

DIRECT TESTIMONY

of

BRETT SEAGLE

Energy Engineering Program

Safety and Reliability Division

Illinois Commerce Commission

Peoples Gas Light and Coke Company

Investigation of the cost, scope, schedule and other issues related to the Peoples Gas Light and Coke Company's natural gas system modernization program and the establishment of Program policies and practices pursuant to Sections 8-501 and 10-101 of the Public Utilities Act.

Docket No. 16-0376

October 11, 2016

1 **Q. Please state your name and business address.**

2 A. My name is Brett Seagle and my business address is: Illinois Commerce
3 Commission ("Commission"), 527 East Capitol Avenue, Springfield, Illinois
4 62701.

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

6 A. I am employed by the Commission as a Gas Engineer in the Gas Section of the
7 Energy Engineering Program of the Safety and Reliability Division. I have
8 worked for the Commission since 2008.

9 **Q. Please state your educational background.**

10 A. I received a Bachelor of Science degree in Mechanical Engineering from
11 Southern Illinois University.

12 **Q. What are your primary responsibilities and duties as a Gas Engineer in the**
13 **Safety and Reliability Division's Energy Engineering Program?**

14 A. My primary responsibilities and duties are in the performance of studies and
15 analyses dealing with the day-to-day, and long-term, operations and planning of
16 the gas utilities serving Illinois. For example, I review purchased gas adjustment
17 clause reconciliations, rate base additions, levels of natural gas used for working
18 capital, and utilities' applications for certificates of public convenience and
19 necessity. I also perform utility gas meter test shop audits. Further, I currently
20 serve as the Project Manager for the Commission-ordered investigation

21 performed by the Liberty Consulting Group of Peoples Gas Light and Coke
22 Company's ("Peoples Gas" or the "Company") Accelerated Main Replacement
23 Program ("AMRP"), now referred to by the Company as the System
24 Modernization Program ("SMP").

25 **Q: How do you refer to the gas system modernization plan that is the subject**
26 **of this proceeding?**

27 A: I refer to it as the Proposed SMP. During the workshop process, Staff proposed
28 that use of the term AMRP is no longer appropriate, as AMRP describes a plan
29 previously addressed by various prior Commission orders. The Company offers
30 the term "SMP", and it is clear that the scope of SMP as proposed by the Company
31 includes components that were not included within the scope of AMRP as
32 previously carried out by the Company. In his direct testimony, Company witness
33 Andrew J. Hesselbach states that the Company uses the term SMP "to encompass
34 the AMRP and other system improvement projects." (PGL Ex. 1.0, 4 n. 1.)_During
35 this proceeding Staff will refer to the Company's proposal as "Proposed SMP" to
36 indicate that the ongoing plan as revised and supported by Staff does not mirror
37 the Company's proposal.

38 **Q. What is the purpose of this proceeding?**

39 A. On July 20, 2016, the Commission entered an order initiating a proceeding to
40 investigate the cost, scope, schedule and other issues related to Peoples Gas'
41 natural gas system modernization program and the establishment of program
42 policies and practices pursuant to Sections 8-501 and 10-101 of the Public

43 Utilities Act. Further, the Commission concurrently entered an Interim Order
44 directing Peoples Gas to provide a Preliminary Report that details the Company's
45 projections and plans for the system modernization program for the remainder of
46 2016.

47 **Q. What is your role in this proceeding?**

48 A. I present my analysis and review of the documentation provided by Peoples Gas
49 in this docket. I provide my opinion as well as recommendations regarding
50 Peoples Gas' current methods of reporting on and monitoring of the SMP.
51 Specifically, I am providing an opinion and recommendations on four topics:

- 52 1) AMRP work vs. Proposed SMP work
- 53 2) Information that should be addressed by Peoples Gas in future
54 reports
- 55 3) Reporting by Peoples Gas of an Earned Value Metric

56 **Q. Are you sponsoring any attachments as part of your direct testimony?**

57 A. Yes, I have two attachments. The first reflects Staff's proposed revisions to PGL
58 Exhibit 1.2, the Company's Proposed SMP. Specifically, this attachment reflects
59 the changes I recommend, as discussed in more detail below, as well as
60 changes to the SMP schedule that Staff witness Gene Beyer recommends in his
61 direct testimony, Staff Exhibit 3.0. In the second, I propose some additional
62 metrics regarding safety monitoring. Below in the order they appear are my
63 attachments:

64 Attachment 2.1 - Staff Revised PGL Exhibit 1.2

65 Attachment 2.2 - Reporting Metrics for Safety Monitoring

66 **Q. Have you reviewed the Company's testimony and documentation in this**
67 **proceeding?**

68 A. Yes, I have. I reviewed Mr. Hesselbach's direct testimony and accompanying
69 attachments. I reviewed Peoples Gas' Preliminary Report, filed August 9, 2016
70 and Peoples Gas' July and August 2016 Month-End Report, filed on August 30,
71 2016. Further, I reviewed Peoples Gas' responses to Staff data requests as well
72 as many of Peoples Gas' responses to data requests from other parties.

73 **Q. What conclusions have you reached in this proceeding?**

74 A. As I describe below, Peoples Gas' reporting on SMP should contain only those
75 costs associated with system modernization: 1) the replacement of leak-prone
76 cast iron and ductile iron ("CI/DI") pipe; 2) increasing system pressure from low to
77 medium; and 3) the relocation of meters from inside to outside customers'
78 residences. Further, I conclude that Peoples Gas should track and report on an
79 Earned Value Metric in addition to the provided thus far.

80 **Q. What are your recommendations for this proceeding?**

81 A. I recommend that the Commission adopt Attachment 2.1, Staff Revised People
82 Ex. 1.2 as Peoples Gas' SMP and order Peoples Gas to include the additional

83 information in its bi-annual filings. Further, I recommend that Peoples Gas
84 include an Earned Value Metric in its bi-annual report to the Commission.

85 **Q. By presenting a Proposed SMP Plan for Commission approval is the**
86 **Company seeking a predetermination of the prudence, justness and**
87 **reasonableness of costs incurred pursuant to an approved SMP Plan?**

88 A. No, the Company is not. It is my understanding of the Company's testimony that
89 the prudence and the justness and reasonableness of any costs incurred by the
90 Company pursuant to any plan that is ultimately approved will be determined either
91 in Rider QIP reconciliation proceedings or in general rate cases. (PGL Ex. 1.0, 28-
92 31.)

93 **Q. Are you offering an opinion on the prudence and justness and**
94 **reasonableness of costs incurred pursuant to an approved SMP Plan?**

95 A. No I am not. My testimony is offered only for the purposes of evaluating the
96 issues in this docket and making recommendations to the Commission regarding
97 Peoples Gas' Proposed SMP. I offer no opinion regarding whether the actual
98 costs and expenses of the Company's Proposed SMP are or should be
99 considered to be prudently incurred or are just and reasonable. As discussed
100 above, the prudence of expenditures pursuant to the approved plan, and whether
101 any specific costs are just and reasonable will be determined in either Rider QIP
102 reconciliation proceedings or general rate cases and not in this proceeding.

103 **Total Proposed SMP Work**

104 **Q. How is Peoples Gas' currently reporting costs associated with SMP?**

105 A. Peoples Gas currently reports costs separately on four programs: Neighborhood
106 Replacement Program, Public Improvement / System Improvement Program,
107 High Pressure Installation Program, and Transmission Upgrades. (PGL Ex. 1.0,
108 15-16) Each of these four programs contains information on the cost and
109 number of miles of main installed, cost and number of miles of main retired, cost
110 and number of services installed, and the cost to retire services and the cost of
111 restoration work. (July 2016 Month-End Report, August 30, 2016)

112 **Q. Is there a distinction between costs related to SMP (i.e., the replacement of**
113 **leak-prone pipe, increasing pressure from low to medium, and moving**
114 **meters from inside to outside) recoverable under the Qualified**
115 **Infrastructure Plan ("QIP") Rider and other costs that may be recovered**
116 **under QIP?**

117 A. Yes. Most SMP costs will be recoverable under QIP; however, there are other
118 Company expenses that may be unrelated to SMP that are also recoverable
119 under the QIP Rider. For example, the Public Improvement / System
120 Improvement Program, High Pressure Installation Program, and Transmission
121 Upgrades all include costs recoverable under the QIP Rider but which may or
122 may not be SMP costs. An example of an expense associated with the High
123 Pressure Installation Program that may be part of the SMP is the installation of a
124 high pressure main that connects directly to a regulating station from which a
125 medium pressure main supplies gas to Peoples Gas' distribution system. An

126 example of an expense associated with the High Pressure Installation program
127 that may not be part of the SMP is the replacement of a high pressure
128 transmission line for the singular reason of establishing MAOP (“Maximum
129 Allowable Operating Pressure”). This second example is not directly associated
130 with the SMP. Staff’s main concern in the instant proceeding is SMP costs
131 incurred in the replacement of leak-prone pipe, increasing pressure from low to
132 medium, and moving meters from inside to outside, most of which will be
133 incurred through the Neighborhood Replacement Program, which encompassed
134 most of the legacy AMRP work. While replacing leak-prone pipe, upgrading
135 pressure and meter relocations are, generally speaking, costs recoverable under
136 QIP, I believe that the distinction between SMP costs and other QIP recoverable
137 costs is an important one with respect to effective Commission monitoring and
138 oversight of Peoples Gas’ SMP. The Company’s Proposed SMP includes costs
139 such as those associated with transmission upgrades that, although recoverable
140 under Rider QIP, are not SMP costs. In order for the Commission and all parties
141 to effectively monitor the main replacement program in the long-term, it is
142 essential that the Company include only SMP activities and costs in its plan, as
143 well as related reporting.

144 **Q. Should Peoples Gas provide clarification regarding exact costs associated**
145 **with specific QIP categories and if and when those costs are directly**
146 **associated with the SMP?**

147 A. Yes. The Peoples Gas tariff establishing Rider QIP sets out seven categories of
148 infrastructure plant that may qualify for recovery as QIP. Of these seven, three
149 are clearly related to SMP (category 1, replacing leak-prone pipe; category 2,
150 relocating meters and category 3, upgrading from low to medium pressure) and
151 two are clearly not SMP related (category 4, modernization of gas meters and
152 category 6, replacement of un-locatable facilities). The two remaining categories
153 are considered by the Company to be SMP, but it is not clear to Staff that these
154 categories properly should be.

155 **Q, Does Peoples Gas' current SMP reporting metrics allow for a clear**
156 **differentiation between costs directly related to the SMP and other**
157 **Company expenses?**

158 A. No, Peoples Gas' current SMP reporting metrics does not allow for a clear
159 differentiation between costs directly related to the SMP and other Company
160 expenses that may be unrelated to SMP that are also recoverable under the QIP
161 Rider in QIP category 5, MAOP records, or in QIP category 7, the replacement of
162 regulation stations, regulators and valve assemblies.

163 **Q. Regarding QIP categories 5 and 7, how should Peoples Gas clarify the**
164 **difference between the costs associated with the SMP and other Company**
165 **expenses that may be unrelated to SMP?**

166 A. Peoples Gas should provide in its rebuttal testimony a detailed explanation that
167 contains examples of how and why QIP categories 5 and 7 costs are directly
168 related to the SMP. Further, Peoples Gas should provide the exact percentage

169 of costs incurred in QIP categories 5 and 7 that are directly related to the SMP,
170 and the exact percentage of costs incurred in QIP categories 5 and 7 that are not
171 directly related to the SMP.

172 **Information that Should Be Addressed by Peoples Gas in Future Reports**

173 **Q. What metrics does Peoples Gas currently use in its reports to the**
174 **Commission?**

175 A. The metrics shown in Peoples Gas' Preliminary Report and July and August
176 2016 Month-End Reports contain information on main installed; main retired;
177 services installed; services retired; and restoration work as well as transmission
178 facilities installed, retired, and restored. Peoples Gas' reporting with respect to
179 these metrics, shown in Peoples Gas' Preliminary Report, and July and August
180 2016 Month-End Reports, is currently the only information the Commission has
181 to monitor SMP work.

182 **Q. What additional information should be included in SMP reports and why is**
183 **this information important?**

184 A. Staff must have all relevant information available to be able to make informed
185 recommendations regarding Peoples Gas' policies and practices associated with
186 the execution of the SMP. To that end, Staff needs not only a summary view of
187 the program, as Peoples Gas has shown in its July and August 2016 monthly
188 reports, but also more detailed and precise reporting and information regarding
189 the type of work completed and the costs associated with such work. This more

190 detailed and precise information and long-term reporting is Staff's main focus of
191 the instant proceeding. Such reporting and information will enable Staff to make
192 recommendations regarding Peoples Gas' policies and practices and assist the
193 Commission in providing effective, meaningful regulatory oversight. Information
194 currently provided to Staff, e.g. Peoples Gas' Preliminary Report, Peoples Gas'
195 July and August 2016 Month-End Reports, is summary in nature and not
196 adequate to permit Staff to make the required recommendations regarding going-
197 forward regulation and oversight of Peoples Gas' SMP.

198 **Q. Describe with specificity the type of reporting the Company should include**
199 **in future reports.**

200 A. The Commission in its Initiating/Interim Order directed Peoples Gas to provide
201 information contained in a bulleted list of reporting metrics. (July 20, 2016 Order,
202 3.) This bulleted list of reporting metrics is the basis for Staff's recommendation.
203 Therefore, Staff recommends that Peoples Gas' reporting contain separate
204 detailed information on each of the following metrics:

- 205 1. Detailed information regarding progress and costs in the replacement of
206 leak-prone pipe (total cost of replacement; total number of miles replaced;
207 cost per mile replaced, total cost of retirement; total miles of pipe retired;
208 cost per mile retired; total cost of restoration; and a comparison of actual-
209 to-date values to planned-to-date values)
- 210 2. Detailed information regarding progress and costs in increasing
211 distribution system pressure from low to medium (total cost of

212 replacement; total number of miles replaced; cost per mile replaced; total
213 cost of retirement; total miles of pipe retired; cost per mile retired; total
214 number of services installed, total cost to install services; cost per service
215 installation; total cost of service retirement; total cost of restoration; and a
216 comparison of actual-to-date values to planned-to-date values)

217 3. Detailed information regarding progress and costs in moving meters from
218 inside customer premises to outside, or to a central location (including
219 number of meters moved; total cost of meter moves; costs per meter
220 moved; total services installed; total cost of service installation; cost per
221 service installation; total cost of service retirement, total cost of
222 restoration; and a comparison of actual-to-date values to planned-to-date
223 values)

224 **Q. What is your recommendation regarding this topic?**

225 A. I recommend that Peoples Gas provide in its monthly SMP reports details
226 regarding costs associated with the replacement of leak-prone pipe, increasing
227 pressure from low to medium, and moving meters from inside to outside as well
228 as all metrics that may assist the Commission in its review of Peoples Gas' SMP
229 in addition to those depicted in Peoples Gas' Preliminary Report, July 2016
230 Month-End Report and August 2016 Month-End Report.

231 **Peoples Gas reports to the Commission should include an Earned Value Metric**

232 **Q. Should Peoples Gas include any reporting metrics outside of those**
233 **associated with SMP, i.e., the replacement of leak-prone pipe, upgrading**
234 **from low to medium pressure, and relocating meters from inside to**
235 **outside?**

236 A. In addition to the changes discussed above, I suggest the addition of an Earned
237 Value Metric be added to Company reports, discussed in more detail below.

238 **Q: What is an Earned Value Metric?**

239 A: As described in Liberty's Final Report – Chapter V, an Earned Value Metric
240 measures the worth of work that has been physically accomplished to date. It
241 focuses on the cost and the schedule of SMP to evaluate the efficiency and
242 productivity of work done during a set period of time.

243 **Q. Do the metrics currently reported allow for Staff to form an opinion**
244 **regarding the productivity or effectiveness of SMP work?**

245 A. These metrics could be augmented to aid the Commission in evaluating SMP
246 effectiveness/productivity. While the information currently provided is certainly
247 useful to some degree, additional information is required in order for Staff and the
248 Commission to reach well-informed conclusions regarding the efficiency and
249 effectiveness of SMP work.

250 **Q. Why is this additional information vital to Staff's ability to monitor the SMP**
251 **work?**

252 A. With this information, the Commission can monitor and conduct a meaningful
253 review of SMP work to ascertain whether work is being completed on time and
254 within budget. Comparing actual value with planned or “earned” value provides a
255 good indicator of productivity and effectiveness because it allows a comparison
256 of planned schedules with actual amount work performed.

257 As a simple example of how this can be measured, assume the Company plans
258 to install 100 meters during a calendar month and budgets 4 hours each for the
259 work of installing these 100 meters. The “earned value” of the total meter
260 installations is 400 hours (4 x 100). If the Company completes each installation
261 in 3.5 hours, the actual hours spent is 350 (3.5 x 100). Comparing actual hours
262 spent to hours earned provides a good indicator of productivity. In this example,
263 400 hours (earned) divided by 350 hours (spent) yields a ratio of 1.14.

264 Therefore, if the ratio is 1 or greater, than the metric is showing that the work is
265 indeed effective. A ratio of below 1, however, would show ineffectiveness or a
266 decline in productivity. For this hypothetical example, the Earned Value Metric
267 shows that meter installation is effective.

268 From my review of the Company Preliminary Report and July and August 2016
269 Month-End Reports, I found no earned value/effectiveness metric. Such a metric
270 would be invaluable to the Commission’s ability to measure the effectiveness of
271 SMP work.

272 **Q. Describe with specificity the reporting metric described above.**

273 A. The reporting metric described above should contain information on the number
274 of hours (in-house and contractor separately) per mile of main installed.
275 Thereafter, Peoples Gas should compare the actual number of hours (spent) per
276 mile of main installed with the amount of hours originally budgeted (earned) for
277 the same amount of miles installed; e.g. hours earned per hours spent. This
278 metric should also be included for services installed and meters moved. Where
279 applicable, this metric should be included in each category of the SMP including
280 but not limited to the Neighborhood Main Replacement Program, Public
281 Improvement/System Improvement, and the High-Pressure Installation Program.
282 Finally, Peoples Gas should provide an aggregate of all these metrics
283 demonstrating total SMP effectiveness or productivity. This proposed metric is
284 depicted more fully in Attachment 2.1.

285 **Q. What is your recommendation regarding this topic?**

286 A. I recommend the Commission require Peoples Gas to include in its monthly
287 report for the duration of the instant proceeding, and in all future SMP reports, an
288 earned value metric allowing the Commission to oversee the effectiveness of the
289 SMP work. Attachment 2.1 to my testimony, Staff Revised PGL Ex. 1.2, includes
290 an example of how Peoples Gas should include this metric in its reporting of
291 SMP work.

292 **Q. Do you have any further recommendations regarding Peoples Gas'**
293 **reporting metrics?**

294 A. Yes. I recommend the Commission direct Peoples Gas to continue reporting on
295 the metrics contained in Peoples Gas' Preliminary Report and July and August
296 2016 Month-End Reports as well as those reporting metrics included in the Final
297 Order for the duration of the SMP on a monthly basis. This reporting should
298 continue until a) Peoples Gas requests and receives Commission approval to
299 discontinue the reporting; or b) the Commission determines that Peoples Gas no
300 longer needs to report regarding GSMP.

301 Next, I recommend the Commission require Peoples Gas to include in all future
302 reports reporting metrics demonstrating increased safety or decreased risk
303 allowing the Commission to evaluate the public safety benefits of AMRP.
304 Attached to my testimony as Attachment 2.2 – Reporting Metrics for Safety
305 Monitoring, is an example of how Peoples Gas should include this metric in its
306 reporting of SMP work.

307 Finally, consistent with Mr. Beyer's testimony, Peoples Gas should not rely
308 primarily on QIP reporting requirements as a vehicle for reporting SMP progress.
309 Instead, in the Monitoring and Control section of Attachment 2.1, I recommend
310 the this sentence be included, "The interim reporting process outlined in the
311 Commission's July 20, 2016, Order will be the primary guide for reporting data to
312 the ICC, with a mid-year status report on progress to date." This language would
313 replace the sentence regarding Rider QIP reconciliation reporting that Staff
314 Witness Beyer recommends be deleted.

315 **Q. Does this conclude your prepared direct testimony?**

316 A. Yes.

System Modernization Program 2016 - 2018 Three-Year Plan

Date: August 11, 2016
Version History: 1.0

Three-Year SMP Plan Background and Overview

Beginning in June 2015, the new management team at Peoples Gas took a fresh look at the existing Accelerated Main Replacement Program (AMRP) to upgrade its infrastructure, developed a new approach to executing work, and adopted the System Modernization Program (SMP). ~~The scope of SMP aligns with the Qualifying Infrastructure Plant legislation.~~ SMP includes the work identified under AMRP as well as other modernization work performed in compliance with Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations. SMP is Peoples Gas' systematic multi-year approach to assess the condition of its natural gas distribution system, prioritize the system components most at risk, and replace those components in coordination with the City of Chicago and other entities.

While the AMRP portion of SMP is well defined, the priority of work is annually reevaluated and re-sequenced to minimize risk, coordinate work with the City and others, and reduce cost. Peoples Gas expects that applicable federal, state and local regulations will continue to be modified periodically, requiring modifications to aspects of SMP. Due to the many variables that can and will change the sequencing of work, Peoples Gas' new management developed a **three-year SMP plan** (2016 - 2018) that it first proposed in its November 30, 2015 compliance filing in the acquisition docket (14-0496). This document is the framework for the first three-year cycle as well as the template for the subsequent rolling three-year implementation plans that will be produced annually.

The SMP is comprised of four sub-programs

<p>1. Neighborhood Replacement Program – Projects that Peoples Gas ranks, designs, and constructs based on the most at risk system components identified by the company's neighborhood ranking tool.¹ Neighborhood sequencing in the plan is also affected by coordination with other agencies and timeliness of permits and authorizations.</p>	<p>{QIP categories 1,2,3}²</p>
<p>2. Public Improvement (PI) / System Improvement (SI) - Projects similar to the Neighborhood Replacement Program, but other factors require the upgrade or relocation of existing vulnerable material. In most cases Peoples Gas is responding to a third party request to relocate or replace facilities due to conflicts with a PI project or addressing capacity or reliability concerns.</p>	<p>{QIP categories 1,2,3}</p>
<p>3. High Pressure (HP) Installation Program - Projects that support the upgrade of low pressure (LP) distribution facilities to medium pressure (MP) facilities. HP systems are required to provide an adequate supply of natural gas into the newly-installed MP systems.</p>	<p>{QIP categories 3,7}</p>
<p>4. Transmission Upgrades and future PHMSA requirements - Projects that address the replacement of high risk HP transmission pipelines and associated facilities as well as establishing records and maximum allowable operating pressures.</p>	<p>{QIP categories 5,7}</p>

¹ For more detail on the project ranking and selection process that utilizes a Uniform Main Ranking Index (UMRI) and a Neighborhood Ranking System, please refer to the appendix on page 4.

² For more detail on the seven Rider QIP investment categories please refer to the appendix on page 4.

Projected Program Target End-date:

Peoples Gas has concluded that a target end-date between years 2035 and 2040 is reasonable given a feasible pace of work, level of coordination between Peoples Gas, the City of Chicago and other entities, and the conclusions of the 2007 Kiefner study. Additionally, this target end-date allows the flexibility to accommodate future PHMSA requirements and changes in state and local regulations that may affect the scope of the SMP.

Program Pace

The targeted annual investment is divided into the four programs described above. The planning and execution of the work is necessarily dynamic to accommodate changing risk rankings, updated regulations and coordination with numerous third parties.

The current three-year plan will target a program pace of approximately \$250 million to \$280 million of annual investment. In the first quarter of each year, Peoples Gas will reproduce the total program estimate

Approach and Methodology

The rolling three year-plan will identify the proposed SMP projects for the ensuing three years, giving priority to the most at risk components of the system. In the fourth quarter of each year, the plan for the next two years will be updated and a plan added for the new third year.

A three-year timeframe is the appropriate planning horizon because it provides assurance and stability to support more effective contracting strategies, resource planning, trending analytics, and regulatory and compliance planning. A three-year timeframe also provides flexibility in re-sequencing work in the event of changes to component risk rankings, regulations, conflicts with third parties or obstacles to construction that may otherwise delay the overall program schedule.

Monitoring and Control

The three-year plan will be actively monitored by the Peoples Gas Project Management and Controls Department. The annual Rider QIP reconciliation process will provide the primary means of reporting data to the ICC, with a mid-year status report on progress to date. [The interim reporting process outlined in the Commission's July 20, 2016, Order will be the primary guide for reporting data to the ICC, with a mid-year status report on progress to date.](#)

Metrics and Key Performance Indicators (KPIs)

The metrics shown below will be used to measure program performance and will be included in annual and mid-year reports to the ICC.

Metrics					
Main Installation	Main Retirement	Service Installation	Meter Installation	Restoration Miles	Materials
# of miles	# of miles	# of services	# of meters	# of miles	Cost by size
Cumulative Cost	Cumulative Cost	Cumulative Cost	Cumulative Cost	\$/mile	Cost by type
\$/mile	\$/mile	\$/service	\$/meter		
hrs/mile		hrs/service	hrs/meter		
hrs earned/hrs spent		hrs earned/hrs spent	hrs earned/hrs spent		

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Current Rolling Three-year Plan

Date: August 19, 2016
Version History: 1.0

2016	Proposed Budget	\$ 250.0 million	Install (mi)	Retire (mi)	Services	Meters
			51	108	5,064	14,579
Meters	\$ 14.6					
PI/SI	\$ 101.2		25	20	2,378	4,426
HP	\$ 27.5		1	1	1	6
Transmission	\$ 27.7		N/A	N/A	N/A	N/A
Neighborhood	\$ 78.6		25	87	2,685	10,147
<i>Beverly</i>			20	19	1,755	1,949
<i>South Austin</i>			3	17	632	3,037
<i>South Shore</i>			2	31	76	4,548
<i>Portage Park</i>			1	7	11	158
<i>misc systems</i>				12	211	455
2017	Proposed Budget	\$ 280.1 million	Install (mi)	Retire (mi)	Services	Meters
			89	70	8,109	15,509
Meters	\$ 20.2					
PI/SI	\$ 37.2		15	13	2,034	3,099
HP	\$ 40.0		2	0	0	0
Transmission	\$ 27.1		N/A	N/A	N/A	N/A
Neighborhood	\$ 155.6		72	58	6,075	12,410
<i>Beverly</i>			16	18	1,068	2,101
<i>South Austin</i>			11	10	1,159	1,680
<i>South Shore</i>			1	1	3	1
<i>Portage Park</i>			2	2	0	0
<i>Albany Park</i>			28	18	2,653	7,192
<i>West Beverly</i>			6	3	537	633
<i>West Morgan Park</i>			6	5	546	653
<i>Morgan Park WOF</i>			2	1	109	150
2018	Proposed Budget	\$ 280.4 million	Install (mi)	Retire (mi)	Services	Meters
			95	69	11,095	24,572
Meters	\$ 31.9					
PI/SI	\$ 46.6		16	14	1,500	3,000
HP	\$ 10.5		0	0	0	0
Transmission	\$ 19.1		N/A	N/A	N/A	N/A
Neighborhood	\$ 172.3		79	55	9,595	21,572
<i>Albany Park</i>			41	29	3,888	12,130
<i>Morgan Park WOF</i>			15	8	1,184	1,507
<i>Schorsch Village</i>			TBD	TBD	1,812	2,513
<i>Irving Woods</i>			11	9	1,420	2,840
<i>Belmont Terrace</i>			TBD	TBD	TBD	TBD
<i>Bowmanville</i>			TBD	TBD	464	928
<i>Old Norwood Park</i>			13	10	827	1,654
2019	Proposed Budget	\$ 279.6 million	Install (mi)	Retire (mi)	Services	Meters
			90	70	11,000	23,000
Meters	\$ 35.4					
PI/SI	\$ 46.6		16	14	1,500	3,000
HP	\$ 35.7		4	0	0	0
Transmission	\$ -		N/A	N/A	N/A	N/A
Neighborhood	\$ 162.0		70	56	9,500	20,000
<i>Mayfair</i>			16	10	1,353	3,092
<i>Stoney Island</i>			TBD	TBD	1,221	1,837
<i>North Mayfair</i>			10	8	1,372	2,744
<i>Craigin</i>			TBD	TBD	TBD	TBD
<i>Ravenswood</i>			TBD	TBD	TBD	TBD
<i>Norwood Park East</i>			TBD	TBD	2,182	4,364
<i>Avalon Park</i>			TBD	TBD	879	1,010

Current Year - Year 0

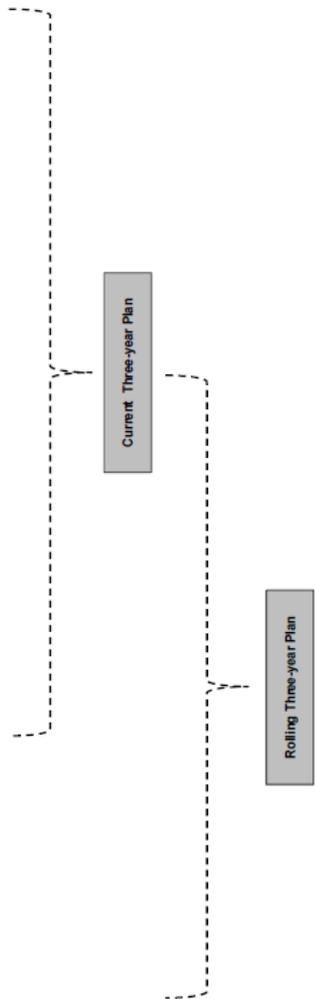
Year 1

Year 2

Year 3

Current Three-year Plan

Rolling Three-year Plan



APPENDIX:

Uniform Main Ranking Index (UMRI): UMRI is a tool that maintains historical information on individual pipe segments and creates an "index factor" for each segment based upon past performance indicators of the pipe. The index factor is based on the following inputs: historical information, cracks, breaks, observations made on the pipe, analysis of coupons of the pipe, and repairs made on the pipe. The index factor provides a means of comparing pipe segments and determining those that are most at risk for failure and is used to prioritize the projects in the three-year plan. The UMRI is system driven and its results are reviewed monthly. If there are specific segments of pipe that need to be addressed immediately due to condition, those will be replaced as part of small projects on an expedited timeline.

Neighborhood Ranking: Neighborhood ranking is an annual process used to compare the risks associated with the facilities from one neighborhood to another. The factors taken into consideration are based on Peoples Gas' Distribution Integrity Management Program ("DIMP"):

- percentage of medium pressure cast and ductile iron pipe,
- percentage of small diameter cast iron pipe,
- the mean UMRI index,
- the number of pending unrepaired leaks, and
- the number of services which are constructed of vulnerable material types (cast iron, ductile iron, bare steel, copper, and clear plastic).

The Neighborhood Ranking is used to prioritize work to be included in the three-year plan. The sequencing of projects is also affected by coordination with the City of Chicago and other entities, conflicts with other construction and the timeliness of permits and authorizations.

Rider QIP Plant Addition Types: Under Rider QIP and the Commission's rules, the term "Qualifying Infrastructure Investment" means Qualifying Infrastructure Plant ("QIP") and costs associated with investments in QIP. Section D(4) of Rider QIP and Section 556.40 of the Commission's rules identifies seven types of plant additions that may qualify as QIP. The below table outlines these seven types of plant additions and highlights how the scope of the AMRP and the new SMP differ based on the individual categories included within each program.

AMRP and SMP scope elements based on Rider QIP Investment Categories	
Rider QIP Plant Addition or Investment Types	<ol style="list-style-type: none"> 1. Replace materials prone to leakage 2. Relocate meters from inside to outside locations 3. Upgrade low pressure to medium pressure including high pressure facilities to support upgrade 4. <i>Modernization of gas meters and network*</i> 5. Replace high pressure transmission without maximum allowable operating pressure (MAOP) records 6. <i>Replace un-locatable facilities*</i> 7. Replace regulation stations, regulators, and valve assemblies <p>----- <i>*Not applicable</i></p>
Accelerated Main Replacement Program (AMRP) Scope Elements (QIP categories 1,2, and 3)	<ol style="list-style-type: none"> 1. Replace materials prone to leakage 2. Relocate meters from inside to outside locations 3. Upgrade low pressure to medium pressure including high pressure facilities to support upgrade
SMP Scope Elements (QIP categories 1,2,3,5, and 7)	<ol style="list-style-type: none"> 1. Replace materials prone to leakage 2. Relocate meters from inside to outside locations 3. Upgrade low pressure to medium pressure including high pressure facilities to support upgrade 5. Replace high pressure transmission without MAOP records 7. Replace regulation stations, regulators, and valve assemblies

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Attachment 2.2 - Reporting Metrics for Safety Monitoring

Reporting Metrics for Safety Monitoring				
Category	Measure	Actual thru 12/31 of prior year	Planned this year	Planned for total program
Operational Results	Leaks			
	Leaks per mile of remaining leak-prove pipe			