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February 8, 2013

VIA E-FILING  
Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street  
Harrisburg, PA 17120

Re: Petition Of PECO Energy Company For Approval Of Its Gas Long Term Infrastructure Improvement Plan – Docket No. M-2009-2123944

Dear Secretary Chiavetta:

With this letter, we are filing the **Petition of PECO Energy Company For Approval Of Its Gas Long Term Infrastructure Improvement Plan** (“Petition”) accompanied by PECO Energy Company’s (“PECO” or the “Company”) **Long Term Infrastructure Improvement Plan** (“LTIIIP”). Exhibit A to the LTIIIP, which is a copy of PECO’s Gas Operator Qualification Program, is not included with PECO’s e-filing because it contains confidential information. Accordingly, one copy of Exhibit A, which has been marked “**CONFIDENTIAL**,” is being filed with your office via Federal Express, and we ask that Exhibit A be lodged in a non-public file and not be made publicly available.

As evidenced by the enclosed Certificate of Service, copies of the enclosed Petition and accompanying LTIIIP, excluding Exhibit A, are being served upon the Bureaus of Investigation and Enforcement and Technical Utility Services, the Office of Consumer Advocate, the Office of Small Business Advocate and the parties to PECO’s last gas base rate proceeding.

If you have any questions regarding this filing, please contact me at 215-841-5777.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Webster", with a long horizontal flourish extending to the right.

Cc: Certificate of Service

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PETITION OF PECO ENERGY** :  
**COMPANY FOR APPROVAL OF ITS GAS** : **DOCKET NO. P-2013-**  
**LONG TERM INFRASTRUCTURE** :  
**IMPROVEMENT PLAN** :

**CERTIFICATE OF SERVICE**

I hereby certify and affirm that I have this day served a copy of the **Petition for Approval of PECO Energy Company's Gas Long Term Infrastructure Improvement Plan** and **PECO Energy Company's Gas Long Term Infrastructure Improvement Plan** excluding Exhibit A thereto, which contains confidential information, on the following persons in the matter specified in accordance with the requirements of 52 Pa. Code § 1.54:

**VIA ELECTRONIC MAIL AND FIRST CLASS MAIL**

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Date: February 8, 2013

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PETITION OF PECO ENERGY COMPANY** :  
**FOR APPROVAL OF ITS GAS LONG** : **DOCKET NO. P-2013-**  
**TERM INFRASTRUCTURE** :  
**IMPROVEMENT PLAN** :

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**PETITION FOR APPROVAL OF  
PECO ENERGY COMPANY'S GAS  
LONG TERM INFRASTRUCTURE IMPROVEMENT PLAN**

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Pursuant to 66 Pa.C.S. § 1352(a) and 52 Pa. Code § 5.41, PECO Energy Company (“PECO” or the “Company”) hereby petitions the Pennsylvania Public Utility Commission (“PUC” or the “Commission”) to approve PECO’s gas Long Term Infrastructure Improvement Plan (“LTIIIP” or the “Plan”), which accompanies this Petition. PECO’s LTIIIP contains all of the elements required by 66 Pa.C.S. § 1352(a)(1)-(6) and the Commission’s Final Implementation Order entered August 2, 2012 (“Implementation Order”).<sup>1</sup> Accordingly, PECO’s LTIIIP satisfies all the requirements for Commission approval set forth in 66 Pa.C.S. § 1352(a)(7) and the Implementation Order (p. 20).

As more fully explained below, the LTIIIP reflects PECO’s implementation of a plan designed to increase its projected capital investment for replacing cast iron, wrought iron, and ductile iron mains and bare steel mains and services by \$20 million per year, from approximately \$14 million to \$34 million per year. Based on reasonable estimates of unit costs, PECO’s increased level of investment would enable it to replace all of its oldest, high-risk cast iron mains

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<sup>1</sup> *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611 (Final Implementation Order entered August 2, 2012).

and all of its bare steel services in approximately ten years and replace all of the cast iron and bare steel mains in its system in approximately 34 years. Schedules showing PECO's projected expenditures and quantities of eligible plant to be replaced during the period 2013 through 2022 are provided in Appendix A to the Plan and are described in Sections IV.A.3. and B. of the Plan.

## **I. INTRODUCTION**

1. PECO is a corporation organized and existing under the laws of the Commonwealth of Pennsylvania with its principal office in Philadelphia, Pennsylvania. PECO provides electric delivery service to approximately 1.6 million customers and natural gas delivery service to approximately 495,000 customers in Pennsylvania. PECO furnishes gas service within its authorized service territory in Bucks, Chester, Delaware, Lancaster and Montgomery Counties. PECO is a "public utility," as defined in 66 Pa.C.S. § 102, and, with respect to its provision of gas service, a "natural gas distribution company," as defined in 66 Pa.C.S. § 2201.

2. On February 14, 2012, Governor Corbett signed into law Act 11 of 2012 ("Act 11"). Act 11 amended the Public Utility Code in several respects, including the addition of Subchapter B (66 Pa.C.S. §§ 1350 – 1360), which authorizes the Commission to approve a distribution system improvement charge ("DSIC") upon petition by an electric distribution company, a natural gas distribution company, a water utility or a wastewater utility. In addition, Subchapter B sets forth various requirements that must be satisfied by a qualifying utility in order to establish a DSIC and to recover the reasonable and prudent costs to repair, improve or replace eligible property.

3. Section 1352(a)<sup>2</sup> provides that a utility must submit an LTIP “in order to be eligible to recover costs under section 1353 (relating to distribution system improvement charge).” In addition, Section 1352 provides that an LTIP should include the following:

- (1) Identification of the types and age of eligible property owned or operated by the utility for which the utility would seek recovery under this subchapter.
- (2) An initial schedule for the planned repair and replacement of eligible property.
- (3) A general description of the location of the eligible property.
- (4) A reasonable estimate of the quantity of eligible property to be improved.
- (5) Projected annual expenditures to implement the plan and measures taken to ensure that the plan is cost effective.
- (6) The manner in which the replacement of aging infrastructure will be accelerated and how the repair, improvement or replacement will ensure and maintain adequate, efficient, safe, reliable and reasonable service.

4. On August 2, 2012, the Commission entered the Implementation Order, most of which is devoted to explaining how the Commission intends to implement the provisions of Subchapter B. In particular, the Implementation Order sets forth the Commission’s expectations with regard to the contents of: (1) an LTIP, which must be filed as a precursor to a request to establish a DSIC (*see* 66 Pa.C.S. § 1352); (2) Annual Asset Optimization Plans, which must be filed each year by a utility that has an approved DSIC and LTIP (*see* 66 Pa.C.S. § 1356); and (3) a petition requesting Commission approval to include a DSIC in a utility’s tariff (*see* 66 Pa.C.S. § 1353).

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<sup>2</sup> Unless otherwise indicated, references to a “section” are to the Public Utility Code.

5. The terms of the Implementation Order build upon the provisions of Subchapter B, furnish further guidance on what an LTIP should contain and delineate the standards by which such plans will be reviewed and approved by the Commission. The principal terms of the Implementation Order that apply to LTIPs are summarized below:

- **Workforce Management Plans** (Implementation Order, pp. 17-18). As an appropriate means of implementing the standards set forth in Section 1359 (i.e., that utilities demonstrate that work done on eligible property is performed by “qualified employees of either the utility or an independent contractor”), the Implementation Order provides that a “workforce management and training plan” is “a necessary element of the LTIP.”
- **LTIP Need Not Address Property That Is Not Eligible For Cost Recovery Under A DSIC** (Implementation Order, p. 18). The Commission’s Tentative Order, which preceded the Implementation Order, explained that “an LTIP should include a review of all distribution plant, including inventory, age, functionalities, reliability and performance.” In response to comments from various utilities, the Commission clarified and revised its tentative finding to provide that “the long-term infrastructure plan need only address the specific property eligible for DSIC recovery.”
- **Time Frame For LTIP** (Implementation Order, pp. 18-19). The Commission determined that “a five to ten-year term for the LTIP is appropriate as this time period is forward-looking enough for utilities to make accurate predictions and also provides sufficient time for long-term planning of planned repairs and replacement of eligible property.”
- **Consistency With Pipeline Replacement Plans (“PRPs”)** (Implementation Order, p. 19). On November 10, 2011, the Commission issued a Tentative Order in *Natural Gas Pipeline Replacement And Performance Plans*, at Docket No. M-2011-2271982, which solicited comments on the Commission’s proposal to establish replacement timeframes and performance metrics for gas utilities’ PRPs for “high-risk” pipe. The Commission has not issued a final Order in that matter. However, in its Implementation Order, the Commission stated that it anticipates PRPs will be filed at some point and that “the LTIP should be consistent with the PRP Plans.”
- **Maintain Or Augment Acceleration Of Infrastructure Improvement** (Implementation Order, p. 19). The Commission noted that an LTIP should “reflect and maintain an *acceleration* of infrastructure replacement over a utility’s historic level of capital improvement” (emphasis in original). However, the Commission acknowledged that “some utilities have already taken substantial steps recently to increase prudent capital investment to address their aging infrastructure.” As a consequence, the Commission determined that the LTIP should, in such a circumstance, reflect how the DSIC will enable the utility to maintain a previously accelerated rate of infrastructure replacement.

- **Standard Of Review** (Implementation Order, p. 20). The Commission concluded that “the standard of review is set forth in the statute itself and nothing further is required.” Accordingly, the Implementation Order provides that, pursuant to Section 1352(a), a utility has the burden of demonstrating that its LTIP and the associated expenditures to implement the LTIP “are reasonable and cost effective and are designed to maintain safe, adequate and reliable service to consumers.” The Implementation Order sets forth the process for review<sup>3</sup> and limits the review period to not more than 120 days.
- **Confidential Information** (Implementation Order, pp. 20-21). A utility may obtain a protective order for confidential or proprietary information contained in an LTIP.
- **Time For Filing** (Implementation Order, p. 21). The Implementation Order makes it clear the Commission expects utilities to file LTIPs in advance of filing a petition to establish a DSIC because Commission approval of the LTIP “can reduce the scope of issues in the DSIC petition and expedite the process of getting this new rate mechanism in place.”
- **Continuing Responsibility For Gas Utilities To Comply With 52 Pa. Code § 59.38** (Implementation Order, p. 21). The Commission declined to grant a blanket waiver of the requirement imposed by 52 Pa. Code § 59.38 for advance notice of major construction projects by gas utilities that have approved LTIPs.
- **Periodic Review And Flexibility To Deviate From An Approved LTIP** (Implementation Order, pp. 21-22). The Commission acknowledged that it is required to initiate a rulemaking to establish regulations for the review of LTIPs every five years. In addition, the Commission determined that utilities should be afforded flexibility to deviate from their LTIPs under appropriate circumstances:

We acknowledge the comments of the various utilities, especially the smaller utilities, that there may be [a] need for utility management to have the flexibility, if circumstances arise, to deviate from a previously approved LTIP. However, significant modifications/deviations to the LTIP will be subject to public notice and Commission approval. Accordingly, we will draft regulations that to (*sic.*) may allow for this flexibility as long as the utility identifies operational, financial, or other justifications for deviating from its approved plan. Additionally, a utility will be afforded notice and opportunity to be heard before its DSIC is terminated.

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<sup>3</sup> As provided in the Implementation Order, interested parties would have twenty days to file comments on an LTIP, and the matter would be referred to the Office of Administrative Law Judges only if such comments “raise material factual issues.” *Id.*

6. PECO's LTIP submitted with this Petition includes all of the required elements identified in Section 1352(a) and the Implementation Order. An overview of PECO' LTIP is provided in Section III of the Plan.

## II. PECO'S LTIP

### A. Types And Ages Of Eligible Property (66 Pa.C.S. § 1352(a)(1); LTIP Section IV.A.)

7. PECO's gas distribution system consists of mains constructed of several different materials. From the late 19th century until the early 1960s, cast iron and bare steel were the predominant material used in constructing gas mains. In the 1960s, "coated" steel was widely introduced as a main material. The installation of bare steel was prohibited by Federal law in 1970. Plastic pipe was introduced in the 1960s and is now the principal material type for most new installations and replacements that operate at distribution-level pressures.

8. Cast iron, wrought iron, ductile iron, and bare steel mains, along with bare steel services, are susceptible to breaks and leakage from different failure mechanisms:

- Cast iron pipe is relatively strong but is vulnerable to breaks from ground movement, which can occur from the cycles of freezing and thawing in the surrounding soil or from nearby excavation. Leaks can also occur where sections of cast iron pipe are joined.
- Bare steel, wrought iron, and ductile iron pipe are vulnerable to galvanic corrosion. Moisture in the surrounding soil induces metallic ions to migrate from the anode (the bare steel) to the cathode (constituents in the surrounding soil), which corrodes and weakens the pipe).<sup>4</sup> Over a long enough period of time, corrosion can cause the material to fail. Ductile iron pipe is also susceptible to corrosion, but failure occurs predominantly at the joints. Similar to cast iron, the joints of ductile iron pipe sections are secured by steel bolts, which corrode at a faster rate than ductile iron pipe walls.
- Plastic pipe has a proven track record as an excellent application for transporting natural gas at distribution-level pressures. Plastic pipe is strong and flexible and, therefore, is

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<sup>4</sup> To inhibit corrosion, gas utilities began "coating" steel pipe with non-conducting material to insulate the pipe and break the electrolytic path so that the ion exchange responsible for corrosion cannot as readily occur. Steel pipe can also be protected through "cathodic" protection. Under this approach, a "sacrificial" metal, which is more active than the metal to be protected, becomes the anode. The sacrificial metal corrodes instead of the steel pipe, thus protecting the pipe.

much less vulnerable to breakage by earth movement. Additionally, it does not corrode and does not require cathodic protection. Plastic pipe is also a less costly material and is easier to install and join than steel pipe. Plastic pipe's principal drawback is that it is more easily damaged by nearby excavation.<sup>5</sup>

9. As of December 31, 2011, there were approximately 1,731 miles of cast iron, wrought iron and ductile iron mains and bare steel mains and services in PECO's gas distribution system. These mains and services were installed between the late 1800s and the 1960s. (Table 1 of the LTIIP provides a breakdown of PECO's mains and services by decade of installation and material type.)

10. Although cast iron, wrought iron and ductile iron mains and bare steel mains and services represent only about 14% (in length) of PECO's gas distribution system, they are responsible for approximately 86% of all the leaks on PECO's gas system. *See* Table 2 to PECO's LTIIP. For this reason, cast iron, wrought iron and ductile iron mains and bare steel mains and services were considered a prime target for accelerated investment, as more fully explained in Sections IV.A. and B. of PECO's LTIIP.

11. Prior to 2011, PECO had been replacing cast iron and bare steel mains at a rate of approximately thirteen to fourteen miles per year and had been replacing bare steel services at a rate of 1,800 services per year. At those prior rates of replacement, PECO estimates it would have taken approximately 85 years to modernize all of its cast iron and bare steel mains and 22 years to modernize its bare steel services.

12. In 2011, PECO began to reevaluate its strategy for replacing mains and services. After assessing the age, material types and leak history of mains and services within its system, PECO determined that its schedule for modernizing cast iron and bare steel mains and bare steel

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<sup>5</sup> For this reason, excavators must use appropriate earth moving techniques near plastic pipe (hand digging) and must be sure to comply with Pennsylvania's "One Call" requirements. PECO enforces such requirements through Pennsylvania One-Call and a dedicated Damage Prevention organization within its Gas Division.

services should be accelerated and, therefore, initiated an accelerated infrastructure modernization program designed to increase its projected capital investment for replacing cast, wrought, and ductile iron mains and bare steel mains and services by \$20 million per year, from approximately \$14 million to approximately \$34 million per year. PECO projected, based on reasonable estimates of unit costs, that an increase of this magnitude would enable it to replace all of its oldest, high-risk<sup>6</sup> cast iron mains and all of its bare steel services in approximately ten years and replace all of its cast iron and bare steel mains in approximately 34 years.

13. As this reassessment was being done, Federal regulations were issued that required the Company to adopt a Distribution Integrity Management Program (“DIMP”) and to develop and file a written Distribution Integrity Management Program Plan (“DIMP Plan”). As explained in Section IV.B. of PECO’s LTIP, in developing its DIMP Plan, PECO conducted a comprehensive evaluation and ranking of the risks posed to its distribution system and identified measures that should be implemented to reduce the risks of failure of its gas distribution pipelines. The DIMP also requires PECO to measure its performance and to monitor and evaluate the effectiveness of each element of its DIMP Plan.

14. PECO’s DIMP Plan provides a rigorous framework for analyzing, ranking and mitigating threats to PECO’s distribution system<sup>7</sup> and, therefore, played a very important role in focusing PECO’s LTIP on areas that will reduce overall risks to its distribution system and improve safety and reliability. While PECO’s DIMP Plan was a very important input, it was not the only basis for developing PECO’s LTIP. The DIMP’s risk reduction goal was coupled with

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<sup>6</sup> Mains in this category consist of cast iron that is less than eight inches in diameter, operates at elevated pressure, is located in areas with greater population density and under paved surfaces, and was installed prior to 1900. *See* LTIP Section IV.B.

<sup>7</sup> A summary of the seven elements that Federal regulations require a distribution system operator to address in its DIMP Plan is provided in PECO’s LTIP. *See* Section IV.A.3.

other planning measures to prioritize PECO's investment in infrastructure improvements. *See* LTIIP Section IV.A.3.

**B. Initial Schedule For The Planned Repair And Replacement Of Eligible Property And Reasonable Estimates Of The Quantity Of The Eligible Property To Be Improved (66 Pa.C.S. § 1352(a)(2) and (4); LTIIP Sections IV.B. and D.)**

15. Appendix A to the Plan shows in detail the expenditures PECO plans to make for 2013 as well as broader estimates of its planned annual expenditures for 2014 through 2022. The tables in Appendix A also show, by material type, the miles of main and number of services to be replaced in PECO's service territory for 2013 and estimates of the associated cost. Because these figures are estimates, issues can arise during the implementation period that could alter PECO's work plans. As a result, the miles of main and number of services replaced for a given level of investment may differ from PECO's estimates if actual work site conditions are more or less favorable than those assumed for purposes of those estimates.

16. The enactment of Act 11, which authorized a DSIC for gas utilities, has validated the Company's decision to accelerate its repair and replacement of vulnerable mains and services by assuring full and current cost recovery, which was a fundamental assumption underlying PECO's decision to embark on a program of accelerated investment. As previously explained, in mid-2011, the Company began the process of increasing its spending for gas infrastructure modernization. The ramp-up to the annual increase of \$20 million reflected in Appendix A took place over two years. Expenditures increased by \$10 million in 2011 and, in 2012, the year Act 11 became law, PECO followed-up by increasing annual expenditures by an additional \$10 million, or to \$20 million.

17. PECO will continue to invest \$20 million per year above its baseline level of expenditures of approximately \$14 million, for a total annual investment of approximately \$34

million, to replace cast iron, wrought iron, ductile iron, and bare steel mains and bare steel services. As shown in Table 4 of PECO's LTIP, at this level of investment, PECO will modernize all of the cast iron and bare steel mains in its gas system within approximately 34 years. This represents a significant acceleration over the 85-year replacement plan under which the Company had been working.<sup>8</sup>

18. PECO's DIMP Plan will continue to be used to identify the additional areas that will be the focus of accelerated main replacement.<sup>9</sup> With respect to cast iron mains, PECO will focus first on pipe that: (1) is less than eight inches in diameter; (2) operates at elevated pressure; and (3) is located in areas with greater population density and under extensively paved surfaces, or (4) was installed prior to 1900. These characteristics generally identify pipe that is at higher risk of failure, as explained in Section IV.B. of PECO's LTIP. As previously explained, PECO estimates that, under its accelerated replacement program, all cast iron pipe with the characteristics identified above will be replaced in ten years.

19. PECO will use the result of its risk modeling, which is part the DIMP process, to prioritize expenditures for the replacement of wrought iron, ductile iron and bare steel mains. This risk analysis directs investment into areas that are identified as having the highest potential risk.

20. Under its LTIP, PECO will modernize all of its bare steel customer service lines within ten years versus the 22-year replacement timeframe under its baseline level of expenditures. Bare steel customer service lines are subject to corrosion just like bare steel mains.

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<sup>8</sup> Given the contingencies that could affect how much work the Company can complete for a given level of investment, a reasonable range of completion times has been provided in Table 4 of its LTIP to reflect the fact that higher or lower unit costs per mile can affect how long it will take to replace all of the targeted mains.

<sup>9</sup> PECO's DIMP Plan and its LTIP will be monitored, re-evaluated and updated annually. To the extent an annual update identifies any required changes in PECO's LTIP, those changes will be specifically noted and explained in the Annual Asset Optimization Plans that PECO will file with the Commission after its LTIP and DSIC are implemented.

Some bare steel service lines will be modernized along with the mains to which they are attached that are being replaced under the LTIIP. The remaining bare steel service lines will be prioritized to stay ahead of any repaving projects, areas prone to blockage, and areas that have a previous leak history.

21. In addition to the expenditures and quantities of eligible property set forth in Appendix A, there are three other potential projects on the horizon that could require PECO to make significant expenditures for property that is eligible for inclusion in its LTIIP. These projects consist of: (1) work that may be required to comply with regulations on meter relocation issued by the Commission in its pending meter rulemaking at Docket No. L-2009-2107155; (2) replacing PECO's current gas automated meter reading ("AMR") system with PECO-owned modules that are compatible with the Advanced Metering Infrastructure network PECO has installed to comply with the electric "smart meter" provisions of 66 Pa.C.S. § 2807(f); and (3) replacing certain gas pipelines that may be classified as a "transmission" facilities under regulations issued by the United States Department of Transportation's Pipeline and Hazardous Materials Safety Administration ("PHMSA") at 49 C.F.R. § 192.3 if replacement is the only feasible means of complying with enhanced safety requirements imposed under those regulations. Each of these potential projects is described in greater detail in Section IV.D. of PECO's LTIIP.

**C. Location Of Eligible Property (66 Pa.C.S. § 1352(3); LTIIP Section IV. C.)**

22. As explained in Section I, *supra*, PECO's authorized service territory is located in Bucks, Chester, Delaware, Lancaster and Montgomery Counties.<sup>10</sup> Most of the Company's investment under its LTIIP will be made in eligible property located in Montgomery and

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<sup>10</sup> PECO does not furnish gas service within the City of Philadelphia, where the Philadelphia Gas Works is the authorized gas service provider.

Delaware Counties because the majority of its cast iron and bare steel mains and bare steel services are located within its distribution piping in those areas. Cast iron and bare steel mains tend to be found in older areas because those materials have not been used for over 40 years. *See* Table 1 of the LTIP.

23. In addition to safety and reliability-related projects, “unreimbursed costs related to highway relocation projects” (“facility relocation costs”) are eligible for recovery under Sections 1351 and 1353. These costs arise when PECO moves facilities at the direction of the state, a municipality or another governmental entity to construct a new road or to perform other construction. Facility relocation costs are difficult to predict and estimate and, therefore, only one year’s worth of data for this category of eligible property is being provided in Appendix A of PECO’s LTIP. The estimated facility relocation costs for each year thereafter will be provided with PECO’s Annual Asset Optimization Plans to be filed after PECO’s LTIP and DSIC are approved.

**D. Projected Annual Expenditures To Implement The LTIP And Measures Taken To Ensure That The Plan Is Cost Effective (66 Pa.C.S. § 1352(a)(5) and LTIP Section IV. E.)**

24. Appendix A (p. 1) and Table 6 of PECO’s LTIP show PECO’s actual (2005 – 2012) and estimated (2013 – 2022) expenditures for the period 2005-2022. As previously explained, the Company will spend an additional \$20 million per year over the next five years (2013-2022). The estimated annual expenditures after acceleration provide for a significant increase over PECO’s expenditures during its 2005-2010 “baseline” period. The ramp-up, discussed earlier, is shown in 2011 and 2012, when spending increased approximately \$10 million and \$20 million, respectively. The significantly higher spending level in 2012 will continue through 2022.

25. The overall cost-effectiveness of PECO's LTIIIP is established by data presented in Section IV.A. of the Plan and, in particular, in Table 2, which show that only about 14% (in length) of PECO's gas distribution system (cast, ductile and wrought iron mains and bare steel mains and services) is responsible for 86% of all leaks on the Company's system. As previously explained, mains and services comprising the 14% of leak-prone pipe are the focus of PECO's LTIIIP. Additionally, as also explained in Section IV.A. of the Plan, the eligible property within each category of vulnerable material is being prioritized for replacement using risk assessment measures derived from PECO's DIMP Plan, its cast iron main replacement protocols and a widely-used software program (i.e., "Optimain") designed to help plan and optimize expenditures for gas distribution main repair and replacement.

26. In implementing its LTIIIP, PECO will group the mains selected for replacement by reasonable geographic areas to improve the efficiency of workforce and contractor deployment and capture economies of scale, as explained in greater detail in Section IV. E.2. of the Plan. PECO also anticipates minimizing costs through the prudent use of contractors for construction and expanding its inspector force to address the increased scope of work under the LTIIIP to assure that all work is done properly and cost-effectively. Audits of each project will be conducted through PECO's Project Management and Finance groups to assure cost effectiveness, compliance with contract terms and high-quality work performance.

27. To minimize street opening and closing costs, PECO will work closely with the Pennsylvania Department of Transportation, local municipalities, and local water and wastewater utilities to align its LTIIIP work with construction that each of those entities is planning. In some instances, this may require PECO to alter somewhat the timeframes for work in its LTIIIP to

capture the economies associated with coordinating street openings with governmental entities and other utilities.

**E. The Manner In Which The Replacement Of Aging Infrastructure Will Be Accelerated Under The LTIIP And How The Repair, Improvement Or Replacement Will Ensure And Maintain Adequate, Efficient, Safe, Reliable And Reasonable Service (66 Pa.C.S. § 1352(a)(6); LTIIP Section IV.F.)**

28. PECO is confident that its gas distribution system is safe and that its current monitoring, testing, operating, leak-response, odor-response and maintenance procedures ensure the safety of PECO's gas customers and the public.<sup>11</sup> Notwithstanding the strength of PECO's existing procedures, its natural gas distribution system continues to age, and the forces acting to degrade the most vulnerable segments of that system continue to operate. Based on its 2011 appraisal of all of the factors discussed in Sections IV.A. and B. of the LTIIP, including the potential for a DSIC to be approved for use by gas utilities, PECO decided that a prudent, proactive approach called for substantially accelerating the rate at which it was modernizing its cast iron, wrought iron, ductile iron, and bare steel mains and bare steel services. At the same time, the Company also decided that it would increase spending on main replacement by approximately \$20 million per year, which equates to approximately an additional 16-19 miles of main replacement per year.

29. Section 1352(a)(6) provides that an LTIIP should explain "the manner in which the replacement of aging infrastructure will be accelerated." In the Implementation Order (p. 19), the Commission explained that utilities, like PECO, that had "already taken substantial steps recently to increase prudent capital investment to address their aging infrastructure" would

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<sup>11</sup> In fact, in the detailed management audit report prepared by Schumaker and Company at the Commission's request in August 2007, the auditors found that PECO's natural gas safety program is "very comprehensive and places the proper emphasis on the safety of its workers and the public in general." (Management Efficiency Investigation, Volume 1, p. 254).

comply with Section 1352(a)(6) by explaining how the implementation of a DSIC will enable them to maintain a previously accelerated rate of infrastructure replacement.

30. As shown in Appendix A (p. 1) and Table 6 of the LTIIP, PECO is significantly accelerating its investment in infrastructure improvement relative to its expenditures for qualifying plant over a baseline period of 2005-2010. During the six-year period of 2005 to 2010, PECO was spending between \$12 and \$19 million per year on mains and services replacement and had projected to spend approximately \$14 million per year for the post-2013 period prior to acceleration.

31. As explained in Section II. B. of this Petition and Section IV.B. of the LTIIP, the enactment of Act 11, which granted the Commission authority to approve a DSIC for gas utilities, validated the Company's decision to accelerate its repair and replacement of vulnerable mains and services by assuring full and current cost recovery, which was a fundamental assumption underlying PECO's decision to adopt a program of accelerated investment. The fact that a DSIC can be implemented if and when it is needed provides the financial assurance that enables PECO to make a long-term commitment to its accelerated main and service replacement plan.

32. As explained in Section II. A. of this Petition and Sections IV.A. and B. of the LTIIP, PECO will use its DIMP Plan, along with the knowledge and judgment of operating staff with years of experience, to identify areas where increased investment will help reduce risk and, thereby, increase the safety and reliability of PECO's distribution system.

33. As also previously explained, PECO has mains and services constructed of vulnerable material that, while constituting only 14% (in length) of its system, are responsible for 86% of system leaks. Replacing mains and services consisting of those material types is

expected to significantly reduce leaks and the expenses incurred to respond to, and repair, leaks. Reducing leaks has a direct relationship to lost and unaccounted for gas (“LAUF”). As older, leaking mains and services are replaced, LAUF gas should decrease somewhat because leaks, although not a major cause, are still one factor driving LAUF gas. PECO’s LTIP, which increases investment and prioritizes that investment based largely upon risk mitigation factors, will ensure and maintain adequate, efficient, safe, reliable and reasonable service and, thus, satisfies the criteria set forth in Section 1352(a)(6).

**F. Use Of A Qualified Workforce (66 Pa.C.S. § 1359(a); Implementation Order (p. 18); LTIP Section IV. H.)**

34. PECO anticipates that it will use outside contractors to perform much of the pipe and service-modernization work it is planning to undertake to implement its LTIP. To the extent PECO uses outside contractors, its contractor workforce will be fully qualified, in accordance with the standards set forth in Section 1359. PECO currently has procedures in place that outline the criteria for qualifying both employees and contractors to work on its system. Anyone performing work on PECO’s gas distribution system must meet those standards and must take all required training. A copy of PECO’s procedure for assuring that those working on its system meet a minimum standard of knowledge and training is being provided as Exhibit A to the LTIP. Exhibit A to the LTIP contains confidential information and, therefore, PECO requests that the Commission treat Exhibit A as a confidential, non-public document, exclude it from the Commission’s public files and issue appropriate directives to ensure that the confidentiality of the information contained in Exhibit A is preserved. *See* Implementation Order, pp. 20-21.

35. Contractors go through the same rigorous training program as PECO employees who work on mains and services. In fact, neither PECO employees nor contractors are permitted

to work on any pipeline facilities without being qualified through appropriate training. The Company's training program complies with the regulations for pipeline safety developed by PHMSA and set forth at 49 C.F.R., Part 192, Subpart N, while also requiring additional training specific to PECO's system. *See* LTIP Section IV. H.

### **III. SERVICE, COMMENTS AND COMMISSION REVIEW**

36. This Petition and the accompanying LTIP, excluding confidential Exhibit A, are being served upon the Commission's Bureaus of Investigation and Enforcement and Technical Utility Services, the Office of Consumer Advocate, the Office of Small Business Advocate and the parties to PECO's last gas base rate case.

37. The Implementation Order (p. 20) provides that comments on a utility's LTIP are to be filed within twenty days of the filing and service of the LTIP. The Implementation Order further provides that an LTIP will not be assigned to the Office of Administrative Law Judges ("OALJ") unless comments to the LTIP "raise material factual issues." PECO is not providing a proposed litigation schedule because it does not believe that its LTIP will raise any "material factual issues." However, if this matter were to be referred to the OALJ, PECO would intend to submit written testimony in further support of its LTIP.

#### IV. CONCLUSION

For the reasons set forth above, PECO's LTIP satisfies the requirements set forth in Section 1352(a) and the Implementation Order. The LTIP identifies the age and type of eligible property included in the plan; provides schedules depicting the levels of investment and quantity of property included in the plan; provides schedules depicting the levels of investment and quantity of property targeted for accelerated repair and replacement; provides the general location of eligible property covered by the LTIP; explains the measures being taken to ensure the plan is cost-effective; explains the manner in which aging infrastructure will be accelerated to ensure and maintain adequate, efficient, safe, reliable and reasonable service; and provides an effective workforce management plan. Consequently, the Commission should find and determine that PECO's gas LTIP is "adequate and sufficient to ensure and maintain adequate, efficient, safe, reliable and reasonable service" and should, therefore, approve PECO's LTIP pursuant to Section 1352(a)(7).

Respectfully submitted,

  
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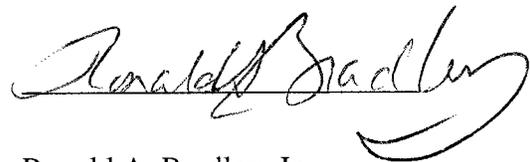
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*Counsel For PECO Energy Company*

Dated: February 8, 2013

## VERIFICATION

I, Ronald A. Bradley, Jr. hereby declare that I am the Vice President of Gas of PECO Energy Company; that, as such, I am authorized to make this verification on its behalf; that the facts set forth in the foregoing Petition for Approval of PECO Energy Company For Approval Of Its Gas Long Term Infrastructure Improvement Plan are true and correct to the best of my knowledge, information and belief; and that I make this verification subject to the penalties of 18 Pa.C.S. §4904 pertaining to false statements to authorities.

A handwritten signature in cursive script, reading "Ronald A. Bradley, Jr.", written over a horizontal line.

Ronald A. Bradley, Jr.

Date: Feb 7, 2013

**PECO Energy Company**

**Gas Long Term Infrastructure Improvement Plan**

**2013-2022**

**February 8, 2013**

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## I. INTRODUCTION

On February 14, 2012, Governor Corbett signed into law Act 11 of 2012 (“Act 11”). Act 11 amended the Public Utility Code in several respects, including the addition of Subchapter B (66 Pa.C.S. §§ 1350 – 1360), which authorizes the Pennsylvania Public Utility Commission (“PUC” or the “Commission”) to approve a distribution system improvement charge (“DSIC”) upon petition by an electric distribution company, a natural gas distribution company, a water utility or a wastewater utility.<sup>1</sup> In addition, Subchapter B sets forth various requirements that must be satisfied by a qualifying utility in order to establish a DSIC and to recover the reasonable and prudent costs to repair, improve or replace eligible property.

On August 2, 2012, the Commission entered its Final Implementation Order in *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611 (“Implementation Order”). Most of the Implementation Order is devoted to explaining how the Commission intends to implement the provisions of Subchapter B. In particular, the Implementation Order sets forth the Commission’s expectations with regard to the contents of: (1) a Long Term Infrastructure Improvement Plan (“LTIIIP”), which must be filed as a precursor to a request to establish a DSIC (*see* 66 Pa.C.S. § 1352); (2) Annual Asset Optimization Plans, which must be filed each year by a utility that has an approved DSIC and LTIIIP (*see* 66 Pa.C.S. § 1356); and (3) a petition requesting Commission

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<sup>1</sup> Prior to the enactment of Act 11, the Public Utility Code expressly provided only for water utilities to establish a DSIC. *See* former 66 Pa.C.S. § 1307(g), which was repealed by Act 11.

approval to include a DSIC in a utility's tariff (*see* 66 Pa.C.S. § 1353). The terms of the Implementation Order track, and build upon, the provisions of Subchapter B.

Pursuant to 66 Pa.C.S. §§ 1352 and 1353(b)(3), PECO is submitting this LTIP for its Gas Division and requests that, pursuant to Section 1352(a)(7)<sup>2</sup> and the Implementation Order (p. 20), the Commission find that this LTIP is “adequate and sufficient to ensure and maintain adequate, efficient, safe, reliable and reasonable service.”

## II. REQUIRED ELEMENTS OF AN LTIP

Section 1352(a) provides that a utility must submit an LTIP “in order to be eligible to recover costs under section 1353 (relating to distribution system improvement charge).” In addition, Section 1352 provides that an LTIP should include the following:

- (1) Identification of the types and age of eligible property owned or operated by the utility for which the utility would seek recovery under this subchapter.
- (2) An initial schedule for the planned repair and replacement of eligible property.
- (3) A general description of the location of the eligible property.
- (4) A reasonable estimate of the quantity of eligible property to be improved.
- (5) Projected annual expenditures to implement the plan and measures taken to ensure that the plan is cost effective.
- (6) The manner in which the replacement of aging infrastructure will be accelerated and how the repair, improvement or replacement will ensure and maintain adequate, efficient, safe, reliable and reasonable service.

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<sup>2</sup> Unless indicated otherwise, references to a “section” are to the Public Utility Code.

In the Implementation Order, the Commission incorporated the six elements of an LTIIIP required by Section 1352(a). *Id.* at 17. In addition, the Commission provided further guidance on what an LTIIIP should contain and the standards by which such plans would be reviewed and approved:

**Workforce Management Plan** (Implementation Order, pp. 17-18). As an appropriate means of implementing the standards set forth in Section 1359 (i.e., that utilities must demonstrate that work done on eligible property is performed by “qualified employees of either the utility or an independent contractor”), the Implementation Order provides that a “workforce management and training plan” is “a necessary element of the LTIIIP.”

**LTIIIP Need Not Address Property That Is Not Eligible For Cost Recovery Under A DSIC** (Implementation Order, p. 18). The Commission’s Tentative Order, which preceded the Implementation Order, explained that “an LTIIIP should include a review of all distribution plant, including inventory, age, functionalities, reliability and performance.” In response to comments from various utilities, the Commission clarified and revised its tentative finding to provide that “the long-term infrastructure plan need only address the specific property eligible for DSIC recovery.”

**Time Frame For LTIIIP** (Implementation Order, pp. 18-19). The Commission determined that “a five to ten-year term for the LTIIIP is appropriate as this time period is forward-looking enough for utilities to make accurate predictions and also provides sufficient time for long-term planning of planned repairs and replacement of eligible property.”

**Consistency With Pipeline Replacement Plans (“PRPs”)** (Implementation Order, p. 19). On November 10, 2011, the Commission issued a Tentative Order in *Natural Gas Pipeline Replacement And Performance Plans*, at Docket No. M-2011-2271982, which solicited comments on the Commission’s proposal to establish replacement timeframes and performance metrics for gas utilities’ PRPs for “high-risk” pipe. The Commission has not issued a final Order in that matter. However, in its Implementation Order, the Commission stated that it anticipates PRPs will be filed at some point and that “the LTIP should be consistent with the PRP Plans.”

**Maintain Or Augment Acceleration Of Infrastructure Improvement** (Implementation Order, p. 19). The Commission noted that an LTIP should “reflect and maintain an *acceleration* of infrastructure replacement over a utility’s historic level of capital improvement” (emphasis added). However, the Commission acknowledged that “some utilities have already taken substantial steps recently to increase prudent capital investment to address their aging infrastructure.” As a consequence, the Commission determined that the LTIP should, in such a circumstance, reflect how the DSIC will enable the utility to maintain a previously accelerated rate of infrastructure replacement.

**Standard Of Review** (Implementation Order, p. 20). The Commission concluded that “the standard of review is set forth in the statute itself and nothing further is required.” Accordingly, the Implementation Order provides that, pursuant to Section 1352(a), a utility has the burden of demonstrating that its LTIP and the associated expenditures to implement the LTIP “are reasonable and cost effective and are designed

to maintain safe, adequate and reliable service to consumers.” The Implementation Order sets forth the process for review<sup>3</sup> and limits the review period to not more than 120 days.

**Confidential Information** (Implementation Order, pp. 20-21). A utility may obtain a protective order for confidential or proprietary information contained in an LTIP.

**Time For Filing** (Implementation Order, p. 21). The Implementation Order makes it clear the Commission expects utilities to file LTIPs in advance of filing a petition to establish a DSIC because Commission approval of the LTIP “can reduce the scope of issues in the DSIC petition and expedite the process of getting this new rate mechanism in place.”

**Continuing Responsibility For Gas Utilities To Comply With 52 Pa. Code § 59.38** (Implementation Order, p. 21). The Commission declined to grant a blanket waiver of the requirement imposed by 52 Pa. Code § 59.38 for advance notice of major construction projects by gas utilities that have approved LTIPs.

**Periodic Review And Flexibility To Deviate From An Approved LTIP** (Implementation Order, pp. 21-22). The Commission acknowledged that it is required to initiate a rulemaking to establish regulations for the review of LTIPs every five years. In addition, the Commission determined that utilities should be afforded flexibility to deviate from their LTIPs under appropriate circumstances:

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<sup>3</sup> As provided in the Implementation Order, interested parties would have twenty days to file comments on an LTIP, and the matter would be referred to the Office of Administrative Law Judges only if such comments “raise material factual issues.” *Id.*

We acknowledge the comments of the various utilities, especially the smaller utilities, that there may be [a] need for utility management to have the flexibility, if circumstances arise, to deviate from a previously approved LTIIIP. However, significant modifications/deviations to the LTIIIP will be subject to public notice and Commission approval. Accordingly, we will draft regulations that to (*sic.*) may allow for this flexibility as long as the utility identifies operational, financial, or other justifications for deviating from its approved plan. Additionally, a utility will be afforded notice and opportunity to be heard before its DSIC is terminated.

### III. OVERVIEW OF PECO'S GAS LTIIIP

Section IV and Appendix A of this LTIIIP contain all of the components of an LTIIIP specified by Section 1352 and the Implementation Order. The contents of Section IV and Appendix A are summarized below.

**Section IV.A.** identifies the types and ages of eligible property that is the subject of PECO's LTIIIP. As part of Section IV.A., PECO explains the materials used for the mains and services that comprise its distribution system, the potential vulnerability of each material type, the method(s) it used to develop a risk-based prioritization of plant to be replaced, and how its LTIIIP is derived from, and coordinated with, the written Distribution Integrity Management Program Plan that PECO was required to file pursuant to regulations of the Department of Transportation's Pipeline and Hazardous Material Safety Administration ("PHMSA") at 49 C.F.R. Subpart P. Additionally, PECO's analysis of the number of leaks by material types – 86% of all leaks occur on mains and services constructed of vulnerable materials that represent only 14% (by length) of PECO's distribution system – supports the cost-effectiveness of accelerating the modernization of those categories of eligible plant.

**Section IV.B.** sets forth the initial schedule for PECO's planned repair and replacement of eligible property. In this section, PECO provides its estimate of the reduced timeframe for replacing vulnerable mains and services pursuant to the goals set forth in an accelerated repair and replacement plan it developed and began to implement in 2011 in contemplation of an assured mechanism for full and current cost recovery such as the DSIC that was subsequently authorized by Act 11. Under the LTIP, based on current estimates of unit costs, PECO expects to modernize all of the cast iron and bare steel mains in its system within approximately 34 years, as compared to its prior baseline level of expenditures, which would have required approximately 85 years to achieve the same goal. Similarly, based on current estimates of unit costs, PECO anticipates that all of its bare steel services will be modernized in ten years versus a baseline of 22 years.

**Section IV.C.** describes, generally, the location of eligible property slated for modernization under PECO's LTIP. The mains that are subject to accelerated modernization are part of an integrated distribution grid and are identified principally by their material type and other relevant factors. For purposes of presenting the data in its LTIP, PECO has grouped its major expenditures by geographic locations that provide a reasonable indication of where work will be done each year under the LTIP. However, actual work to implement the LTIP will be tailored to specific, on-going prioritization of vulnerable mains.

**Section IV.D.** identifies other areas where additional investment may be required over the ten-year term of the LTIP for work that, because of its contingent nature, is not currently included in the LTIP. If any of the identified contingencies were to occur, PECO's investment could increase above the levels identified in its LTIP.

**Section IV.E.** summarizes PECO’s actual and anticipated expenditures for gas infrastructure improvements over the period 2005 to 2022. In addition, PECO explains why it will be cost effective to implement the LTIIIP over its ten-year timeframe of 2013-2022.

**Section IV.F.** explains how PECO has accelerated the repair, improvement and replacement of eligible property and describes its plans to maintain that accelerated level of work for the term of the current LTIIIP and beyond.

**Section IV.G.** discusses the charts and tables depicting estimated expenditures for the ten-year term of the LTIIIP set forth in Appendix A and explains how the estimates will be augmented with additional detail when PECO files future Asset Optimization Plans.

**Section IV.H.** explains PECO’s workforce management plan for utility and contractor employees.

#### **IV. PECO’s GAS LTIIIP**

##### **A. Identification Of The Types And Age Of Eligible Property Included In PECO’s Gas LTIIIP; PECO’s Risk Analysis; And PECO’s Distribution Integrity Management Program**

###### **1. Pipe Materials And Associated Failure Mechanisms**

PECO’s gas distribution system consists of mains constructed of several different materials. From the late 19<sup>th</sup> century until the early 1960s, cast iron and bare steel were the predominant material used in constructing gas mains. In the 1960s, “coated” steel was widely introduced as a main material. The installation of bare steel was prohibited by Federal law in 1970. Plastic pipe was introduced in the 1960s and is now the principal

material type for most new installations and replacements that operate at distribution-level pressures.

Cast iron, wrought iron, ductile iron, and bare steel mains, along with bare steel services, are susceptible to breaks and leakage from different failure mechanisms. Cast iron pipe is relatively strong. However, cast iron is vulnerable to breaks from ground movement, which can occur from the cycles of freezing and thawing in the surrounding soil or from nearby excavation. Also, because cast iron pipes are joined together section by section, leaks can occur at the joints.

Bare steel, wrought iron, and ductile iron pipe are vulnerable to galvanic corrosion. Moisture in the surrounding soil creates an electrolyte around the pipe, which induces metallic ions to migrate from the anode (the bare steel) to the cathode (constituents in the surrounding soil). The result is corrosion in the anode (the pipe), which will weaken the pipe and, over a long enough period of time, cause the material to fail. For ductile iron pipe, while the pipe wall is susceptible to weakening by corrosion, the predominant failure occurs at the joints. Similar to cast iron, ductile iron is joined section by section, and the joints are secured with steel bolts, which corrode at a faster rate than ductile iron pipe wall.

To inhibit corrosion, gas utilities began using “coated” steel pipe. With coated steel pipe, a non-conducting coating electrically insulates the pipe and breaks the galvanic “couple” (i.e., the electrolytic path) so that the ion exchange responsible for corrosion cannot as readily occur. Another way to protect steel pipe is through sacrificial “cathodic” protection. Under this approach, a “sacrificial” metal, which is more active

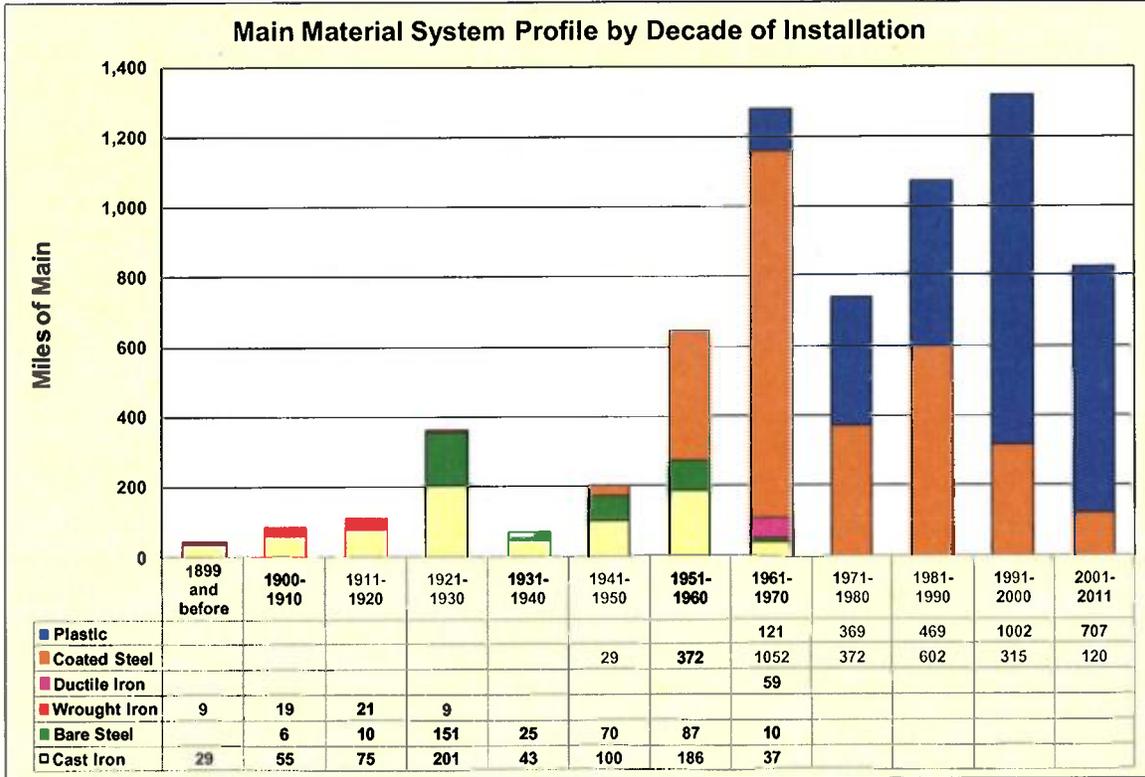
than the metal to be protected, becomes the anode. The sacrificial metal corrodes instead of the steel pipe, thus protecting the pipe.

Plastic pipe has a proven track record as an excellent application for transporting natural gas at distribution-level pressures. Plastic pipe is both strong and flexible and, therefore, is much less vulnerable to breakage by earth movement. Additionally, it does not corrode and does not require cathodic protection. Plastic pipe is also a less costly material and is easier to install and join than steel pipe. Plastic pipe's principal drawback is that it is more easily damaged by nearby excavation and, therefore, it is very important that excavators use appropriate earth moving techniques near plastic pipe (hand digging) and are vigilant in complying with Pennsylvania's "One Call" requirements. PECO enforces such requirements through Pennsylvania One-Call and a dedicated Damage Prevention organization within its Gas Division.

## **2. Breakdown Of PECO's Mains By Age And Material Type**

As of December 31, 2011, there were approximately 1,731 miles of cast iron, wrought iron and ductile iron mains and bare steel mains and services in PECO's gas distribution system. These mains and services were installed between the late 1800s and the 1960s. Table 1 below shows a breakdown of PECO's mains by decade of installation and type of material. As shown in Table 1 and further explained hereafter, a significant portion of the mains that would be replaced under the Company's LTIP are over 50 years old.

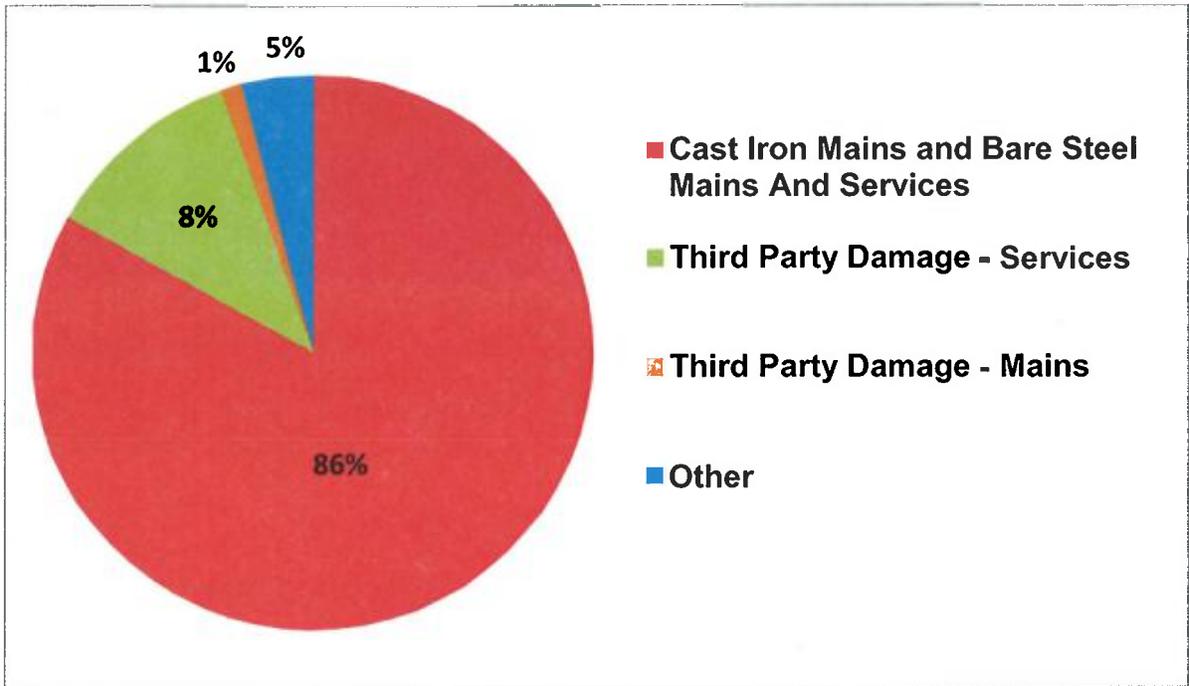
**Table 1**



Although cast iron, wrought iron and ductile iron mains and bare steel mains and services represent only about 14% (in length) of PECO’s gas distribution system, they are responsible for approximately 86% of all the leaks on PECO’s gas system, as shown in Table 2, below:

**Table 2**

**Percentage of Total System Leaks by Material Type**



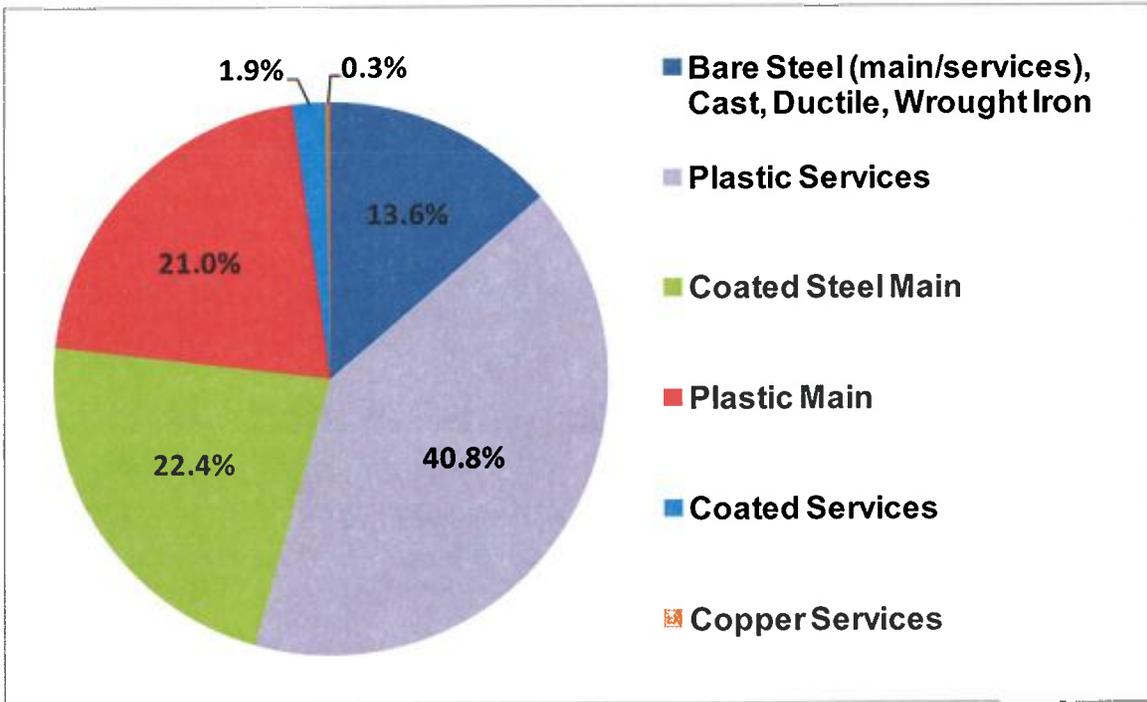
<u>Cause of Leaks</u>	<u># of Leaks</u>	<u>% of Total</u>
Bare Steel (mains/services) & Cast Iron	4,526	85.9%
Third Party Damage Services	420	8.0%
Third Party Damage Mains	56	1.1%
Other	269	5.1%
Totals	5,271	100%

Cast iron, wrought iron and ductile iron mains and bare steel mains and services are the prime target for investment under PECO’s LTIIP because the disproportionately high occurrence of leaks on these material types has several material adverse effects. First, and most importantly, leaks raise safety concerns. Second, leakage can affect reliability in a number of ways, particularly when gas service has to be interrupted for repairs. Third, high levels of leaks raise economic issues because of higher maintenance costs and increased lost and unaccounted for gas.

In order to get a better picture of the scope of work involved with targeting cast iron, wrought iron and ductile iron mains and bare steel mains and services for modernization, Table 3, below, shows a breakdown of the lengths of PECO's mains and services by material type.

**Table 3**

**Percentages of Total Length of Mains and Services by Material Type**



<u>Category</u>	<u>Miles</u>	<u>% of Total</u>
Bare Steel (main/services), Cast, Ductile, Wrought Iron	1,731	13.6%
Plastic Services	5,194	40.8%
Coated Steel Main	2,857	22.4%
Plastic Main	2,667	21.0%
Coated Services	242	1.9%
Copper Services	36	0.3%
Totals	12,727	100.0%

**3. Risk Assessment, Prioritization And Replacement Rates**

Even before it developed its accelerated main replacement program, PECO initiated a pro-active approach to replacing cast iron and bare steel mains and services. In

fact, in the recent past, PECO had replaced such mains at a rate of approximately thirteen to fourteen miles per year and had replaced bare steel services at a rate of 1,800 services per year. PECO estimates that, at those prior rates of replacement, it would have taken approximately 85 years to modernize all of its cast iron and bare steel mains and 22 years to modernize its bare steel services.

In 2011, PECO reexamined its strategy for replacing mains and services. After assessing the age, material types and leak history of mains and services within its system, PECO determined that its schedule for modernizing cast iron and bare steel mains and bare steel services should be accelerated. Accordingly, in 2011, PECO initiated an accelerated gas infrastructure modernization program designed to increase its projected capital investment for replacing cast, wrought, and ductile iron mains and bare steel mains and services by \$20 million per year, from approximately \$14 million to approximately \$34 million per year. PECO projected, based on reasonable estimates of unit costs, that an increase of this magnitude would enable it to replace all of its oldest, high-risk<sup>4</sup> cast iron mains and all of its bare steel services in approximately ten years and replace all of its cast iron and bare steel mains in approximately 34 years. Other factors PECO considered in establishing the \$20 million increase were the ability to manage the significant increase in contractor forces required to handle the additional projects covered by PECO's accelerated infrastructure replacement plan, the potential impact on customer rates of that acceleration, and the potential that DSIC-eligible projects in addition to those

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<sup>4</sup> As explained in Section IV.B, hereafter, mains in this category consist of cast iron that is less than eight inches in diameter, operates at elevated pressure, is located in areas with greater population density and under paved surfaces, and was installed prior to 1900.

in the Plan could be undertaken. The \$20 million increase enables the Company to achieve its goal of replacing the riskiest and oldest pipe material while keeping the potential rate impact reasonable.

While PECO was developing its accelerated gas infrastructure modernization program, Federal regulations were issued that required the Company to adopt a Distribution Integrity Management Program (“DIMP”) and to develop and file a written Distribution Integrity Management Program Plan (“DIMP Plan”). The preparation of PECO’s DIMP Plan was instrumental in determining the appropriate areas for PECO to accelerate its infrastructure modernization.

As required by PHMSA’s regulations, PECO’s DIMP Plan includes a written explanation of how PECO will implement its DIMP to ensure compliance with 49 C.F.R. 192, Subpart P. Specifically, Section 192.1007 of PHMSA’s regulations requires each DIMP Plan to address the following seven elements:

1. **System Knowledge:** The operator of a distribution system must develop and compile reasonably available information about its system that is needed to identify applicable threats and analyze risks.
2. **Threat Identification:** The operator of a distribution system must develop a plan that considers eight threats to its pipeline system as identified by PHMSA: corrosion, natural forces, excavation damage, other outside force damage, material or welds, equipment failure, incorrect operations, and other concerns that could threaten the integrity of its pipeline. Sources of data used to identify threats

include, among other things, incident and leak history, corrosion control records, continuing surveillance records, patrolling records, maintenance history, and excavation damage experience.

3. **Risk Evaluation And Ranking:** The operator of a distribution system must evaluate the risks associated with its distribution pipeline. In this evaluation, the operator must determine the relative importance of each threat and both estimate and rank the risks posed to its pipeline by each threat. This evaluation must consider each applicable current and potential threat, the likelihood of failure associated with each threat, and the potential consequences of such a failure. PHSMA has stated that, in evaluating and ranking risks, the likelihood as well as the consequences of failure must be taken into account because a potential incident of relatively low probability with significant consequences could be ranked at a higher threat level than an incident with greater probability that would not produce major consequences.<sup>5</sup>

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<sup>5</sup> To implement this important element of its DIMP, PECO has developed a quantitative measure of "Risk Potential" that employs the following formula: Risk Potential = (Risk Frequency) x (Consequence). A Risk Frequency factor is developed for each asset class, which is derived from historical data on failures extracted from PECO's Annual Report for Gas Distribution Systems, Leak Tracking Database, Regulator Station Database, Corrective Maintenance Summaries, PassPort, and Mercury Software Suite. The Consequence factor is calculated with the following formula: Consequence = (Pressure Factor) x (Incident Factor) x (Hazardous Leak Factor) x (Average Service Length Factor). The Pressure Factor accounts for the increased risk associated mains that operate at higher pressures. The Incident Factor was developed from all incidents on the PECO system submitted to PHMSA. The Hazardous Leak Factor accounts for those materials that tend to create

**4. Identification And Implementation Of Measures To Address**

**Risks:** The operator of a distribution system must determine and implement measures designed to reduce the risks of failure of its gas distribution pipeline, including an effective leak management program. The Company's LTIIP is considered an integral part of this element of PECO's DIMP Plan because it constitutes an effective risk reduction measure.

**5. Performance Measurement, Result Monitoring And**

**Evaluation Of Effectiveness:** An operator of a distribution system must develop and monitor performance measures relative to an established baseline to evaluate the effectiveness of its DIMP Plan. An operator must assess its performance by periodically re-evaluating threats and risks. Performance must be measured by several metrics, including;

- The number of hazardous leaks either eliminated or repaired as required by §192.703(c) of this subchapter (or total number of leaks if all leaks are repaired when found), categorized by cause;
- The number of excavation damage incidents;
- The total number of leaks either eliminated or repaired, categorized by cause;
- The number of hazardous leaks either eliminated or repaired as required by §192.703(c) (or total number of

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hazardous leaks. The Average Service Length Factor reflects the increased potential for a failure to create a hazard due to closer proximity of properties to a main.

leaks if all leaks are repaired when found), categorized by material; and

- Any additional measures the operator determines are needed to evaluate the effectiveness of its DIMP Plan in controlling each identified threat.

6. **Periodic Evaluation And Improvement:** The operator of a distribution system must re-evaluate threats and risks on its entire pipeline and consider how threats in one location may affect other areas. An operator must conduct a complete program re-evaluation not less frequently than every five years.
7. **Reporting Results:** The operator of a distribution system must report, on an annual basis, four principal measures of performance specified by the regulations as part of the annual report required by 49 CFR §191.11. An operator also must report those measures to its state pipeline safety authority if the state exercises jurisdiction over the operator's pipeline.

In general, PECO's LTIP is focused on addressing issues of safety and reliability. As evidenced by the foregoing summary of required elements, PECO's DIMP Plan provides a rigorous framework for analyzing, ranking and mitigating threats to PECO's distribution system and, therefore, played a very important role in focusing PECO's enhanced expenditures on areas that will reduce overall risk and improve safety and reliability. As the DIMP process requires, the Company continues to monitor its compliance with each prescribed element of the DIMP, to evaluate its performance in meeting the applicable standards, and to reassess threat levels and mitigation measures in

light of new information and evolving conditions on its system. In short, neither the DIMP Plan nor PECO's LTIIP are static documents because both will continue to be scrutinized by PECO over time based on past performance, new information, lessons learned and changing circumstances.

While PECO's DIMP Plan is a very important input to PECO's LTIIP, it was not the only basis for developing PECO's LTIIP. The DIMP's risk reduction goal is used principally to target additional expenditures associated with the acceleration of infrastructure repair and replacement. PECO's "baseline" expenditure level, which reflected PECO's pre-acceleration efforts to stabilize risks to its system, already included a cast iron main replacement program and a bare steel main and service replacement program. Additionally, while bare steel replacement is, in itself, a category identified for accelerated repair and replacement, the Company prioritizes the replacement of specific mains within the bare steel category using the OptiMain software application, which analyzes leak history to determine how mains should be ranked for replacement. Baseline expenditures for PECO's cast iron replacement program are prioritized by taking into account a number of considerations such as the location, size, and operating pressure.

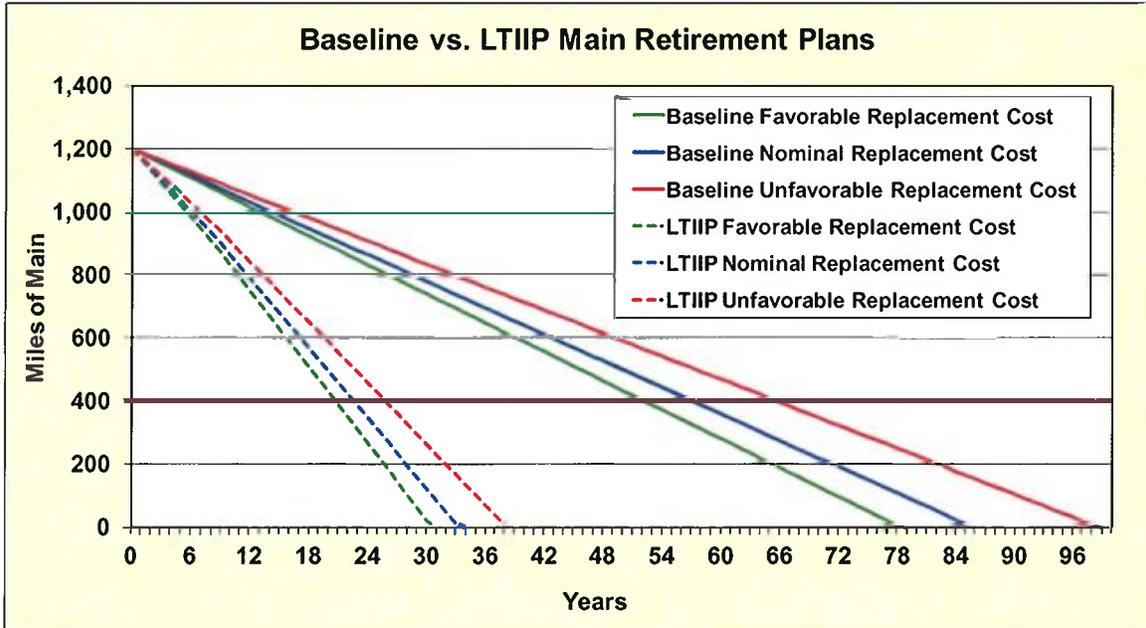
**B. Initial Schedule For The Planned Repair And Replacement Of Eligible Property**

Appendix A shows the expenditures PECO will make for 2013 through 2022. The tables in Appendix A also show, by material type, the miles of main and number of services to be replaced each year in PECO's service territory. The miles of main and number of services replaced for a given level of investment may be different from the

estimates in Appendix A if actual work site conditions are more or less favorable than those assumed for purposes of PECO's estimates.

The enactment of Act 11 and the authorization of a DSIC for gas utilities have validated the Company's decision to accelerate its repair and replacement of vulnerable mains and services by assuring full and current cost recovery, which was a fundamental assumption underlying PECO's corporate decision to embark on a program of accelerated investment. As previously explained, in mid-2011, the Company began the process of increasing its spending for gas infrastructure modernization. The ramp-up to the annual increase of \$20 million took place over two years. Expenditures increased by \$10 million in 2011 and, in 2012, the year Act 11 was enacted, PECO followed-up by increasing annual expenditures by an additional \$10 million, or to \$20 million. PECO will continue to invest \$20 million per year above its baseline level of expenditures of approximately \$14 million, for a total annual investment of approximately \$34 million, to replace cast iron, wrought iron, ductile iron, and bare steel mains and bare steel services. The \$14 million baseline is based upon the average expenditures for the 2005-2010 period adjusted to remove one-time accelerated expenditures. As shown in Table 4, below, at this level of investment, PECO will modernize all of the cast iron and bare steel mains in its gas system within approximately 34 years. This represents a significant acceleration over the 85-year replacement plan under which the Company had been working. Given the contingencies that could affect how much work the Company can complete for a given level of investment, a reasonable range of completion times has been provided in Table 4 to reflect the fact that higher or lower unit cost per mile can affect how long it will take replace all of the targeted mains.

**Table 4**



As previously explained, PECO’s DIMP Plan will be used to establish which additional areas will be the primary focus of accelerated main replacement. As also explained, the LTIIIP will be monitored, re-evaluated and updated annually. To the extent an annual update identifies any required changes in PECO’s LTIIIP, those changes will be specifically noted and explained in the Annual Asset Optimization Plans that PECO will file with the Commission after its LTIIIP and DSIC are implemented.

With respect to cast iron mains, PECO will focus first on pipe that: (1) is less than eight inches in diameter; (2) operates at elevated pressure; and (3) is located in areas with greater population density and under extensively paved surfaces, or (4) was installed prior to 1900. Cast iron pipe less than eight inches in diameter and operating at elevated pressure has historically been more prone to breaks and leaks. Population density and paved surfaces are safety-related risk factors. The risk associated with increased population density is intuitive. Extensive paving is problematic because gas escaping

from a leak in a paved area cannot readily find a path to the atmosphere – where it is rapidly dispersed with little or no safety risk. Instead, the escaped gas tends to migrate through voids created by existing underground linear features, such as water/wastewater lines or customer service lines, and into or around structures. The build-up of gas in potential ignition areas poses an increased safety risk. This focus will direct efforts into areas with the highest potential risk to help reduce the overall risk potential on the PECO system. As previously noted, PECO estimates that, under its accelerated replacement program, all cast iron pipe with the characteristics identified above will be replaced in ten years.

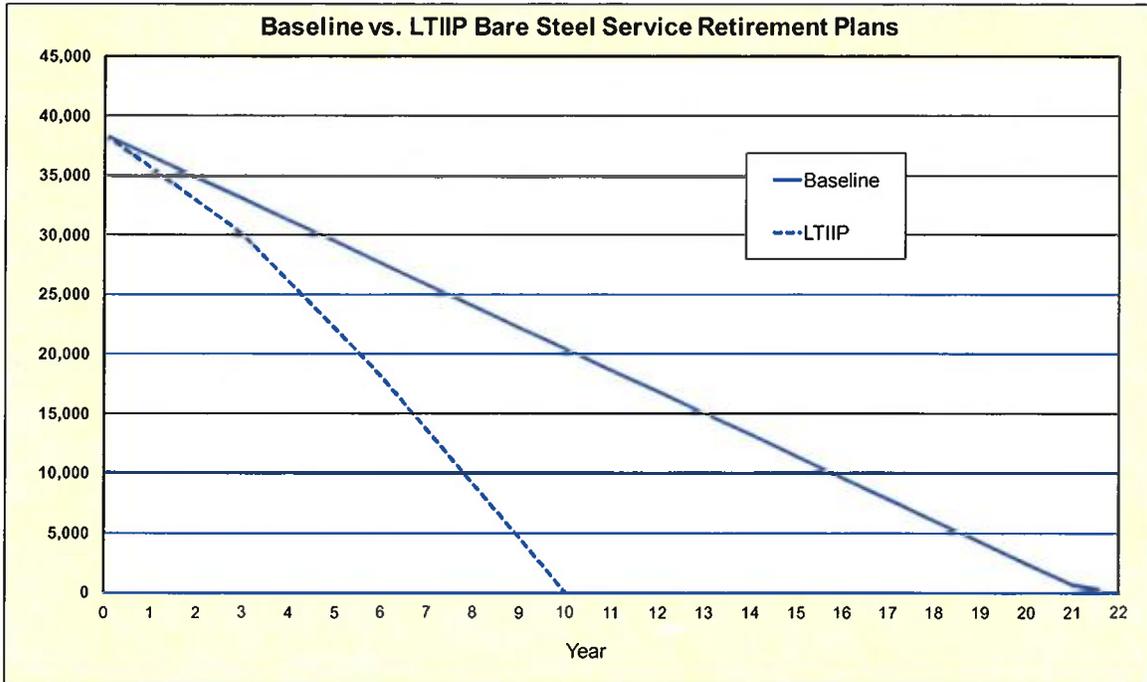
To prioritize wrought iron, ductile iron, and bare steel mains for modernization, PECO will employ the results of the risk model that is part of its DIMP Plan. This risk model directs efforts into areas that the model identifies as having the highest potential risks.

PECO will also modernize all of its bare steel customer service lines. (PECO owns and maintains customer service lines from the main to the meter.) Bare steel customer service lines are subject to corrosion just like bare steel mains. Some bare steel service lines will be modernized along with the mains – to which they are attached – that are being replaced under the LTIP. The remaining bare steel service lines will be prioritized to stay ahead of any repaving projects, areas prone to blockage, and areas that have a previous leak history.

Additionally, as previously explained, under PECO's accelerated infrastructure modernization program, all bare steel services will be modernized within 10 years versus

the 22-year replacement period that existed prior to acceleration. Table 5, below, shows the expected trajectory of the accelerated replacement versus the prior investment level.

**Table 5**



**C. Location Of Eligible Property**

PECO provides gas service within its authorized service territory in Bucks, Chester, Delaware, Lancaster and Montgomery Counties. PECO does not furnish gas service within the City of Philadelphia, where the Philadelphia Gas Works is the authorized gas service provider. Most of the Company’s investment under its LTIP will be made in eligible property located in Montgomery and Delaware Counties because the majority of its cast iron and bare steel mains and bare steel services are located within its distribution piping in those areas. Cast iron and bare steel mains tend to be found in older areas because those materials have not been used for over 40 years. Indeed, as noted

previously, most of the cast iron and bare steel main on PECO's system is over 50 years old.

In addition to safety and reliability-related projects, "unreimbursed costs related to highway relocation projects" ("facility relocation costs") are eligible for recovery under Sections 1351 and 1353. These costs arise when PECO moves facilities at the direction of the state, municipality or other governmental entity to construct a new road or to perform other construction. These costs are difficult to predict and estimate because PECO does not control when facilities will have to be relocated. Because this cost is driven by governmental decisions, only one year's worth of data for this category of eligible property is being provided in PECO's LTIP, as set forth in Appendix A. The estimated facility relocation cost for each year will be provided with PECO's Annual Asset Optimization Plans to be filed after PECO's LTIP and DSIC are approved. Where facilities relocation costs are to be incurred will depend upon the directives of the municipalities or other entities that require the work to be performed.

**D. Estimate Of The Quantity Of Eligible Property To Be Improved – Possible Increase In Expenditures Not Reflected In PECO's LTIP**

Estimates of the quantity (miles of main and number of services) of eligible property to be repaired or replaced have been provided in Appendix A and have been discussed in Sections IV.A. and B., above. Accordingly, those elements of PECO's LTIP are incorporated by reference in this section. In addition, there are three other potential projects on the horizon that could require expenditures that qualify for inclusion in LTIP, namely, work required to comply with the Commission's pending meter relocation rulemaking, the replacement of PECO's current gas automated meter reading

(“AMR”) system, and the replacement of certain gas pipelines that may be classified as a “transmission” facilities under PHMSA’s regulations at 49 C.F.R. § 192.3.

**Meter Relocation.** On July 28, 2011, the Commission initiated a proposed rulemaking at Docket No. L-2009-2107155 to address, among other things, a requirement for the relocation (from inside structures to outside structures) of meters and regulators connected to steel service lines. If the Commission adopts a formal regulation that requires meters and regulators connected to steel service be located outside structures, PECO may have to spend in excess of \$10 million to comply. PECO currently has plans to relocate 83% of indoor meters on steel services by 2022 though its plan to retire all bare steel services within ten years. Another 800 such meters would be relocated through the remaining 20 years of PECO’s accelerated main replacement program. That would leave approximately 4,189 meters for relocation that are not incorporated in any current plan because they are not deemed to be “high risk.” These services are coated, protected steel services on coated, protected mains. The approximate cost to relocate a meter is \$2,000.

**Gas AMR System.** A second large project on the horizon is the replacement of PECO’s gas AMR system. The Company is currently reviewing whether or not to extend an existing contract for reading and data collection for its existing gas AMR system or to replace all of the AMR modules that are owned by PECO with modules compatible with the Advanced Metering Infrastructure (“AMI”) network for electric customers that PECO has installed to comply with the “smart meter” provisions of Section 2807(f). The current contract for AMR reading and data collection expires at the end of 2014. The cost of extending the contract and the length of extension will be critical factors in

PECO's analysis. PECO anticipates making a decision in 2013 as to whether it will convert its gas customers to its AMI system.

**Classification Of Certain Pipelines As "Transmission" Facilities.** The Company operates certain pipelines that, based on criteria set forth in PHMSA's regulations for Transmission Integrity Management Programs, are potentially within the scope of the enhanced inspection and documentation requirements imposed by those regulations. The Company is in the process of analyzing the application of the enhanced requirements. If such enhanced requirements are applicable, compliance would require PECO to spend in excess of \$50 million to construct replacement facilities to serve the needs of existing customers. PECO is evaluating approximately twenty miles of pipelines that may have to be replaced or for which other significant capital investments would be required if PHMSA's enhanced inspection and documentation requirements apply to them.

**Impact On Future LTIP Filings.** Currently, PECO's LTIP does not contain any costs related to the three contingencies identified above. If it becomes necessary to do any of the identified work to meet those contingencies, the projects, which are "eligible property" under Section 1351, and the associated costs would have to be included in a modification to PECO's LTIP and filed with the PUC for approval.

As discussed previously, facility relocations are another category of cost that is eligible for recovery under Sections 1351 and 1353 but are difficult to predict because PECO does control when facilities will have to be relocated. The estimated facility relocation cost for each year will be identified and quantified in the Annual Asset Optimization Plans PECO will file when it has an approved LTIP and DSIC. Currently,

PECO anticipates that facility relocation costs will be in the range of \$3 to \$4 million per year.

**E. Projected Annual Expenditures To Implement The LTIP And Measures Taken To Ensure That The Plan Is Cost Effective**

**1. Projected Annual Expenditures**

As required by Section 1352(a)(5), Table 6, below, shows PECO's actual (2005 – 2012) and estimated (2013 – 2022) expenditures for the period 2005-2022. As previously explained, the Company will spend approximately an additional \$20 million per year<sup>6</sup> over the next ten years (2013-2022).

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<sup>6</sup> The figure of \$20 million per year is expressed in 2011 "real" dollars. Consequently, as reflected in Table 6 and in other data presented in PECO's LTIP, the additional investment increases, in nominal dollars, in the future.

**Table 6**

**Expenditures For Main and Bare Steel Service Replacement – 2005 -2022**

		BASELINE					
Million \$	2005	2006	2007	2008	2009	2010	
Mains	\$ 12.9	\$ 11.0	\$ 13.3	\$ 17.0	\$ 14.5	\$ 18.0	
Accelerated Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Services	\$ 0.3	\$ 0.8	\$ 0.6	\$ 1.0	\$ 1.3	\$ 1.5	
Accelerated Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Total</b>	<b>\$ 13.2</b>	<b>\$ 11.8</b>	<b>\$ 13.9</b>	<b>\$ 18.0</b>	<b>\$ 15.8</b>	<b>\$ 19.5</b>	

		ACCELERATED	
Million \$	2011	2012	
Mains	\$ 16.4	\$ 14.1	
Accelerated Main	\$ 10.0	\$ 19.4	
Services	\$ 1.3	\$ 1.1	
Accelerated Services	\$ 1.0	\$ 1.0	
<b>Total</b>	<b>\$ 28.7</b>	<b>\$ 35.6</b>	

		LONG TERM PLAN					
Million \$	2013	2014	2015	2016	2017	2018-2022	
Mains	\$ 13.5	\$ 12.8	\$ 14.1	\$ 14.3	\$ 13.3	\$ 66.5	
Accelerated Main	\$ 19.3	\$ 19.9	\$ 18.5	\$ 19.2	\$ 19.7	\$ 93.5	
Services	\$ 1.2	\$ 1.2	\$ 1.3	\$ 1.3	\$ 1.4	\$ 7.0	
Accelerated Services	\$ 1.0	\$ 1.1	\$ 3.1	\$ 3.1	\$ 3.2	\$ 21.0	
<b>Total</b>	<b>\$ 35.0</b>	<b>\$ 35.0</b>	<b>\$ 37.0</b>	<b>\$ 37.9</b>	<b>\$ 37.6</b>	<b>\$ 188.0</b>	

**Miles of Main and Number of Services Replaced Or To Be Replaced  
2005-2022**

		BASELINE					
	2005	2006	2007	2008	2009	2010	
Base Mains (miles)	10.40	11.60	11.50	12.40	14.00	17.00	
Accelerated Mains							
Base Services	1,335	1,271	1,271	1,915	1,834	2,505	
Accelerated Services	-	-	-	-	-	-	

		ACCELERATED	
	2011	2012	
Base Mains (miles)	11.00	15.50	
Accelerated Mains	9.00	16.50	
Base Services	1,690	2,468	
Accelerated Services	600	613	

		LONG TERM PLAN					
	2013	2014	2015	2016	2017	2018-2022	
Base Mains (miles)	11.0-15.0	11.0-15.0	11.0-15.0	11.0-15.0	11.0-15.0	55-75	
Accelerated Mains	16.0-17.0	16.0-17.1	13.0-15.0	13.0-15.0	13.0-15.0	65-75	
Base Services	2,200	2,200	2,150	2,150	2,150	10,750	
Accelerated Services	600	600	1,800	1,800	1,800	9,750	

The estimated annual expenditures after acceleration, as shown in Table 6, above, provide for a significant increase over the 2005-2010 baseline period. The ramp-up, discussed earlier, is shown in 2011 and 2012, when spending increased approximately \$10 million and \$20 million, respectively. The significantly higher spending level in 2012 will continue through 2022.

## **2. Cost-Effectiveness**

Section 1352(a)(5) provides that the LTIIP should describe measures being taken to ensure the projected expenditures are cost-effective. The overall cost-effectiveness of PECO's LTIIP is established by data presented in Section IV.A. and, in particular, Table 2, which show that only about 14% (in length) of PECO's gas distribution system (cast, ductile and wrought iron mains and bare steel mains and services) is responsible for 86% of all leaks on the Company's system. As previously explained, mains and services comprising the 14% of leak-prone pipe are the focus of PECO's LTIIP. Additionally, as also explained in Section IV.A., the eligible property within each category of vulnerable material is being prioritized for replacement using risk assessment measures derived from PECO's DIMP Plan, its cast iron main replacement protocols and the Optimain program.

In addition, mains selected for replacement are being grouped by reasonable geographic designations to improve the efficiency of workforce and contractor deployment through the following:

- Reduced work scoping, engineering, and design by aggregating individual main and service replacement efforts into larger, centralized projects;
- Reduced mobilization and demobilization time associated with moving construction crews to different areas; and

- Reduced tie-in work, by replacing facilities in areas larger than city blocks.

PECO also anticipates minimizing costs through the prudent use of contractors for construction. Recognizing that the accelerated investment levels set forth in its Plan will require significantly more contractors, the Company has reorganized its forces to make additional supervisors and foremen available to oversee contractors. The expanded inspector force will be used to inspect the increased scope of work under the LTIP to assure that all work is done properly and cost-effectively. Audits of each project will be conducted through PECO's Project Management and Finance groups or through monthly performance meetings to assure cost effectiveness, compliance with contract terms and high-quality work performance.

To minimize street opening and closing costs, PECO will work closely with the Pennsylvania Department of Transportation, local municipalities, and local water and wastewater utilities to align its LTIP work with construction that each of those entities is planning. Furthermore, as PECO is also an electric distribution company, it will continue to make every effort to coordinate electric and gas work where possible to reduce paving and other costs. PECO's new geographic information system ("GIS") mapping is a beneficial tool in this regard. In some instances, this may require PECO to alter somewhat the timeframes for work in its LTIP to capture the economies associated with coordinating street openings with governmental entities and other utilities.

**F. The Manner In Which The Replacement Of Aging Infrastructure Will Be Accelerated Under The LTIIP And How The Repair, Improvement Or Replacement Will Ensure And Maintain Adequate, Efficient, Safe, Reliable And Reasonable Service**

PECO is confident that its gas distribution system is safe and that its current monitoring, testing, operating, leak-response, odor-response and maintenance procedures ensure the safety of PECO's gas customers and the public. In the detailed management audit report prepared by Schumaker and Company at the Commission's request in August 2007, the auditors found that PECO's natural gas safety program is "very comprehensive and places the proper emphasis on the safety of its workers and the public in general." (Management Efficiency Investigation, Volume 1, p. 254).

Notwithstanding the strength of PECO's existing procedures, its natural gas distribution system continues to age, and the forces acting to degrade the most vulnerable segments of that system continue to operate. Based on its appraisal of all of the factors discussed above, including (at the time) the potential for a DSIC to be approved for use by gas utilities, PECO, in 2011, decided that a prudent, pro-active approach called for substantially accelerating the rate at which it is modernizing its cast iron, wrought iron, ductile iron, and bare steel mains and bare steel services. At the same time, the Company also decided that it would increase spending on main replacement by approximately \$20 million per year, which equates to approximately an additional 18-20 miles of main replacement per year.

Section 1352(a)(6) provides that an LTIIP should explain "the manner in which the replacement of aging infrastructure will be accelerated." In the Implementation Order (p. 19), the Commission explained that utilities, like PECO, that had "already taken

substantial steps recently to increase prudent capital investment to address their aging infrastructure” would comply with Section 1352(a)(6) by explaining how the implementation of a DSIC will enable them to maintain a previously accelerated rate of infrastructure replacement. As shown in Table 6, above, PECO is significantly accelerating its investment in infrastructure improvement relative to its expenditures for qualifying plant over a baseline period of 2005-2010. During the six-year period of 2005 to 2010, PECO was spending between \$12 and \$19 million per year on mains and services replacement and had projected to spend approximately \$14 million per year for the period 2013-2022, prior to acceleration.

As explained in Section IV.B., above, the enactment of Act 11, which granted the Commission authority to approve a DSIC for gas utilities, validated the Company’s decision to accelerate its repair and replacement of vulnerable mains and services by assuring full and current cost recovery, which was a fundamental assumption underlying PECO’s decision to adopt a program of accelerated investment. The fact that a DSIC can be implemented if and when it is needed provides the financial assurance that enables PECO to make a long-term commitment to its accelerated main and service replacement plan. As explained in Sections IV.A. and B., above, PECO will use its DIMP Plan, which was being developed at the time PECO decided to accelerate main and service replacement, along with the knowledge and judgment of operating staff with years of experience, to identify areas where increased investment will help reduce risk and, thereby, increase the safety and reliability of PECO’s distribution system. PECO has mains and services constructed of vulnerable material that, while constituting only 14% (in length) of its system, are responsible for 86% of system leaks. Replacing mains and

services consisting of those material types is expected to significantly reduce leaks and the expenses incurred to respond to, and repair, leaks. Reducing leaks has a direct relationship to lost and unaccounted for gas (“LAUF”). As older, leaking mains and services are replaced, LAUF gas should decrease somewhat because leaks, although not a major cause, are still one factor driving LAUF gas. PECO’s LTIP, which increases investment and prioritizes that investment based largely upon risk mitigation factors, will ensure and maintain adequate, efficient, safe, reliable and reasonable service and, thus, satisfies the criteria set forth in Section 1352(a)(6).

**G. Detailed Expenditure Plans For The LTIP Period**

The charts and tables in Appendix A provide the Company’s estimated expenditures for 2013 through 2022 to implement PECO’s LTIP. As shown in those tables, a range has been provided for miles of main due to the unforeseen circumstances that can arise at a construction site. Consistent with the requirements of the Implementation Order, additional details will be provided for 2013 and subsequent years in the Annual Asset Optimization Plans that will be filed after PECO’s LTIP is approved and PECO implements a DSIC. The Annual Asset Optimization Plans will also provide information on how the Company performed in achieving the estimated scope of work for each prior year of the LTIP and what the Company’s expectations are for the then upcoming year. A breakdown of investment by county for the years 2013-2022 is not being provided because, to optimize efficiency in the replacement of mains, the Company coordinates work with other projects such as required facility relocation or other construction work. In this regard, the Company will also provide additional detail each year in its Annual Asset Optimization Plans.

## **H. Use Of A Qualified Work Force**

PECO anticipates that it will use outside contractors to perform much of the pipe and service-modernization work it is planning to undertake to implement its LTIP. Section 1359 and the Commission's Implementation Order (pp. 17-18) require that all work performed under an LTIP should be done by a qualified work force. Use of a qualified work force is very important to PECO because it views work force qualification as a safety factor, and safety is a paramount goal of PECO in designing, constructing and operating its gas distribution system.

To the extent PECO uses outside contractors, its contractor workforce will be fully qualified, in accordance with the standards set forth in Section 1359. PECO currently has procedures in place that outline the criteria for qualifying both employees and contractors to work on its system. Anyone performing work on PECO's gas distribution system must meet those standards and must take all required training. A copy of PECO's procedure for assuring that those working on its system meet a minimum standard of knowledge and training is being provided as Exhibit A, attached hereto. Contractors go through the same rigorous training program as PECO employees who work on mains and services. In fact, neither PECO employees nor contractors are permitted to work on any pipeline facilities without being qualified through appropriate training.

The Company's training program complies with the regulations for pipeline safety developed by PHMSA and set forth at 49 C.F.R., Part 192, Subpart N, while also requiring additional training specific to PECO's system. If contractors that are retained to work on PECO's system propose to qualify based on completing a program other than

PECO's, they must demonstrate that the program under which they have been previously qualified complies with the standards set forth in 49 C.F.R., Part 192, Subpart N, and that its qualification requirements are at least as rigorous as PECO's. They must also complete any necessary PECO-specific training that PECO may require for the specific tasks they are called upon to perform. Contractor training programs are not accepted at face value. PECO's Methods & Training Department reviews the contractor programs to assure that they comply with PECO's requirements and may require testing of contractors before they are eligible to work on the system. Each major task on the system has specific training requirements that must be met. Moreover, PECO's Methods and Training Department monitors industry developments for more efficient and effective procedures to use on the system and to assure the long-term effectiveness of PECO's training program.

## **V. CONCLUSION**

In summary, PECO's LTIP satisfies the requirements set forth in Section 1352(a) and the Implementation Order. The LTIP identifies the age and type of eligible property included in the plan; provides schedules depicting the levels of investment and quantity of property targeted for accelerated repair and replacement; provides the general location of eligible property covered by the LTIP; explains the measures being taken to ensure the plan is cost-effective; explains the manner in which aging infrastructure will be accelerated to ensure and maintain adequate, efficient, safe, reliable and reasonable service; and provides an effective workforce management plan. Consequently, the Commission should find and determine that PECO's gas LTIP is "adequate and

sufficient to ensure and maintain adequate, efficient, safe, reliable and reasonable service” and should, therefore, approve PECO’s LTIP pursuant to Section 1352(a)(7).

## **APPENDIX A**

## SUMMARY OF LTIP EXPENDITURES

### Expenditures for Main and Bare Steel Service Replacement 2005 -2022

BASELINE						
Million \$	2005	2006	2007	2008	2009	2010
Mains	\$ 12.9	\$ 11.0	\$ 13.3	\$ 17.0	\$ 14.5	\$ 18.0
Accelerated Main	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Services	\$ 0.3	\$ 0.8	\$ 0.6	\$ 1.0	\$ 1.3	\$ 1.5
Accelerated Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total</b>	<b>\$ 13.2</b>	<b>\$ 11.8</b>	<b>\$ 13.9</b>	<b>\$ 18.0</b>	<b>\$ 15.8</b>	<b>\$ 19.5</b>

ACCELERATED		
Million \$	2011	2012
Mains	\$ 16.4	\$ 14.1
Accelerated Main	\$ 10.0	\$ 19.4
Services	\$ 1.3	\$ 1.1
Accelerated Services	\$ 1.0	\$ 1.0
<b>Total</b>	<b>\$ 28.7</b>	<b>\$ 35.6</b>

LONG TERM PLAN						
Million \$	2013	2014	2015	2016	2017	2018-2022
Mains	\$ 13.5	\$ 12.8	\$ 14.1	\$ 14.3	\$ 13.3	\$ 66.5
Accelerated Main	\$ 19.3	\$ 19.9	\$ 18.5	\$ 19.2	\$ 19.7	\$ 93.5
Services	\$ 1.2	\$ 1.2	\$ 1.3	\$ 1.3	\$ 1.4	\$ 7.0
Accelerated Services	\$ 1.0	\$ 1.1	\$ 3.1	\$ 3.1	\$ 3.2	\$ 21.0
Facilities Relocation	\$ 3.1	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 15.0
<b>Total</b>	<b>\$ 38.1</b>	<b>\$ 38.0</b>	<b>\$ 40.0</b>	<b>\$ 40.9</b>	<b>\$ 40.6</b>	<b>\$ 203.0</b>

### Miles of Main and Number of Services Replaced 2005-2022

BASELINE						
	2005	2006	2007	2008	2009	2010
Base Mains (miles)	10.40	11.60	11.50	12.40	14.00	17.00
Accelerated Mains						
Base Services	1,335	1,271	1,271	1,915	1,834	2,505
Accelerated Services	-	-	-	-	-	-

ACCELERATED		
	2011	2012
Base Mains (miles)	11.00	15.50
Accelerated Mains	9.00	16.50
Base Services	1,690	2,468
Accelerated Services	600	613

LONG TERM PLAN						
	2013	2014	2015	2016	2017	2018-2022
Base Mains (miles)	11.0-15.0	11.0-15.0	11.0-15.0	11.0-15.0	11.0-15.0	55-75
Accelerated Mains	16.0-17.0	16.0-17.1	13.0-15.0	13.0-15.0	13.0-15.0	65-75
Base Services	2,200	2,200	2,150	2,150	2,150	10,750
Accelerated Services	600	600	1,800	1,800	1,800	9,750

**NAME/TYPE OF ASSET: Mains**

**Program Description and Purpose**

This investment is part of the Company's overall effort to modernize its gas infrastructure to improve reliability and safety of the system.

**Identification/Justification Process**

The Company uses its Distribution Integrity Management Plan along with other judgment to provide guidance as to where to make improvements to its system.

**Scope**

**Location(s)**

County	Total Bare Steel (Miles)	Wrought Iron (Miles)	Cast Iron (Miles)	Ductile Iron (Miles)	Total Miles
Bucks	47.8	1.7	25.3	2.8	77.6
Chester	46.3	4.2	55.4	9.8	115.7
Delaware	82.2	34.0	375.7	13.9	505.8
Lancaster	0.4	-	-	-	0.4
Montgomery	176.8	18.0	260.8	31.1	486.7
Total Miles	353.5	57.9	717.2	57.7	1,186.3

**Planned Expenditures**

	2013	2014	2015	2016	2017	2018-2022
Miles of Main Retired (Miles)	27-32	27-33	24-30	24-31	24-32	120-150
Projected Expenditures (\$ Millions)	32.8	32.7	32.6	33.5	33.0	160.0

**NAME/TYPE OF ASSET: Bare Steel Services**

**Program Description and Purpose**

This investment is part of the Company's overall effort to modernize its gas infrastructure to improve reliability and safety of the system. The Company's goal is to replace all bare steel services within 10 years. The goal of this specific program is to replace the services that would not otherwise be replaced in the normal course of business.

**Identification/Justification Process**

The Company uses its Distribution Integrity Management Plan along with other judgment to provide guidance as to where to make improvements to its system.

## Scope

### Location(s)

County	Number of Bare Steel Services
Bucks	4,019
Chester	3,311
Delaware	16,969
Lancaster	17
Montgomery	13,000
Total	37,316

### Planned Expenditures

Exact locations are unknown at this time. However, the plan is to modernize 3000 services at a planned spend of \$3.0 Million in 2013. Going forward it will be about 4300 per year at a cost of \$4.2 million.

Year	Services	Cost (\$ Million)
2013	2,200	\$ 2.2
2014	2,800	\$ 2.3
2015	3,950	\$ 4.4
2016	3,950	\$ 4.4
2017	3,950	\$ 4.6
2018-2022	20,500	\$ 28.0

**NAME/TYPE OF ASSET: Facilities Relocation**

**Program Description and Purpose**

This investment is part of the Company’s overall effort to modernize its gas infrastructure to improve reliability and safety of the system. It is planned at the request of municipalities or other governmental entities when necessary for road and highway construction.

**Identification/Justification Process**

Generally these expenditures are made in the context of improving roads and highways or railroad crossings.

**Scope**

**Location(s)**

County	Facility Relocation (Miles)
Bucks	N/A
Chester	N/A
Delaware	N/A
Lancaster	N/A
Montgomery	N/A
Total Miles	N/A

**Planned Expenditures**

	(\$ Million)					
	2013	2014	2015	2016	2017	2018-2022
PennDOT Request	\$ 2.9	\$ 3.0	\$ 3.0	\$ 3.0	\$ 3.0	\$ 15.0
Township Request	\$ 0.2					

Note, the values for 2014-2017 are placeholder estimates only as actual values are dependent upon the municipal and government entities requiring the relocation of facilities.

# **EXHIBIT A**

**PECO's Gas Operator Qualification Program**

**CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION  
NOT TO BE INCLUDED IN PUBLIC FILES**