected Annual Expenditures

The projected annual expenditures for 2015 to 2019 are listed in Table 5 below. These estimates are based on the quantities listed in Table 4 and recent, competitively-bid prices in Pennsylvania.

Table 5 - Projected Annual Expenditures 2015 to 2019

Year	Projected Annual Expenditures
2015	5,265,244
2016	5,290,000
2017	5,682,655
2018	5,097,241
2019	4,350,000
Total	25,685,140

Some quantities may change depending on the results of engineering studies, sewer system evaluation studies, and new acquisitions. Cost may vary depending on replacement / rehabilitation method selected during the final design. Certain assumptions were made about eligible properties to estimate these expenditures. For example, competitive bid prices for gravity replacement varied with depth of pipe and diameter, so an average depth and diameter was assumed to generate a projected cost. Also, to estimate quantities and expenditures it was assumed a low pressure collection system will be installed to replace the gravity collection portion of Marcel Lake. However, the final remediation plan for Marcel Lake will include evaluation of all options, and will be subject to third party review. Annual expenditures may be subject to periodic fluctuation due to larger wastewater upgrades associated with DEP consent decree compliance, or acquisition of new wastewater systems.

For all projects, the most prudent and cost-effective method will be selected. In addition, PAWC uses competitive bidding to ensure all major capital projects are completed in a cost-effective manner.

Section 6 – Acceleration of Infrastructure Replacement

PAWC has continuously invested in its wastewater infrastructure to maintain safe, reliable service to its customers. As shown in Figure 2 below, from 2009 to 2013 PAWC spent an average of $3.79 million annually (app. $239 annually per wastewater customer) on wastewater DSIC eligible infrastructure improvements. From 2015 to 2019, PAWC proposes to increase wastewater DSIC eligible spending to about $5.14 million annually (app. $305 annually per wastewater customer) in order to continue making necessary improvements at an accelerated pace. The proposed spending for 2015 to 2019 represents a 35.6 percent increase in total spending, and a 27.6 percent increase in per customer spending compared to spending for 2009 to 2013.

Expenditures for 2014 at $7.92 million are higher than historical average spending primarily due to one large project associated with DEP consent order compliance (Liberty lift station and collection system improvements in Clarion). Therefore, 2014 expenditures were not included in the baseline spending comparison. Customers for Koppel, Marcel Lake, and Franklin were included in the per-customer cost calculation for year 2014 and later. In addition, the approximately 74 additional customers from Hamiltonban were included in 2015 and later years.

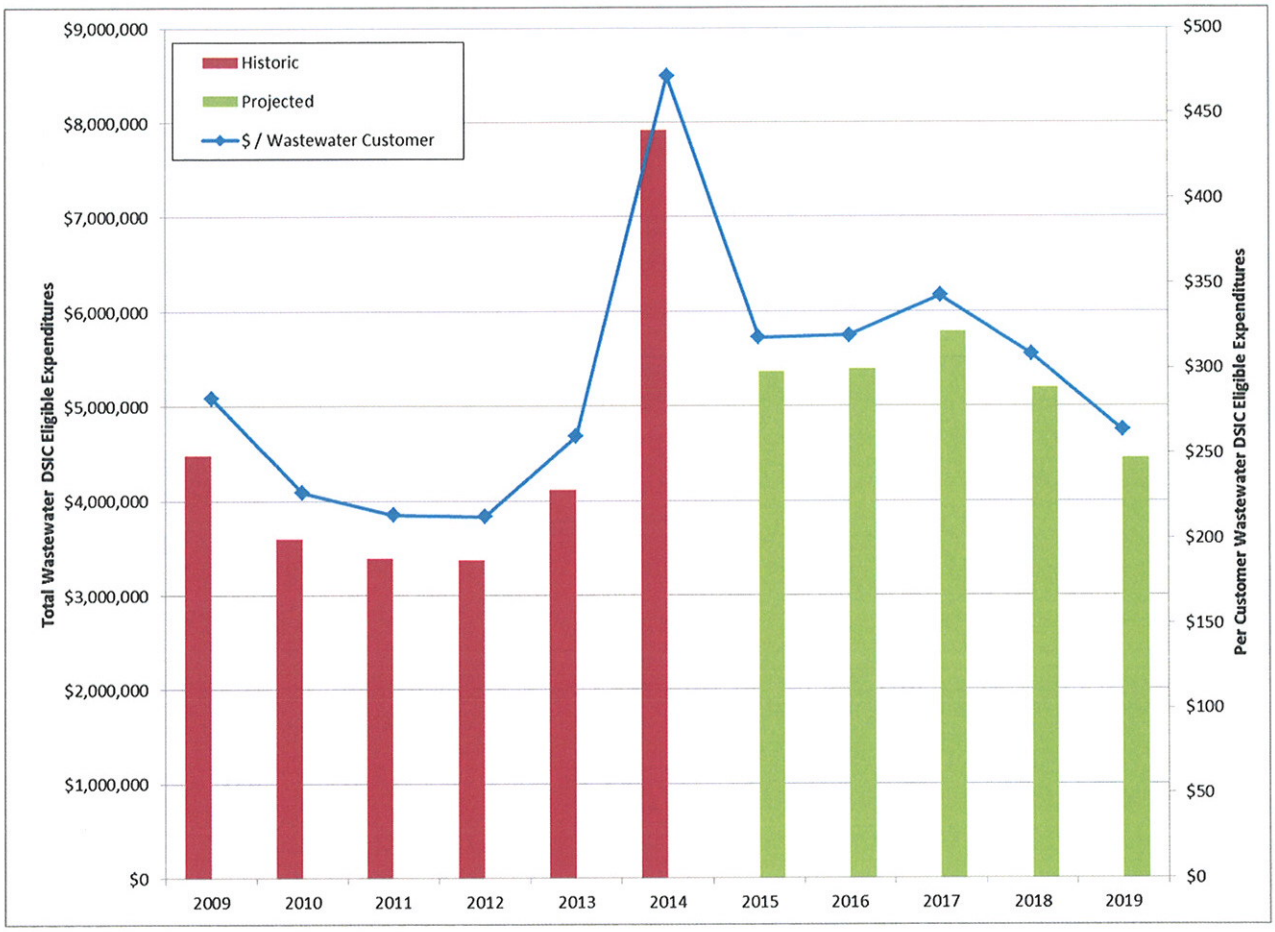

Figure 2 – Projected and Historic Wastewater DSIC Eligible Capital Expenditures

Maintaining historic average annual spending levels, it is estimated that the proposed replacements for 2015 to 2019 would take approximately 7 years to complete. The proposed 2015 to 2019 spending allows PAWC to maintain an accelerated pace of replacement of aging infrastructure.

Section 7 – Workforce Management Plan

To ensure system reliability and public safety, all wastewater DSIC eligible projects will be constructed by qualified contractors. PAWC uses competitive bidding and maintains a pre-qualification process to ensure all contractors are qualified to perform work in a cost-effective, safe, and reliable manner. PAWC utilizes the PICS contractor prequalification, screening and management service. The PICS process helps PAWC certify and centralize contractor data, perform pre-project screening, and contractor pre-qualification. PICS allows PACW to more effectively manage its risk and contractors' performance. During the pre-qualification screening process, contractors and subcontractors are required to submit pertinent documentation, such as:

- Safety: company policy, designated safety inspector, OSHA lost workdays and recordable incidents, OSHA violations
- Worker's Compensation Experience Ratings (Experience Modifier)
- Staffing information
- Annual value of work and percentage of work relevant to bid project
- Work experience schedule
- Bonding capacity
- Liability Insurance coverage
- References

All construction projects performed by independent contractors are properly inspected. PAWC employees are actively engaged in the direct supervision of project inspections. The project close-out process includes a punch-list to ensure all work is completed according to contract documents.

Section 8 – Outreach and Coordination with other Utilities

The acceleration of aging infrastructure proposed in this LTIIP will lead to disruptions as work is performed in the right of ways of the roadways and streets across the PAWC service area. Local municipalities and other utilities / agencies may be planning paving projects or underground infrastructure replacement projects located in the same right-of-way as PAWC wastewater infrastructure. PAWC recognizes that coordination with other utilities minimizes disruption and ensures that infrastructure replacement is efficient and cost effective. Therefore, PAWC plans to take the following steps to reach out to customers about disturbances, and to coordinate with other utilities located within the PAWC service area:

- Utilize Pennsylvania's one-call system for "design notifications"
- Maintain open communication with local municipalities to stay informed about planned utility and paving projects
- Maintain communication with PennDOT Utility Administrators and review the "letting" schedule
- Maintain communication / working relationships with other utilities operating in our service area
- Where applicable and cost-effective, use trenchless technologies to minimize roadway disturbance
- Prior to working within a community, issue door-to-door notifications, press releases, and / or information letters to notify those customers / community associations affected by the work

APPENDIX C

Certification Regarding Base Rate Proceedings

I, John R. Cox, pursuant to 66 Pa.C.S. §1353(b)(4), hereby certify that Pennsylvania-American Water Company ("PAWC") has filed a base rate proceeding within five years prior to July 3, 2014, which is the date of its initial petition to establish a Wastewater Distribution System Improvement Charge authorized by PA.C.S. §1353. Specifically, PAWC filed its last base rate case, a combined water and wastewater rate case, on April 30, 2013, which was subsequently settled with rates effective January 1, 2014 at Docket No. R-2013-2355276. This base rate case included the Coatesville, Claysville, Clarion, Marcels Lake (Clean Treatment), Northeast (Blue Mountain Lake and Lehman Pike) and Pocono wastewater operations of the Company. The base rate case did not include the Franklin and Koppel wastewater operations which were acquired after the filing of the base rate case.

John R Cox

Date: July 3, 2014

John R. Cox
Manager of Rates and Regulations
Pennsylvania-American Water Company

APPENDIX D

PAWC STATEMENT NO. 1

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PETITION OF PENNSYLVANIA-AMERICAN WATER COMPANY WASTEWATER OPERATIONS FOR APPROVAL OF LONG TERM INFRASTUCTURE IMPROVEMENT PLAN AND APPPROVAL TO ESTABLISH AND IMPLEMENT A DISTRIBUTION SYSTEM IMPROVEMENT CHARGE	:	**DOCKET NO. P-2014-_____**

DIRECT TESTIMONY
OF
JOHN R. COX
MANAGER OF RATES AND REGULATIONS

DATE: July 3, 2014

PENNSYLVANIA-AMERICAN WATER COMPANY

DIRECT TESTIMONY OF JOHN R. COX

Q. What is your name and business address?

A. My name is John R. Cox. My business address is 800 West Hersheypark Drive, Hershey, Pennsylvania 17033.

Q. By whom are you employed and in what capacity?

A. I am employed by American Water Works Service Company as Manager of Rates and Regulations for Pennsylvania-American Water Company ("PAWC or the Company").

Q. Please summarize your educational background and professional experience.

A. I am a 1985 graduate of Shippensburg University of Pennsylvania with a Bachelor of Science degree in Business Administration, with a major in accounting. In 1999, I received my Masters Degree in Business Management from Lebanon Valley College. I have also completed the continuing education program sponsored by the National Association of Regulatory Utility Commissioners (NARUC) and the University of Utah.

I have been employed by PAWC or the Service Company since June 1986. From 1986 through June 1988, I served as a staff accountant in the Accounting Department. In July 1988, I was transferred to the Rate Department, and, in July 1989, I was promoted to Senior Rate Analyst. In 1991, I was promoted to accounting supervisor and held that position until December 2000 when I was promoted to Fleet and Materials Management Superintendent. In July 2004 I was promoted to the position of Senior Financial Analyst assigned to the Finance Department. In 2007, I was promoted to my current position of Manager of Rates and Regulations.

Q. What are your duties as Manager of Rates and Regulations?

A. My duties include, principally, preparing and presenting rate applications for PAWC. In addition, I am responsible for certain aspects of the financial, budgeting and regulatory functions of the Company.

Q. Have you previously submitted testimony before the Pennsylvania Public Utility Commission?

A. Yes. I previously presented testimony on accounting and rate matters before this Commission. I have also prepared water rate applications that were presented to the Maryland Public Service Commission and the Virginia State Corporation Commission by subsidiaries of the American Water Works Company that operate in those states.

Q. What is the purpose of your testimony?

A. My testimony will provide an overview of PAWC's Wastewater Distribution System Improvement Charge ("DSIC") filing. I will discuss the proposed tariff in compliance with the model tariff included in the Public Utility Commission's Final Implementation Order entered August 2, 2012 at Docket No. M- 2012-2293611. Finally, I will provide the required rate case certification on PAWC's last base wastewater rate case.

Overview of PAWC's DSIC Filing

Q. Why has PAWC filed for a wastewater DSIC?

A. The Company has supported the need for a recovery mechanism that would allow wastewater utilities to recover the reasonable and prudently incurred costs related to the repair, improvement and replacement of utility infrastructure on a more timely basis,

subject to reconciliation, audit and other consumer protections. On February 14, 2012, Governor Corbett signed into law House Bill 1294 as Act 11 of 2012 (Act 11). As a result the Company is permitted to request the implementation of a DSIC for eligible sewer projects, limited to 5% of annual revenues.

Q Please address the requirement to file a wastewater Long Term Infrastructure Improvement Plan ("LTIIP") as part of this filing.

A. The LTIIP provides details on the Company's sewer infrastructure and how the Company plans to address the replacement of such property over the next five years. Section 1353 of the Pennsylvania Public Utility Code ("Code"), 66 PA.C.S. §1353, requires a LTIIP as part of a utility's request for a DSIC. Mr. Kaufman, the Vice President of Engineering for the Company has submitted testimony which is labeled as APPENDIX E of this petition. In his testimony Mr. Kaufman has provided an overview of PAWC's wastewater LTIIP and eligible wastewater DSIC projects.

Proposed Tariff and Customer Notification

Q. Please describe the proposed Tariff.

A. In Appendix A of this petition the Company has submitted its proposed tariff supplement, Supplement No. 4 to Tariff Wastewater PA P.U.C No. 15. Supplement No. 4 includes a description of the eligible property, the computation and effective date of the DSIC, method of providing quarterly updates and description of customer safeguards. The language included in Supplement No. 4 is in compliance with the Commission's Final Implementation Order entered August 2, 2012 at Docket No. M- 2012-2293611.

Q. What is the effective date of the proposed wastewater DSIC?

A. In Supplement No. 4 the Company has requested an initial DSIC rate of 0% with an effective date of January 1, 2015. On a quarterly basis, the Company will file an additional supplement to update the DSIC rate based on actual plant additions at least ten (10) days prior to the effective date of the update, provided Commission approval is obtained.

Q. When could wastewater customers of PAWC incur their first DSIC charge on their wastewater bill?

A. Provided the Commission approves this petition customers could expect to see a wastewater DSIC charge on their wastewater bills starting in April of 2015. This DSIC charge would have an effective date of April 1, 2015 and would be based on plant additions for the month of January and February 2015. These plant additions were not claimed as a rate base addition in the Company's last base rate case at Docket No. R-2013-2355276. The DSIC charge will be applicable to all wastewater customers of PAWC.

Q. How will PAWC base its projected revenues?

The Company's computation of the DSIC charge will be based on the summation of projected revenues for the applicable three-month period, subject to annual reconciliation and audit.

Q. What method will PAWC provide notification to the customer of this filing and future changes in the DSIC?

A. The Company will issue a bill insert notifying wastewater customers of submission of this DSIC petition. In addition customers shall be notified of changes in the DSIC by including appropriate information on the first bill they receive following any change. An explanatory bill insert shall also be included with the first billing.

Rate Case Certification

Q. Has PAWC filed a base rate case within the five years prior to this filing?

A. Yes, included as part of PAWC's DSIC petition as Appendix C is a certification that prior to this filing PAWC filed a combined water and wastewater base rate case at Docket No. R-2013-2355276. Under this Docket base rates were established with an effective date of January 1, 2014 for the Company's wastewater operations.

Q. Does this conclude your direct testimony?

A. Yes.

APPENDIX E

PAWC STATEMENT NO. 2

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PETITION OF PENNSYLVANIA-AMERICAN WATER COMPANY WASTEWATER OPERATIONS FOR APPROVAL OF LONG TERM INFRASTUCTURE IMPROVEMENT PLAN AND APPPROVAL TO ESTABLISH AND IMPLEMENT A DISTRIBUTION SYSTEM IMPROVEMENT CHARGE	:	DOCKET NO. P-2014-_____

DIRECT TESTIMONY
OF
DAVID R. KAUFMAN
VICE PRESIDENT ENGINEERING

DATE: July 3, 2014

PENNSYLVANIA-AMERICN WATER COMPANY

DIRECT TESTIMONY OF DAVID R. KAUFMAN

Q. What is your name and business address?

A. My name is David R. Kaufman, and my business address is 800 West Hersheypark Drive, Hershey, Pennsylvania 17033.

Q. By whom are you employed and in what capacity?

A. I am employed by Pennsylvania-American Water Company (PAWC or the Company) as Vice President of Engineering.

Q. Please describe your educational background and business experience.

A. In 1975, following graduation from Pennsylvania State University with a Bachelor of Science degree in civil engineering, I accepted an engineering position with Pennsylvania Gas and Water Company (PG&W) in Wilkes-Barre, Pennsylvania. I remained in that position until 1989, when I was promoted to Manager of Water Engineering for PG&W. In August 1991, I was promoted to Vice President of Water Resources for PG&W. In that position, I was responsible for PG&W's water operations relating to water supply, water quality and treatment, water engineering and planning. When the water assets of PG&W were acquired by PAWC in February 1996, I accepted an Operations Manager position with the Company in its Northeast Region. I remained in that position until February 2001, when I was promoted to Manager of Northeast Operations. In 2004, I accepted the position of Director of Engineering-Southeast Region with American Water Works Service Company and remained in that position until I accepted the position of Vice President of Engineering for PAWC. I am a registered Professional Engineer in Pennsylvania and hold a Class A1 water treatment plant operator's license.

Q. Do you belong to any professional or industry associations?

A. Yes, I am a member of the American Water Works Association, the Pennsylvania Chapter of the National Association of Water Companies, the American Society of Civil Engineers and the Water Environmental Federation.

Q. What are your duties and responsibilities in your current position?

A. As Vice President of Engineering for PAWC, I am responsible for the administration of engineering services, including the planning, design and construction of water and wastewater capital investment projects, for all of PAWC's systems and facilities.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide an overview of PAWC's wastewater operations and PAWC's Long Term Infrastructure Improvement Plan ("LTIIP") which has been simultaneously submitted for Commission approval as Appendix B to its Petition filed with the Pennsylvania Public Utility Commission ("Commission") requesting approval to implement a wastewater Distribution System Improvement Charge (DSIC). The LTIIP provides details on the Company's sewer infrastructure and how the Company plans to address the replacement of such property over the next five years. Section 1353 of the Pennsylvania Public Utility Code ("Code"), 66 Pa.C.S. §1353, requires a LTIIP as part of a utility's request for a DSIC.

Q. Describe PAWC's wastewater DSIC eligible projects.

A. Per the Pennsylvania Public Utility Code, 66 Pa.C.S. §1351(4), wastewater DSIC eligible investments include repair, rehabilitation, or replacements of the following types of property: collection sewers, collecting mains, service laterals, valves, manholes, lift stations, grinder pumps, flow meters, inflow and infiltration projects, unreimbursed costs

related to highway relocation projects, collection main extensions installed to implement solutions to wastewater problems that present a significant health and safety concern for customers currently receiving services, other related capital costs, etc. The LTIIP includes specifics relative to the Company's planned investments to address the aging infrastructure in its sewer facilities and collection system network.

Q. What types of capital expenditures are not wastewater DSIC eligible?

A. Expenditures that are not DSIC-eligible include buildings, treatment facilities, reimbursed projects such as highway relocations, and new (not replacement) mains and services.

Q. Please describe the contents of PAWC's LTIIP.

A. PAWC's LTIIP includes the six specific elements listed in Section 1352 of the Code: 1) types and age of eligible property; 2) schedule for planned repair and replacement of eligible property; 3) general description of the location of the eligible property; 4) reasonable estimate of the quantity of eligible property to be improved; 5) projected annual expenditures and measures to ensure that the plan is cost effective; and 6) manner in which replacement of aging infrastructure will be accelerated and how repair, improvement or replacement will maintain adequate, efficient, safe, reliable, and reasonable service. In addition, PAWC's plan includes description of outreach and coordination activities with other utilities, PADOT, and local governments and a description of its workforce management plan designed to ensure that PAWC will have access to a qualified work force to perform the work in a cost-effective, safe and reliable manner, as required by the Commission's Final Implementation Order entered August 2, 2012 at Docket No.M-2012-2293611.

Q. Can you please summarize the Company's LTIIP?

A. Yes. PAWC has continuously invested in its wastewater treatment facilities and collection systems to ensure safe and reliable continuity of service, public health and environmental protection. The Company has been replacing, rehabilitating, and maintaining its collection and conveyance systems based upon studies and evaluations and intends to accelerate the repair, replacement and refurbishment of these systems. For the calendar years 2015 through 2019, PAWC plans to accelerate its infrastructure improvement spending to approximately $5.40 million annually for pipe and lateral repair and replacement, manhole and lift station rehabilitation and replacement, and inflow and infiltration ("I&I") reduction programs. PAWC plans to maximize treatment efficiencies and prevent sewer overflow through I&I projects that include pipe replacement and manhole rehabilitation. Where possible, pipe replacement will be performed utilizing trenchless sewer rehabilitation methods which require less installation time and less bypass pumping, which minimizes disruption to customers and municipalities.

Q. Please describe the Company's wastewater operations.

A. PAWC currently owns and operates nine separate and distinct wastewater systems. Consolidated, they serve almost 16,803 customers including 5 bulk municipal customers, making PAWC the largest investor-owned wastewater service provider in the Commonwealth. Additionally, the Company anticipates expanding its wastewater operations in the future. In 1995, the Company acquired the wastewater facilities serving A Pocono Country Place ("PCP") in Coolbaugh Township, Monroe County. The service territory consists of a single residential development and small strip mall adjacent to the development. The facilities serve approximately 3,552 mainly residential customers and

consist of a collection system, two lift stations and a rated 1.256 mgd wastewater treatment plant. The wastewater collection system consists of 150,591 LF of gravity main, 5,407 linear feet (LF) of force main, and 94, 265 LF of low pressure mains. The gravity mains range in size from 30 inches to 4 inches in diameter, whereas the low pressure mains typically range in size from 2 inches to 6 inches in diameter. The territory served by the low pressure collection system utilizes individual grinder pumps at each customer's premises. The grinder pumps are owned and maintained by the customer. PAWC acquired the assets of the Coatesville system in March 2001. The Coatesville Wastewater system is located in Chester County and provides wastewater collection and treatment service to approximately 6,257 customers. The collection system serves the City of Coatesville, the Borough of Parkesburg and portions of the Borough of South Coatesville and portions of the Townships of Caln, East Fallowfield, Highland, Sadsbury, Valley, West Caln and West Sadsbury. The system includes the following bulk municipal customers: Caln, Sadsbury, Valley, and West Brandywine Townships. The Coatesville collection system consists of approximately 331,017 LF of gravity main and approximately 85,826 LF of force main. The system also includes 16 lift stations and a wastewater treatment plant with a permitted annual average flow of 7.0 million gallons per day (mgd).

The Lehman Pike wastewater system was acquired in April 2002. It provides service to approximately 2,634 mainly residential customers in portions of Lehman Township, Pike County and portions of Middle Smithfield, Smithfield and Stroud Townships, in Monroe County. The wastewater collection system consists of approximately 268,484 L.F. of low

pressure PVC main ranging in diameter from 2 inches to 10 inches. Wastewater is moved through the low pressure collection system by grinder pumps, which are owned and maintained by each customer. Thirteen (13) lift stations are utilized to transmit wastewater to the .532 million gallon per day (mgd) wastewater treatment plant.

The Blue Mountain Lake (BML) wastewater system is located in Monroe County and currently provides wastewater collection and treatment service to approximately 663 mainly residential customers in portions of Stroud and Smithfield Townships. PAWC purchased the assets of the BML system in 2005. The BML collection system consists of about 67,825 LF of low pressure sewer main, and does not contain any gravity or force main. The system contains one wastewater treatment plant with a permitted annual average daily flow of 0.183 MGD.

The Claysville wastewater system is located in Washington County and currently provides wastewater collection and treatment service to approximately 513 mostly residential customers in the Borough of Claysville and portions of Donegal Township. PAWC purchased the assets of the Claysville system in 2008. The Claysville collection system consists of approximately 62,126 LF of PVC gravity main and approximately 1,100 LF of PVC force main. The system includes one lift station which serves the I-70 highway rest stop along with a few residential connections. The system contains one wastewater treatment plant with a permitted annual average flow of 0.16 MGD.

The Clarion wastewater system is located in Clarion County and provides wastewater collection and treatment service to approximately 2,210 mainly residential customers. The collection system serves Clarion Borough, and portions of Monroe Township, Clarion Township, and Strattanville Borough. Strattanville Borough is a bulk municipal customer that owns and maintains its own wastewater collection system. PAWC purchased the assets of the Clarion system in 2008. The Clarion collection system consists of approximately 200,901 LF of gravity main, approximately 11,640 LF of force main, and 5 lift stations. The system contains one wastewater treatment plant with a permitted annual average flow of 1.75 MGD. Plant improvements are currently being implemented and are expected to be completed in 2015. The improvements will increase the plant capacity to 2.9 MGD. Other major improvements are currently underway on the gravity collection system, including the replacement of approximately 7,728 LF of undersized segments (ranging from 8-inch to 36-inch) and abandonment of parallel sewers many of which are known sources of I&I. In addition, improvements at the plant (scheduled to be completed in 2015) and at Liberty Lift Station (scheduled to be completed in 2014) should reduce the number of sanitary sewer overflows.

The Franklin wastewater system is located in Adams County and provides wastewater Collection and treatment service to portions of Franklin Township. The system consists of approximately 287 mostly residential customers. PAWC purchased the assets of the Franklin system in 2013.

The Franklin collection system consists of approximately 47,906 LF of PVC gravity main and one wastewater treatment plant with a permitted annual average flow of 0.2 MGD. In 2014, PAWC expects to finalize the acquisition of the Hamiltonban collection system, which serves about 74 customers in Hamiltonban Township. After the acquisition, PAWC plans to interconnect the Hamiltonban system to the Franklin system, and institute a proactive I&I monitoring and abatement program in the Hamiltonban system.

Koppel wastewater system is located in Beaver County and provides wastewater collection and treatment service to approximately 348 mostly residential customers in Koppel Borough. PAWC purchased the assets of the Koppel system in 2013. The Koppel system consists of approximately 24,041 LF of gravity main and contains one wastewater treatment plant with a permitted annual average flow of 0.240 MGD.

The Marcel Lake wastewater system is located in Pike County and provides wastewater collection and treatment service to approximately 339 residential customers in the Marcel Lake Estates development in Delaware Township. In 2013, PAWC purchased the assets of the Marcel Lake system from the Clean Treatment Sewage Company. The Marcel Lake collection system consists of approximately 30,700 LF of 8-inch PVC gravity main and approximately 26,000 LF of PVC low pressure main. The gravity collection area includes 10 lift stations. The system contains one wastewater treatment plant with a permitted average flow of 0.100 MGD.

Q. Please describe, in general, the condition of the wastewater facilities.

A. The condition of the wastewater systems varies, depending on age, material, local conditions and quality of initial design or installation. PAWC has acquired its wastewater systems from prior ownership in various state of disrepair. Many systems have aging infrastructure and significant inflow and infiltration (I&I) from rainwater and groundwater.

During dry-weather conditions, the impact of I&I varies. Some collection systems have minimal impact from I&I during dry weather, while other systems experience high I&I even in dry weather conditions. For example, a collection system with a high-groundwater table can be significantly impacted by infiltration in dry weather conditions. In wet weather conditions, the impact of I&I is amplified. Flow entering a wastewater treatment plant can increase significantly due to the influx of groundwater, rainwater, and/or snowmelt. This may cause a sanitary sewer overflow (SSO) to occur if flow exceeds the plant's peak hydraulic capacity. Similarly, lift stations can become hydraulically overloaded if the inflow of sewage mixed with groundwater and rainwater exceeds the pumping capacity, causing raw sewage to be released to streets or a local waterway. In addition, the influx of rainwater and groundwater can fill up pipes and manholes in the collection system, causing manhole lids to be lifted and raw sewage to be released into the environment. Hydraulically overloaded pipes and manholes can also cause sewer backups into homes and businesses. SSO's and sewer backups due to I&I pose a public health risk and may violate many local and federal environmental regulations. The Claysville and Clarion systems are currently under a Pennsylvania

Department of Environmental Protection (PADEP) Consent Order and Agreement to implement mandated upgrades to address I&I issues. I&I has been a problem for several of PAWC's collection systems, especially for older systems with aging infrastructure. Rainwater inflow can enter the wastewater collection system in various ways, such as storm sewer cross connections, uncapped cleanouts, below-grade manhole lids, or roof drain cross connections. Groundwater inflow can enter the collection system through cracks in sewer pipes, faulty lateral connections, cracks in manhole walls, or deteriorated pipe joints. Groundwater can also enter the collection system through broken service laterals, root intrusion into a lateral pipe, or cracks in the walls of customer-owned grinder pump pits.

Q. More specifically, describe the condition and anticipated improvement activity in each of the Company's wastewater systems.

A. The Company's LTIIP provides details on the Company's sewer infrastructure and how the Company plans to address the accelerated replacement of such property over the next five years. Some low pressure systems such as Blue Mountain Lakes and Lehman Pike which are in relatively good condition and experience minimal I&I will continue to be monitored and assessed with limited rehabilitation work conducted on an as needed basis. The Franklin wastewater system is a newer gravity system which has similar performance characteristics and limited rehabilitation needs.

Four of the Company's wastewater systems - Pocono Country Place, Claysville, Coatesville, and Clarion - have on-going I&I abatement programs due to the age and

condition of their respective wastewater systems described in the LTIIP. The Company plans to maintain an accelerated I&I abatement program, and continue to assess the condition and needs of these systems. The primary focus of the investment projects will be the replacement and rehabilitation of pipes, laterals, manholes, and lift stations that have been selected based upon prior investigations to reduce I&I and replace deteriorated, aging infrastructure. Two recent wastewater system acquisitions, Koppel and Marcel Lake (also known as Clean Treatment), are in differing states of disrepair. Both systems are influenced by I&I and are currently being assessed to identify sources of I&I and develop a targeted rehabilitation plan.

Q. Please explain how the LTIIP was developed.

A. The LTIIP establishes how the Company plans to implement a wastewater DSIC mechanism to rehabilitate, improve, and replace aging infrastructure at an accelerated pace. The plan describes the type and age of property eligible for wastewater DSIC recovery; the schedule for its planned rehabilitation and replacement; location of eligible property; reasonable estimate of the quantity of property to be improved; projected annual expenditures; manner in which replacement of aging infrastructures will be accelerated; the workforce management plan to ensure work is performed in a cost-effective, safe and reliable manner and a description of outreach to other utilities to minimize disruption to customers. The Company has developed and is utilizing Geographic Information System (GIS) tools to assist in identifying and prioritizing specific improvement projects, based on attributes such as material type, diameter, age, physical condition, break history, and I&I data. GIS data is regularly updated with the addition of new pipes and the replacement of old pipes. The rehabilitation and

replacement needs have been prioritized on both a macro and micro level. The macro level breaks down the general categories of sewer components for each system which is in need of rehabilitation or replacement of eligible property. At the micro level, the system planning addressed the priority order in which specific portions and components of the wastewater systems are to be replaced or rehabilitated.

Q. Is the adoption of PAWC's DSIC in the public interest?

A. Yes. The Company recognizes that continued long term investment at an accelerated pace is needed for its wastewater system to maintain safe and reliable service to our customers. From 2009 to 2013, the Company spent an average of $3.79 million annually (approx. $239 annually per wastewater customer) on wastewater DSIC eligible Infrastructure improvements. From 2015 to 2019, the Company proposes to increase wastewater DSIC eligible spending to about $5.14 million annually (approx. $305annually per wastewater customer) in order to continue making necessary improvements at an accelerated pace. The proposed spending for 2015 to 2019 represents a 35.6 percent increase in total spending, and a 27.6 percent increase in per customer spending compared to spending for 2009 to 2013. The DSIC will allow the Company to continue to accelerate its wastewater infrastructure rehabilitation and replacement program to the benefit of its customers, the public, and the environment.

Q. Does this complete your testimony?

A. Yes.

VERIFICATION

I, John R. Cox, hereby state that the facts set forth are true and correct (or are true and correct to the best of my knowledge, information and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. §4904 (relating to unsworn falsifications to authorities).

July 3, 2014

Date

John R Cox

John R. Cox
Manager of Rates and Regulation
Pennsylvania-American Water Company

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PETITION OF PENNSYLVANIA-AMERICAN WATER COMPANY WASTEWATER OPERATIONS FOR APPROVAL OF LONG TERM INFRASTUCTURE IMPROVEMENT PLAN AND APPPROVAL TO ESTABLISH AND IMPLEMENT A DISTRIBUTION SYSTEM IMPROVEMENT CHARGE	:	**DOCKET NO. P-2014-_____**

CERTIFICATE OF SERVICE

I hereby certify that I have on this day served a true and correct copy of the above-referenced Petition upon the participants listed below, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54:

VIA E-MAIL AND UPS GROUND-NEXT DAY DELIVERY

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The above-referenced Petition of Pennsylvania-American Water Company Wastewater Operations was electronically filed on the Pennsylvania Public Utility Commission's eFiling system.

Susan Simms Marsh

Susan Simms Marsh
Corporate Counsel
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Dated this 3rd day of July, 2014