

STATE OF MARYLAND
PUBLIC SERVICE COMMISSION

ORDER NO. 88852

IN THE MATTER OF THE APPLICATION
OF COLUMBIA GAS OF MARYLAND, INC.
FOR AUTHORITY TO ADOPT A NEW
INFRASTRUCTURE REPLACEMENT AND
IMPROVEMENT PLAN AND
ACCOMPANYING COST RECOVERY
SURCHARGE MECHANISM

* BEFORE THE
PUBLIC SERVICE COMMISSION
* OF MARYLAND

CASE NO. 9479

August 28, 2018

PROPOSED ORDER OF PUBLIC UTILITY LAW JUDGE

I. Introduction

On April 6, 2018, Columbia Gas of Maryland, Inc. (“Columbia” or “Company”) filed an application (“Application”) with the Public Service Commission of Maryland (“Commission”) for authority to adopt a new gas infrastructure replacement and improvement plan and an accompanying cost recovery surcharge mechanism to become effective January 1, 2019. The Application was filed pursuant to Section 4-210 of the Public Utilities Article, *Annotated Code of Maryland* (“PUA”)¹ which authorizes a gas company such as Columbia to seek approval of a strategic infrastructure development and enhancement (“STRIDE”) plan and surcharge cost recovery mechanism, subject to the statutory guidelines set forth therein.

The Maryland Office of People's Counsel ("OPC") submitted testimony and recommended that the Commission deny approval of the proposed STRIDE II Plan and instead order the Company to submit a new plan that uses the 7.56 miles per year

¹ All statutory references are to PUA §4-210, the STRIDE statute, unless otherwise noted.



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Commission require Columbia to update its cost estimates such that there is a full five years of cost estimates, with those estimates assuming a maximum escalation factor of 2.5 percent.

The Technical Staff (“Staff”) of the Commission submitted testimony and concluded that Columbia’s proposed STRIDE II Plan met the requirements of PUA §4-210. Staff supported the Company’s proposed acceleration of its STRIDE Plan. Staff concluded that Columbia’s preliminary revenue requirement calculation for 2019-2023 was reasonable and consistent with its previously approved STRIDE revenue requirement calculation methodology. However, Staff recommended that Columbia change its tariff language to reflect that interest is applied to the prior year reconciliation of over-collections at the Company’s authorized rate of return.

Prior to the scheduled evidentiary hearings, Staff filed a letter indicating that the Parties had reached a settlement in principle as to all issues in the case, and subsequently filed a Stipulation and Settlement Agreement (“Settlement”).

After reviewing the entire record in this proceeding, including all of the testimony and exhibits, public comments, and the terms and conditions of the Settlement, as well as the testimony in support thereof, for the reasons set forth below, I find that Columbia has satisfied the relevant statutory requirements and approve the Company’s Revised STRIDE II Plan filed on August 7, 2018.

II. Procedural History

On April 6, 2018, Columbia filed an Application seeking authority to adopt a new gas infrastructure replacement and improvement plan (“STRIDE II Plan”) and an accompanying cost recovery surcharge mechanism (“IRIS”) pursuant to PUA §4-210. The Application included the testimony of the following individuals: Michael Davidson,



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Columbia's General Manager and Vice President; Ribeka S. Garrity, Senior Regulatory Analyst for Columbia; and Jennifer Shikany, Director of Regulatory for NiSource Corporate Services Company ("NCSC").²

On April 11, 2018, the Commission issued Order No. 88642 that initiated a docketed proceeding to consider the Application, and delegated the case to the Public Utility Law Judge ("PULJ") Division to conduct proceedings to determine the justness and reasonableness of Columbia's proposed new STRIDE II Plan and IRIS.

On May 3, 2018, a pre-hearing conference was held to address any petitions to intervene, set a procedural schedule, and consider any other preliminary matters. Representatives from Columbia, OPC, and Staff appeared at the conference and a procedural schedule was adopted.

On June 20, 2018, OPC filed the direct testimony of Brendan Larkin-Connolly, Principal at DHInfrastructure LLC.³ Also on June 20, 2018, Staff filed the direct testimony of Adesina Jaiyeola, a Pipeline Safety Engineer in the Commission's Engineering Division;⁴ Joanne Hernandez, a Public Utility Auditor in the Accounting Investigations Division;⁵ and Shamika Shelton, a Regulatory Economist II in the Energy Analysis and Planning Division.⁶

² The Application, with all attachments thereto, including testimony, was entered into the evidentiary record, collectively, as Columbia Ex. 1.

³ The Direct Testimony of Brendan Larkin-Connolly dated June 20, 2018 ("Larkin-Connolly Direct") was entered into the evidentiary record as OPC Ex. 1.

⁴ The Direct Testimony and Exhibits of Adesina Jaiyeola dated June 20, 2018 ("Jaiyeola Direct") was entered into the evidentiary record as Staff Ex. 1.

⁵ The Direct Testimony of Joanne Hernandez dated June 20, 2018 ("Hernandez Direct") was entered into the evidentiary record as Staff Ex. 2.

⁶ The Direct Testimony and Exhibits of Shamika T. Shelton dated June 20, 2018 ("Shelton Direct") was entered into the evidentiary record as Staff Ex. 3.



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On June 27, 2018 and June 28, 2018, evening hearings for public comment were held in Hagerstown and Cumberland, Maryland, respectively.

On July 9, 2018, Columbia filed the rebuttal testimony and exhibits of Ms. Shikany and Mr. Davidson.⁷ On that same date, OPC filed the rebuttal testimony and exhibits of Mr. Larkin-Connolly,⁸ and Staff filed rebuttal testimony of Juan Carlos Alvarado, the Director of the Telecommunication, Gas, and Water Division, and Mr. Jaiyeola.⁹

On July 17, 2018, OPC filed surrebuttal testimony and exhibits of Mr. Larkin-Connolly. Staff also filed surrebuttal testimony and exhibits of Ms. Hernandez.

On July 19, 2018, Staff submitted a Notice of Settlement in Principle letter and requested that the procedural schedule be suspended. On July 20, 2018, the procedural schedule was suspended and the hearings scheduled for July 23 and 24, 2018 were cancelled. On July 31, 2018, the PULJ Division issued a Notice of Revised Procedural Schedule setting deadlines for the filing of a formal settlement document and testimony in support of the settlement, and setting August 16, 2018 as the date for an evidentiary hearing in this matter.

On August 7, 2018, Staff, on behalf of the Parties, filed a Joint Motion for Approval of Agreement of Unanimous Stipulation and Settlement ("Joint Motion"), along with a revised STRIDE II Plan (Revised Attachment A), revised Project Roster (Revised

⁷ The Rebuttal Testimony of Jennifer Shikany dated July 6, 2018 ("Shikany Rebuttal"), and the Rebuttal Testimony of Michael Davidson dated July 6, 2018 ("Davidson Rebuttal") were entered into the evidentiary record as Columbia Ex. 3 and 4, respectively.

⁸ The Rebuttal Testimony of Brendan Larkin-Connolly ("Larkin-Connolly Rebuttal") was entered into the evidentiary record as OPC Ex. 2.

⁹ The Rebuttal Testimony of Juan Carlos Alvarado dated July 9, 2018 ("Alvarado Rebuttal") and the Rebuttal Testimony of Adesina Jaiyeola dated July 9, 2018 ("Jaiyeola Rebuttal") were entered into the evidentiary record as Staff Ex. 4 and 5, respectively.



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Exhibit 1 to Revised Attachment A), revised IRIS rates (Attachment B), and revised proposed tariff sheets (Attachment C).¹⁰

Also on August 7, 2018, Columbia filed the Testimony of Ribeka Garrity In Support of Stipulation and Settlement (“Garrity Settlement Testimony”).¹¹ On August 8, 2018, in support of the Settlement, OPC filed Supplemental Testimony of Brendan Larkin-Connolly (“Larkin-Connolly Supplemental Testimony”),¹² and on August 9, 2018, Staff filed the Testimony of Adesina Jaiyeola (“Jaiyeola Settlement Testimony”), Testimony of Joanne Hernandez (“Hernandez Settlement Testimony”), and Testimony of Shamika T. Shelton (“Shelton Settlement Testimony”).¹³

An evidentiary hearing was held on August 16, 2018 at which time all pre-filed testimony was admitted into the record, including testimony in support of the Settlement, as well as certificates of publication,¹⁴ and the Joint Motion (containing the Settlement), with attachments.

III. Statutory Guidelines and General Plan Requirements

PUA §4-210 establishes a mechanism for prompt cost recovery (via a surcharge) for reasonable and prudent costs of eligible gas infrastructure replacement projects, separate from base rate proceedings. An “eligible infrastructure replacement” is a replacement or improvement in existing gas infrastructure made after June 1, 2013, that

¹⁰ The Joint Motion, including all attachments thereto, was entered into the evidentiary record as Staff Ex. 10, and is attached hereto as Appendix A.

¹¹ Garrity Settlement Testimony was entered into the evidentiary record as Columbia Ex. 5.

¹² Larkin-Connolly Supplemental Testimony was entered into the evidentiary record as OPC Ex. 4.

¹³ Hernandez Settlement Testimony, Jaiyeola Settlement Testimony, and Shelton Settlement Testimony were entered into the evidentiary record as Staff Ex. 7, 8 and 9, respectively.

¹⁴ The Certificates of Publication were entered into the evidentiary record collectively as Columbia Ex. 2.



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improves public safety or system reliability, does not increase Company revenues, has the potential to reduce greenhouse gas emissions, and is not currently included in rate base.¹⁵ PUA §4-210(b) expressly notes the legislative intent behind this section of the PUA was for the purpose of accelerating gas infrastructure improvements in the State.¹⁶ Gas companies may file a plan to invest in eligible infrastructure replacement projects with an associated cost recovery schedule that provides for a fixed annual surcharge over a 5-year period.¹⁷ The fixed annual surcharge may not exceed \$2 per month for residential customers, and is capped pursuant to a formula in §4-210(d)(4)(i)2. for non-residential customers.¹⁸ If the actual cost of a plan is less than the amount collected under a surcharge, the gas company shall refund the difference with interest.¹⁹

PUA §4-210(d)(2) requires that a STRIDE plan include: (1) a time line for the completion of each eligible project; (2) the estimated cost of each project; (3) a description of the customer benefits under the plan; and (4) any other information the Commission considers necessary to evaluate the plan.²⁰

IV. Columbia's STRIDE II Plan

Columbia seeks approval of a STRIDE II Plan, as revised by the Settlement and included as part of the Joint Motion filed on August 7, 2018 ("Revised STRIDE II Plan"), and an IRIS for the years 2019-2023, to recover the costs to implement the Revised STRIDE II Plan. Columbia's preliminary project list for 2019 is included as Revised

¹⁵ PUA §4-210(a)(3).

¹⁶ PUA §4-210(b).

¹⁷ PUA §§4-210(d)(1) and (g)(1)(i).

¹⁸ PUA §§4-210(d)(4)(i).

¹⁹ PUA §4-210(g)(2)(i).

²⁰ PUA §§4-210(d)(2).



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Exhibit 1 to its Revised STRIDE II Plan. Columbia estimates it will spend \$10,419,275 to replace eligible mains, for a total investment of \$15.86 million in infrastructure replacement in 2019.²¹ Applying the agreed upon escalation factor of 3.25%, Columbia is now budgeting \$86.4 million in total infrastructure replacement costs over the course of its proposed five-year plan.²²

In direct testimony on behalf of Columbia, Michael Davidson testified that as of December 31, 2017, Columbia's facilities are comprised of approximately (1) 68.9 miles of bare steel main; (2) 2.2 miles of cast iron and wrought iron main; and (3) 3,027 bare steel service lines, with the balance of the system comprised of coated cathodically protected steel, or plastic (polyethylene) mains and services.²³

Mr. Davidson testified that under Columbia's current 2014-2018 STRIDE I Plan, the Company plans to retire all of its remaining cast iron by the end of 2018. Under that Plan, the Company replaced 7.26 miles of pipe in 2014; 5.42 miles in 2015; 6.13 miles in 2016; 9.27 in 2017; and 11 miles were projected to be replaced in 2018.²⁴

Mr. Davidson further testified that Columbia will continue to evaluate facilities for inclusion in its proposed STRIDE II Plan in the same manner it evaluated facilities for inclusion in its STRIDE I Plan for 2014-2018.²⁵ Mr. Davidson testified that annually Columbia attempts to identify the highest risk segments and sections of its

²¹ Staff Ex. 10, Revised Attachment A, p. 13; Revised Exhibit 1 to Revised Attachment A, p.8.

²² Staff Ex. 10, Revised Attachment A, p. 13; *see also*, Transcript of August 16, 2018 evidentiary hearing ("Tr."), p. 40-41.

²³ Columbia Ex. 1, Attachment D, Direct Testimony of Michael Davidson dated April 6, 2018 ("Davidson Direct"), p. 3.

²⁴ Columbia Ex. 1, Attachment D, Davidson Direct, p. 5. Ms. Garrity testified at the evidentiary hearing that Columbia is on track to replace the approximate 11 miles it had projected to replace in 2018. Tr. at 46-47.

²⁵ Columbia Ex. 1 at 7.



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distribution piping that are prone to leakage and failure and prioritize those replacements using Optimain DS software.²⁶

Ribeka S. Garrity testified in direct testimony on behalf of Columbia that under its current STRIDE I Plan, the Company was able to avoid carrying projects over from year to year; all projects were completed and in service during the calendar year in which cost recovery began.²⁷ Ms. Garrity testified that Columbia will continue to adhere to reporting requirements established by the Commission including the Project List and Current Factor filing no later than November 1 of each year; the Reconciliation Factor filing no later than March 15 of each year; the Mid-Year Report no later than August 1 of each year; and the Annual Audit filing no later than April 30 of each year.²⁸ The Company will file its first Project List and Current Factor filing no later than November 1, 2018, which will contain updates to the preliminary project list, and an updated calculation of rates to become effective January 1, 2019.²⁹

Lastly, Jennifer Shikany testified on behalf of Columbia that the Company proposes to calculate the IRIS using the same methodology as is used in its current STRIDE I Plan.³⁰ Ms. Shikany testified that costs related to the Company's 2014-2018 STRIDE I Plan, including 2017 investments not included in base rates in Case No. 9447 and all 2018 investments, will continue to be recovered through the surcharge until such costs are

²⁶ *Id.* at 8.

²⁷ Columbia Ex. 1, Attachment E, Direct Testimony of Ribeka S. Garrity dated April 6, 2018 ("Garrity Direct"), p. 4.

²⁸ Columbia Ex. 1, Attachment E, Garrity Direct, p. 5.

²⁹ *Id.* at 5-6. Ms. Garrity confirmed in oral testimony that the filing on or before November 1, 2018 would include an updated project roster with quarterly estimates of project start and completion dates, similar to the project rosters filed in Case No. 9332. Tr. at 40.

³⁰ Columbia Ex. 1, Attachment F, Direct Testimony of Jennifer Shikany dated April 6, 2018 ("Shikany Direct"), p. 3-4.



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recovered through base rates, but will be separated from the costs of the STRIDE II Plan since the IRIS is calculated using a year-by-year approach.³¹ Ms. Shikany explained when a final order is issued in a base rate case, the IRIS revenue requirement must be recalculated to prevent duplicative recovery of STRIDE costs.³² The new IRIS will reflect the removal of STRIDE investments included in an approved base rate proceeding, the newly approved rate of return, an updated allocation of revenue requirement among customers, and an updated non-residential cap allocation, if appropriate.³³

V. Party Positions on Columbia's STRIDE II Plan as Originally Proposed

A. OPC

Brendan Larkin-Connolly submitted direct testimony on behalf of OPC, testifying that the main difference between Columbia's initial STRIDE I Plan and its STRIDE II Plan, as originally proposed, was that the Company proposed to increase the rate of replacement from the 7.56 miles per year (37.8 miles total) approved in the initial STRIDE I Plan to 8.5 miles per year (42.5 miles total) in the STRIDE II Plan.³⁴ Mr. Larkin-Connolly discussed the recent decision in Case No. 9468, *In the Matter of the Application of Baltimore Gas and Electric Company for Approval of a New Gas System Strategic Infrastructure Development and Enhancement Plan and Accompanying Cost Recovery Mechanism* ("BGE Case 9468"), Order No. 88714, *slip op.* (dated May 30, 2018), opining that in order to further accelerate infrastructure replacement through STRIDE there must be

³¹ Columbia Ex. 1, Attachment F, Shikany Direct, p. 4.

³² *Id.* at 4-5.

³³ *Id.* at 5.

³⁴ OPC Ex. 1, Larkin-Connolly Direct, p. 8.



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clear evidence that the leak performance of the assets that are proposed to be replaced has degraded over the course of the current STRIDE Plan.³⁵

Mr. Larkin-Connolly expressed surprise that the Company did not include in its Application a record of leaks or leak rates on the assets being proposed for acceleration.³⁶ He obtained some leak information from the Company and collected data from the annual reports submitted by the Company to the Pipeline and Hazardous Materials Safety Administration to evaluate the bare steel and wrought iron corrosion leak and leak rate records for the most recent five years. Mr. Larkin-Connolly found this historical corrosion leak record unremarkable, stating that the leak history demonstrates no evidence that the condition of the remaining bare steel and wrought iron mains and services on Columbia's system are deteriorating at a rate requiring the Company to increase its current replacement rate.³⁷

In addition to asserting that the proposed increased pace of replacement is unnecessary, Mr. Larkin-Connolly testified that the increased pace may "exacerbate the Company's earnings attrition problem."³⁸ Mr. Larkin-Connolly noted that the Company pointed to the statutory cap on its IRIS as a contributing factor to it not earning its authorized return on equity.³⁹ He summarized that a customer using 70 therms per month has seen an increase in their monthly base rates of 8.4 percent in 2014, 3.7 percent in 2015, 14.7 percent in 2016, and 9.0 percent in 2017, and thus a 40 percent increase in base rates

³⁵ *Id.* at 9-11.

³⁶ *Id.* at 11.

³⁷ *Id.* at 13.

³⁸ *Id.* at 15.

³⁹ *Id.* at 15-16.



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over the initial four years of STRIDE.⁴⁰ He concluded that any increase in the scope of the STRIDE I Plan will further add to base rates increases.⁴¹

Mr. Larkin-Connolly found the cost estimate presented by Columbia to be incomplete because although the Application provides a range of \$16 million to \$19 million per year, the actual plan document contains projected costs only for the first four years and a “TBD” for 2023.⁴² He stated that the Commission should not be expected to approve a multi-year plan without cost estimates for each year of the plan.⁴³ In addition to incompleteness, Mr. Larkin-Connolly testified that Columbia’s use of a four percent per year escalation factor results in inflated cost estimates.⁴⁴ He testified that since this escalation factor is to account for inflation, a more appropriate number would be 2.5 percent, based on historical inflation rates in Maryland and anticipated national inflation rates.⁴⁵ Mr. Larkin-Connolly pointed out that Columbia’s cost estimates will be used to evaluate the Company’s adherence to its STRIDE II Plan and to assess the Company’s performance.⁴⁶

In rebuttal, OPC Witness Larkin-Connolly disagreed with Staff Witness Jaiyeola that Columbia should be allowed to further accelerate its replacement rate because the Company has been successful replacing pipe pursuant to its STRIDE I Plan.⁴⁷ Mr. Larkin-Connolly opined that prior success is a necessary condition to allowing

⁴⁰ *Id.* at 16.

⁴¹ *Id.*

⁴² *Id.* at 16-17.

⁴³ *Id.* at 17.

⁴⁴ *Id.* at 17-18.

⁴⁵ *Id.* at 18.

⁴⁶ *Id.* at 18-19.

⁴⁷ OPC Ex. 2, Larkin-Connolly Rebuttal, p. 2.



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accelerated replacement but it is not a sufficient condition on its own.⁴⁸ Mr. Larkin-Connolly noted that since Columbia has the ability to do so, the Company may continue to make replacements above the average rate eventually approved for its STRIDE II Plan, with additional costs further contributing to cost and bill impact implications.⁴⁹ He opined that any incremental increase in spend on STRIDE projects in 2019 will result in a higher base adjustment in 2020.⁵⁰

Mr. Larkin-Connolly maintained his position in his surrebuttal testimony as to all of the issues he raised.⁵¹

B. Staff

In direct testimony on behalf of Staff, Adesina Jaiyeola testified that in addition to Columbia's STRIDE II Plan making the Company's system safer and more reliable, the Company will be able to upgrade the operating pressures in its distribution system.⁵² Mr. Jaiyeola explained the benefits of upgrading Columbia's low pressure distribution systems to a higher pressure. He also explained that because Columbia is required by Federal pipeline safety regulations to install excess flow valves ("efv"), which provide enhanced protection, when replacing services in certain instances, the number of efvs has increased as a result of Columbia's STRIDE I Plan.⁵³

Mr. Jaiyeola testified that at an estimated cost of \$90 million, the Stride II Plan is projected to be 34 percent more expensive than Columbia's Stride Plan II, while the increase

⁴⁸ *Id.* at 3.

⁴⁹ *Id.*

⁵⁰ *Id.* at 5.

⁵¹ *See, generally*, OPC Ex. 3.

⁵² Staff Ex. 1, Jaiyeola Direct, p. 6.

⁵³ *Id.* at 7-8.



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in replacements represents a 12.45 percent increase.⁵⁴

Also on behalf of Staff, Joanne Hernandez testified that Columbia's revenue requirement calculation methodology is consistent with its previously approved STRIDE revenue requirement calculation methodology.⁵⁵ Ms. Hernandez noted that since Columbia filed a base rate case on April 13, 2018, Case No. 9480, and a final order will not be due in that case until November 26, 2018, the IRIS calculations would have to be recalculated and the revenue requirement and rates would have to be updated to reflect the approved movement of STRIDE investment into base rates as of that date.⁵⁶

Ms. Hernandez testified that Columbia proposes to continue to have interest apply to over-collections at a rate reflecting the current U.S. Bank Prime Rate plus 1.⁵⁷ Ms. Hernandez testified that interest on over-collections should be calculated using Columbia's authorized rate of return, not the bank prime rate, consistent with general utility ratemaking principles.⁵⁸

Lastly, Shamika Shelton testified on behalf of Staff that Columbia's surcharge amounts were calculated correctly, but that the amounts (and capped amounts) may change as a result of the Company's base rate case currently pending before the Commission.⁵⁹

In rebuttal, on behalf of Staff, Juan Carlos Alvarado responded to the direct testimony of OPC Witness Larkin-Connolly. Mr. Alvarado interpreted Order No. 88714 in

⁵⁴ *Id.* at 9.

⁵⁵ Staff Ex. 2, Hernandez Direct, p. 3.

⁵⁶ *Id.* at 4.

⁵⁷ *Id.*

⁵⁸ *Id.* at 4-5.

⁵⁹ Staff Ex. 3, Shelton Direct, p. 4.



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BGE Case No. 9468 to mean that further acceleration under STRIDE is allowable if a company has a track record of meeting its STRIDE cost and schedule commitments and the bill impact on ratepayers is reasonable.⁶⁰

Mr. Adesina Jaiyeola also submitted rebuttal testimony on behalf of Staff. Mr. Jaiyeola does not agree with OPC Witness Larkin-Connolly's comparison of Columbia's leak rate with Baltimore Gas and Electric Company's and Washington Gas Light Company's leak rates because Columbia's system is located in a different environmental condition.⁶¹ He stated that although leak rates are important, damage prevention, unaccounted for gas, leaks found and leaks cleared, and response time to gas incidents are additional measures to be taken into consideration.⁶² Mr. Jaiyeola believes that the leak rate and other performance measures that are currently stable will decrease with increased investment (34 percent more than STRIDE I or approximately \$90 million) in the elimination of bare steel and wrought iron pipes.⁶³

C. Columbia's Rebuttal

Ms. Shikany corrected her direct testimony to reflect that Columbia's proposal is that interest will continue to be applied to over-collections at a rate reflecting the current U.S. Bank Prime Rate, not the U.S. Bank Prime Rate, plus 1.⁶⁴ Ms. Shikany testified that applying interest to over-collections at the U.S. Bank Prime Rate is consistent with the

⁶⁰ Staff Ex. 4, Alvarado Rebuttal, p. 6-7.

⁶¹ Staff Ex. 5, Jaiyeola Rebuttal, p. 3.

⁶² *Id.*

⁶³ *Id.*

⁶⁴ Columbia Ex. 3, Shikany Rebuttal, p. 1.



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Commission's findings in Columbia first STRIDE case, Case No. 9332.⁶⁵ Ms. Shikany testified about the impact on customer rates if interest on over-collections had been calculated based on the prevailing weighted average cost of capital ("WACC"), stating that the 2015 revenue requirement would be reduced and certain customer classes would have had lower rates in 2015.⁶⁶ She indicated that Columbia is not opposed to using the Company's WACC on a prospective basis, March 31st being an appropriate time to make such a change.⁶⁷

Mr. Davidson responded to the direct testimony of OPC Witness Larkin-Connolly. Mr. Davidson testified that the increased pace of replacement under Columbia's STRIDE II Plan is reasonable and prudent.⁶⁸ He stated that bare steel and wrought iron mains and services remain significant system risks and will continue to pose risks until replaced with modern materials.⁶⁹ Mr. Davidson stated that there are system risks other than leakage rates which necessitate the acceleration and replacement of Columbia's gas infrastructure.⁷⁰ Mr. Davidson stated that corrosion on unprotected steel will not slow down and the rate of leakage will only accelerate as the unprotected steel facilities continue to age and deteriorate.⁷¹

⁶⁵ *Id.*

⁶⁶ *Id.* at 2-3.

⁶⁷ *Id.* at 3.

⁶⁸ Columbia Ex. 4, Davidson Rebuttal, p. 1.

⁶⁹ *Id.*

⁷⁰ *Id.* at 2.

⁷¹ *Id.* at 3.



Mr. Davidson maintained that Columbia's inflation rate of 4% should be adopted.⁷² He offered more complete information as to the cost estimate for Columbia's STRIDE II Plan, testifying that the Company estimates that in 2023 project costs would be approximately \$19.25 million.⁷³

VI. Public Comments

Ms. Erin Miller from WDVM-TV Hagerstown attended the public comment hearing held in Hagerstown. Two members of the public attended the Cumberland hearing. Those individuals expressed concern with the repeated increases in their gas bills and the size of this request, given that Columbia is also requesting a base rate increase. The individuals expressed that they are retired and on fixed incomes, and, as such, they cannot afford continuing increases in their monthly bills. One of the individuals stated that she had never heard of STRIDE before checking her bill recently and had never had a deduction for it before. The other individual discussed the amount of his bill even when he does not use any gas (customer charge).

No written comments were received.

VII. Summary of Settlement and Columbia's Revised STRIDE II Plan

As part of the Settlement, the Company revised its proposed STRIDE II Plan. Columbia's Revised STRIDE II Plan incorporates a replacement pace for the years 2019-2023 of 8 miles per year, totaling 40 miles by the end of 2023.⁷⁴ Columbia will use its currently authorized WACC to apply interest to over-collections. Columbia agreed to develop its STRIDE budget forecasts using a 3.25% escalation rate, with the Parties

⁷² *Id.* at 4.

⁷³ *Id.*

⁷⁴ *Id.*



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retaining the ability to request an adjustment based in the context of the Company's annual filing made on or before November 1 of each year ("Annual Filing").

Pursuant to the Settlement, the Parties agreed that Columbia's tariff pages (Attachment C), effective January 1, 2019, should be accepted for filing.⁷⁵ Columbia agreed that should the underlying allocation factors used to calculate the STRIDE surcharges change between the date the Settlement is approved and January 1, 2019, the Company will make a tariff filing with the Commission at least 30 days prior to the rate effective period reflecting the re-calculated rates.⁷⁶

The Settlement also contains several general provisions including that the Settlement represents a compromise of divergent positions and it shall therefore not be regarded as precedent in any future proceedings; that if the Commission does not unconditionally approve the Settlement without modification, then the Settlement is void; and that if the Commission unconditionally accepts the specific terms of the Settlement without modification, the Parties waive the right to appeal a proposed order of the PULJ to the Commission, seek rehearing of a Commission order, or seek judicial review of a Commission order.

Ms. Garrity testified in support of the Settlement on behalf of Columbia. Ms. Garrity testified that Columbia responded to over 80 formal discovery requests, some with multiple subparts, allowing a comprehensive investigation into the Company's

⁷⁵ Staff Ex. 10, Joint Motion, p. 3.

⁷⁶ *Id.* Columbia would need to make a tariff filing no later than November 30, 2018 for rates effective January 1, 2019. Tr. at 36.



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STRIDE II Plan.⁷⁷ Ms. Garrity stated that the Settlement reflects a carefully balanced compromise that is fair and reasonable.⁷⁸

On behalf of OPC, Mr. Larkin-Connolly summarized the differences between Columbia's original STRIDE II proposal and OPC's position, and then outlined the significant terms of the Settlement.⁷⁹ He stated that the terms of the Settlement are reasonable, that the Settlement represents a middle ground between the Company's initial proposal and OPC's recommendation on replacement rate and budget escalation, and that the Settlement is justified in order to mitigate litigation risk to residential ratepayers.⁸⁰

Staff provided testimony in support of the Settlement as well. Mr. Jaiyeola explained the differences between the originally proposed project list and the revised project list.⁸¹ Ms. Hernandez explained that the IRIS revenue requirement was recalculated based on the settlement of the base rate case, Case No. 9480, which is pending approval.⁸² In oral testimony, Ms. Hernandez clarified that the proposed revenue requirement for the 5-year period from 2019 through 2023, as revised by the Settlement in this case, and the settlement in Case No. 9480, is consistent with the methodology used in Case No. 9332, Columbia's STRIDE I case.⁸³ Ms. Shelton found Columbia's proposed IRIS surcharges were properly calculated. She also presented the recalculated monthly uncapped surcharges which represent a proxy for the long-term monthly bill impact of the Company's STRIDE II Plan

⁷⁷ Columbia Ex. 5, Garrity Settlement Testimony, p. 1.

⁷⁸ *Id.* at 2-4.

⁷⁹ OPC Ex. 4, Larkin-Connolly Supplemental Testimony, p. 1-3.

⁸⁰ *Id.* at 3.

⁸¹ Staff Ex. 8, Jaiyeola Settlement Testimony, p. 1-2.

⁸² Staff Ex. 7, Hernandez Settlement Testimony, p. 2.

⁸³ Tr. at 20.



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for each customer class if the Case No. 9480 settlement is approved.⁸⁴ In oral testimony, Ms. Shelton confirmed that should Columbia continue the practice of coming in yearly for base rate cases, the rate impact in 2019 could be as high as \$3.84 for residential customers.⁸⁵

VIII. Discussion and Findings

Pursuant to PUA §4-210(e)(3), the Commission may approve a STRIDE plan if it finds that the investments and estimated costs of eligible infrastructure replacement projects are reasonable and prudent and designed to improve public or infrastructure reliability over the short term and long term.⁸⁶ Additionally, in accordance with PUA §4-210(d)(2), a STRIDE plan must include a timeline for the completion of each eligible project, an estimated cost for each eligible project, and a description of customer benefits under the plan.

As an initial matter, based on the record in this proceeding, I find that Columbia's Revised STRIDE II Plan includes replacements or improvements in its existing infrastructure: (1) made on or after June 1, 2013; (2) designed to improve public safety or infrastructure reliability; (3) that do not increase revenue by connecting directly to new customers; (4) that reduce or have the potential to reduce greenhouse gas emissions through a reduction in natural gas system leaks; and (5) that are not included in the Company's current rate base. The replacements and improvements are therefore eligible infrastructure replacement projects under PUA §4-210(a)(3).

Columbia's Revised STRIDE II Plan includes the estimated cost of each project and a description of customer benefits. Revised Exhibit 1 to Columbia's Revised

⁸⁴ Staff Ex. 9, Shelton Settlement Testimony, p. 3.

⁸⁵ Tr. at 22.

⁸⁶ PUA §4-210(e)(3).



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STRIDE II Plan includes the list of projects that were engineered and expected to be put into service for 2019.⁸⁷ Columbia stated that the Company's final proposed project list for 2019 will be included in its Annual Filing. Thus, by November 1, 2018, Columbia's Revised STRIDE II Plan will include a timeline for the completion of each eligible project.

In Case No. 9332, Columbia filed its 2018 IRIS Eligible Main Replacement and Abandonment Project Roster on October 30, 2017; the 2018 Project Roster provided quarterly estimates for the projected start and projected completion dates of each project, *e.g.*, a project that was projected to start in Q1 and might be projected to be completed in Q4.⁸⁸ After considering the matter at the December 20, 2017 Administrative Meeting, the Commission approved the Company's project list and accepted the tariff revisions for filing with an effective date of January 1, 2018.⁸⁹ Since the practice of filing final proposed project lists as part of an annual filing on or before November 1 of each year, with quarterly timelines for completion of each project, has been accepted by the Commission with respect to Columbia's STRIDE I Plan, Columbia is authorized to continue such practice as part of its STRIDE II Plan.

The Parties agreed as part of their Settlement that Columbia's Revised STRIDE II Plan meets the statutory requirements of the STRIDE statute.⁹⁰ Columbia's Revised STRIDE II Plan includes the estimated cost of each project and will include, as of November 1 of each year, a timeline for the completion of each eligible project. The

⁸⁷ Staff Ex. 10, Revised Exhibit 1 to Revised Attachment A.

⁸⁸ See Case No. 9332, *In the Matter of the Application of Columbia Gas of Maryland, Inc. for Authority to Adopt and Infrastructure and Replacement Surcharge Mechanism*, Dkt. Item 127.

⁸⁹ Case No. 9332, *In the Matter of the Application of Columbia Gas of Maryland, Inc. for Authority to Adopt and Infrastructure and Replacement Surcharge Mechanism*, Dkt. Item 129.

⁹⁰ Staff Ex. 10, Joint Motion, p. 3.



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Revised STRIDE II Plan also includes a description of the customer benefits under the plan. Thus, I find that the Revised STRIDE II Plan satisfies the statutory requirements of PUA §4-210(d)(2).

The Company had originally proposed a replacement pace of 8.5 miles per year, for a total of 42.5 miles by the end of 2023. OPC had recommended that the replacement pace should remain at 7.56 miles per year,⁹¹ for a total of 37.8 miles by the end of 2023 based on analysis of leak rate data by its witness. Although, as part of the Settlement, Staff supports a replacement pace of 8 miles per year, Staff had supported Columbia's original proposal of 8.5 miles per year. Staff's position is that if the Company has shown it is capable of performing at a certain pace, it should be permitted to increase that pace if the proposed replacements will increase safety and reliability.⁹² I do not find Staff's testimony fully instructive in determining whether further acceleration of the pace of replacement is appropriate. Replacing Columbia's aging infrastructure at an even faster pace than Columbia originally proposed would arguably increase safety and reliability to an even greater extent, however, it would also further escalate the eventual burden on customers. At some point this burden renders the costs of a STRIDE plan unreasonable.

PUA §4-210(e)(3) requires that the investments and costs of a STRIDE plan be reasonable and prudent, in addition to being designed to increase infrastructure reliability. Although the monthly surcharge for residential ratepayers is capped at \$2, the rate impact of the investments is significantly higher when assets are brought into base rates. Hence, in the

⁹¹ Although authorized to replace 37.8 miles in its STRIDE I Plan, Columbia will have replaced 39.2 miles by the end of 2018. Tr. at 47.

⁹² See Tr. at 14-16.



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recent decision in the BGE 9468 Case, the Commission noted the need to balance the costs of a STRIDE plan with the extent of improvement and reliability.⁹³

In oral testimony, Mr. Larkin-Connolly acknowledged Columbia's and Staff's position that leak rates are only one measure to be taken into consideration in determining whether to replace gas infrastructure. Thus, the Settlement incorporates a compromise – a replacement pace of 8 miles per year, for a total of 40 miles by the end of 2023. Mr. Larkin-Connolly agreed that the investments and costs associated this Revised STRIDE II Plan are reasonable and prudent.⁹⁴

I find that the investments and estimated costs of eligible infrastructure replacement projects in the Revised STRIDE II Plan are designed to improve public or infrastructure reliability over the short term and long term, and are reasonable and prudent. The replacement pace the Parties have settled on reflects a proper balance between the need to improve infrastructure reliability and the costs to do so, which must of course be borne by ratepayers. Moreover, I find that the replacement pace of 8 miles per year satisfies the legislative intent, expressed in PUA §4-210(b), of accelerating gas infrastructure improvements in the State. Accordingly, Columbia's Revised STRIDE II Plan, filed as part of the Joint Motion on August 7, 2018, is approved.

OPC had also recommended that the Commission require Columbia to update its cost estimates such that there is a full five years of cost estimates, with those estimates assuming a maximum escalation factor of 2.5 percent. Pursuant to the Settlement, Columbia

⁹³ *In the Matter of the Application of Baltimore Gas and Electric Company for Approval of a New Gas System Strategic Infrastructure Development and Enhancement Plan and Accompanying Cost Recovery Mechanism*, Order No. 88714, *slip op.* (dated May 30, 2018) at 26.

⁹⁴ Tr. at 30.



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agreed to develop its STRIDE budget forecasts using a 3.25 percent escalation rate, with the Parties retaining the ability to request an adjustment based in the context of the Company's Annual Filing. Columbia provided cost estimates for all five years of its Revised STRIDE II Plan. The 3.25 percent escalation factor reflects a reasonable compromise; moreover, the Parties can request an adjustment based on actual costs rendering the compromise eminently reasonable.

Lastly, the Settlement incorporates Staff's recommendation regarding the interest to be applied to over-collections. The revised tariff language reflects that interest is applied to the prior year reconciliation of over-collections at the Company's WACC. As Ms. Garrity noted, this will make Columbia's tariff consistent with other Maryland utilities with STRIDE plans⁹⁵ which, on this point, is certainly desirable. As part of the Settlement, the Parties agreed that Columbia's tariff pages (Attachment C) filed with the Joint Motion, outlining IRIS rates to be effective January 1, 2019, assuming the settlement in Case No. 9480 is approved, should be accepted for filing at this time.

IT IS, THEREFORE, this 28th day of August, in the year Two Thousand Eighteen,

ORDERED: (1) That the Application filed by Columbia Gas of Maryland, Inc. on April 6, 2018 is hereby denied;

(2) That the Joint Motion for Approval of Agreement of Unanimous Stipulation and Settlement is hereby granted, and the Stipulation and Settlement Agreement contained therein, and incorporated herein by reference, is approved without modification;

⁹⁵ Columbia Ex. 5, Garrity Settlement Testimony, p. 3.



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(3) That Columbia Gas of Maryland, Inc.'s Revised STRIDE II Plan, filed on August 7, 2018 as part of the Joint Motion, is approved and Columbia is authorized to proceed at the replacement pace of 8 miles per year in accordance therewith;

(4) That Columbia's tariff pages outlining IRIS rates, filed on August 7, 2018 as part of the Joint Motion, are accepted; once there is a final order of the Commission in this proceeding, Columbia shall file clean tariff pages with an effective date of January 1, 2019;

(5) That there was to be a shortened appeal period in this proceeding, however, pursuant to the terms of the Settlement, the Parties have waived their right to appeal this Proposed Order; and

(6) That this Proposed Order will become a final order of the Commission on September 28, 2018, unless the Commission modifies or reverses the Proposed Order or initiates further proceedings in this matter as provided in Section 3-114(c)(2) of the Public Utilities Article.



Kristin Case Lawrence
Public Utility Law Judge
Public Service Commission of Maryland



**BEFORE THE
PUBLIC SERVICE COMMISSION OF MARYLAND**

IN THE MATTER OF THE APPLICATION OF COLUMBIA GAS OF MARYLAND, INC. FOR AUTHORITY TO ADOPT A NEW INFRASTRUCTURE REPLACEMENT AND IMPROVEMENT PLAN AND ACCOMPANYING COST RECOVERY SURCHARGE MECHANISM))))))))))	Case No. 9479
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**JOINT MOTION FOR APPROVAL OF
AGREEMENT OF UNANIMOUS
STIPULATION AND SETTLEMENT**

Columbia Gas of Maryland, Inc. ("Columbia" or "the Company"), an indirect, wholly-owned subsidiary of NiSource Inc. ("NiSource"); the Staff of the Public Service Commission of Maryland ("Staff"); and the Office of People's Counsel ("OPC"), by their undersigned counsel, hereby respectfully move the Public Service Commission of Maryland (the "Commission") to: (1) approve the Unanimous Stipulation and Settlement set forth in this document ("Stipulation") among all parties to this proceeding, in full settlement of the issues in the above-captioned proceeding; and (2) waive such provisions of the Commission's Rules and Regulations as may be necessary to permit the relief requested herein.

Background

On April 6, 2018, Columbia filed an Application with the Commission, seeking authority to implement a new Infrastructure Replacement and Improvement Plan ("IRIP" or "STRIDE 2 Plan") for the years 2019-2023 and an accompanying Infrastructure Replacement and Improvement Surcharge ("IRIS") to become effective

January 1, 2019. The Company proposes to implement such surcharges as are consistent under Section 4-210 Public Utilities Article, *Maryland Code* ("STRIDE Legislation").

On April 11, 2018, the Commission suspended the Company's Application to consider the justness and reasonableness of Columbia's proposed new STRIDE 2 Plan and IRIS and delegated the matter to the Public Utility Law Judge Division ("PULJ"). A prehearing conference was held on May 3, 2018, before Chief PULJ Terry J. Romine. In an order issued May 3, 2018, Chief PULJ Romine established a procedural schedule for this proceeding. On May 23, 2018 the proceeding was re-assigned to PULJ Kristin Lawrence. In accordance with the established procedural schedule, both Staff and OPC filed direct testimony on June 20, 2018, and the Company, Staff, and OPC all submitted rebuttal testimony on July 9, 2018. Staff and OPC filed surrebuttal testimony on July 17, 2018. During the course of this proceeding, Columbia responded to formal discovery requests submitted by Staff and OPC on various STRIDE issues. Evening hearings were held in Hagerstown on June 27, 2018, and in Cumberland on June 28, 2018, for the purpose of receiving comments from interested members of the public.

The Parties have engaged in settlement discussions with respect to Columbia's Application. As a result of those discussions, the Parties have agreed to the Stipulation and Settlement Agreement set forth below. Columbia's 2019-2023 Revised STRIDE 2 Plan is appended hereto as Attachment A, which includes Columbia's 2019 STRIDE 2 Project Roster labeled as Exhibit 1. Columbia's Revised IRIS rates are appended as Attachment B. Proposed tariff sheets that would implement this Stipulation are appended hereto as Attachment C.

Stipulation and Settlement Agreement

1. The Parties agree as follows:

- a) Columbia's tariff pages (Attachment C) outlining IRIS rates to be effective January 1, 2019 should be accepted for filing at this time.
- b) Columbia agrees that should the underlying allocation factors used to calculate the STRIDE surcharges change between the date the Settlement is approved and January 1, 2019, it will make a tariff filing with the Commission at least 30 days prior to the rate effective period reflecting the re-calculated rates based on the adjusted underlying factors.
- c) Columbia's Revised STRIDE 2 Plan (Attachment A) includes the following provisions:
 - 1) Columbia's replacement pace for the years 2019-2023 will be 8 miles per year, totaling 40 miles by the end of 2023;
 - 2) Columbia will use its currently authorized weighted average cost of capital to apply interest to over collections and revise its applicable tariff pages (Attachment C).
- d) Columbia agrees to develop its STRIDE budget forecasts using a 3.25% escalation rate. Columbia, OPC and Staff shall have the ability to request an adjustment to the escalation rate, in the context of the Company's Annual Filing made on or before November 1 of each year, based on the Company's experience and actual costs incurred.
- e) The Parties agree that Columbia's Revised STRIDE Plan in Case No. 9479 meets the statutory requirements of the STRIDE Legislation and that the rates proposed for Calendar Year 2019 are just and reasonable as to the project list proposed for that period.

2. Competent and Substantial Evidence. The Parties agree to the admission of all testimony, exhibits, any attachments thereto, certificates of publication and affidavits as competent and substantial evidence supporting Commission approval of this Stipulation.

General Provisions

3. This Stipulation is being entered into for the purpose of disposing of the issues that are specifically addressed in this Stipulation. In presenting this Stipulation,

none of the Parties shall be deemed to have approved, accepted, agreed to, consented to, or acquiesced in any ratemaking or procedural principle, including, without limitation, any method of cost or revenue determination or cost allocation or revenue-related methodology or any specific justification for any tariff revision, and none of the Parties shall be prejudiced or bound in any manner by the terms of this Stipulation (whether it is approved or not) in this or any other proceeding, other than a proceeding limited to enforcement of the terms of this Stipulation. Because this Stipulation represents a compromise of divergent positions, it shall not be regarded as precedent in relation to any future Commission proceeding, or in relation to any matter in this proceeding not expressly addressed herein.

4. This Stipulation has resulted from extensive negotiations involving the resolution of disputed claims and the terms hereof are independent and contain the entire agreement of the Parties concerning the issues addressed herein.

5. If the Commission does not approve this Stipulation without modification, then the Stipulation shall be void and no signatory shall be bound by any of the agreements or provisions herein.

6. If the Commission does not unconditionally approve this Stipulation without modification, and notwithstanding its provision that it shall become void, neither this Stipulation, nor any matters associated with its consideration by the Commission, shall be considered or argued to be a waiver of the rights that any signatory has to a decision in this matter. The Parties shall retain all procedural and due process rights as fully as though this Stipulation had not been presented for approval.

7. If the Commission unconditionally accepts the specific terms of this Stipulation without modification, the Parties waive, with respect to the issues resolved

herein, their respective rights to: (1) call, examine, and cross-examine witnesses; (2) present oral argument and/or written briefs to the PULJ; (3) appeal a proposed order of the PULJ to the Commission; (4) seek rehearing of a Commission order; and (5) seek judicial review of a Commission order. These waivers apply only to a Commission order respecting this Stipulation issued in the above-captioned proceeding, and do not apply to any matters raised in any prior or subsequent Commission proceeding, or any matters not explicitly addressed by this Stipulation.


8. This Stipulation does not constitute a contract with the Commission. Acceptance of this Stipulation by the Commission shall not be deemed as constituting an agreement on the part of the Commission to forego the use of any discovery or investigative or other power that the Commission currently has. Nothing in this Stipulation is intended to impinge upon or restrict in any manner the exercise by the Commission of any statutory right, including the right to access information, or any statutory obligation. Moreover, acceptance by the Commission of this Stipulation shall not be deemed, nor shall it constitute in any respect, a determination by the Commission as to the merits of any of the contentions or allegations that were or may have been made by any of the parties to the Stipulation in the absence of settlement.

9. The Parties agree to cooperate in presenting this Stipulation to the Commission for approval and will take no action, direct or indirect, in opposition to the request for approval of this Stipulation. If the Commission has questions for the Parties' witnesses or Parties, the Parties will make available, at any on-the-record session, their witnesses and attorneys on the issues resolved by this Stipulation, so long as all Parties have adequate notice of that session.

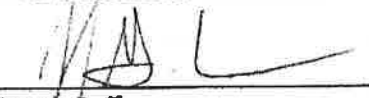
10. This Stipulation may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a "pdf" or other formatted data file, such signature shall be treated as an original and create a valid and binding obligation of the executing party.

WHEREFORE, for the foregoing reasons, the undersigned parties respectfully request that the Public Service Commission of Maryland enter an order granting this request and approving the Stipulation and Settlement Agreement contained herein.


STAFF OF THE PUBLIC SERVICE COMMISSION

By: 
Annette B. Garofalo
Assistant Staff Counsel

OFFICE OF PEOPLE'S COUNSEL

By: 
Joseph G. Cleaver
Assistant People's Counsel

COLUMBIA GAS OF MARYLAND, INC.

By: 
Meagan B. Moore
Counsel, NiSource Corporate Services Co.
Attorney for Columbia Gas of Maryland, Inc.

Columbia Gas of Maryland, Inc.
Infrastructure Replacement and Improvement Plan
(2019-2023)

I. Introduction

Columbia Gas of Maryland, Inc. ("Columbia" or "the Company") submits its second 5-year Infrastructure Replacement and Improvement Plan ("IRIP" or "Plan"), for the years 2019-2023, in compliance with the requirements of § 4-210 of the Public Utilities Article, Annotated Code of Maryland also commonly referred to as the "STRIDE" Statute (hereinafter referred to as "STRIDE Statute" or "§ 4-210"). This Plan is being submitted in order to obtain surcharge recovery under the STRIDE Statute for the Company's investment in eligible infrastructure replacement. The Company's initial five year IRIP, approved in Case No. 9332, will expire at the end of 2018.

II. Background

The Company owns and operates a natural gas distribution system and furnishes natural gas service at retail under its Tariff Gas - P.S.C. Md. No. 12. As of December 31, 2017, Columbia serves approximately 33,000 residential, commercial, and industrial customers in Garrett, Allegany and Washington Counties. Columbia provides that service through 658 miles of mains and services that it owns, operates, and maintains.

These facilities (as of December 31, 2017) are composed of approximately 68.9 miles of bare steel mains, 2.2 miles of cast iron and wrought iron mains, and 3,027 bare steel service lines.¹ The balance of the system is comprised of coated cathodically protected steel, or plastic (polyethylene) mains and services. The cast iron and bare steel facilities, which are susceptible

¹ Footages are derived from Columbia's 2017 DOT Annual Distribution Report.

to corrosion and material failure, comprise approximately 10.9% of Columbia's total distribution mains and 8.7% of services. Most of these early cast iron and bare steel distribution systems currently operate as low pressure systems that require larger piping to serve current market areas due to the capacity limitations inherent in pipe operated at low pressure. These low pressure systems are also susceptible to ground water infiltration that can impact service reliability due to the interruptions of service created by infiltration of water into the distribution main.

III. History

Prior to the 1940s, the primary materials used for distribution pipe were cast iron and wrought iron. Around the 1940s gas companies were primarily installing steel materials, however early steel pipe was not adequately protected against corrosion as required with modern steel installations. In the late 1960s Columbia began installing first generation plastic materials and cathodically protected steel.

Improvements in plastic materials and cathodic protection standards now provide for the construction of a safe and reliable distribution system without the same concerns for deterioration as with these early materials. In addition the newer materials allow for higher operating pressures and increased distribution capacity to better serve existing market areas.

In 2009, Columbia began its infrastructure replacement program by accelerating the replacement rate of bare steel and cast iron mains and services. Between 2009 and 2013 Columbia retired approximately 27% of its total bare steel and cast iron piping along with 22% of its bare steel services. This represents an average replacement rate of 6.8 miles of bare steel/cast iron pipe per year. During that time period, Columbia dedicated approximately \$5 million per year to its infrastructure replacement program, and in some of those years, the Company exceeded that annual spending level as additional capital became available.

Under the first four years of the Company's current 5-year plan, between 2014 and 2017, Columbia has retired approximately 28 miles of bare steel and cast iron piping and replaced approximately 1,083 of its bare steel services. This represents an average replacement rate of 7 miles of bare steel/cast iron pipe per year. Over the past four years, Columbia has spent approximately \$7 million per year on its STRIDE mainline expenditures which exceeded the projected STRIDE expenditures in its approved 2014-2018 5-year Plan by 12%. The Company's total age and condition expenditures between 2014 and 2017, at approximately \$11.5 million per year, also exceed the levels that Columbia had projected for that time frame.²

The Company's proposed 2019-2023 5-year Plan continues to focus on replacing existing bare steel and wrought iron mains, along with associated services and meters that were installed using techniques that would not meet current code requirements if those facilities were installed today. It is noteworthy that, under the current 2014-2018 STRIDE Plan, Columbia is planning to retire all of its remaining cast iron by the end of 2018. Columbia is designing and building a modernized distribution system in accordance with the basic tenets of modern gas distribution system design, which includes improved plastic and protected steel materials capable of higher pressures and allowing for either the same or even increased capacity while using smaller diameter pipe than was previously used with the lower pressure system. Replacement projects are evaluated and prioritized based on a number of safety and reliability concerns which include characteristics such as: age of the pipe, maintenance history, service reliability concerns, proximity to structures, and highway maintenance schedules. The scope of replacement projects can vary in size from short isolated sections of pipe experiencing advanced corrosion to larger projects involving multiple streets. Generally, larger

² Columbia had projected total Age and Condition capital investment of \$8.9 million in 2014, \$5.9 million in 2015, \$7.1 million in 2016, and \$11.3 million in 2017.

projects are more economical due to the efficiencies gained through systematic design and construction.

Columbia attempts to identify the highest risk segments and sections of its distribution piping that are prone to leakage and failure, and to prioritize those replacements under its existing infrastructure replacement program annually. Columbia utilizes Optimain DS®, a comprehensive software solution, to assist engineers in the identification and evaluation of the most efficient plan to accomplish this goal of reducing overall system risk. Optimain DS® utilizes many environmental and pipe condition factors obtained from field reports and the Geographical Information System ("GIS") to assign a risk score to each segment of pipe. These scores are further analyzed by engineers and field level management using local operating knowledge to design the scope of individual replacement projects. Some of the evaluation factors include:

- Pipe Size, Pressure and Pipe Material
- Leak History
- Ground Cover Type (grass, concrete, etc.)
- Service Length/Building Proximity
- Building Use (hospital, etc.)
- Population Density
- Pipe Condition and Depth
- Service Reliability Issues
- Planned Highway Projects
- Planned Municipal Paving Projects

This is consistent with Columbia's Distribution Integrity Management Program Plan ("DIMP Plan") that complies with 49 CFR 192.1007. In Columbia's DIMP Plan, corrosion leakage and material failure issues associated with bare steel and cast iron pipe are considered

top risks along with third party excavation damage. Columbia's current infrastructure replacement program is an accelerated action identified as a component of DIMP and a major effort in reducing safety risks to the distribution system.

In connection with Columbia's bare steel and cast iron main, as of December 31, 2017 the Company has approximately 3,027 bare steel services left to replace that are prone to leakage and material failure, and are individual service lines that were installed prior to current code standards and modern industry standards aimed at protecting facilities and reducing third party damage. Many of these services were installed without cathodic protection, using prone-to-fail materials. They may also lack adequate cover, due to subsequent erosion or excavation activities, and their proximity to structures tends to result more often in emergency leak situations.

Columbia will continue to replace many of these older service lines and their associated meter settings and regulators in conjunction with larger main replacement projects. Service replacement costs are tracked as part of the Company's age and condition investment.

In addition to the service line replacements associated with larger main replacement projects, Columbia also replaces service lines individually primarily due to age and condition when the service is not part of a scheduled main replacement project. This work typically involves a smaller street crew responding to an emergency leak and then installing a new service line from the existing main to the structure, including meter and regulator, in order to quickly re-establish service to the customer. If a subsequent main replacement project involves one of these replaced services it will be reconnected to the new distribution main.

Infrastructure replacement also includes upgrading piping and facilities associated with aging pressure reduction stations that feed the distribution system and are experiencing leakage and other increased maintenance. The Company's existing and current infrastructure replacement program is focused on replacing bare steel and cast iron piping, however it sometimes includes the

replacement of plastic material and coated steel material because some vintage plastic material can be prone to failure and early coating material used on steel piping can become ineffective and it is better to simply replace than recoat. The Company's 2019-2023 Plan proposes to use the same approach.

IV. Eligible Infrastructure under § 4-210

As explained below and in the Company's approved 2014-2018 5-year Plan, infrastructure replacements proposed by the Company for its next 5-year Plan, for years 2019-2023, satisfy all five requirements for designation as "Eligible Infrastructure Replacement" under § 4-210.

First, all replacement and improvement in existing infrastructure made in connection with Eligible Infrastructure Replacement subject to cost recovery under Columbia's IRIP will be made on or after January 1, 2019, which is after the June 1, 2013 effective date of the statute.

Second, all Eligible Infrastructure Replacement is designed to improve public safety and infrastructure reliability. As explained above, all Eligible Infrastructure Replacement will be installed as a replacement of bare steel, wrought iron, and cast iron mains and services, associated meter settings and regulators, individual service lines, piping and facilities associated with aging pressure reduction stations, plastic material, or coated steel material. In every case, these facilities to be replaced are older and less reliable than the new materials and facilities that will replace them. Moreover, the facilities to be replaced are nearing, or have already reached, the end of their useful life and are typically experiencing increased leakage due to continuing corrosion. These older facilities were installed prior to modern corrosion control methods and it is impractical to adequately protect them from future corrosion leaks. Additionally these older facilities are prone to material failure associated with early pipe joining methods and connection materials that are experiencing an increased rate of failure. Older facilities are also more susceptible to leakage from damage by third party excavators, because such facilities are much more difficult to locate and work around due to their age and condition. Installed by hand in the early 1900s, many of these older facilities

were installed at shallower depths than modern code requirements and installed with the contour of original roads that existed at the time—many of which have since expanded. Excavation activity near these older, shallow facilities raises the risk of damage from third party excavation activity. Columbia makes every effort to replace these aging facilities in coordination with road improvement projects.

Third, none of the Eligible Infrastructure Replacement will increase Columbia's revenues by connecting an improvement directly to new customers. Columbia is focused on replacing existing facilities serving existing gas customers within established neighborhoods. Only existing service lines, meters and regulators, directly connected to the main line being replaced for age and condition will be replaced as part of the IRIP. Any new customer that requests service off this replaced infrastructure will be treated as a new customer and costs will be recorded in a separate account for new business which is not part of this IRIP.

Fourth, because all Eligible Infrastructure Replacement is new and is comprised of the latest technology and materials, it will reduce, or has the potential to reduce, greenhouse gas emissions through a reduction in natural gas system leaks. As mentioned earlier, older bare steel and cast iron facilities cannot be adequately protected against continuing corrosion and will experience increased leakage over time if not replaced with modern construction materials. Additionally some early materials are prone to leakage due to component failure and early construction methods make facilities more prone to leakage and to third party excavation damage.

In regard to the reduction of greenhouse gas emissions that can be reasonably expected to result from the broad scale replacement of cast iron and bare steel infrastructure, Columbia has performed an analysis to show the projected change in methane (CH₄), carbon dioxide (CO₂) and carbon dioxide equivalent (CO₂e) gases over the next 5-year Plan.

STRIDE PLAN 2019-2023

All Values in Miles	Removed Pipe	Replacement Pipe
Wrought Iron Main	0.5	
Unprotected Steel Main	39.5	
Protected Steel Main		1
Plastic Main		39

EPA Emission Factors (40 CFR Part 98 Subpart W)		
Mains	(metric tons CO ₂ e/mile-yr)	(scf/hr-mile)
Cast/Wrought Iron	114.72	27.25
Unprotected Steel	52.96	12.58
Protected Steel	1.47	0.35
Plastic	4.76	1.13

All Values in Metric Tons of CO ₂ e Per Year	Emission Reductions
Wrought Iron Main Removed	57.4
Unprotected Steel Main Removed	2,091.9
Protected Steel Main	(1.5)
Plastic Main	(185.5)
Net Emission Reductions	1,962.3

The results of Columbia's analysis, the details of which are shown above, indicate that an average approximate reduction over the next 5 years is a decrease of 21.88 metric tons per year of CH₄, a decrease of 0.66 metric tons per year of CO₂ and a decrease of 547.50 CO₂e metric tons per year can potentially result from the replacement of the Company's cast iron and bare steel mains and services.

Fifth, no Eligible Infrastructure Replacement investment proposed to be recovered in this Plan is included in Columbia's current rate base.

Consistent with the statutory criteria outlined above, all of Columbia's Age and Condition investments are replacement and improvement projects made as a direct result of reducing risk associated with leaking facilities and improving system reliability and consistent with the statutory criteria outlined above are Eligible Infrastructure Replacement. Columbia's Age and Condition investment funds the replacement (planned or emergency) of any facilities due to damage or physical deterioration in situations where repair is not feasible. The Age and Condition investment encompasses the replacement of existing mains, services, regulators, meters, and station settings that are being replaced due to age and condition reasons mentioned above.

In addition to the Company's Age and Condition investments, the Company makes other investments that satisfy the requirements for designation as "Eligible Infrastructure Replacement" under the STRIDE Statute. For instance, the Company may be required to relocate its facilities

due to grading done by highway contractors or developers in connection with their construction activities which have rendered the Company's facilities too shallow. In such situations, the facilities are more prone to damage and leakage due to the limited amount of cover, so they must be relocated. Capital expenditures incurred to relocate those facilities are designed to ensure continued public safety and infrastructure reliability by relocating the facilities to a site that will not be exposed to the danger of third party damages and the resultant leakage. In these situations, the relocation is neither related to new business investment nor will it connect improvements directly to new customers. Consequently, while such improvements meet the criteria for "Eligible Infrastructure" they are not contained within the Company's "Age and Condition" budget but instead are classified as "Betterment" investment.

Due to the more modest nature of the Company's investments in Betterment capital projects when compared to the Company's robust Age and Condition capital program and the fact that the Company's Age and Condition capital program projects cause the Company to hit the cap contained within § 4-210, the Betterment capital investment is not addressed by this Plan. Nevertheless the Company reserves the right to amend its IRIP to add Betterment projects which meet the Eligible Infrastructure Replacement definition if conditions change.

On an ongoing basis, the Company has an 18- to 24- month roster of engineered, specifically identified projects. The distribution system is reassessed and projects are reprioritized each year based on the most current data available. As such, the list of projects is a dynamic roster subject to modification based on emerging conditions. It is also supplemented throughout the calendar year to reflect the continued assessment of system conditions. Additionally, non-repairable leakage and active and atmospheric corrosion continue to drive replacement of segments of pipe that qualify as Eligible Infrastructure Replacement pursuant to § 4-210(A)(3), and by their nature can become a higher priority and may take precedence over previously scheduled work. And last, mandatory replacements, not always known in a planning

environment, will have an ultimate impact on actual Eligible Infrastructure Replacement in a given year.

As the Company proposed in its 2014-2018 5-year Plan, the Company proposes that for purposes of its second IRIP and Infrastructure Replacement and Improvement Surcharge ("IRIS" or "Surcharge"), it again be permitted to rely on its annual Age and Condition budget and infrastructure to be replaced thereunder as the accounting measure for costs of "Projects" for its infrastructure replacement and improvement surcharge described below.

V. Cost Recovery under § 4-210

Section 4-210(d)(1)(II) provides for a "fixed annual surcharge on customer bills to recover reasonable and prudent costs of proposed eligible infrastructure replacement projects." Section 4-210(d)(3)(I) enumerates the estimated costs components as 1.) the pretax rate of return on the Company's investment in the project; 2.) depreciation associated with the project, based on new assets less retired plant; and 3.) property taxes associated with the project, based on new assets less retired plant. Section 4-210(d)(3)(II) further provides that "estimated project costs ...are collectible at the same time the eligible infrastructure replacement is made." Accordingly, Columbia is continuing to propose that the fixed annual surcharge for each year of the plan provide for the recovery of the cost elements set forth in § 4-210(d)(3)(I) for the projected investment to be placed into service that year of the Plan and continued recovery of those elements for investment placed into service in prior years of the Plan.

Columbia proposes to reset its IRIS on an annual 12-month calendar year basis. The Company will continue to file an Annual Report to the Commission on or by November 1 that will recalculate the Surcharge to be effective the following January 1 based on 9-months of actual data, January through September of the current year. The recalculation will add to the IRIS the recovery of estimated costs of eligible investment projected to be placed in service for the upcoming calendar year. The recalculation of the IRIS, which will be filed with the Commission on or by

March 15 of the next year, will include a reconciliation of any difference between the actual cost of the current year's plan for the nineteen months and the actual amounts recovered under the Surcharge during the period ended December 31, subject to the statutory cap. Subsequent annual recalculations of the IRIS will include reconciliations that will match calendar year costs of the Plan with calendar year recovery. This is the same approach that is currently being used, and was approved, in the Company's initial 5-year Plan.

In the event that the calculated IRIS exceeds the statutory limitations, the residential fixed annual Surcharge will be capped at \$2.00 per month and the non-residential Surcharges by class will be capped at the corresponding percentage limitation described in §4-210(d)(4). Subsequent annual filings that reconcile the differences between actual costs and actual recoveries may decrease the IRIS if appropriate, but will not seek to increase the Surcharge beyond the capped amounts. Once the IRIS has been reset to zero through the implementation of new base rates, estimated costs of additional eligible infrastructure investments will be subject to recovery through a new IRIS.

Based upon the proposals set forth herein and, consistent with the Commission's approval of the Company's 2014-2018 5-year Plan, the Company has calculated and requests approval for a fixed annual Surcharge for each of four customer classifications to be effective January 1, 2019. The details of the calculations of each of the IRISs are contained in Columbia witness Shikany's testimony, which is submitted with this Plan. Revised Attachment B summarizes the calculation of the estimated cost of the 2019 project list and sets forth the surcharges. The IRIS to be applied to residential customers is \$3.85 per month, or \$2.00 per monthly bill. The three non-residential surcharges have been calculated and will apply as follows: \$13.37 per non-residential customer with annual usage less than 20,920 therms or \$6.95 per monthly bill, \$121.05 per non-residential customer with annual usage equal to or greater than 20,920 therms but not in excess of 523,000 therms or \$62.92 per monthly bill and \$1,318.63 per non-residential customer with annual usage in

excess of 523,000 therms, or \$685.40 per monthly bill. These non-residential customer classes correspond to the delineation assigned to "low", "medium" and high" commercial and industrial customer usage, reflected as sub-classifications in Columbia's Commission approved and currently effective Tariff.

The components of the estimated project costs have been calculated in accordance with the requirements of § 4-210(d)(3). The pre-tax return is based upon the capital structure and ROE of 9.7% approved by the Commission at Case No. 9447, Columbia's most recent base rate proceeding. The surcharges have been calculated in accordance with traditional ratemaking methodology, include the use of a thirteen month average rate base and recognition of Accumulated Deferred Income Taxes.

VI. Timeline for the completion of each project

Consistent with its approved 2014-2018 IRIP, Columbia uses, and proposes to continue to use, a systematic approach to determine the property to be replaced based on the age, condition, geographical proximity, leak history, and capacity needs of the area. The specific projects are then engineered for each calendar year beginning in the fourth quarter of the preceding year in accordance with expected capital budgets. This systematic approach ensures that the Company's capital dollars are being optimally invested by replacing the pipe with the highest risk. The fact that the process is conducted annually ensures that any segments of pipe whose risk profile has changed from the previous analysis are addressed appropriately such that the greatest amount of risk is reduced. Revised Exhibit 1 includes the list of projects that were engineered and expected to be put into service for 2019. The totals are reflective of major projects and are a subset, rather than a total, of the Age and Condition investment to be completed. It is critical to note that the list of projects is a dynamic roster subject to modification based on emerging conditions. It is supplemented throughout the calendar year to reflect the continued assessment of system conditions. Additionally, non-repairable leakage and active

and atmospheric corrosion continue to drive replacement of pipe segments that qualify as Eligible Infrastructure under § 4-201(a)(3) and, by their nature, can become a higher priority and may take precedence over previously scheduled work. The Company's final proposed project list for 2019 will be included in the annual report which will be submitted to the Commission on or by November 1, 2018.

VII. Estimated Project Costs & Replacement

In the Company's proposed 2019-2023 5-year Plan, Columbia will continue to replace eligible distribution system infrastructure. The Company proposes to accelerate its replacement of priority pipe by increasing the projected 5-year replacement over the years 2019-2023 to 40 miles or 8 miles per year, as compared to the 7.5 mile yearly average approved under Columbia's 2014-2018 IRIP. This represents a 5.8% increase over Columbia's current 5-year Plan. The table below sets the five-year estimates of the Company's Age and Condition investment.

	2019	2020	2021	2022	2023
	Projected	Projected	Projected	Projected	Projected
Projected Age & Condition Spend (\$000)	15,861	16,376	16,908	17,458	18,025

This table demonstrates an increase over Columbia's approved 2014-2018 IRIP, under which the highest annual projection for Age and Condition capital investment was \$14.1 million.

The age and condition estimates are based, among other things, upon current capital markets, current economic conditions and Columbia's projected revenues given its current rate structure.

Cost-Effectiveness

As stated previously, Columbia supports a systematic rather than a segmented approach to designing replacement projects whenever possible. Efficiencies are maximized and costs are better controlled by addressing larger segments of the system. Further, the

systematic approach concentrates more of the work allowing Columbia to more effectively manage contractor and material costs. A long term and steady infrastructure replacement and improvement program allows Columbia to secure contract labor and construction materials by competitive bidding, and to continue to secure long-term, lower unit cost contracts with various utility installation contractors. By identifying larger segments of the system that require attention (through leak rates and pipe condition reports), Columbia can focus resources and complete full segment replacements and tie-ins in a systematic fashion, thus reducing the overall quantity of bare steel in the system as quickly and efficiently as possible, with minimal disruption to the customers and municipalities that Columbia serves.

Columbia also takes advantage of replacing aging infrastructure by coordinating replacement projects with state and municipal road improvement projects. Effectively coordinating replacements with other projects can result in reduced restoration, traffic control, and permitting costs. This has been an effective approach in offsetting the higher permit fees and extensive restoration requirements being adopted by some municipalities. However not all project schedules can be aligned and the burden of increased permit fees and extensive restoration requirements can create a burden on all customers through rising construction costs.

For replacement mains and services, Columbia primarily installs modern plastic piping material except in situations where larger pipe installations or higher pressures require the use of cathodically protected steel material. Plastic material is not susceptible to corrosion and does not require additional cathodic protection and on-going maintenance of the cathodic protection system. Plastic material is also easier to handle and install resulting in lower unit cost construction and the material itself is much more cost effective.

Columbia continues to improve pipe installation practices to protect its facilities from third party excavation damages. Facilities are installed with improved locate wire and "marking

balls" that allow for more accurate pipe locating performance. In addition, facilities are installed with adequate separation from other utilities and in conjunction with industry best practices including improved record keeping for improved locate accuracy.

VIII. Description of Customer Benefit

Columbia is replacing 19th and early 20th century designs of its system with a more integrated, 21st century system design. This integrated, higher pressure (standard 60 psig design) system enables Columbia to substantially reduce the current need for pressure regulators that are presently located throughout its system, thereby making the system safer, more reliable and easier to operate. A distribution system operating at these higher pressures also enables Columbia to install new safety devices in areas to be upgraded. As part of the upgrade, Columbia is installing excess flow valves on nearly all services connected to the replacement mains that operate at over 10 pounds of pressure. (The exception would be for those commercial and industrial customers whose consumption is over 5,000 cubic feet per hour.) These excess flow valves will shut off gas to a residence or business in the event of a large pressure differential which is typically indicative of a major gas leak or a service damaged by excavation. Over time, this will produce a system which is much less vulnerable to safety risks from third-party damage.

Given the acceleration of corrosion-related leaks, over the near term Columbia's program will only slow or possibly halt the growth in main corrosion leak repair-related O&M expenses. As a result of this phenomenon, Columbia is unlikely to see a reduction in O&M leak repair costs for a number of years. Based on Columbia's DIMP driven initiatives to further reduce the back-log of Type-2 leaks, in the short and medium term, O&M spending on leak repairs is planned to increase or stay flat. That said, in the longer term, as the percentage of bare steel and cast iron pipe is materially diminished, Columbia would expect to see a reduction in such expenses. Columbia is removing deteriorating portions of its system and

enhancing the safety of its system by ensuring replacement of facilities with new, longer lasting and safer materials. Its system will continue to be able to provide deliverability at its Maximum Allowable Operating Pressure ("MAOP"). The public will receive better service, with fewer interruptions. Columbia's customers will continue to receive tangible benefits with the continuation of the Company's STRIDE Plan.

In the most recent construction season (2017), Columbia estimates that it paved 2 miles of streets and roads in Maryland and installed almost 12,400 feet of sidewalks associated with its existing capital replacement program. Columbia's program employed 12 contractor crews consisting of 48-60 contractor employees. Since 2007, Columbia has reduced the amount of bare steel and cast iron on its system from 21.7% to 10.8%. Columbia has also reduced the number of accounts without excess flow valve safety devices (EFVs). Approximately 30% more EFVs have been installed since 2014 (the estimated number of services with EFVs in the system at the end of the year in 2014 was 10,023 compared to 13,045 as of December 31, 2017). And, through its efforts, Columbia has reduced the portions of its system classified as low pressure by 10.34% (from 43.8% in 2007 and 33.46% as of December 31, 2017). None of these benefits would have happened if not for Columbia's investment in replacing its infrastructure, and these benefits will increase through approval of Columbia's next 5-year Plan.

Columbia is removing deteriorating portions of its system and enhancing the safety of its system by ensuring replacement of facilities with new, longer lasting and safer materials. Its system will continue to be able to provide deliverability at its maximum MAOP. Columbia is confident that approval of its next 5-year plan will continue to provide the public with better service with fewer interruptions.

IX. Workforce Availability

Essentially the majority of all Columbia's infrastructure replacement work is carried out by contractors, at the direction and under the supervision of Columbia employees. This provides the most cost effective means to accomplish the replacement program.

Early in 2011, Columbia's affiliated service entity, NiSource Corporate Services Company, began discussions around the impact of the escalating capital replacement program on the supply of construction contractors for Columbia and the other five NiSource Gas Distribution Companies (NGDs) providing gas distribution service in six different states. As the program had grown in the prior few years and with a forecasted significant growth in the future years, a risk to successful execution was having sufficient quality contractor crews.

Subsequently a decision was made to proceed with a Contractor Acquisition Strategy to build longer term relationships with current blanket contractors. The objective was to establish review contracts that include language enabling Columbia to become the "preferred customer" of these contractors and entice the contractors to grow their businesses to support the replacement programs in each of the six states where NiSource provides distribution service. A specific goal of this initiative was to position the NGDs to have access to sufficient qualified and experienced contract resources at a reasonable cost.

Columbia continually evaluates the availability of pipeline contractors and closely monitors the performance of pipeline contractors selected to perform work for Columbia. Key performance indicators (KPIs) are used to evaluate contractors in a number of areas including safety performance. These efforts enhance Columbia's ability to continue to execute efficiently on its large scale capital program by providing certainty, clarity and flexibility in the relationship between Columbia and its pipeline contractors. The strategy establishes a long term, cost effective means of replacing Columbia's cast iron and bare steel pipe. The economies of scale produced by joining forces with its affiliates to negotiate contracts, allows Columbia to negotiate rates that would be difficult to obtain on its own.

Supplier Diversity

Columbia recently filed its 2017 Annual Supplier Diversity Report with the Commission on March 30, 2018 (Maillog No. 219731). In that report, Columbia describes its commitments across the board with respect to enhancing the diversity of all of its vendors and suppliers. Columbia has a continued focus on the integration of supplier diversity within its procurement process. Since 2014, Columbia has experienced a significant amount of growth. In 2014, Columbia had a diverse spend of 2.81%. Years 2015, 2016 and 2017, the Company continued to achieved an increase to its diverse spend of 8%, 12% and 14.85%, respectively. The growth of the program can be attributed to a continued focus on identification of new and existing procurement opportunities as well as our collaboration throughout our supply chain and with our business partners. Supplier diversity enhances the company's ability to meet our commitments to our customers and the communities in which we serve, including the commitment to delivering service integrity, while also providing valuable opportunities to diverse companies that reflect our communities. Columbia also encourages all of its prime contractors to expand opportunities for diverse suppliers in their supplier networks.

Operator Qualification

The NGDs maintain a written Operator Qualification Plan applicable to all Company employees, contractors and mutual aid individuals who perform covered tasks on behalf of Columbia. The plan encompasses all aspects of ensuring that the Company has a qualified workforce and that its operations comply with relevant Federal Pipeline Safety Regulations.

Additionally, all capital projects are subject to inspection by Columbia Gas of Maryland employees.

X. Annual Review

The Company will continue to undergo a detailed audit for each program year by an independent contractor to evaluate performance and to ensure that costs spent under the

proposed Plan are both reasonable and prudent. The costs of these audits will continue to be a regulatory asset recoverable in a base rate case. Additionally, the Audit Report will continue to be filed by April 30 following each program year.

XI. Conclusion

Columbia's proposed 2019-2023 Plan demonstrates the Company's continued commitment to replacing its aging infrastructure at an accelerated rate, a commitment which pre-dates the enactment of § 4-201. The Company's Plan commits to replacing 40 miles of priority pipe over the next 5 years, a 5.8% increase over its 2014-2018 IRIP commitment.

As described above, Columbia uses a systematic approach to determine the property to be replaced based on age, condition, geographical proximity, leak history, and capacity needs of the area. The specific projects identified are then engineered for a calendar year beginning in the fourth quarter of the preceding year in accordance with expected capital budgets. This systematic process ensures that the Company's capital dollars are being optimally invested by replacing the pipe with the highest risk. The fact that this process is conducted annually ensures that any segment of pipe whose risk profile has changed from the previous analysis are addressed appropriately.

Columbia's replacement program to date has yielded tangible benefits to its customers. Columbia is confident that its proposed 2019-2023 plan will continue to deliver and enhance distribution system reliability in a cost-effective manner.

Columbia Gas of Maryland, Inc.

2019 IRIS Eligible Main Replacement and Abandonment Project Roster

Legend: P - Plastic

PMMP - Plastic (Medium Density Polyethylene) Medium Pressure

PMLP - Plastic (Medium Density Polyethylene) Low Pressure

PHHP - Plastic (High Density Polyethylene) High Pressure

Project Location	Project Description	Project Cost Estimate	Projected CI/BS Footage Abandoned	2019 Projected Start	2019 Projected Completion	Optimain Score
Hagerstown:						
Northern Avenue Phase 2	Install 5200' - 6', 4", & 2" PMMP Justification: This project was identified for replacement using risk analysis software. The project includes replacing medium pressure bare steel pipe with medium pressure plastic pipe on Northern Avenue between US Highway 11 and Oak Hill Avenue in Hagerstown, Md.	\$1,032,500	4,176	NA	NA	407

Westside Avenue	Install 1200' - 4" PMLP Justification: This project was identified for replacement using risk analysis software. The project includes replacing low pressure bare steel, and wrought iron pipe with low pressure plastic pipe on Westside Avenue between Franklin Street and Salem Avenue in Hagerstown, Md.	\$297,837	1,095	NA	NA	167
Mont Valla Avenue	Install 2050' - 4", & 2" PMMP & Retest 2,445' P (in multiple sections) Justification: This section of main was identified for replacement using risk analysis software. The project includes replacing low pressure wrought iron pipe with medium pressure plastic pipe. This project is located on Mont Valla Avenue between Washington Street south to its dead end in Hagerstown, Md. Sections of existing plastic main within the scope of this project are planned to be retested in order to infiltrate new medium pressure pipe.	\$407,043	2,034	NA	NA	357

Snyder Avenue	Install 1875' - 4", & 2" PMMP & Uprate 4,382' P Justification: This project was identified for replacement using risk analysis software. The project includes replacing medium pressure bare steel pipe with medium pressure plastic pipe on Snyder Avenue, Noland Drive, and Sherman Avenue, located in Hagerstown, Md. As a part of this project, an uprate is proposed that will allow CMD to abandon one of its District Regulator Stations.	\$428,140	1,849	NA	NA	244
Rockwillow Avenue	Install 3,640' - 4", & 2" PMMP & Retest 739' P (in multiple sections) Justification: This project was identified for replacement using risk analysis software. The project includes replacing low pressure bare steel pipe with medium pressure plastic pipe. This project is located on Rockwillow Avenue, Church Street and Key Ave, located in Hagerstown, Md. Sections of existing plastic main within the scope of this project are planned to be retested in order to infiltrate new medium pressure pipe.	\$722,750	1,423	NA	NA	232

Cumberland:						
Maryland Street Phase 1	Install 5,700' – 4", & 2" PMMP & Retest 1157' P (in multiple sections) Justification: This project was identified for replacement using risk analysis software. The project includes replacing low pressure bare steel pipe with medium pressure plastic pipe on Maryland Street, Helen Street, Braddock Street, Ort Drive, and Old Cash Valley Road located in Cumberland, Md. Sections of existing plastic main within the scope of this project are planned to be retested in order to infiltrate new medium pressure pipe.	\$1,273,251	4,349	NA	NA	124
Frederick Street Phase 3	Install 8,250' – 4", & 2" PMMP & Retest 5,783' P (in multiple sections) Justification: This project was identified for replacement using risk analysis software. The project includes replacing low pressure bare steel pipe with medium pressure plastic pipe on Frederick Street and Bedford Street, along with multiple side streets. This project is located in Cumberland, Md. Sections of existing plastic main within the scope of this project are planned to be retested in order to infiltrate new medium pressure pipe. This low pressure to medium pressure replacement will allow CMD to abandon one of its District Regulator Stations.	\$1,433,338	7,367	NA	NA	429

Walnut Street, Cumberland	Install 750' - 4" PMLP Justification: This project was identified for replacement using risk analysis software. The project includes replacing low pressure bare steel pipe with low pressure plastic pipe on Walnut Street between Valley Street and Independence Street along with B-14 Alley, in Cumberland, Md.	\$148,918	710	NA	NA	108
Allegany Street	Install 4,100 - 4", & 2" PMMP, PMLP Justification: This project was identified for replacement using risk analysis software. The project includes replacing some low pressure bare steel pipe with medium pressure plastic pipe. It also entails replacing some low pressure bare steel pipe with low pressure plastic pipe in order to maintain the system's integrity that is supplied by the Essex Place Regulator (R-2285). The sections planned for replacement are on Allegany Street, Chase Street, Millman Street, Fayette Street, Cumberland Street, along with a few side streets, located in Cumberland, Md.	\$814,087	3,273	NA	NA	506
Ridgewood Avenue	Install 2850' - 4" & 2" PMMP & Retest 529' P (in multiple sections) Justification: The project was identified for replacement using risk analysis software. The project includes replacing low pressure bare	\$509,300	2,869	NA	NA	401

	steel pipe with medium pressure plastic pipe on Ridgewood Avenue, Warwick Avenue, Brookfield Avenue, and Kent Avenue. This project is located in Cumberland, Md. Sections of existing plastic main within the scope of this project are planned to be retested in order to infiltrate new medium pressure pipe.					
LaVale Court	Install 2,950' - 8", 6", & 4" PMLP Justification: This project was identified for replacement using risk analysis software. The project includes replacing low pressure bare steel pipe with low pressure plastic pipe in order to maintain the systems integrity that is supplied by the Eleanor Street Regulator (R-3724). The sections planned for replacement are on LaVale Court, Weires Drive, and Roselawn Avenue located in Cumberland, Md.	\$468,596	2,464	NA	NA	189
Primrose Street	Install 6400' - 4", & 2" PMMP & Retest 2048' P (in multiple sections) Justification: This project was identified for replacement using risk analysis software. The project includes replacing low pressure bare steel pipe with medium pressure plastic pipe. The sections planned for replacement are located on Primrose Street, US Highway 220, Kite Avenue and multiple side streets, located in Cumberland, Md. Sections of existing plastic main within the scope of this project are planned to be retested in order to infiltrate new medium pressure pipe.	\$1,143,692	4,373	NA	NA	827

Third Street	Install 775' - 6" PMMP Justification: This project was identified for replacement using risk analysis software. Approximately 256' of main on Third Street was included on our Active Corrosion Log 7/17/18. The project includes replacing medium pressure bare steel pipe with medium pressure plastic pipe on Third Street, Memorial Drive and Hawkinson Alley, located in the Town of Oakland, Md.	\$169,270	524	NA	NA	90
Paradise Avenue	Install 4,200' - 4", & 2" PMMP & Uprate 5,974' P Justification: This project was identified for replacement using risk analysis software. The project includes replacing low pressure bare steel pipe with medium pressure plastic pipe on Paradise Avenue, Lanacoring Street, Foley's Alley, & Omara Avenue, located in Midland, Md. An uprate is proposed that will allow CMD to infiltrate new medium pressure pipe. This low pressure to medium pressure replacement will allow CMD to abandon one of its District Regulator Stations.	\$750,548	3,382	NA	NA	246

Cedarwood Drive	Install 1,300' - 4", & 2" PMMP Justification: This project was identified for replacement using risk analysis software. The project includes replacing medium pressure bare steel pipe with medium pressure plastic pipe on Cedarwood Drive between US Highway 220 and Wyoming Avenue in Cresaptown, Md.	\$193,594	897	NA	NA	483
Tenants Lane	Install 2,868' - 4", & 2" PMMP Justification: This project was identified for replacement using risk analysis software. The project includes replacing low pressure bare steel pipe with medium pressure plastic pipe on Tennants Lane, Standish Street, and Bealls Lane, located in Frostburg, Md.	\$626,410	2,222	NA	NA	197
Total		\$10,419,275	43,007	NA	NA	NA

**Columbia Gas of Maryland
2019 IRIS Revenue Requirement and Rates
March 30, 2018 Filing**

Calculation of the 2019 IRIS Rates effective January 1, 2019

Line No.	Customer Class	Base Revenue Case No. 9480 3/1/18 (1)	IRIS Allocation Factor by Class (2)	2019 IRIS Revenue Requirement (3) = Col 2 * (Att. B-2, Sch. 1, Col. 4, Ln. 12)	Annual Customer Count Case No. 9480 2/1/18 (4)	Monthly Rate (5 = 3 / 4)	Cap of 2019 IRIS Monthly Rate (6)
1	RS	\$ 19,108,964	57.09%	\$ 1,568,583	356,268	\$ 3.84	\$ 2.00
2	C & I - Low	\$ 8,951,195	24.9%	\$ 598,260	43,686	\$ 13.71	\$ 7.14
3	C & I - Medium	\$ 3,627,645	10.8%	\$ 259,894	22,120	\$ 12.25	\$ 63.83
4	C & I - High	\$ 2,417,748	7.2%	\$ 134,263	133	\$ 1,302.73	\$ 678.24
5	Total	\$ 33,505,752	100.0%	\$ 2,399,760	402,157		

1. Reflects Base Revenue as approved in the settlement of Case No. 9480.

2. Total annual estimated customer counts per Case No. 9480 Exhibit 2-B-Supplemental.

Note: Totals may not sum due to rounding.

**Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2019 Investments - 12 months Projected**

Line No.	Description	2017 Investments in 2019 Net of Case No. 9480	2018 Investments in 2019 Net of Case No. 9480	2019 Investments (Schedule 2C)	2019 Calendar Year IRIS Net of Case No. 9480 (4 = 1 + 2 + 3)	Reference
		(Schedule 2A) (1)	(Schedule 2B) (2)	(3)	Revenue Requirement (4 = 1 + 2 + 3)	
1	13-month average - Plant	0	13,391,841	5,710,434	19,102,275	Schedule 2A, 2B and 2C, Column 5, Line 15
2	13-month average - Accumulated Depreciation	0	2,385,777	1,194,898	3,580,675	Schedule 2A, 2B and 2C, Column 11, Line 15
3	13-month average - Accumulated Deferred Income Tax	0	(1,992,336)	(621,933)	(2,614,269)	Schedule 2A, 2B and 2C, Column 12, Line 15
4	Rate Base	0	13,745,282	6,283,378	20,028,660	Sum (Line 1 : Line 3)
5	Allowed Rate of Return	7.3830000%	7.3830000%	7.3830000%	7.3830000%	Att B-4, Schedule 1, Column 3, Line 4
6	Allowed Return, Pre Conversion Factor	0	1,014,962	463,902	1,478,864	Line 4 * Line 5
7	Conversion Factor	1.421385	1.421385	1.421385	1.421385	Att B-4, Schedule 1, Column 3, Line 14
8	Allowed Return, Post Conversion Factor	0	1,442,852	659,383	2,102,235	Line 6 * Line 7
9	Depreciation	0	2,616,855	123,852	2,740,707	Att B-5, Schedule 1, Line 13
10	Property taxes	0	92,884	0	92,884	Att B-5, Schedule 1, Line 14
11	Interest Synchronization	0	(125,992)	(56,673)	(180,665)	Att B-5, Schedule 1, Line 8
12	Total IRIS To be Recovered	0	1,673,198	726,562	2,399,760	Sum (Line 8 : Line 11)

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
RIS Reserve Requirement - March 30, 2018 Filing
2017 Net Investment Activity in 2019 (Not Included in Base Rates in Calendar Year 2019)

Line No.	Description (1)	Beginning Balance (2)	Additions (3)	Retirements (4)	Balance with Rate Cap (5 = 2+3-4)	Beginning Balance (6)	Not Used (7)	Depreciation Accrual (8)	Cost of Removal (9)	Retirements (10 = -col 4)	Ending Balance (11 = 6+9-10)	Deferred Income Tax (12)	Net Rate Base (13 = 5+11+12)	Property Tax (14)
1	December 31, 2018		0	0					0	0	0			0
2	January 31, 2019		0	0					0	0	0			0
3	February 28, 2019		0	0					0	0	0			0
4	March 31, 2019		0	0					0	0	0			0
5	April 30, 2019		0	0					0	0	0			0
6	May 31, 2019		0	0					0	0	0			0
7	June 30, 2019		0	0					0	0	0			0
8	July 31, 2019		0	0					0	0	0			0
9	August 31, 2019		0	0					0	0	0			0
10	September 30, 2019		0	0					0	0	0			0
11	October 31, 2019		0	0					0	0	0			0
12	November 30, 2019		0	0					0	0	0			0
13	December 31, 2019		0	0					0	0	0			0
14	Total Calendar December 31, 2019		0	0					0	0	0			0
15	13-month average/Normalized ADIT as of December 31, 2019													

NOTE: 12/31/2018 Plant Ending Balance is the 12/31/2017 Plant Ending Balance from Attachment B-3, Schedule 1.

Monthly Depreciation Accrual is calculated using a half-year convention, for each gas plant account (GPA) as (Plant beginning balance + Plant ending balance)/2 x GPA depreciation accrual rate with 1/12th allocated to each month of the calendar year.

The 12/31/2018 Reserve Ending Balance is the 12/31/2017 Reserve Ending Balance from Attachment B-3, Schedule 1 minus the annual depreciation accrual (line 25).

ADIT is calculated per Reg. Sec. 1.167, normalized at 12/31/2019 on Attachment B-6, Schedule 2, Line 27.

Property Tax calculated using 12/31/17 Net Plant (Plant and Reserve for Accum Depreciation from Attachment B-3, Schedule 1) times the property tax rate detailed in Attachment B-4, Schedule 1, Line 21 divided by 12 months for the monthly expense.

Note: Totals may not sum due to rounding.

Line No.	Description	Gas Plant Account (1)	NOTE 6				NOTE 7				Reserve for Depreciation & Amortization			
			Jan. 2019 Plant Balance (2)	Additions (3)	Retirements (4)	Dec. 2019 Plant Balance (5 = 2+3-4)	Jan. 2019 Reserve Beginning Balance (6)	Depreciation Accrual (7)	Depreciation Accrual (8)	Cost of Removal (9)	Retirements (10 = -col 4)	Dec. 2019 Reserve Ending Balance (11 = 6+9-10)		
16	TRANSMISSION AND DISTRIBUTION PLANT		0	0	0	0	0	1.57%	0	0	0	0		
17	Regulator Structures	375.40	0	0	0	0	0	1.46%	0	0	0	0		
18	Mains	376.00	0	0	0	0	0	2.63%	0	0	0	0		
19	Res. & Cons. MGR Equipment	378.20	0	0	0	0	0	3.48%	0	0	0	0		
20	Services	380.00	0	0	0	0	0	1.48%	0	0	0	0		
21	Meters	381.00	0	0	0	0	0	1.54%	0	0	0	0		
22	Meter Installations	382.00	0	0	0	0	0	1.82%	0	0	0	0		
23	House Regulators	383.00	0	0	0	0	0	2.96%	0	0	0	0		
24	Industrial MGR Equipment	385.00	0	0	0	0	0		0	0	0	0		
25	Total 2019		0	0	0	0	0		0	0	0	0		

NOTE: 12/31/2018 Plant Ending Balance is the 12/31/2017 Plant Ending Balance from Attachment B-3, Schedule 1.

The 12/31/2018 Reserve Ending Balance is the 12/31/2017 Reserve Ending Balance from Attachment B-3, Schedule 1 minus the annual depreciation accrual by account (lines 17-24).

Columbia Gas of Maryland
IRS Depreciation Requirement - March 30, 2018 Filing
2018 Net Investment Activity in 2019 (Not Included in Base Rates in Calendar Year 2019)

Line No.	Plant Description (1)	Reference	Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance (5 = 2+3-4)	Reserve Beginning Balance (6)	Not Used (7)	NOTE 3 Depreciation Actual (8)	Reserve Cost of Removal (9)	Retirements (10 = -col 4)	Ending Balance (11 = 6+9+10)	Accumulated Deferred Income Tax (12)	Net Rate Base (13 = 5+11+12)	NOTE 2 Property Tax (14)
1	December 31, 2018	Alt B-3, SCH 2	11,393,841	0	0	11,393,841	2,413,206		21,164	0	0	2,413,206	1,897,341	13,900,254	
2	January 31, 2019		11,393,841	0	0	11,393,841	2,401,709		21,164	0	0	2,379,545	1,897,341	13,896,886	
3	February 28, 2019		11,393,841	0	0	11,393,841	2,390,212		21,164	0	0	2,368,045	1,897,341	13,893,521	
4	March 31, 2019		11,393,841	0	0	11,393,841	2,378,715		21,164	0	0	2,346,548	1,897,341	13,890,156	
5	April 30, 2019		11,393,841	0	0	11,393,841	2,367,218		21,164	0	0	2,325,051	1,897,341	13,886,791	
6	May 31, 2019		11,393,841	0	0	11,393,841	2,355,721		21,164	0	0	2,303,554	1,897,341	13,883,426	
7	June 30, 2019		11,393,841	0	0	11,393,841	2,344,224		21,164	0	0	2,282,057	1,897,341	13,880,061	
8	July 31, 2019		11,393,841	0	0	11,393,841	2,332,727		21,164	0	0	2,260,560	1,897,341	13,876,696	
9	August 31, 2019		11,393,841	0	0	11,393,841	2,321,230		21,164	0	0	2,239,063	1,897,341	13,873,331	
10	September 30, 2019		11,393,841	0	0	11,393,841	2,309,733		21,164	0	0	2,217,566	1,897,341	13,869,966	
11	October 31, 2019		11,393,841	0	0	11,393,841	2,298,236		21,164	0	0	2,196,069	1,897,341	13,866,601	
12	November 30, 2019		11,393,841	0	0	11,393,841	2,286,739		21,164	0	0	2,174,572	1,897,341	13,863,236	
13	December 31, 2019		11,393,841	0	0	11,393,841	2,275,242		21,164	0	0	2,153,075	1,897,341	13,859,871	
14	Total Cumulative December 31, 2019		11,393,841	0	0	11,393,841	2,275,242		21,164	0	0	2,153,075	1,897,341	13,859,871	
15	13-month average/Normalized ADIT as of December 31, 2019					11,393,841									

NOTE:

- ADIT is calculated per Reg. Sec. 1.167, normalized at 12/31/2019 on Attachment B-6, Schedule 2, Line 60.
- Property Tax calculated using December Net Plant (Plant in Line 1, Column 5 and Reserve for Accum Depreciation in Line 1, Column 11) times the property tax rate detailed in Attachment B-4, Schedule 1, Line 21 divided by 12 months for the monthly expense.
- Monthly Depreciation Accrual is calculated using a half-year convention, for each gas plant account (CPA) as (Plant Beginning balance + Plant ending balance)/2 x CPA depreciation accrual rate with 1/17th allocated to each month of the calendar year.

Note: Totals may not sum due to rounding.

Line No.	Description	Gas Plant Account (1)	NOTE 4 Gas Plant In Service				NOTE 4 Reserve for Depreciation & Amortization					
			Jan. 2019 Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Dec. 2019 Plant Ending Balance (5 = 2+3+4)	Jan. 2019 Reserve Beginning Balance (6)	Depreciation Accrual (7)	Depreciation Accrual (8)	Cost of Removal (9)	Retirements (10 = - col 4)	Dec. 2019 Reserve Ending Balance (11 = 6+9+10)
16	TRANSMISSION AND DISTRIBUTION PLANT											
17	Regulatory Structures	375.40	64,126	0	0	64,126	1,078	1.07%	686	0	0	686
18	Valve	376.00	11,402,197	0	0	11,402,197	134,907	1.19%	134,907	0	0	134,907
19	Pas. & Cont. M&R Equipment	378.20	171,831	0	0	171,831	2,539	1.48%	2,539	0	0	2,539
20	Services	380.00	2,614,728	0	0	2,614,728	91,501	3.49%	91,501	0	0	91,501
21	Meters	381.00	178,456	0	0	178,456	1,418	0.80%	1,418	0	0	1,418
22	Meter Installations	382.00	31,947	0	0	31,947	47	0.15%	47	0	0	47
23	House Regulators	383.00	4,322	0	0	4,322	17	0.40%	17	0	0	17
24	Industrial M&R Equipment	385.00	20,207	0	0	20,207	611	2.98%	611	0	0	611
25	Total 2019		11,791,841	0	0	11,791,841	241,238		241,238	0	0	241,238

NOTE:
January 2019 Plant and Reserve Beginning Balance per Alt B-3, Sch 2

Columbia Gas of Maryland
IRS Revenue Requirement - March 30, 2018 Filing
2019 Investments - Monthly Detail - 12 months Projected

Line No.	Description (1)	Gas Plant In Service				Reserve for Depreciation & Amortization				NOTE 1		NOTE 2	
		Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance (5 = 2+3-4)	Reserve Beginning Balance (6)	Net Used (7)	Depreciation Accrual (8)	Reserve End of Year (9)	Retirements (10 = -col 4)	Ending Balance (11 = 6-8+9-10)	Accumulated Deferred Income Tax (12)	Net Rate Base (13 = 5+11+12)
1	December 31, 2018	16,145.50	0.00	0.00	16,145.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	January 31, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
3	February 28, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
4	March 31, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
5	April 30, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
6	May 31, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
7	June 30, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
8	July 31, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
9	August 31, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
10	September 30, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
11	October 31, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
12	November 30, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
13	December 31, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
14	Total Cumulative December 31, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51
15	13-month average/normalized ADIT as of December 31, 2019	16,145.50	1,181.51	0.00	17,327.01	31,700.00	22.31	1,178.79	13,528.21	21,164.14	6,362.87	1,181.51	1,181.51

NOTE:
 1 ADIT is calculated per Reg. Sec. 1.167, normalized at 12/31/2019 on Attachment B-6, Schedule 2, Line 93.
 2 Property tax not applicable to current year 2019 until July 2020.

Columbia Gas of Maryland
IRS Revenue Requirement - March 30, 2018 Filing
2019 Investments - Monthly Detail - 12 months Projected

Line No.	Description (1)	Gas Plant In Service				Reserve for Depreciation & Amortization			
		Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance (5 = 2+3-4)	Reserve Beginning Balance (6)	Depreciation Accrual (7)	Depreciation Accrual (8)	Cost of Retirements (9)
16	TRANSMISSION AND DISTRIBUTION PLANT	375.40	0.00	0.00	375.40	0.00	1,079.00	0.00	0.00
17	Regulator Structures	376.00	0.00	0.00	376.00	0.00	1,079.00	0.00	0.00
18	Mains	378.20	0.00	0.00	378.20	0.00	1,079.00	0.00	0.00
19	Reg. & Com. M&R Equipment	380.00	0.00	0.00	380.00	0.00	1,079.00	0.00	0.00
20	Services	381.00	0.00	0.00	381.00	0.00	1,079.00	0.00	0.00
21	Meters	382.00	0.00	0.00	382.00	0.00	1,079.00	0.00	0.00
22	Meter Installations	383.00	0.00	0.00	383.00	0.00	1,079.00	0.00	0.00
23	House Regulators	385.00	0.00	0.00	385.00	0.00	1,079.00	0.00	0.00
24	Industrial M&R Equipment	385.00	0.00	0.00	385.00	0.00	1,079.00	0.00	0.00
25	Subtotal - January 2019	0.00	185,112.00	0.00	185,112.00	0.00	0.00	206.00	61,911.00

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
RMS Revenue Requirement - March 30, 2018 Filing
2019 Investments - Monthly Detail - 12 months Projected

February-19

TRANSMISSION AND DISTRIBUTION PLANT									
26	Regulator Structures	375.40	0	0	0	0	0	0	0
27	Mains	376.00	33,925	12,300	176	3,811	38,135	(6)	
28	Rec. & Com. M&R Equipment	378.20	(0)	0	0	0	0	(0)	
29	Services	380.00	125,989	70,900	565	17,358	177,731	(4)	
30	Meters	381.00	1,180	(0)	3	0	0	(2)	
31	Meter Installations	382.00	524	(0)	1	0	0	(2)	
32	House Regulators	383.00	2,572	(0)	7	0	0	(9)	
33	Industrial M&R Equipment	385.00	160	(0)	1	0	0	(1)	
34	Subtotal - February 2019		163,450	83,276	753	21,168	216,040		
35			382,576	(21,168)					
36			374,808						

March-19

TRANSMISSION AND DISTRIBUTION PLANT									
36	Regulator Structures	375.40	0	0	0	0	0	(0)	
37	Mains	376.00	249,629	38,325	417	18,405	79,379	(0)	
38	Rec. & Com. M&R Equipment	378.20	55	(0)	0	0	0	(0)	
39	Services	380.00	263,491	177,731	1,216	72,447	341,634	(10)	
40	Meters	381.00	3,342	(0)	7	0	0	(2)	
41	Meter Installations	382.00	1,485	(0)	3	0	0	(2)	
42	House Regulators	383.00	5,939	(0)	13	0	0	(19)	
43	Industrial M&R Equipment	385.00	396	(0)	17	0	0	(19)	
44	Subtotal - March 2019		524,458	216,040	1,673	90,852	420,857		
45			595,118	(90,852)					
46			374,808						

April-19

TRANSMISSION AND DISTRIBUTION PLANT									
46	Regulator Structures	375.40	874	(0)	1	0	0	(1)	
47	Mains	376.00	421,638	79,379	599	0	83,659	(29)	
48	Rec. & Com. M&R Equipment	378.20	101	(0)	29	0	0	(22)	
49	Services	380.00	572,866	341,634	2,080	147,346	506,501	(10)	
50	Meters	381.00	7,046	(0)	11	0	0	(10)	
51	Meter Installations	382.00	3,132	(0)	5	0	0	(38)	
52	House Regulators	383.00	10,260	(0)	16	0	0	(53)	
53	Industrial M&R Equipment	385.00	13,207	(0)	34	0	0	(19)	
54	Subtotal - April 2019		1,079,124	420,957	2,775	147,346	590,008		
55			586,489	(147,346)					
56			374,808						

May-19

TRANSMISSION AND DISTRIBUTION PLANT									
56	Regulator Structures	375.40	874	(1)	5	0	0	(6)	
57	Mains	376.00	542,593	83,659	1,336	0	97,814	(104)	
58	Rec. & Com. M&R Equipment	378.20	26,343	(29)	75	0	0	(64)	
59	Services	380.00	857,389	506,501	2,974	95,056	660,822	(19)	
60	Meters	381.00	11,144	(0)	9	0	0	(52)	
61	Meter Installations	382.00	4,933	(0)	17	0	0	(19)	
62	House Regulators	383.00	10,678	(0)	35	0	0	(53)	
63	Industrial M&R Equipment	385.00	14,293	(0)	4,470	0	758,124		
64	Subtotal - May 2019		1,468,267	590,008	77,120	95,056	758,124		
65			1,529,366	(95,056)					
66			374,808						

Note: Totals may not sum due to rounding.

June-19

TRANSMISSION AND DISTRIBUTION PLANT

66	Regulator Structures	375.40	10,186	45,309	(6)	25	0	(11)
67	Male	1,608,802	1,796,337	97,818	(104)	2,114	69,998	19,392
68	Rec. & Com. M&R Equipment	378.20	41,435	41,716	(104)	92	0	(196)
69	Services	380.00	1,187,713	1,547,917	660,422	3,978	162,462	924,665
70	Meters	381.00	19,648	24,720	(41)	28	0	(69)
71	Meter Installations	382.00	8,753	10,987	(19)	13	0	(32)
72	House Regulators	383.00	11,740	12,371	(55)	19	0	(74)
73	Industrial M&R Equipment	385.00	14,379	20,655	(88)	43	0	(131)
74	Subtotal - June 2019	1,907,576	875,906	3,500,022	758,372	6,311	237,460	1,118,055

July-19

TRANSMISSION AND DISTRIBUTION PLANT

76	Regulator Structures	375.40	45,309	45,309	(31)	40	0	(71)
77	Male	1,796,337	3,840,138	191,922	(196)	3,499	21,155	214,671
78	Rec. & Com. M&R Equipment	378.20	41,716	41,905	(196)	92	0	(288)
79	Services	380.00	1,547,917	2,152,157	924,665	5,381	196,479	1,126,226
80	Meters	381.00	24,720	40,315	(69)	41	0	(110)
81	Meter Installations	382.00	10,987	17,918	(32)	19	0	(50)
82	House Regulators	383.00	12,371	12,760	(74)	20	0	(93)
83	Industrial M&R Equipment	385.00	20,655	20,655	(131)	51	0	(182)
84	Subtotal - July 2019	3,500,022	2,878,778	6,171,166	1,116,055	9,143	207,634	1,348,102

August-19

TRANSMISSION AND DISTRIBUTION PLANT

86	Regulator Structures	375.40	45,309	45,309	(71)	40	0	(112)
87	Male	3,840,138	4,706,018	214,671	(288)	5,343	111,601	324,563
88	Rec. & Com. M&R Equipment	378.20	41,905	41,905	(110)	93	0	(166)
89	Services	380.00	2,152,157	2,610,383	924,665	6,926	143,921	1,277,823
90	Meters	381.00	40,315	49,558	(50)	57	0	(76)
91	Meter Installations	382.00	17,918	22,026	(32)	26	0	(114)
92	House Regulators	383.00	12,760	13,397	(74)	20	0	(93)
93	Industrial M&R Equipment	385.00	20,655	20,655	(182)	51	0	(232)
94	Subtotal - August 2019	6,171,166	1,453,617	7,569,261	1,340,102	12,555	255,573	1,601,205

September-19

TRANSMISSION AND DISTRIBUTION PLANT

96	Regulator Structures	375.40	45,309	45,309	(112)	40	0	(152)
97	Male	4,706,018	6,844,517	324,563	(381)	7,208	211,212	534,816
98	Rec. & Com. M&R Equipment	378.20	41,905	46,403	(166)	98	0	(479)
99	Services	380.00	2,610,383	3,138,259	924,665	8,360	141,289	1,435,855
100	Meters	381.00	49,558	58,511	(76)	72	0	(110)
101	Meter Installations	382.00	22,026	29,116	(32)	33	0	(135)
102	House Regulators	383.00	13,397	13,679	(74)	21	0	(93)
103	Industrial M&R Equipment	385.00	20,655	20,679	(232)	51	0	(283)
104	Subtotal - September 2019	7,569,261	2,587,233	10,204,093	1,601,205	15,884	317,525	1,909,274

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2019 Investments - Monthly Detail - 12 months projected

Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2019 Investments - 12 months Projected

Line No.	Description	2017 Investments in 2019 Net of Case No. 9480	2018 Investments in 2019 Net of Case No. 9480	2019 Investments (Schedule 2C)	2019 Calendar Year IRIS Revenue Requirement (4 = 1 + 2 + 3)	Reference
		(Schedule 2A) (1)	(Schedule 2B) (2)	(3)		
1	13-month average - Plant	0	18,393,841	5,710,434	19,104,275	Schedule 2A, 2B and 2C, Column 5, Line 15
2	13-month average - Accumulated Depreciation	0	2,285,777	1,194,898	3,480,675	Schedule 2A, 2B and 2C, Column 11, Line 15
3	13-month average - Accumulated Deferred Income Tax	0	(1,952,386)	(621,953)	(2,574,339)	Schedule 2A, 2B and 2C, Column 12, Line 15
4	Rate Base	0	13,747,283	6,283,378	20,030,661	Sum (Line 1 : Line 3)
5	Allowed Rate of Return	7.3830000%	7.3830000%	7.3830000%	7.3830000%	Att B-4, Schedule 1, Column 3, Line 4
6	Allowed Return, Pre Conversion Factor	0	1,014,962	463,902	1,478,864	Line 4 * Line 5
7	Conversion Factor	1.421385	1.421385	1.421385	1.421385	Att B-4, Schedule 1, Column 3, Line 14
8	Allowed Return, Post Conversion Factor	0	1,442,652	659,383	2,102,035	Line 6 * Line 7
9	Depreciation	0	261,555	123,852	385,407	Att B-5, Schedule 1, Line 13
10	Property taxes	0	92,884	0	92,884	Att B-5, Schedule 1, Line 14
11	Interest Synchronization	0	(123,992)	(56,673)	(180,665)	Att B-5, Schedule 1, Line 8
12	Total IRIS To be Recovered	0	1,613,138	726,562	2,339,700	Sum (Line 8 : Line 11)

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
DHS Reserve Requirement - March 30, 2018 Filing
2017 Net Investment Activity in 2019 (Not Included in Base Rates in Calendar Year 2019)

Line No.	Description (1)	Gas Plant In Service				Reserve for Depreciation & Amortization			
		Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance with Misc. Charge (5 = 2+3-4)	Reserve Beginning Balance (6)	Net Used (7)	Depreciation Accrual (8)	Reserve Cost of Recovery (9)
1	December 31, 2018	0	0	0	0	0	0	0	0
2	January 31, 2019	0	0	0	0	0	0	0	0
3	February 28, 2019	0	0	0	0	0	0	0	0
4	March 31, 2019	0	0	0	0	0	0	0	0
5	April 30, 2019	0	0	0	0	0	0	0	0
6	May 31, 2019	0	0	0	0	0	0	0	0
7	June 30, 2019	0	0	0	0	0	0	0	0
8	July 31, 2019	0	0	0	0	0	0	0	0
9	August 31, 2019	0	0	0	0	0	0	0	0
10	September 30, 2019	0	0	0	0	0	0	0	0
11	October 31, 2019	0	0	0	0	0	0	0	0
12	November 30, 2019	0	0	0	0	0	0	0	0
13	December 31, 2019	0	0	0	0	0	0	0	0
14	Total Cumulative December 31, 2019	0	0	0	0	0	0	0	0
15	13-month average/normalized ADIT as of December 31, 2019	0	0	0	0	0	0	0	0

NOTE: 1. 12/31/2018 Plant Ending Balance is the 12/31/2017 Plant Ending Balance from Attachment B-3, Schedule 1.
2. Monthly Depreciation Accrual is calculated using a half-year convention, for each gas plant account (GPA) as (Plant beginning balance + Plant ending balance)/2 x GPA depreciation accrual rate with 1/12th allocated to each month of the calendar year.
3. The 12/31/2018 Reserve Ending Balance is the 12/31/2017 Reserve Ending Balance from Attachment B-3, Schedule 1 minus the annual depreciation accrual (line 25).
4. ADIT is calculated per Reg. Sec. 1.167, normalized at 12/31/2019 on Attachment B-6, Schedule 2, Line 27.
5. Property Tax calculated using 12/31/17 Net Plant (Plant and Reserve for Accum Depreciation from Attachment B-3, Schedule 1) times the property tax rate detailed in Attachment B-4, Schedule 1, Line 21 divided by 12 months for the monthly expense.

Note: Totals may not sum due to rounding.

Line No.	Description	Gas Plant Account (1)	Gas Plant In Service				Reserve for Depreciation & Amortization			
			Jan. 2019 Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Dec. 2019 Plant Ending Balance (5 = 2+3-4)	Jan. 2019 Reserve Beginning Balance (6)	Depreciation Rate (7)	Depreciation Accrual (8)	Dec. 2019 Reserve Ending Balance (11 = 6-8+9+10)
16	TRANSMISSION AND DISTRIBUTION PLANT		0	0	0	0	0	1.57%	0	0
17	Regulator Structures	375.40	0	0	0	0	0	1.66%	0	0
18	Mains	376.00	0	0	0	0	0	1.66%	0	0
19	Reg. & Com. M&R Equipment	378.20	0	0	0	0	0	2.63%	0	0
20	Services	390.00	0	0	0	0	0	3.48%	0	0
21	Meters	381.00	0	0	0	0	0	1.48%	0	0
22	Meter Installations	382.00	0	0	0	0	0	1.54%	0	0
23	House Regulators	383.00	0	0	0	0	0	1.82%	0	0
24	Industrial M&R Equipment	385.00	0	0	0	0	0	2.96%	0	0
25	Total 2019		0	0	0	0	0		0	0

NOTE: 6. 12/31/2018 Reserve Ending Balance is the 12/31/2017 Reserve Ending Balance from Attachment B-3, Schedule 1.
7. The 12/31/2018 Reserve Ending Balance is the 12/31/2017 Reserve Ending Balance from Attachment B-3, Schedule 1 minus the annual depreciation accrual by account (lines 17-24).

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2018 Net Investment Activity in 2019 (Not Included in Base Rates in Calendar Year 2019)

Line No.	Description	Reference	Gas Plant in Service				Reserve for Depreciation & Amortization				NOTE 1				NOTE 2	
			Plant Beginning Balance (2)	Address (3)	Retirement (4)	Plant Ending Balance (5 = 2+3+4)	Reserve Beginning Balance (6)	Not Used (7)	NOTE 3 Depreciation Actual (8)	Reserve Cost of Removal (9)	Retirement (10 = - col 4)	Ending Balance (11 = 6+9+10)	Accumulated Deferred Income Tax (12)	Net Rate Base (13 = 5+11+12)	Property Tax (14)	
1	December 31, 2018	At B-3, SCH 2	13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
2	January 31, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
3	February 28, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
4	March 31, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
5	April 30, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
6	May 31, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
7	June 30, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
8	July 31, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
9	August 31, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
10	September 30, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
11	October 31, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
12	November 30, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
13	December 31, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
14	Total Cumulative December 31, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	
15	15-month average/normalized ADIT as of December 31, 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	

NOTE:

- ADIT is calculated per Reg. Sec. 1.167, normalized at 12/31/2019 on Attachment B-6, Schedule 2, Line 60.
- Property Tax calculated using December Net Plant (Plant in Line 1, Column 1) times the property tax rate detailed in Attachment B-4, Schedule 1, Line 21 divided by 12 months for the monthly expense.
- Monthly Depreciation Actual is calculated using a half-year convention, for each gas plant account (GPA) as (Plant Beginning balance + Plant ending balance) / 2 x GPA depreciation actual rate with 1/12th allocated to each month of the calendar year.

Note: Totals may not sum due to rounding.

Line No.	Description	Gas Plant Account (1)	Gas Plant in Service				Reserve for Depreciation & Amortization				NOTE 1				NOTE 2	
			Jan. 2019 Plant Balance (2)	Address (3)	Retirement (4)	Dec. 2019 Plant Balance (5 = 2+3+4)	Jan. 2019 Reserve Beginning Balance (6)	Depreciation Actual Rate (7)	Depreciation Actual (8)	Cost of Removal (9)	Retirement (10 = - col 4)	Ending Balance (11 = 6+9+10)	Accumulated Deferred Income Tax (12)	Net Rate Base (13 = 5+11+12)	Property Tax (14)	
16	TRANSMISSION AND DISTRIBUTION PLANT															
17	Regulator Structures	375.40	24,136	0	0	24,136	1,079	1.07%	1,079	0	0	25,215	1,079	26,294	15,028	
18	Mains	376.00	10,402,197	0	0	10,402,197	154,993	1.49%	154,993	0	0	10,557,190	154,993	10,712,183	15,028	
19	Res. & Com. M&R Equipment	378.20	173,557	0	0	173,557	4,602	2.65%	4,602	0	0	178,159	4,602	182,761	15,028	
20	Services	380.00	2,614,928	0	0	2,614,928	91,251	3.49%	91,251	0	0	2,706,179	91,251	2,797,430	15,028	
21	Meters	381.00	72,835	0	0	72,835	1,193	1.31%	1,193	0	0	74,028	1,193	75,221	15,028	
22	Meter Installations	382.00	35,017	0	0	35,017	47	1.35%	47	0	0	35,064	47	35,111	15,028	
23	Header Regulators	383.00	4,312	0	0	4,312	61	1.47%	61	0	0	4,373	61	4,434	15,028	
24	Industrial M&R Equipment	385.00	20,707	0	0	20,707	511	2.45%	511	0	0	21,218	511	21,729	15,028	
25	Total 2019		13,593,841	0	0	13,593,841	2,412,763		2,412,763	0	0	4,427,763	1,973,417	15,989,554	15,989,554	

NOTE:

- January 2019 Plant and Reserve Beginning Balance per At B-3, Sch 2.

Columbia Gas of Maryland
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2019 Investments - Monthly Detail - 12 months Projected

Line No.	Description (1)	Gas Plant In Service				Reserve for Depreciation & Amortization				NOTE 1		NOTE 2	
		Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance (5 = 2+3-4)	Reserve Beginning Balance (6)	Net Used (7)	Depreciation Accrual (8)	Reserve Cost of Removal (9)	Retirements (10 = - col 9)	Ending Balance (11 = 6+10-9)	Accumulated Deferred Income Tax (12)	Net Rate Base (13 = 5+11-12)
1	December 31, 2018	0	185,112	21,662	163,450	0	0	0	0	0	0	0	0
2	January 31, 2019	163,450	210,276	21,662	351,964	81,276	112,348	21,662	112,348	21,662	163,450	21,662	351,964
3	February 28, 2019	324,726	210,276	21,662	513,340	162,552	224,696	43,324	224,696	43,324	206,868	43,324	513,340
4	March 31, 2019	1,028,114	210,276	21,662	1,216,728	489,557	224,696	124,640	224,696	124,640	365,008	124,640	1,216,728
5	April 30, 2019	1,848,257	1,028,114	21,662	2,854,709	989,008	44,176	224,696	224,696	224,696	589,604	224,696	2,854,709
6	May 31, 2019	2,500,576	1,028,114	21,662	3,507,028	1,284,134	44,176	224,696	224,696	224,696	814,300	224,696	3,507,028
7	June 30, 2019	3,000,022	2,172,728	21,662	5,151,188	1,417,035	22,143	224,696	224,696	224,696	1,038,991	224,696	5,151,188
8	July 31, 2019	4,151,167	1,651,613	21,662	5,781,118	1,540,102	17,940,102	1,601,345	1,601,345	1,601,345	1,540,102	1,601,345	5,781,118
9	August 31, 2019	5,781,167	2,172,728	21,662	7,932,233	1,601,345	17,940,102	1,601,345	1,601,345	1,601,345	1,540,102	1,601,345	7,932,233
10	September 30, 2019	7,246,561	2,172,728	21,662	9,397,627	1,601,345	17,940,102	1,601,345	1,601,345	1,601,345	1,540,102	1,601,345	9,397,627
11	October 31, 2019	10,284,921	2,172,728	21,662	12,435,987	1,601,345	17,940,102	1,601,345	1,601,345	1,601,345	1,540,102	1,601,345	12,435,987
12	November 30, 2019	11,938,309	2,172,728	21,662	14,089,375	1,601,345	17,940,102	1,601,345	1,601,345	1,601,345	1,540,102	1,601,345	14,089,375
13	December 31, 2019	11,938,309	2,172,728	21,662	14,089,375	1,601,345	17,940,102	1,601,345	1,601,345	1,601,345	1,540,102	1,601,345	14,089,375
14	Total Cumulative December 31, 2019	11,938,309	2,172,728	21,662	14,089,375	1,601,345	17,940,102	1,601,345	1,601,345	1,601,345	1,540,102	1,601,345	14,089,375
15	11-month average/normalized ADIT as of December 31, 2019	15,338,200	2,172,728	21,662	17,489,266	1,601,345	17,940,102	1,601,345	1,601,345	1,601,345	1,540,102	1,601,345	17,489,266

NOTE:
1 ADIT is calculated per Reg. Sec. 1.167, normalized at 12/31/2019 on Attachment B-6, Schedule 2, Line 93.
2 Property Tax not applicable to current year 2019 until July 2020.

Columbia Gas of Maryland
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Line No.	Description (1)	Gas Plant In Service				Reserve for Depreciation & Amortization				NOTE 1		NOTE 2	
		Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance (5 = 2+3-4)	Reserve Beginning Balance (6)	Net Used (7)	Depreciation Accrual (8)	Reserve Cost of Removal (9)	Retirements (10 = - col 9)	Ending Balance (11 = 6+10-9)	Accumulated Deferred Income Tax (12)	Net Rate Base (13 = 5+11-12)
16	TRANSMISSION AND DISTRIBUTION PLANT	0	0	0	0	0	0	0	0	0	0	0	0
17	Regulator Structures	375,400	13,925	0	389,325	0	0	0	0	0	0	0	389,325
18	Meters	376,000	0	0	376,000	0	0	0	0	0	0	0	376,000
19	Reg. & Com. M&R Equipment	378,200	0	0	378,200	0	0	0	0	0	0	0	378,200
20	Services	380,000	146,730	0	526,730	0	0	0	0	0	0	0	526,730
21	Meters	381,000	11,180	0	392,180	0	0	0	0	0	0	0	392,180
22	Meter Installations	382,000	534	0	382,534	0	0	0	0	0	0	0	382,534
23	Process Regulators	383,000	2,372	0	385,372	0	0	0	0	0	0	0	385,372
24	Industrial M&R Equipment	385,000	160	0	385,160	0	0	0	0	0	0	0	385,160
25	Schedule - January 2019	0	185,112	21,662	163,450	0	0	0	0	0	0	0	163,450

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
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2019 Investments - Monthly Detail - 12 months Projected

February-19									
26	TRANSMISSION AND DISTRIBUTION PLANT								
27	Regulator Structures	375.40	0	0	0	0	0	0	0
28	Valves	376.00	33,925	12,300	176	0	3,811	38,325	(0)
29	Res. & Com. M&R Equipment	378.20	(0)	0	0	0	0	0	(0)
30	Services	380.00	125,089	70,980	565	0	17,358	177,731	(4)
31	Meters	381.00	1,180	3,342	3	0	0	0	(2)
32	Meter Installations	382.00	524	1,485	1	0	0	0	(2)
33	Home Regulators	383.00	2,572	5,959	7	0	0	0	(9)
34	Industrial M&R Equipment	385.00	896	0	1	0	0	0	(1)
35	Subtotal - February 2019		163,450	83,276	753	0	21,168	216,040	

March-19									
36	TRANSMISSION AND DISTRIBUTION PLANT								
37	Regulator Structures	375.40	0	0	0	0	0	0	(0)
38	Valves	376.00	249,629	38,325	417	0	18,405	79,379	(0)
39	Res. & Com. M&R Equipment	378.20	55	0	0	0	0	0	(0)
40	Services	380.00	263,491	177,731	1,216	0	72,447	341,634	(10)
41	Meters	381.00	3,342	7,046	7	0	0	0	(5)
42	Meter Installations	382.00	1,485	3,132	3	0	0	0	(2)
43	Home Regulators	383.00	5,959	13,307	13	0	0	0	(19)
44	Industrial M&R Equipment	385.00	896	0	1	0	0	0	(1)
45	Subtotal - March 2019		524,858	216,840	1,673	0	90,852	429,957	

April-19									
46	TRANSMISSION AND DISTRIBUTION PLANT								
47	Regulator Structures	375.40	874	0	1	0	0	0	(1)
48	Valves	376.00	421,638	79,379	599	0	0	83,659	(29)
49	Res. & Com. M&R Equipment	378.20	101	0	29	0	0	0	(22)
50	Services	380.00	572,866	341,634	2,080	0	147,346	506,501	(10)
51	Meters	381.00	7,046	11,144	11	0	0	0	(38)
52	Meter Installations	382.00	3,132	4,953	5	0	0	0	(3)
53	Home Regulators	383.00	10,260	14,293	16	0	0	0	(5)
54	Industrial M&R Equipment	385.00	1,096	0	34	0	0	0	(5)
55	Subtotal - April 2019		1,079,124	429,957	2,775	0	147,346	590,008	

May-19									
56	TRANSMISSION AND DISTRIBUTION PLANT								
57	Regulator Structures	375.40	874	0	5	0	0	0	(6)
58	Valves	376.00	542,593	83,659	1,336	0	0	97,814	(104)
59	Res. & Com. M&R Equipment	378.20	26,343	506,501	75	0	0	660,822	(41)
60	Services	380.00	857,589	1,187,713	2,974	0	0	0	(39)
61	Meters	381.00	11,144	19,648	19	0	0	0	(3)
62	Meter Installations	382.00	4,953	8,733	9	0	0	0	(3)
63	Home Regulators	383.00	10,678	11,740	17	0	0	0	(3)
64	Industrial M&R Equipment	385.00	1,429	0	35	0	0	0	(3)
65	Subtotal - May 2019		1,468,287	590,008	4,470	0	95,056	748,534	

Note: Totals may not sum due to rounding.

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June-19									
TRANSMISSION AND DISTRIBUTION PLANT									
66	Regulator Structures	375.40	10,186	18,453	0	45,309	(6)		
67	Mains	376.00	1,608,802	22,313	(66,898)	1,796,337	97,814	25	0
68	Reg. & Com. M&R Equipment	378.20	41,455	261	0	41,716	(106)	92	69,998
69	Services	380.00	1,181,713	19,648	(132,402)	1,347,917	660,822	3,978	162,462
70	Meters	381.00	19,648	2,251	0	24,720	(41)	28	0
71	Meter Installations	382.00	8,733	631	0	10,987	(19)	13	0
72	House Regulators	383.00	11,740	0	0	12,311	(55)	19	0
73	Industrial M&R Equipment	385.00	14,299	6,666	0	20,665	(82)	43	0
74	Subtotal - June 2019		2,962,576	879,906	(212,460)	3,500,022	758,324	6,311	121,582
									232,446
									1,115,055

July-19										
TRANSMISSION AND DISTRIBUTION PLANT										
76	Regulator Structures	375.40	45,309	0	0	45,309	0	40	0	(71)
77	Mains	376.00	1,796,337	1,064,381	(21,155)	3,840,138	3,499	92	21,155	(288)
78	Reg. & Com. M&R Equipment	378.20	41,716	180	0	41,905	5,381	20	0	(110)
79	Services	380.00	1,347,917	24,720	(166,179)	2,152,137	186,479	0	0	(93)
80	Meters	381.00	24,720	13,324	0	40,515	0	0	0	(182)
81	Meter Installations	382.00	10,987	1,231	0	17,918	0	0	0	(232)
82	House Regulators	383.00	12,311	0	0	12,680	0	0	0	(232)
83	Industrial M&R Equipment	385.00	20,665	580	0	20,665	0	0	0	(232)
84	Subtotal - July 2019		3,500,022	2,878,778	(207,634)	6,171,166	1,116,055	9,143	25,545	1,343,102

86	August-19									
TRANSMISSION AND DISTRIBUTION PLANT										
87	Regulator Structures	375.40	45,309	0	0	45,309	0	40	0	(112)
88	Mains	376.00	3,840,138	1,037,182	(111,201)	4,766,018	214,671	5,343	3,634	(381)
89	Reg. & Com. M&R Equipment	378.20	41,905	0	0	41,905	0	93	0	(66)
90	Services	380.00	2,152,137	6,021,171	(143,921)	2,610,383	1,265,226	6,926	1,902	1,277,833
91	Meters	381.00	40,515	1,107	0	49,558	(110)	57	0	(66)
92	Meter Installations	382.00	17,918	1,037	0	22,026	(34)	26	0	(76)
93	House Regulators	383.00	13,397	0	0	13,397	(93)	0	0	(19)
94	Industrial M&R Equipment	385.00	20,665	0	0	20,665	(182)	51	0	(232)
95	Subtotal - August 2019		6,171,166	1,653,617	(255,523)	7,469,261	1,340,102	172,555	18,236	1,601,305

September-19										
TRANSMISSION AND DISTRIBUTION PLANT										
96	Regulator Structures	375.40	45,309	0	0	45,309	(112)	0	0	(152)
97	Mains	376.00	4,766,018	2,228,711	(231,312)	6,844,517	324,562	7,208	6,288	(479)
98	Reg. & Com. M&R Equipment	378.20	41,905	0	0	46,405	(381)	36	0	0
99	Services	380.00	2,610,383	6,021,166	(143,245)	3,138,739	1,277,023	8,360	23,104	141,289
100	Meters	381.00	22,026	15,081	0	63,511	(166)	72	0	0
101	Meter Installations	382.00	13,397	0	0	13,779	(76)	31	0	0
102	House Regulators	383.00	20,665	0	0	20,665	(135)	25	0	0
103	Industrial M&R Equipment	385.00	20,665	0	0	20,665	(116)	51	0	0
104	Subtotal - September 2019		7,469,261	2,487,333	(251,501)	10,204,093	1,601,305	15,284	31,152	352,501
							(232)	(232)		1,967,274

Note: Totals may not sum due to rounding.

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October-19											
TRANSMISSION AND DISTRIBUTION PLANT											
106	Regulator Structures	375.40	45,309	11,596	0	64,879	9,384,599	534,816	(132)	49	0
107	Mains	376.00	6,844,517	1,004,638	0	7,849,155	56,673	1,435,855	10,076	59,956	592,620
108	Res. & Com. M&R Equipment	378.20	46,403	10,470	0	56,873	3,627,791	9,840	114	0	(592)
109	Services	380.00	3,138,759	65,511	0	3,204,270	82,620	1,557,026	9,840	99,174	1,557,026
110	Meters	381.00	65,511	1,010	0	66,521	36,720	0	93	0	(332)
111	Meter Installations	382.00	29,116	1,378	0	30,494	14,213	0	43	0	(152)
112	House Regulators	383.00	13,779	1,115	0	14,894	0	0	22	0	(157)
113	Industrial M&R Equipment	385.00	20,699	1,115	0	21,814	0	0	51	0	(334)
Subtotal - October 2019			10,704,093	3,243,346	(159,130)	13,288,309			20,287	159,130	2,147,878

November-19											
TRANSMISSION AND DISTRIBUTION PLANT											
116	Regulator Structures	375.40	64,879	0	0	64,879	9,595,063	592,620	58	0	(259)
117	Mains	376.00	9,384,599	1,035,960	0	10,420,559	56,700	1,557,026	11,783	205,517	889,948
118	Res. & Com. M&R Equipment	378.20	56,673	12,470	0	69,143	3,701,350	9,840	125	0	(718)
119	Services	380.00	3,627,791	65,511	0	3,753,302	86,122	0	10,658	58,876	1,700,035
120	Meters	381.00	82,620	1,378	0	84,000	36,277	0	106	0	(438)
121	Meter Installations	382.00	36,720	1,557	0	38,277	14,615	0	49	0	(201)
122	House Regulators	383.00	14,213	1,115	0	15,328	0	0	22	0	(179)
123	Industrial M&R Equipment	385.00	20,614	1,115	0	21,729	0	0	68	0	(403)
124	Subtotal - November 2019		13,208,409	6,477,806	(344,393)	13,591,801			22,870	118,384	3,447,933
											2,587,078

December-19											
TRANSMISSION AND DISTRIBUTION PLANT											
126	Regulator Structures	375.40	64,879	121	0	65,000	9,741,175	889,948	58	0	(317)
127	Mains	376.00	9,595,063	146,343	(166)	9,741,175	56,700	2,000,000	12,005	169	883,614
128	Res. & Com. M&R Equipment	378.20	56,700	143,500	9	200,000	3,701,350	3,656,540	283	0	(1,001)
129	Services	380.00	3,701,350	(110,390)	0	3,656,540	86,122	1,700,035	10,671	110,390	1,821,860
130	Meters	381.00	86,122	1,378	0	90,000	38,277	(438)	111	0	(349)
131	Meter Installations	382.00	38,277	1,071	0	40,000	14,615	(201)	51	0	(252)
132	House Regulators	383.00	14,615	233	0	15,000	20,614	(179)	23	0	(202)
133	Industrial M&R Equipment	385.00	20,614	50	0	15,000	13,591,801	(403)	86	0	(488)
134	Subtotal - December 2019		13,591,801	341,473	(110,559)	13,872,715			23,287	27,668	3,170,655

Note: Totals may not sum due to rounding.
Calendar Year Activity - by Gas Plant Account

136	TRANSMISSION AND DISTRIBUTION PLANT									
137	Regulator Structures	375.40	65,000	0	0	317	0	0	0	0
138	Mains	376.00	10,523,000	(781,825)	0	54,576	156,365	0	0	0
139	Res. & Com. M&R Equipment	378.20	200,000	0	0	1,001	0	0	0	0
140	Services	380.00	4,893,000	(1,256,460)	0	62,829	628,230	0	1,256,460	0
141	Meters	381.00	90,000	0	0	549	0	0	0	0
142	Meter Installations	382.00	40,000	0	0	252	0	0	0	0
143	House Regulators	383.00	15,000	0	0	202	0	0	0	0
144	Industrial M&R Equipment	385.00	35,000	0	0	488	0	0	0	0
145	Total 2019 Activity		15,861,000	(2,038,285)	0	704,595		120,215	7,038,285	

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2017 Investments - Monthly Detail - 12 months actual

Gas Plant In Service					Reserve for Depreciation & Amortization					NOTE 1			NOTE 2	
Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance with Rate Change (5 = 2+3+4)	Reserve Beginning Balance (6)	Not Used (7)	Depreciation Accrual (8)	Reserve Cost of Removal (9)	Retirements (10 = -col 4)	Ending Balance (11 = 6-9+10)	Accumulated Deferred Income Tax (12)	Net Rate Base (13 = 5+11+12)	Property Tax (14)		
\$	\$	\$		\$		\$	\$		\$	\$	\$	\$		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
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0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
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0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
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0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
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0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
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0	0	0	0	0		0	0	0	0	0	0	0		
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0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0	0	0		
0	0	0	0	0		0	0	0	0	0				

NOTE:
 1 ADIT calculated on All B-6, Schedule 1, Columns 4 & 5 - January balance reflects 1/12th total Annual total with 1/12th added each month February - December
 2 Property Tax not applicable to 2017 Investment until 2018 calendar year

Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2017 Investments - Monthly Detail - 12 months actual

Gas Plant In Service														Reserve for Depreciation & Amortization													
Line No.	Description	Plant				Depreciation				Reserve for Depreciation & Amortization				Reserve for Depreciation & Amortization													
		Gas Plant Account (1)	Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance (5 = 2+3-4)	Reserve Beginning Balance (6)	Accrual Rates (7)	Depreciation Accrual (8)	Cost of Removal (9)	Refirements (10 = -col 4)	Ending Balance (11 = 6-9+10)															
January-17																											
16	TRANSMISSION AND DISTRIBUTION PLANT																										
17	Regulator Structures	375.40	0	0	0	0	0	1.57%	0	0	0	0	0	0	0	0	0										
18	Mains	376.00	0	0	0	0	0	1.46%	0	0	0	0	0	0	0	0	0										
19	Reg. & Com. Meter Equipment	378.20	0	0	0	0	0	2.63%	0	0	0	0	0	0	0	0	0										
20	Services	380.00	0	0	0	0	0	3.48%	0	0	0	0	0	0	0	0	0										
21	Meters	381.00	0	0	0	0	0	1.48%	0	0	0	0	0	0	0	0	0										
22	Water Installations	382.00	0	0	0	0	0	1.54%	0	0	0	0	0	0	0	0	0										
23	Water Regulators	383.00	0	0	0	0	0	1.82%	0	0	0	0	0	0	0	0	0										
24	Industrial Water Equipment	385.00	0	0	0	0	0	2.56%	0	0	0	0	0	0	0	0	0										
25	Subtotal - January 2017		0	0	0	0	0		0	0	0	0	0	0	0	0	0										

Note: Totals may not sum due to rounding.

26 TRANSMISSION AND DISTRIBUTION PLANT

	0	0	0	0	0	0	0	0	0
1.57%	0	0	0	0	0	0	0	0	0
1.46%	0	0	0	0	0	0	0	0	0
2.65%	0	0	0	0	0	0	0	0	0
3.48%	0	0	0	0	0	0	0	0	0
1.48%	0	0	0	0	0	0	0	0	0
1.54%	0	0	0	0	0	0	0	0	0
1.87%	0	0	0	0	0	0	0	0	0
2.96%	0	0	0	0	0	0	0	0	0

36 TRANSMISSION AND DISTRIBUTION PLANT

1.57%	0	0	0	0	0
1.46%	0	0	0	0	0
2.63%	0	0	0	0	0
3.48%	0	0	0	0	0
1.48%	0	0	0	0	0
1.54%	0	0	0	0	0
1.82%	0	0	0	0	0
2.59%	0	0	0	0	0

46 TRANSMISSION AND DISTRIBUTION PLANT

1.57%	0	0	0	0
1.46%	0	0	0	0
2.61%	0	0	0	0
3.48%	0	0	0	0
1.48%	0	0	0	0
1.54%	0	0	0	0
1.82%	0	0	0	0
2.96%	0	0	0	0

56 TRANSMISSION AND DISTRIBUTION PLANT

[illegible]

Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2017 Investments - Monthly Detail - 12 months actual

June-17											
TRANSMISSION AND DISTRIBUTION PLANT											
66	Regulator Structures	375.40	0	0	0	0	0	0	0	0	1.57%
67	Maint	376.00	0	0	0	0	0	0	0	0	1.46%
68	Res. & Com. M&R Equipment	378.20	0	0	0	0	0	0	0	0	2.63%
69	Services	380.00	0	0	0	0	0	0	0	0	3.48%
70	Meters	381.00	0	0	0	0	0	0	0	0	1.48%
71	Meter Installations	382.00	0	0	0	0	0	0	0	0	1.54%
72	House Regulators	383.00	0	0	0	0	0	0	0	0	1.82%
73	Industrial M&R Equipment	385.00	0	0	0	0	0	0	0	0	2.96%
74	Subtotal - June 2017		0	0	0	0	0	0	0	0	

July-17											
TRANSMISSION AND DISTRIBUTION PLANT											
76	Regulator Structures	375.40	0	0	0	0	0	0	0	0	1.57%
77	Maint	376.00	0	0	0	0	0	0	0	0	1.46%
78	Res. & Com. M&R Equipment	378.20	0	0	0	0	0	0	0	0	2.63%
79	Services	380.00	0	0	0	0	0	0	0	0	3.48%
80	Meters	381.00	0	0	0	0	0	0	0	0	1.48%
81	Meter Installations	382.00	0	0	0	0	0	0	0	0	1.54%
82	House Regulators	383.00	0	0	0	0	0	0	0	0	1.82%
83	Industrial M&R Equipment	385.00	0	0	0	0	0	0	0	0	2.96%
84	Subtotal - July 2017		0	0	0	0	0	0	0	0	

August-17											
TRANSMISSION AND DISTRIBUTION PLANT											
86	Regulator Structures	375.40	0	0	0	0	0	0	0	0	1.57%
87	Maint	376.00	0	0	0	0	0	0	0	0	1.46%
88	Res. & Com. M&R Equipment	378.20	0	0	0	0	0	0	0	0	2.63%
89	Services	380.00	0	0	0	0	0	0	0	0	3.48%
90	Meters	381.00	0	0	0	0	0	0	0	0	1.48%
91	Meter Installations	382.00	0	0	0	0	0	0	0	0	1.54%
92	House Regulators	383.00	0	0	0	0	0	0	0	0	1.82%
93	Industrial M&R Equipment	385.00	0	0	0	0	0	0	0	0	2.96%
94	Subtotal - August 2017		0	0	0	0	0	0	0	0	

September-17											
TRANSMISSION AND DISTRIBUTION PLANT											
96	Regulator Structures	375.40	0	0	0	0	0	0	0	0	1.57%
97	Maint	376.00	0	0	0	0	0	0	0	0	1.46%
98	Res. & Com. M&R Equipment	378.20	0	0	0	0	0	0	0	0	2.63%
99	Services	380.00	0	0	0	0	0	0	0	0	3.48%
100	Meters	381.00	0	0	0	0	0	0	0	0	1.48%
101	Meter Installations	382.00	0	0	0	0	0	0	0	0	1.54%
102	House Regulators	383.00	0	0	0	0	0	0	0	0	1.82%
103	Industrial M&R Equipment	385.00	0	0	0	0	0	0	0	0	2.96%
104	Subtotal - September 2017		0	0	0	0	0	0	0	0	

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2017 Investments - Monthly Detail - 12 months actual

October-17											
106	TRANSMISSION AND DISTRIBUTION PLANT										
107	Regulator Structures	375.40	0	0	0	0	0	0	0	0	1.57%
108	Mains	376.00	0	0	0	0	0	0	0	0	1.46%
109	Res. & Com. M&R Equipment	378.20	0	0	0	0	0	0	0	0	2.63%
110	Services	380.00	0	0	0	0	0	0	0	0	3.48%
111	Meters	381.00	0	0	0	0	0	0	0	0	1.48%
112	Meter Installations	382.00	0	0	0	0	0	0	0	0	1.54%
113	House Regulators	383.00	0	0	0	0	0	0	0	0	1.82%
114	Industrial M&R Equipment	385.00	0	0	0	0	0	0	0	0	2.96%
115	Subtotal - October 2017		0	0	0	0	0	0	0	0	

November-17											
116	TRANSMISSION AND DISTRIBUTION PLANT										
117	Regulator Structures	375.40	0	0	0	0	0	0	0	0	1.57%
118	Mains	376.00	0	0	0	0	0	0	0	0	1.46%
119	Res. & Com. M&R Equipment	378.20	0	0	0	0	0	0	0	0	2.63%
120	Services	380.00	0	0	0	0	0	0	0	0	3.48%
121	Meters	381.00	0	0	0	0	0	0	0	0	1.48%
122	Meter Installations	382.00	0	0	0	0	0	0	0	0	1.54%
123	House Regulators	383.00	0	0	0	0	0	0	0	0	1.82%
124	Industrial M&R Equipment	385.00	0	0	0	0	0	0	0	0	2.96%
125	Subtotal - November 2017		0	0	0	0	0	0	0	0	

December-17											
126	TRANSMISSION AND DISTRIBUTION PLANT										
127	Regulator Structures	375.40	0	0	0	0	0	0	0	0	1.57%
128	Mains	376.00	0	0	0	0	0	0	0	0	1.46%
129	Res. & Com. M&R Equipment	378.20	0	0	0	0	0	0	0	0	2.63%
130	Services	380.00	0	0	0	0	0	0	0	0	3.48%
131	Meters	381.00	0	0	0	0	0	0	0	0	1.48%
132	Meter Installations	382.00	0	0	0	0	0	0	0	0	1.54%
133	House Regulators	383.00	0	0	0	0	0	0	0	0	1.82%
134	Industrial M&R Equipment	385.00	0	0	0	0	0	0	0	0	2.96%
135	Subtotal - December 2017		0	0	0	0	0	0	0	0	

Note: Totals may not sum due to rounding.
Calendar Year Activity - by Gas Plant Account

136	TRANSMISSION AND DISTRIBUTION PLANT										
137	Regulator Structures	375.40	0	0	0	0	0	0	0	0	
138	Mains	376.00	0	0	0	0	0	0	0	0	
139	Res. & Com. M&R Equipment	378.20	0	0	0	0	0	0	0	0	
140	Services	380.00	0	0	0	0	0	0	0	0	
141	Meters	381.00	0	0	0	0	0	0	0	0	
142	Meter Installations	382.00	0	0	0	0	0	0	0	0	
143	House Regulators	383.00	0	0	0	0	0	0	0	0	
144	Industrial M&R Equipment	385.00	0	0	0	0	0	0	0	0	
145	Total 2017 Activity		0	0	0	0	0	0	0	0	

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
RIS Revenue Requirement - March 30, 2018 Filing
2018 Investments - Monthly Detail - 12 months projected

Line No.	Description	Gas Plant In Service					Reserve for Depreciation & Amortization					NOTE 1				NOTE 2	
		Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance with Rate Case (5 = 2+3+4)	Reserve Beginning Balance (6)	Not Lined (7)	Depreciation Accrual (8)	Reserve Cost of Removal (9)	Retirements (10 = - col 4)	Ending Balance (11 = 6-9+10)	Accumulated Deferred Income Tax (12)	Net Rate Base (13 = 5+11+12)	Property Tax (14)			
1	December 31, 2017	0	248,649	(56,325)	212,324	0		269	98,019	36,325	134,076	0	118,395	0			
2	January 31, 2018	212,324	505,411	(33,743)	683,992	134,076		984	178,132	33,743	344,967	(728,004)	572,950	1,118,395			
3	February 28, 2018	683,992	791,267	(43,876)	1,331,383	344,967		2,173	183,507	143,876	670,176	(684,012)	1,317,547	1,452,950			
4	March 31, 2018	1,331,383	779,846	(247,090)	1,864,139	670,176		3,545	38,814	247,090	952,535	(912,016)	1,994,658	1,452,950			
5	April 30, 2018	1,864,139	2,005,720	(159,403)	3,710,456	952,535		5,676	123,243	159,403	1,229,505	(1,140,020)	3,799,941	1,452,950			
6	May 31, 2018	3,710,456	1,097,469	(357,582)	4,450,343	1,229,505		8,003	206,628	357,582	1,787,712	(1,368,024)	4,870,011	1,452,950			
7	June 30, 2018	4,450,343	3,789,317	(338,446)	7,901,214	1,787,712		11,608	40,518	338,446	2,155,069	(1,586,078)	8,460,254	1,452,950			
8	July 31, 2018	7,901,214	2,185,497	(377,097)	9,709,614	2,155,069		15,994	28,144	377,097	2,545,085	(1,834,072)	10,430,667	1,452,950			
9	August 31, 2018	9,709,614	3,971,758	(493,847)	13,177,525	2,545,085		20,344	49,709	493,847	3,068,347	(2,055,074)	14,152,816	1,452,950			
10	September 30, 2018	13,177,525	4,241,870	(239,238)	17,140,156	3,068,347		26,005	63,011	239,238	3,344,622	(2,280,040)	18,206,126	1,452,950			
11	October 31, 2018	17,140,156	845,709	(446,030)	17,539,836	3,068,347		29,346	187,702	446,030	3,943,097	(2,508,043)	19,108,981	1,452,950			
12	November 30, 2018	17,539,836	402,186	(185,322)	17,756,700	3,943,097		29,371	43,773	185,322	4,148,329	(2,735,048)	19,108,981	1,452,950			
13	December 31, 2018	20,814,700	(3,058,000)		17,756,700	153,871		153,871	1,244,000	3,058,000	4,148,329	(2,735,048)	19,108,981	1,452,950			
14	Total Cumulative December 31, 2018				17,756,700												
15	13-month average as of December 31, 2018				15,473,821						1,871,495	(1,468,034)	7,844,361				

NOTE:
1 ADIT calculated on Au B-6, Schedule 1, Column 7 - January balance reflects 1/12th total Annual total with 1/12th added each month February - December
2 Property Tax not applicable to 2018 investment until 2019 calendar year

Columbia Gas of Maryland
RIS Revenue Requirement - March 30, 2018 Filing
2018 Investments - Monthly Detail - 12 months projected

Gas Plant In Service											Reserve for Depreciation & Amortization										
Line No.	Description	Gas Plant Account (1)	Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance (5 = 2+3-4)	Reserve Beginning Balance (6)	Depreciation Accrual Rate (7)	Depreciation Accrual (8)	Cost of Removal (9)	Retirements (10 = -col 4)	Ending Balance (11 = 6-9+10)									
January-18																					
16	TRANSMISSION AND DISTRIBUTION PLANT																				
17	Regulator Structures	375.40	0	0	0	0	0	1.07%	0	0	0	0									
18	Valves	376.00	0	44,166	0	44,166	0	1.07%	27	14,971	0	14,943									
19	Res. & Com. M&R Equipment	378.20	0	(0)	0	(0)	0	1.07%	(0)	0	0	0									
20	Services	380.00	0	200,046	(56,325)	163,721	0	2.93%	228	83,049	36,325	119,136									
21	Meters	381.00	0	1,180	0	1,180	0	1.11%	1	0	0	(1)									
22	Meter Installations	382.00	0	524	0	524	0	1.56%	2	0	0	(0)									
23	House Regulators	383.00	0	2,572	0	2,572	0	1.75%	0	0	0	(2)									
24	Industrial M&R Equipment	385.00	0	160	0	160	0	2.05%	0	0	0	(0)									
25	Subtotal - January 2018		0	248,649	(56,325)	211,314	0		269	98,019	36,325	134,076									

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
IBIS Revenue Requirement - March 30, 2018 Filing
2018 Investment - Monthly Detail - 12 months projected

February-18									
TRANSMISSION AND DISTRIBUTION PLANT									
26	Regulator Structures	375.40	0	0	0	325.313	0	0	0
27	Mains	376.00	44,166	285,782	(4,635)	325.313	14,943	0	0
28	Res. & Com. M&R Equipment	378.20	(0)	55	0	55	0	0	0
29	Services	380.00	163,721	212,338	(29,108)	346,941	119,136	0	0
30	Meters	381.00	1,180	2,162	0	3,342	(1)	0	0
31	Meter Installations	382.00	524	961	0	1,485	(0)	0	0
32	House Regulators	383.00	2,572	3,387	0	5,959	(2)	0	0
33	Industrial M&R Equipment	385.00	160	736	0	896	(0)	0	0
34	Subtotal - February 2018		213,324	596,411	(33,743)	683,992	134,076	0	0

March-18									
TRANSMISSION AND DISTRIBUTION PLANT									
36	Regulator Structures	375.40	0	874	0	874	0	0	0
37	Mains	376.00	325,313	247,897	(22,388)	550,822	46,536	0	0
38	Res. & Com. M&R Equipment	378.20	55	46	0	101	(0)	0	0
39	Services	380.00	346,941	520,489	(121,489)	745,941	296,426	0	0
40	Meters	381.00	3,342	3,704	0	3,132	(2)	0	0
41	Meter Installations	382.00	1,485	1,646	0	10,260	(0)	0	0
42	House Regulators	383.00	5,959	4,302	0	13,207	(0)	0	0
43	Industrial M&R Equipment	385.00	896	12,311	0	13,207	(0)	0	0
44	Subtotal - March 2018		683,992	791,287	(143,876)	1,531,243	344,967	0	0

April-18									
TRANSMISSION AND DISTRIBUTION PLANT									
46	Regulator Structures	375.40	874	0	0	874	0	0	0
47	Mains	376.00	550,822	157,469	0	708,291	96,427	(0)	0
48	Res. & Com. M&R Equipment	378.20	101	26,342	0	26,343	(0)	0	0
49	Services	380.00	745,941	588,712	(247,090)	1,087,564	573,805	0	0
50	Meters	381.00	7,046	4,098	0	11,144	(10)	0	0
51	Meter Installations	382.00	3,132	1,821	0	4,953	(5)	0	0
52	House Regulators	383.00	10,260	418	0	10,678	(21)	0	0
53	Industrial M&R Equipment	385.00	13,207	1,086	0	14,293	(19)	0	0
54	Subtotal - April 2018		1,531,243	779,846	(247,090)	1,864,139	670,176	0	0

May-18									
TRANSMISSION AND DISTRIBUTION PLANT									
56	Regulator Structures	375.40	874	0	0	874	0	0	0
57	Mains	376.00	708,291	1,388,078	0	2,096,370	101,574	(1)	0
58	Res. & Com. M&R Equipment	378.20	26,343	15,112	0	41,455	(29)	0	0
59	Services	380.00	1,087,564	579,865	(159,403)	1,508,026	851,114	0	0
60	Meters	381.00	11,144	8,904	0	19,048	(22)	0	0
61	Meter Installations	382.00	4,953	3,780	0	8,733	(10)	0	0
62	House Regulators	383.00	10,678	1,062	0	11,740	(38)	0	0
63	Industrial M&R Equipment	385.00	14,293	6	0	14,299	(53)	0	0
64	Subtotal - May 2018		1,864,139	2,096,730	(159,403)	3,710,456	992,535	0	0

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
IGIS Revenue Requirement - March 30, 2018 Filing
2018 Investments - Monthly Detail - 12 months projected

June-18											
TRANSMISSION AND DISTRIBUTION PLANT											
66	Regular Structures	375.40	10.186	35.123	0	45.309	(6)	1,079	25	0	0
67	Main	376.00	2,096,370	335,277	(85,144)	2,346,503	118,656	1,879	2,758	31,864	85,144
68	Reg. & Com. M&R Equipment	378.20	41,453	261	0	41,716	(104)	2,679	92	0	233,906
69	Services	380.00	1,508,026	712,484	(272,538)	1,948,072	1,111,616	3,458	5,026	176,764	1,555,338
70	Meters	381.00	19,648	5,072	0	24,720	(41)	1,819	28	0	(69)
71	Meter Installations	382.00	8,733	2,254	0	10,987	(19)	1,566	13	0	(32)
72	House Regulators	383.00	11,740	631	0	12,371	(88)	1,476	19	0	(74)
73	Industrial M&R Equipment	385.00	14,399	6,366	0	20,665	(88)	2,458	43	0	(131)
74	Subtotal - June 2018		3,710,456	1,097,469	(357,582)	4,459,343	1,229,505	8,003	208,638	357,582	1,787,712

July-18											
TRANSMISSION AND DISTRIBUTION PLANT											
76	Regular Structures	375.40	45,309	0	0	45,309	(31)	1,079	40	0	0
77	Main	376.00	2,346,503	2,688,377	(25,733)	5,009,097	232,906	1,879	4,567	6,189	25,733
78	Reg. & Com. M&R Equipment	378.20	41,716	190	0	41,905	(196)	2,679	92	0	0
79	Services	380.00	1,948,072	1,077,885	(312,713)	2,713,244	1,555,338	3,458	6,778	34,330	312,713
80	Meters	381.00	24,720	15,595	0	40,315	(69)	1,819	41	0	0
81	Meter Installations	382.00	10,987	6,931	0	17,918	(32)	1,566	19	0	0
82	House Regulators	383.00	12,371	389	0	12,760	(74)	1,476	20	0	0
83	Industrial M&R Equipment	385.00	20,665	0	0	20,665	(131)	2,458	51	0	0
84	Subtotal - July 2018		4,459,343	3,789,317	(338,440)	7,901,314	1,787,712	11,608	40,518	338,440	2,555,069

August-18											
TRANSMISSION AND DISTRIBUTION PLANT											
86	Regular Structures	375.40	45,309	0	0	45,309	(71)	1,079	40	0	0
87	Main	376.00	5,009,097	1,350,679	(135,750)	6,224,026	260,261	1,879	6,974	4,416	135,750
88	Reg. & Com. M&R Equipment	378.20	41,905	0	0	41,905	(288)	2,679	93	0	0
89	Services	380.00	2,713,244	820,830	(241,346)	3,292,728	1,893,602	3,458	8,734	24,498	241,346
90	Meters	381.00	40,315	9,243	0	49,558	(100)	1,819	57	0	0
91	Meter Installations	382.00	17,918	4,108	0	22,026	(50)	1,566	26	0	0
92	House Regulators	383.00	12,760	637	0	13,397	(93)	1,476	20	0	0
93	Industrial M&R Equipment	385.00	20,665	0	0	20,665	(182)	2,458	51	0	0
94	Subtotal - August 2018		7,901,314	2,185,497	(377,097)	9,709,614	2,155,069	15,994	28,914	377,097	2,445,065

September-18											
TRANSMISSION AND DISTRIBUTION PLANT											
96	Regular Structures	375.40	45,309	0	0	45,309	(112)	1,079	40	0	0
97	Main	376.00	6,224,026	2,980,933	(256,915)	8,948,043	393,453	1,879	9,419	7,592	256,915
98	Reg. & Com. M&R Equipment	378.20	41,905	4,698	0	46,603	(381)	2,679	98	0	0
99	Services	380.00	3,292,728	912,869	(236,932)	3,968,665	2,132,715	3,458	10,559	42,117	236,932
100	Meters	381.00	49,558	15,953	0	65,511	(166)	1,819	72	0	0
101	Meter Installations	382.00	22,026	7,090	0	29,116	(76)	1,566	33	0	0
102	House Regulators	383.00	13,397	381	0	13,779	(114)	1,476	21	0	0
103	Industrial M&R Equipment	385.00	20,665	14	0	20,699	(232)	2,458	51	0	0
104	Subtotal - September 2018		9,709,614	3,971,758	(493,847)	13,137,515	2,545,065	20,294	49,709	493,847	3,868,317

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2018 Investments - Monthly Detail - 12 months projected

October-18											
TRANSMISSION AND DISTRIBUTION PLANT											
106	Regulator Structures	375.40	45,309	19,570	0	64,879	648,442	(152)	49	0	(201)
107	Mains	376.00	8,948,043	3,384,942	(72,930)	12,260,056	1,194,194	1,194,194	13,167	9,628	72,930
108	Res. & Com. M&R Equipment	378.20	46,403	10,270	0	56,673	2,059,700	(992)	114	0	(592)
109	Services	380.00	3,968,665	801,825	(166,308)	4,604,182	3,079,379	3,079,379	12,466	53,413	166,308
110	Meters	381.00	65,511	17,109	0	82,620	2,421,203	(239)	93	0	2,628,457
111	Meter Installations	382.00	29,116	7,604	0	36,720	1,215,156	(110)	43	0	(332)
112	House Regulators	383.00	13,779	435	0	14,213	1,604,479	(135)	22	0	(152)
113	Industrial M&R Equipment	385.00	20,699	115	0	20,814	1,479,290	(283)	51	0	(157)
114	Subtotal - October 2018		11,137,435	4,241,870	(729,238)	17,140,156	3,069,347	(283)	26,005	63,041	239,238
											3,344,672

November-18											
TRANSMISSION AND DISTRIBUTION PLANT											
116	Regulator Structures	375.40	64,879	0	0	64,879	717,013	(201)	58	0	(259)
117	Mains	376.00	12,260,056	645,707	(347,298)	12,558,465	1,699,700	1,699,700	15,408	28,668	347,298
118	Res. & Com. M&R Equipment	378.20	56,673	38	0	56,700	2,059,700	(992)	425	0	(718)
119	Services	380.00	4,604,182	180,532	(98,771)	4,685,942	3,079,379	3,079,379	13,509	159,034	98,771
120	Meters	381.00	82,620	3,502	0	86,122	2,421,203	(239)	106	0	(638)
121	Meter Installations	382.00	36,720	1,565	0	38,277	1,215,156	(157)	49	0	(201)
122	House Regulators	383.00	14,213	402	0	14,615	1,604,479	(135)	22	0	(179)
123	Industrial M&R Equipment	385.00	20,814	13,982	0	34,796	1,479,290	(403)	68	0	(489)
124	Subtotal - November 2018		17,140,156	845,709	(446,030)	17,539,836	3,344,672	(403)	29,246	187,702	446,030
											3,589,007

December-18											
TRANSMISSION AND DISTRIBUTION PLANT											
126	Regulator Structures	375.40	64,879	121	0	65,000	1,078,492	(259)	58	0	(317)
127	Mains	376.00	12,558,465	190,441	(206)	12,748,700	1,699,700	1,699,700	15,712	6,686	206
128	Res. & Com. M&R Equipment	378.20	56,700	143,300	0	200,000	2,059,700	(718)	283	0	(1,001)
129	Services	380.00	4,685,942	62,134	(185,116)	4,563,000	2,872,713	(438)	111	37,087	185,116
130	Meters	381.00	86,122	3,878	0	90,000	2,421,203	(239)	51	0	(549)
131	Meter Installations	382.00	38,277	1,723	0	40,000	1,215,156	(201)	23	0	(252)
132	House Regulators	383.00	14,615	385	0	15,000	1,604,479	(179)	86	0	(202)
133	Industrial M&R Equipment	385.00	34,796	204	0	35,000	1,479,290	(403)	68	0	(489)
134	Subtotal - December 2018		17,539,836	402,186	(185,322)	17,756,700	3,589,007	(403)	29,773	43,773	185,322
											4,148,339

Note: Totals may not sum due to rounding.
Calendar Year Activity - by Gas Plant Account

TRANSMISSION AND DISTRIBUTION PLANT											
136	Regulator Structures	375.40	65,000	0	0	65,000	71,328	0	317	0	0
137	Mains	376.00	13,699,700	(951,000)	0	190,000	1,001	0	1,001	0	951,000
138	Res. & Com. M&R Equipment	378.20	200,000	0	0	2,107,000	79,533	0	549	0	0
139	Services	380.00	90,000	0	0	40,000	252	0	202	0	0
140	Meters	381.00	40,000	0	0	15,000	35,000	0	488	0	0
141	Meter Installations	382.00	15,000	0	0	20,814	70,773	0	488	0	0
142	House Regulators	383.00	35,000	0	0	153,671	1,244,000	0	488	0	0
143	Industrial M&R Equipment	385.00	35,000	0	0	153,671	1,244,000	0	488	0	0
144	Total 2018 Activity		20,814,700	(3,058,000)	0	153,671	1,244,000	0	488	0	0

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2018 Investments - 2018 Rate Case Impact (Case No. 9480)
Monthly Detail - 12 months projected

Line No.	Description (1)	Gas Plant In Service				Reserve for Depreciation & Amortization								NOTE 1		NOTE 2	
		Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance (5 = 2+3+4)	Reserve Beginning Balance (6)	Not Used (7)	Depreciation Accrual (8)	Reserve Cost of Removal (9)	Retirements (10 = - col 4)	Ending Balance (11 = 6-8+9+10)	Accumulated Deferred Income Tax (12)	Net Rate Base (13 = 5+11+12)	Property Tax (14)			
1	December 31, 2017	0	0	0	0	0	0	0	0	0	0	0	0	0			
2	January 30, 2018	0	0	0	0	0	0	0	0	0	0	0	0	0			
3	February 28, 2018	0	0	0	0	0	0	0	0	0	0	0	0	0			
4	March 31, 2018	0	0	0	0	0	0	0	0	0	0	0	0	0			
5	April 30, 2018	0	0	0	0	0	0	0	0	0	0	0	0	0			
6	May 31, 2018	0	0	0	0	0	0	0	0	0	0	0	0	0			
7	June 30, 2018	0	0	0	0	0	0	0	0	0	0	0	0	0			
8	July 31, 2018	0	0	0	0	0	0	0	0	0	0	0	0	0			
9	August 31, 2018	0	0	0	0	0	0	0	0	0	0	0	0	0			
10	September 30, 2018	0	0	0	0	0	0	0	0	0	0	0	0	0			
11	October 31, 2018	0	(5,340,879)	978,020	(4,362,859)	0	0	(55,375)	(830,343)	(978,020)	0	698,916	(\$416,931)	0			
12	November 30, 2018	(4,362,859)	0	0	(4,362,859)	(1,752,988)	0	(8,710)	0	0	0	768,808	(\$338,329)	0			
13	December 31, 2018	(4,362,859)	0	0	(4,362,859)	(1,744,277)	0	(12,795)	(830,343)	(978,020)	0	838,700	(\$259,727)	0			
14	Total Cumulative December 31, 2018		(5,340,879)	978,020													
15	13-month average as of December 31, 2018				(671,209)							177,417	(761,472)				

(NOTE 2)

NOTE:
1 ADIT calculated on Schedule 6
2 Property Tax not applicable to 2018 investment until 2019 calendar year
3 The 13-month average on Line 15 is calculated using the month-end balances for October 31, 2018 through December 31, 2018.

Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2018 Investments - 2018 Rate Case Impact (Case No. 9480)
Monthly Detail - 12 months projected

Line No.	Description	Gas Plant In Service				Reserve for Depreciation & Amortization				NOTE 1		NOTE 2	
		Plant Beginning Balance (2)	Additions (3)	Retirements (4)	Plant Ending Balance (5 = 2+3-4)	Reserve Beginning Balance (6)	Not Used (7)	Depreciation Accrual (8)	Cost of Removal (9)	Retirements (10 = -col 4)	Ending Balance (11 = 6-8+9-10)	Accumulated Deferred Income Tax (12)	Property Tax (14)
16	January 18	0	0	0	0	0	0	0	0	0	0	0	0
17	Regular Structures	0	0	0	0	0	0	0	0	0	0	0	0
18	Mains	0	44,166	0	44,166	0	1,078	0	0	0	1,078	0	0
19	Rec. & Com. M&R Equipment	0	0	0	0	0	1,456	0	14,971	0	14,971	0	0
20	Services	0	200,046	(36,325)	163,721	0	2,456	0	83,049	36,325	119,136	0	0
21	Meters	0	1,180	0	1,180	0	1,315	0	0	0	1,315	0	0
22	Meter Installations	0	524	0	524	0	1,562	0	0	0	1,562	0	0
23	House Regulators	0	2,572	0	2,572	0	1,878	0	0	0	1,878	0	0
24	Industrial M&R Equipment	0	160	0	160	0	2,324	0	0	0	2,324	0	0
25	Subtotal - January 2018	0	248,649	(36,325)	212,324	0	2,699	0	98,019	36,325	134,076	0	0
26	February 18	0	0	0	0	0	0	0	0	0	0	0	0
27	Regular Structures	0	0	0	0	0	0	0	0	0	0	0	0
28	Mains	0	285,782	(4,635)	281,147	0	1,078	0	0	0	1,078	0	0
29	Rec. & Com. M&R Equipment	0	0	0	0	0	1,456	0	27,207	0	27,207	0	0
30	Services	0	212,328	(29,108)	183,220	0	2,456	0	150,925	29,108	204,267	0	0
31	Meters	0	1,180	0	1,180	0	1,315	0	0	0	1,315	0	0
32	Meter Installations	0	524	0	524	0	1,562	0	0	0	1,562	0	0
33	House Regulators	0	3,387	0	3,387	0	1,878	0	0	0	1,878	0	0
34	Industrial M&R Equipment	0	736	0	736	0	2,324	0	0	0	2,324	0	0
35	Subtotal - February 2018	0	506,411	(33,743)	472,668	0	2,699	0	178,132	33,743	248,986	0	0

[illegible]

TRANSMISSION AND DISTRIBUTION PLANT											
APRIL 18											
46	Regulation Structures	375.40	874	0	874			1	0	0	(1)
47	Mainline	376.00	550,822	157,469	708,291			0	5,928	0	101,574
48	Res. & Com. M&R Equipment	378.20	101	26,342	26,343			29	0	0	851,114
49	Services	380.00	745,941	588,712	(247,090)	1,087,564		2,666	247,090	32,885	
50	Meters	381.00	7,046	4,098	0	11,144		11	0	0	
51	Meter Installations	382.00	3,132	1,821	0	4,953		5	0	0	
52	Flow Regulators	383.00	10,260	418	0	10,678		16	0	0	
53	Industrial M&R Equipment	385.00	13,207	1,086	0	14,293		34	0	0	
54	Subtotal - April 2018		1,331,383	779,846	(247,090)	1,864,139		3,545	38,814	247,090	952,535
						670,176					

[illegible]

TRANSMISSION AND DISTRIBUTION PLANT									
	June-18								
66	Regulator Structures (NOTE 3)	375.40	874	0	874	(2)	1,072	1	0
67	Regulator Structures (NOTE 3)	376.00	2,096,370	335,277	2,346,503	118,656	2,758	0	332,906
68	Regulator Structures (NOTE 3)	378.20	26,343	0	26,343	(88)	58	0	(146,343)
69	Regulator Structures (NOTE 3)	380.00	1,598,026	712,484	1,948,072	1,111,162	5,026	176,764	272,438
70	Regulator Structures (NOTE 3)	381.00	11,144	0	11,144	(16)	14	0	(59)
71	Regulator Structures (NOTE 3)	382.00	4,953	0	4,953	(16)	6	0	0
72	Regulator Structures (NOTE 3)	383.00	10,678	0	10,678	(54)	17	0	(7)
73	Regulator Structures (NOTE 3)	385.00	14,283	0	14,283	(88)	15	0	(123)
74	Regulator Structures (NOTE 3)	385.00	1,047,782	0	1,047,782	7,915	208,628	357,582	1,787,829
75	Regulator Structures (NOTE 3)	3,872,690							

Columbia Gas of Maryland
 DIS Revenue Requirement - March 30, 2018 Filing
 2018 Investment - 2018 Rate Case Impact (Case No. 9480)
 Monthly Detail - 12 months projected

July-18											
TRANSMISSION AND DISTRIBUTION PLANT											
76	Regulator Structures	375.40	874	0	0	0	874	(3)	1	0	(4)
77	Mains	376.00	2,346.503	0	0	0	2,346.503	229,993	2,914	0	(4)
78	Res. & Com. M&R Equipment	378.20	26,343	0	0	0	26,343	(146)	58	0	(204)
79	Services	380.00	1,948,072	0	0	0	1,948,072	1,549,672	5,666	0	(64)
80	Meters	381.00	11,144	0	0	0	11,144	(30)	14	0	(29)
81	Water Installations	382.00	4,953	0	0	0	4,953	(71)	6	0	(88)
82	House Regulators	383.00	10,678	0	0	0	10,678	(13)	17	0	(153)
83	Industrial M&R Equipment	385.00	14,293	0	0	0	14,293	(153)	35	0	(153)
84	Subtotal - July 2018		4,362,859	0	0	0	4,362,859	1,779,119	8,710	0	
85											

August-18											
TRANSMISSION AND DISTRIBUTION PLANT											
86	Regulator Structures	375.40	874	0	0	0	874	(4)	1	0	(4)
87	Mains	376.00	2,346.503	0	0	0	2,346.503	229,993	2,914	0	(4)
88	Res. & Com. M&R Equipment	378.20	26,343	0	0	0	26,343	(204)	58	0	(262)
89	Services	380.00	1,948,072	0	0	0	1,948,072	1,549,672	5,666	0	(78)
90	Meters	381.00	11,144	0	0	0	11,144	(64)	14	0	(46)
91	Water Installations	382.00	4,953	0	0	0	4,953	(88)	6	0	(104)
92	House Regulators	383.00	10,678	0	0	0	10,678	(123)	17	0	(123)
93	Industrial M&R Equipment	385.00	14,293	0	0	0	14,293	(123)	35	0	(123)
94	Subtotal - August 2018		4,362,859	0	0	0	4,362,859	1,779,119	8,710	0	
95											

September-18											
TRANSMISSION AND DISTRIBUTION PLANT											
96	Regulator Structures	375.40	874	0	0	0	874	(4)	1	0	(5)
97	Mains	376.00	2,346.503	0	0	0	2,346.503	229,993	2,914	0	(5)
98	Res. & Com. M&R Equipment	378.20	26,343	0	0	0	26,343	(262)	58	0	(92)
99	Services	380.00	1,948,072	0	0	0	1,948,072	1,549,672	5,666	0	(92)
100	Meters	381.00	11,144	0	0	0	11,144	(78)	14	0	(121)
101	Water Installations	382.00	4,953	0	0	0	4,953	(104)	6	0	(121)
102	House Regulators	383.00	10,678	0	0	0	10,678	(123)	17	0	(123)
103	Industrial M&R Equipment	385.00	14,293	0	0	0	14,293	(123)	35	0	(123)
104	Subtotal - September 2018		4,362,859	0	0	0	4,362,859	1,779,119	8,710	0	
105											

October-18											
TRANSMISSION AND DISTRIBUTION PLANT											
106	Regulator Structures	375.40	874	0	0	0	874	(5)	1	0	(6)
107	Mains	376.00	2,346.503	0	0	0	2,346.503	229,993	2,914	0	(6)
108	Res. & Com. M&R Equipment	378.20	26,343	0	0	0	26,343	(320)	58	0	(106)
109	Services	380.00	1,948,072	0	0	0	1,948,072	1,538,341	5,666	0	(106)
110	Meters	381.00	11,144	0	0	0	11,144	(92)	14	0	(137)
111	Water Installations	382.00	4,953	0	0	0	4,953	(121)	6	0	(137)
112	House Regulators	383.00	10,678	0	0	0	10,678	(123)	17	0	(137)
113	Industrial M&R Equipment	385.00	14,293	0	0	0	14,293	(123)	35	0	(137)
114	Subtotal - October 2018		4,362,859	0	0	0	4,362,859	1,761,698	8,710	0	
115											

[illegible]

Calendar Year Activity - by Gas Plant Account

Summary - 2018 Activity									
TRANSMISSION AND DISTRIBUTION PLANT									
136	Regulator Structures	375.40	874	0	6	0	0	0	0
137	Mains	376.00	2,458,670	(112,167)	17,736	126,821	112,167	0	0
138	Res. & Conn. M&R Equipment	378.20	26,343	0	378	0	0	0	0
139	Services	380.00	2,813,925	(865,852)	36,699	703,522	865,852	0	0
140	Meters	381.00	11,144	0	106	0	0	0	0
141	Meter Installations	382.00	4,953	0	0	0	0	0	0
142	House Regulators	383.00	10,678	0	49	0	0	0	0
143	Industrial M&R Equipment	385.00	0	0	137	0	0	0	0
144	Total - 2018 Activity	5,240,879	(974,028)	0	55,375	830,343	974,028	0	0

Columbia Gas of Maryland
IRIS Revenue Requirement - March 30, 2018 Filing
2018 Net Investment Activity (Not Included in Base Rates in Calendar Year 2018)
Calculation of the Ending Balances for Plant, Accumulated Depreciation & ADIT

Line No.	Description	Gas Plant Account (1)	December 2018 Balance Schedule 2A (2)	Reference (3)	October 2018 Balance Schedule 2B (4)	Reference (5)	November through December 2018 Depreciation Schedule 2B (6)	Reference (7)	December 2018 Ending Balance 2018 IRIS (8 = 2 - 4 + 6)
Plant									
TRANSMISSION AND DISTRIBUTION PLANT									
1	Regulator Structures	375.40	65,000	Sch 2A, Ln 127, Col 5	874	Sch 2B, Ln 107, Col 5	0		64,126
2	Mains	376.00	12,748,700	Sch 2A, Ln 128, Col 5	2,346,503	Sch 2B, Ln 108, Col 5	0		10,402,197
3	Res. & Com. M&R Equipment	378.20	200,000	Sch 2A, Ln 129, Col 5	26,343	Sch 2B, Ln 109, Col 5	0		173,657
4	Services	380.00	4,563,000	Sch 2A, Ln 130, Col 5	1,948,072	Sch 2B, Ln 110, Col 5	0		2,614,928
5	Meters	381.00	90,000	Sch 2A, Ln 131, Col 5	11,144	Sch 2B, Ln 111, Col 5	0		78,856
6	House Regulators	382.00	40,000	Sch 2A, Ln 132, Col 5	4,953	Sch 2B, Ln 112, Col 5	0		35,047
7	Industrial M&R Equipment	383.00	15,000	Sch 2A, Ln 133, Col 5	10,678	Sch 2B, Ln 113, Col 5	0		4,322
8	Total	385.00	35,000	Sch 2A, Ln 134, Col 5	14,293	Sch 2B, Ln 114, Col 5	0		20,707
9			17,756,700		4,362,859		0		13,393,841
10									

Accumulated Depreciation

TRANSMISSION AND DISTRIBUTION PLANT									
11	Regulator Structures	375.40	(317)	Sch 2A, Ln 127, Col 11	(6)	Sch 2B, Ln 107, Col 11	2	(Sch 2B, Ln 107, Col 8) * 2	(310)
12	Mains	376.00	1,069,672	Sch 2A, Ln 128, Col 11	221,252	Sch 2B, Ln 108, Col 5	5,827	(Sch 2B, Ln 108, Col 8) * 2	854,247
13	Res. & Com. M&R Equipment	378.20	(1,001)	Sch 2A, Ln 129, Col 11	(378)	Sch 2B, Ln 109, Col 5	116	(Sch 2B, Ln 109, Col 8) * 2	(506)
14	Services	380.00	3,081,467	Sch 2A, Ln 130, Col 11	1,532,675	Sch 2B, Ln 110, Col 5	11,331	(Sch 2B, Ln 110, Col 8) * 2	1,560,123
15	Meters	381.00	(549)	Sch 2A, Ln 131, Col 11	(106)	Sch 2B, Ln 111, Col 5	28	(Sch 2B, Ln 111, Col 8) * 2	(415)
16	House Regulators	382.00	(252)	Sch 2A, Ln 132, Col 11	(49)	Sch 2B, Ln 112, Col 5	13	(Sch 2B, Ln 112, Col 8) * 2	(191)
17	Industrial M&R Equipment	383.00	(202)	Sch 2A, Ln 133, Col 11	(137)	Sch 2B, Ln 113, Col 5	33	(Sch 2B, Ln 113, Col 8) * 2	(32)
18	Total	385.00	(488)	Sch 2A, Ln 134, Col 11	(263)	Sch 2B, Ln 114, Col 5	70	(Sch 2B, Ln 114, Col 8) * 2	(155)
19			4,148,329		1,752,988		17,421		2,412,763
20									
21	ADIT		(2,736,047)	Att B-6, Sch 1, Line 79, Col 7	838,700	Att B-6, Sch 1, Line 79, Col 8			(1,897,347)

Columbia Gas of Maryland, Inc.
IRIS Revenue Requirement - March 30, 2018 Filing
Rate of Return, Gross Conversion and Effective Property Tax Rate Calculations

Line No.	Rate of Return (Case No. 9480) - Effective November 2017	Cost	Weighted Cost Rate (3 = 1 x 2)	Pre-Tax @ Effect tax of 27.518%
1	Rate of Return (NOTE 1)			
2	Long Term Debt	(1)		(4)
3	Short Term Debt	45.96%	1.75%	2.26800%
4	Common Equity	52.34%	8.70%	0.03800%
		100.00%	7.3830000%	7.00445%
5	Total Debt Return (Col 3, Ln 1 + Col 3, Ln 2)	2.31%		9.3104490%

Effective Tax Rate and Gross Conversion Factor (NOTE 2 & 3)

	Effective Tax Rate	Gross Conversion
6 Operating Revenue	100.0000000%	100.0000000%
7 Less: Unallocable Accounts Expense		0.742977%
8 Less: PSC Fees & Gross Receipts	(NOTE 2)	7.197060%
9	(NOTE 3)	
10 State Income Tax	Net Revenues	100.0000000%
11		8.25000000%
12 Income Before Federal Income Tax		97.063108%
13 Federal Income Tax		91.750000%
	Operating Income Percentage	89.055585%
14		18.7016729%
	Gross Revenue Conversion Factor (Line 6 / Line 13)	70.353912%
		1.421385

Effective Property Tax Percentage

Description	Case No. 9480	2018 IRIS Case 9480
15 Account 101 - Gross Plant in Service, Excl. CIAC	Balance	Balance
16 Account 106 - Completed Construction Not Classified	170,546,226	170,546,226
17 Account 154 - Materials and Supplies	8,358,457	8,358,457
18 Account 164 - Firm Storage Service	7,500,000	7,500,000
19 Total Plant For Property Taxes (Sum Line 15 - Line 18) (NOTE 4)	186,404,683	186,404,683
20	2,000,083	2,000,083
21 Effective Property Tax Rate (Ln 20 / Ln 19) (NOTE 5)	1.1399%	1.1407%

NOTES

- Cost of Capital per the Settlement Agreement of Case No. 9480
- Unallocable Rate per the Settlement Agreement of Case No. 9480
- PSC Fee (Case No. 9480)
- IRIS property tax rate is calculated per the Settlement Agreement of Case No. 9480 (2018), less account 164 - Firm Storage Service and associated tax payments on storage (Exhibit 5, Sh. 3 of 4, Lines 10-(6), consistent with prior IRIS Surcharge Filings.

Note: Totals may not sum due to rounding.

Columbia Gas of Maryland, Inc.
IRIS Revenue Requirement - March 30, 2018 Filing
Calculation of Interest Synchronization, Depreciation and Property Taxes

Line No.		2017 Investment 2019 (1)	2018 Investment 2019 Net of Case No. 9480 (2)	2019 Investment (3)	Amount for Calendar Year 2019 IRIS Net of Case No. 9480 (4 = 1 + 2 + 3)
1	Rate Base (Att B-2, Schedule 1, Line 4)	0	13,747,282	6,283,378	20,030,660
2	Debt Return (Att B-4, Schedule 1, Line 5)	2.31%	2.31%	2.31%	2.31%
3	Return on Plant (Line 1 * Line 2)	0	314,012	144,895	461,907
4	Adjustment to Maryland Income Tax (Line 3 * 8.25%)	0	26,153	11,954	38,107
5	Adjustment to Federal Income Tax ((Line 3 - Line 4) * 21.0%)	0	61,080	27,918	88,998
6	Total Taxes Before Gross Up (Ln 4 + Ln 5)	0	87,234	39,872	127,105
7	Revenue Conversion Factor (Att B-4, Schedule 1, Col 3, Ln 14)	1,421,385	1,421,385	1,421,385	1,421,385
8	Interest Synchronization ((Ln 6 * Ln 7)-1)	0	(123,992)	(56,673)	(180,665)
9	Depreciation and Property Tax, Grossed-up Net of Tax				
9	Depreciation (Att B-2, Schedules 2A, 2B & 2C, Col 8, Ln 14)	0	253,971	120,215	374,186
10	Property Tax (Att B-2, Schedules 2A, 2B & 2C, Col 14, Ln 14)	0	381,156	0	381,156
11	Effective Tax Rate (Att B-4, Schedule 1, Col. 2, Line 13)	72.48250%	72.48250%	72.48250%	72.48250%
12	Revenue Conversion Factor (Att B-4, Schedule 1, Col 3, Ln 14)	1,421,385	1,421,385	1,421,385	1,421,385
13	Depreciation, Grossed-up Net of Tax ((Ln 9 * Ln 11)*Ln 12)	0	261,655	123,852	385,507
14	Property Tax, Grossed-up Net of Tax ((Ln 10 * Ln 11)*Ln 12)	0	92,884	0	92,884

Note: Totals may not sum due to rounding.

NOTE:
Rogers and Mizud Services deduction rates are based on the 2016 Federal Tax Return.
Note: Totals may not sum due to rounding.

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14	December 2018	302,000
15	January 2019	300,000
16	February 2019	300,000
17	March 2019	271,000
18	April 2019	274,000
19	May 2019	274,000
20	June 2019	274,000
21	July 2019	274,000
22	August 2019	154,000
23	September 2019	152,000
24	October 2019	152,000
25	November 2019	154,000
26	December 2019	154,000
27		12,000
28		
29		
30		
31		

This figure illustrates the
 Alignment (Transition to ADN)

Figure 2: **ADN** (Jan 27 Regulatory Body has Normalized ADN)

[illegible][illegible]

Note: Totals may not sum due to rounding.

COLUMBIA GAS OF MARYLAND, INC.

**121 Champion Way, Suite 100
Canonsburg, PA 15317**

Rates, Rules and Regulations for Furnishing GAS SERVICE IN THE TERRITORY AS DESCRIBED HEREIN

**Filed with
THE PUBLIC SERVICE COMMISSION OF MARYLAND**

Issued Date:

Effective Date:

**ISSUED BY: M. A. HUWAR, PRESIDENT
121 CHAMPION WAY, SUITE 100
CANONSBURG, PENNSYLVANIA 15317**

IRIS - INFRASTRUCTURE REPLACEMENT AND IMPROVEMENT SURCHARGE

PURPOSE

The purpose of the Infrastructure Replacement and Improvement Surcharge ("IRIS" or "Surcharge") is to recover reasonable and prudent costs of proposed eligible infrastructure replacement projects. An eligible infrastructure replacement project is defined as replacement of infrastructure that: 1) is made on or after June 1, 2013; 2) is designed to improve public safety or infrastructure reliability; 3) does not increase the revenue of the Company by connecting an improvement directly to new customers; 4) reduces or has the potential to reduce greenhouse gas emissions through a reduction in natural gas system leaks; and 5) is not included in current rate base as determined in the Company's most recent rate base proceeding.

APPLICABILITY

The Infrastructure Replacement and Improvement Surcharge ("IRIS") shall be applicable to all customers throughout the territory served under this tariff.

SURCHARGE

<u>Rate Class</u>	<u>Fixed Surcharge per Month</u>	
Residential Service	\$ 2.00	
Commercial & Industrial Service		
Usage < 20,920 therms/yr	\$ 7.14	(I)
Usage => 20,920 and =<523,000 therms/yr	\$ 63.83	(I)
Usage > 523,000 therms/yr	\$ 678.25	(D)

The Surcharge will appear as a separate line item on each customer bill.

CALCULATION OF SURCHARGE

The Surcharge is calculated as follows:

$$((\text{Net RB} * \text{RRB}) * \text{CF}) + \text{Dep} + \text{Tax} + \text{IntSync} = \text{EPC}$$

$$(\text{EPC} + \text{PYR}) * \text{AF} = \text{AIRIS}$$

$$\text{AIRIS} / \text{NOB} = \text{IRIS}$$

where:

Net RB, or Net Rate Base, equals eligible plant additions plus cost of removal, less the sum of accumulated depreciation and Accumulated Deferred Income Tax (ADIT).

RRB equals the Return on Rate Base, capital structure and cost of capital as approved in the most recent rate case.

Dep equals the Depreciation Expense based on the most recent approved depreciation rates as applied to the average net plant balance grossed-up for bad debt expense, regulatory fees and gross receipts tax.

(C) Indicates Change (D) Indicates Decrease (I) Indicates Increase

IRIS - INFRASTRUCTURE REPLACEMENT AND IMPROVEMENT SURCHARGE - continued

CALCULATION OF SURCHARGE - continued

Tax equals the Property Tax Expense based on the most recent approved property tax rate for the investment period applied to the prior year's ending net plant balance grossed-up for bad debt expense, regulatory fees and gross receipts tax.

IntSync, interest synchronization, computes the tax savings generated by the interest component of the revenue requirement. The interest expense component of the revenue requirement is calculated by multiplying the rate base by the weighted cost of debt. The calculated interest expense is then compared against the interest expense used in the computation of income tax expense. The tax effect of the difference in interest expense is the adjustment for interest synchronization.

CF, conversion factor, represents the gross-up factor for bad debt expense, regulatory fees and gross receipts, and state and federal income taxes.

EPC equals the Estimated Project Cost to be recovered through the Surcharge.

PYR equals the cumulative reconciliation of actual eligible costs less actual IRIS revenues from the prior year(s) surcharge. The reconciliation will reflect the most current known actual data available at the time of filing, pursuant to the STRIDE statute. Interest at the Company's currently authorized weighted average cost of capital will be included if the reconciliation shows an overcollection of costs. (C)

AF equals the Allocation Factor by rate class determined in the most recently approved base rate case.

AIRIS equals the Allocated IRIS per rate class.

NOB equals the annual number of bills per rate class.

IRIS equals the calculated monthly amount per customer by rate class.

The IRIS amount per customer by rate class is then compared to the cap for that rate class and the lower amount is charged.

The monthly IRIS billed to residential customers is subject to a \$2.00 cap. The monthly IRIS billed to nonresidential customers may not be less than the residential customer IRIS. In the event that the residential IRIS cap is implemented, the nonresidential IRIS will be proportionally capped.

(C) Indicates Change

COLUMBIA GAS OF MARYLAND, INC.

**121 Champion Way, Suite 100
Canonsburg, PA 15317**

Rates, Rules and Regulations for Furnishing

GAS SERVICE

IN

THE TERRITORY AS DESCRIBED HEREIN

**Filed with
THE PUBLIC SERVICE COMMISSION OF MARYLAND**

Issued Date:

Effective Date:

**ISSUED BY: M. A. HUWAR, PRESIDENT
121 CHAMPION WAY, SUITE 100
CANONSBURG, PENNSYLVANIA 15317**

P.S.C. Md. No. 12
Columbia Gas of Maryland, Inc.

Revised Sheet No. 108
Canceling Revised Sheet No. 108

IRIS - INFRASTRUCTURE REPLACEMENT AND IMPROVEMENT SURCHARGE

PURPOSE

The purpose of the Infrastructure Replacement and Improvement Surcharge ("IRIS" or "Surcharge") is to recover reasonable and prudent costs of proposed eligible infrastructure replacement projects. An eligible infrastructure replacement project is defined as replacement of infrastructure that: 1) is made on or after June 1, 2013; 2) is designed to improve public safety or infrastructure reliability; 3) does not increase the revenue of the Company by connecting an improvement directly to new customers; 4) reduces or has the potential to reduce greenhouse gas emissions through a reduction in natural gas system leaks; and 5) is not included in current rate base as determined in the Company's most recent rate base proceeding.

APPLICABILITY

The Infrastructure Replacement and Improvement Surcharge ("IRIS") shall be applicable to all customers throughout the territory served under this tariff.

SURCHARGE

<u>Rate Class</u>	<u>Fixed Surcharge per Month</u>	
Residential Service	\$ 2.00	
Commercial & Industrial Service		
Usage < 20,920 therms/yr	\$ 6.957.14	(I)
Usage => 20,920 and =<523,000 therms/yr	\$ 62.9263.83	(I)
Usage > 523,000 therms/yr	\$ 685.40678.25	(D)

The Surcharge will appear as a separate line item on each customer bill.

CALCULATION OF SURCHARGE

The Surcharge is calculated as follows:

$$((\text{Net RB} * \text{RRB}) * \text{CF}) + \text{Dep} + \text{Tax} + \text{IntSync} = \text{EPC}$$

$$(\text{EPC} + \text{PYR}) * \text{AF} = \text{AIRIS}$$

$$\text{AIRIS} / \text{NOB} = \text{IRIS}$$

where:

Net RB, or Net Rate Base, equals eligible plant additions plus cost of removal, less the sum of accumulated depreciation and Accumulated Deferred Income Tax (ADIT).

RRB equals the Return on Rate Base, capital structure and cost of capital as approved in the most recent rate case.

Dep equals the Depreciation Expense based on the most recent approved depreciation rates as applied to the average net plant balance grossed-up for bad debt expense, regulatory fees and gross receipts tax.

(C) Indicates Change (D) Indicates Decrease (I) Indicates Increase

Issued by: M. A. Huwar, President
Issued on:

Effective on:

IRIS - INFRASTRUCTURE REPLACEMENT AND IMPROVEMENT SURCHARGE - continued

CALCULATION OF SURCHARGE - continued

Tax equals the Property Tax Expense based on the most recent approved property tax rate for the investment period applied to the prior year's ending net plant balance grossed-up for bad debt expense, regulatory fees and gross receipts tax.

IntSync, interest synchronization, computes the tax savings generated by the interest component of the revenue requirement. The interest expense component of the revenue requirement is calculated by multiplying the rate base by the weighted cost of debt. The calculated interest expense is then compared against the interest expense used in the computation of income tax expense. The tax effect of the difference in interest expense is the adjustment for interest synchronization.

CF, conversion factor, represents the gross-up factor for bad debt expense, regulatory fees and gross receipts, and state and federal income taxes.

EPC equals the Estimated Project Cost to be recovered through the Surcharge.

PYR equals the cumulative reconciliation of actual eligible costs less actual IRIS revenues from the prior year(s) surcharge. The reconciliation will reflect the most current known actual data available at the time of filing, pursuant to the STRIDE statute. Interest at the bank prime rate Company's currently authorized weighted average cost of capital rate will be included if the reconciliation shows an overcollection of costs. (C)

AF equals the Allocation Factor by rate class determined in the most recently approved base rate case.

AIRIS equals the Allocated IRIS per rate class.

NOB equals the annual number of bills per rate class.

IRIS equals the calculated monthly amount per customer by rate class.

The IRIS amount per customer by rate class is then compared to the cap for that rate class and the lower amount is charged.

The monthly IRIS billed to residential customers is subject to a \$2.00 cap. The monthly IRIS billed to nonresidential customers may not be less than the residential customer IRIS. In the event that the residential IRIS cap is implemented, the nonresidential IRIS will be proportionally capped.

(C) Indicates Change

Columbia Gas of Maryland
2019 IRIS Revenue Requirement and Rates
March 30, 2018 Filing

Calculation of the 2019 IRIS Rates effective January 1, 2019

Line No.	Customer Class	Base Revenue Case No. 9480.1 / (1)	IRIS Allocation Factor by Class (2)	2019 IRIS Revenue Requirement (3) = Col 2 * (Att. B-2, Sch. 1, Col. 4, Ln. 12)	Annual Customer Count (4)	Monthly Rate (5 = 3 / 4)	Cap of 2019 IRIS Monthly Rate (6)
1	RS	\$ 19,108,964	57.0%	\$ 1,368,583	356,268	\$ 3.84	\$ 2.00
2	C & I - Low	\$ 8,351,395	24.9%	\$ 598,260	43,636	\$ 13.71	\$ 7.14
3	C & I - Medium	\$ 3,627,645	10.8%	\$ 259,894	2,120	\$ 122.59	\$ 63.83
4	C & I - High	\$ 2,417,748	7.2%	\$ 173,263	133	\$ 1,502.78	\$ 678.25
5	Total	\$ 33,505,752	100.0%	\$ 2,399,760	402,157		

1/ Reflects Base Revenues as agreed upon in the settlement of Case No. 9480.

2/ Total annual estimated customer counts per Case No. 9480, Exhibit 2-E, Supplemental.

Note: Totals may not sum due to rounding.

