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November 25, 2019

VIA ELECTRONIC FILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor North
P.O. Box 3265
Harrisburg, PA 17105-3265

**Re: Columbia Gas of Pennsylvania, Inc.'s 2019-2021
Universal Service and Energy Conservation Plan
Docket No. M-2018-2645401**

Dear Secretary Chiavetta:

Pursuant to the orders entered August 8, 2019 and November 14, 2019 by the Pennsylvania Public Utility Commission in the above referenced proceeding, enclosed please find Columbia Gas of Pennsylvania, Inc.'s ("Columbia") clean and redline versions of its 2019-2021 Universal Service and Energy Conservation Plan ("USECP").

To assist in review of the attached documents, below is a table that identifies the changes made to the USECP pursuant to the August 8th and November 14th orders.

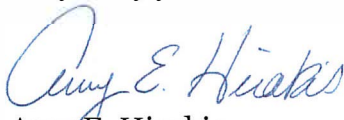
Commission directed changes to Columbia's 2019-2021 USECP per August 8, 2019 and November 14, 2019:	Pages in Redline Copy incorporating changes:
a. Remove the language that customers no longer have to apply for LIHEAP as a condition for CAP eligibility.	Page 4; Attachment B
b. Define the term "household income" as it specifically relates to CAP Eligibility Criteria.	Page 23
c. Clarify that mail-in applications are an option for customers to apply for CAP in addition to over the phone or in-person.	Page 25

<p>d. Implement an online application platform for CAP that also allows for electronic submission of documentation no later than December 1, 2020. File and serve quarterly progress reports beginning October 1, 2019, to inform parties of its progress in designing and implementing an online CAP application with electronic documentation submission capabilities.</p>	<p>Page 25</p>
<p>e. Eliminate the in-person contact requirement and allow customers to complete the application over the phone or mail the application in. Implement this change within three months of the entry date of this Order.</p>	<p>Page 25</p>
<p>f. Explain and clarify how REEP contractors formulate their program recommendations as explained in the Supplemental Information filing.</p>	<p>Page 27</p>
<p>g. Define “extenuating circumstances” as it specifically relates to customers voluntarily leaving CAP and being able to reenroll before the one-year stay-out provision expiration. Document that a former CAP customer with no outstanding arrears that requests re-enrollment will be allowed back into CAP subject to CAP eligibility and enrollment requirements.</p>	<p>Page 28</p>
<p>h. Remove the language that CAP customers who receive LIHEAP, DEF, or another Columbia universal services program do not have to re-verify their income for CAP. Clarify that these customers must re-verify their income for CAP at least once every three years.</p>	<p>Page 31</p>
<p>i. Include additional information regarding the Health & Safety Pilot as directed.</p>	<p>Pages 18- 19</p>
<p>j. Include additional information regarding the Heating Systems Pilot as directed.</p>	<p>Page 20</p>
<p>k. Clarify that the cost of natural gas is not factored into Columbia’s CAP or LIURP shortfall considerations.</p>	<p>Page 27, footnote 4</p>
<p>l. Clarify that a \$500 DEF grant, regardless of the balance owed, will be accepted by Columbia as sufficient to</p>	<p>Page 22</p>

end a termination or restore service.	
m. Include the supplemental explanation of how the Universal Service Rider offset is calculated.	Page 14
n. Identify CBOs that provide LIURP weatherization services.	Page 10

Should you have any questions, please do not hesitate to contact the undersigned at (717) 233-1351.

Very truly yours,



Amy E. Hirkis
Counsel for
Columbia Gas of Pennsylvania, Inc.

/kak

Enclosure

Cc Certificate of Service (w/enc)

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Columbia Gas of Pennsylvania, Inc.

Universal Service

And

Energy Conservation Plan

2019- 2021

Columbia Gas of Pennsylvania, Inc.

Universal Service and Energy Conservation Plan

Plan Submission

Section 62.4 of the Pennsylvania Public Utility Commission's ("Commission") regulations requires natural gas distribution companies to file updated Universal Service and Energy Conservation Plans every three years. 52 Pa. Code § 62.4. On June 27, 2014, by Secretarial Letter, the Commission notified Columbia Gas of Pennsylvania, Inc. ("Columbia" or the "Company") of a new plan submission schedule. The new schedule requires Columbia to file a new plan in February 2018 for plan years 2019 through 2021. Accordingly, Columbia hereby submits its Universal Service and Energy Conservation Plan for plan years 2019 through 2021.

As Universal Service includes energy efficiency programs such as the Low Income Usage Reduction Program ("LIURP"), individual universal service and energy conservation programs referenced herein will be referred to as "Universal Service," and the Universal Service and Energy Conservation Plan will be referenced as the "Plan" or the "Universal Service and Energy Conservation Plan."

Historic Overview

Columbia submitted its first Universal Service and Energy Conservation Plan in August 1999, as part of its Restructuring Filing as required by the Natural Gas CHOICE and Competition Act in Case No. R-00994781. 66 Pa.C.S. Chapter 22. The Commission approved the Plan as part of settlement agreements from Case No. R-00994781 in October and December of 1999. Provisions within those settlements included an enrollment target for the Customer Assistance Program ("CAP") and a funding level for LIURP. Additionally, the approved settlements provided for a temporary funding source for Columbia's Universal Service Program with the expectation that a permanent funding mechanism would be developed later. The Commission approved modifications to Columbia's CAP funding mechanism in 2001 and 2002.

Columbia submitted its second Universal Service and Energy Conservation Plan in November 2002 (for the years 2003 through 2005), which the Commission approved in January 2003. In October 2003, Columbia received Commission approval for a permanent funding mechanism, which allowed for recovery of projected shortfall and application costs, based upon the current and estimated customers in the program and the cost of gas. The mechanism is part of the pass-through charge on customer bills and is adjusted at the same time as the quarterly gas cost adjustment.

In 2005, Columbia submitted its third Universal Service and Energy Conservation Plan (for years 2006 through 2008), which the Commission approved in January 2006. It

included the establishment of a remedial conservation education program for high consumption CAP customers who had already received weatherization services, along with an external evaluation of its LIURP program. Funding and enrollment remained consistent with the previously approved plan from 2003.

In 2008, Columbia filed its fourth Universal Service and Energy Conservation Plan for years 2009-2011 as part of its base rate case at Docket No. R-2008-2011621. The Plan was approved as part of the settlement of that case. The approved plan featured an increase in LIURP spending from \$1,700,000 to \$3,000,000.

In August 2010, Columbia filed a Petition to Modify its 2009-2011 Plan in order to implement the "CAP Plus" program. (Docket No. P-2010-2195759) The Commission approved Columbia's Petition in October 2010 and Columbia implemented CAP Plus in November 2010. Under CAP Plus, CAP participants are billed an applicable "Asked to Pay" amount, as well as an additional "Plus" amount that is intended to balance affordability for CAP customers and cost responsibility for non-CAP customers. The Plus amount is currently calculated as follows: (total Low Income Home Energy Assistance Program ("LIHEAP") receivables from the prior heating season divided by the number of active CAP participants at the start of the current LIHEAP season divided by 12.) As of the date of this filing, Columbia's CAP is based on the CAP Plus model approved in Docket No. P-2010-2195759.

Also, in the third quarter of 2010, Columbia secured the services of an independent third-party consultant to perform a comprehensive impact evaluation of Columbia's Universal Service Programs. In November 2010, Columbia filed its independent evaluation of the Universal Service Programs. The independent evaluator, Melanie Popovich, noted that "throughout this document, the evaluator makes note of the proactive approach taken by the Company's management team in order to address the barriers to program effectiveness. The Company is to be commended on its willingness to engage third party experts to undergo external studies for further program improvement. ... In my opinion as an evaluator, Columbia strives for continuous improvement and has one of the most efficient and effectively managed Universal Service Programs in the state."

In 2011, as part of the approved settlement of its rate case proceeding at Docket No. R-2010-2215623, Columbia agreed to increase its LIURP budget from \$3,000,000 to \$4,000,000. One party to that proceeding, the Pennsylvania Communities Organizing for Change d/b/a ACTION United ("PCOC"), challenged Columbia's CAP Plus program. Specifically, PCOC alleged that the Company's CAP Plus program did not comply with the Pennsylvania Department of Welfare requirements or Federal law. The Commission denied PCOC's challenge to Columbia's CAP Plus, and PCOC appealed the matter to the Pennsylvania Commonwealth Court. On April 10, 2014, the Commonwealth Court affirmed the Commission's decision approving Columbia's CAP Plus program.

On September 28, 2012, Columbia filed a base rate proceeding under Docket No. R-2012-2321748. In 2013, the parties to that proceeding submitted a partial settlement for the Commission's approval, which featured an increase in LIURP funding from \$4,000,000 to \$4,500,000 and the cancellation of Columbia's agreement with Citizen's Energy Corporation which had generated \$375,000 for Columbia's Fuel Fund, but which was only being recovered from Columbia's Purchased Gas Cost residential customers. The settlement provided for replacement of the proceeds of the Citizens Energy transaction with a \$375,000 increase to the Rider Universal Service Plan ("USP").

On March 21, 2014 Columbia filed a base rate proceeding under Docket No. R-2014-2406274. On December 2014, the Commission approved a settlement which included an increase in LIURP funding from \$4,500,000 to \$4,750,000.

On June 27, 2014, the Commission issued a Secretarial Letter to all energy utilities establishing a revised USECP filing schedule. As part of the new filing schedule, Columbia's then-pending proposed USECP for the plan period 2015 through 2017 would extend to include 2018. On January 16, 2015, Columbia filed and served an amended proposed USECP for 2015 through 2018. The Commission approved Columbia's amended plan for the years 2015 through 2018 on July 8, 2015.

On March 19, 2015, Columbia filed a base rate proceeding under Docket No. R- 2015-2468056. The Commission approved a settlement provision which allowed CAP's third-party administrative costs to be recovered through the Rider USP and the establishment of a Universal Service Advisory Committee.

In March 2016, Columbia filed a base rate proceeding under Docket No. R-2016-2529660. The parties agreed to allow Columbia to use the residential portion of federal pipeline credits and refunds collected by Columbia to fund the Hardship Fund. Columbia also agreed to continue to develop plans to increase donations to the Dollar Energy Fund in conjunction with its Universal Advisory Council. Further, Columbia agreed to report on any and all fundraising efforts as a part of the settlement. In addition, Columbia agreed to offset the Universal Service Rider by 7.5% for each customer enrolled over the average annual participation level of 23,000. The offset reflects anticipated savings in operation and maintenance costs gained when a customer participates in CAP.

On February 28, 2018 Columbia filed a petition under Docket No. P-2018-3000160 seeking approval to use federal pipeline penalty credits and refunds to permanently support its residential Hardship Fund. On June 14, 2018, the Commission approved Columbia's petition authorizing Columbia to use federal pipeline penalty credits and refunds to fund its Hardship Fund. Further, the Commission's order allows Columbia to maintain a Hardship Fund balance of up to \$750,000. If Columbia's penalty credit and refund balance is more than \$750,000, Columbia will flow the residential portion of the credits and refunds to its residential customers. Columbia will continue to seek opportunities to raise funds to support its Hardship Fund.

In March 2018 Columbia filed a base rate proceeding under Docket No. R-2018-2647577. The Commission approved a settlement provision which increased LIURP funding by \$125,000 beginning in the year 2020. Additionally, Columbia agreed to design and implement a process for electronic income verification for the CAP program by January, 2020. Further, Columbia and the other parties agreed to discuss the following issues including but not limited to budget billing plans, high CAP credits and CAP payment plan options within Columbia's Universal Services Advisory Committee.

Modifications to the Plan for 2019 - 2021

- I. CAP re-entry Process
 - a. Any customer out of CAP for four years or more will be treated as a customer with no prior CAP participation. Any overdue balance will be treated as Pre-program arrears and will be forgiven over three years with \$5 expected co-pay per month until pre-program arrears are eliminated.
 - b. The re-entry treatment for customers less than four years from the removal date does not change.
- II. The senior CAP payment plan option has been eliminated as an option for all new CAP participants.
- III. CAP customers reporting zero income will be required to re-verify their income every six months or be removed from the program.
- IV. The elimination of \$375,000 Rider USP funding for the Hardship Fund.
- V. Implementation of a Pilot program¹ to increase Health and Safety spending on individual jobs based on the model recommended by the external evaluator in the Impact Evaluation.
- VI. Implementation of a LIURP pilot not to exceed ten customers per year accepting customers with low usage in the most recent twelve months due to inoperable heating systems.

External Studies

September, 2017 USECP Impact Evaluation conducted by Melanie Popovich

Key Recommendations affecting this plan:

CAP-06 Enrollment by FPIG and Payment Plan: Senior CAP

With so few participants in Senior CAP (5) the Company to consider phasing out this payment plan option in order to streamline the menu of CAP options

CAP-13 Default CAP Balances

The Company has designed a CAP process for customers who default from CAP and retain gas service that balances customer accounts as though the customer had remained on CAP throughout. This process encourages year-round participation and avoids seasonal fluctuations in CAP participation.

¹ Costs for pilot programs described in V and VI to be recovered through Columbia's established Rider USP, within approved Rider USP funding levels.

Currently there is no time limit imposed upon the customer as to the length of time they can remain out of CAP and still get reinstated.

- **Recommended Action(s)**

The Company should evaluate the process related to CAP reinstatement as to the allowable length of time a customer can remain out of CAP and still be reinstated.

The evaluator suggests a maximum of a four-year stay-out as it aligns with the Company's collection policy. According to the policy, balances older than four years cannot be collected as per Chapter 56.35.

LIURP-04 De Facto Heat Customers

Customers who might otherwise be eligible for LIURP except for the usage and 12-month history criteria, may be left out of receiving critical services due to non-working furnaces needing repair or replacement. Since LIURP is a 'savings driven' program focusing on usage reduction, it disallows these vulnerable customers to participate.

- **Recommended Action(s)**

The Company to consider the feasibility of a joint gas and electric utility pilot within overlapping service areas to target 'de facto' heat customers who may have received LIURP measures but have not benefited from usage reduction from their heat source.

These customers would be excluded from the expected usage reduction evaluation associated with a savings-driven program, but treated as a sub-set.

2017 Health & Safety Evaluation conducted by Apprise, Inc. (Attachment A)

On May 19, 2017, Columbia retained Apprise, Inc. to perform a Health & Safety Evaluation in order to evaluate the current costs of LIURP jobs that are deferred due to health and safety issues such as knob and tube wiring, moisture in the basement due to leaky roofs, and other minor structural issues. Columbia requested Apprise, Inc. to determine if it was possible to increase the Health and Safety budget at a job level while still maintaining cost effectiveness for the overall program. Apprise, Inc. is a non profit research institute dedicated to collecting and analyzing data and information to assess and improve public programs. On September 7, 2017, Apprise, Inc. completed its evaluation, which is provided herewith as Attachment A. In its evaluation, Apprise, Inc. recommended that, depending on the job characteristics, Columbia Gas may be able to spend a significant amount of funds on remediating health and safety issues and still achieve cost-effective savings, given the high level of opportunities for savings found in the home. In making that recommendation, Apprise, Inc. stated "We find that, depending on the job characteristics, Columbia may be able to spend a significant amount of funds on health and safety and still achieve cost-effective savings, given the high level of opportunities for savings found in the home. This approach would yield high energy savings, reduced costs for ratepayers who are contributing to the costs of the Customer Assistance Program (CAP), and greater likelihood that the customer may be able to afford the full bill if the household exits CAP at some point in the future. We recommend that Columbia Gas pilot this approach on high-usage homes with significant health and safety barriers and assess the level of savings that are achieved."

Integration

Columbia continues to use an integrated approach for outreach and solicitation for all Universal Service programs, focusing on two principle strategies: first, Columbia incorporates referrals into existing processes, and second, Columbia coordinates services with dedicated staff.

Columbia uses existing customer services processes, such as the Cold Weather Survey, collection, compliance, energy assistance receipts and contact management to create opportunities to increase enrollment in Universal Service programs.

Columbia's Contact Center has a designated call group comprised of specially trained employees who are dedicated to the promotion and enrollment of Universal Service programs. Through Universal Service Customer Service Representatives, the customer is referred to all available and appropriate programs including CAP, LIURP, Customer Assistance Referral and Evaluation Services ("CARES"), energy assistance, etc. In addition, Columbia's trained representatives refer eligible customers to non-utility assistance programs such as earned income credits, food banks and community based agencies.

This expedites the referral and intake process, resulting in efficient enrollment. Once a customer is identified as payment troubled or low income, the customer is transferred to a Universal Service Customer Service Representative. The Universal Service Representative will pre-screen a customer and, where applicable, enroll a customer in one of Columbia's Universal Service programs immediately. This "one-stop-shop" approach is administratively efficient because it identifies which programs are appropriate for the customer at the single point of contact.

Payment assistance and low income energy efficiency programs are offered simultaneously to offset program costs that good paying customers fund. Columbia prioritizes CAP customers for LIURP benefits to reduce future consumption and shortfall. This coordination occurs at the time of referral at the contact center. As a result, only one application is needed to apply for both CAP and LIURP.

Outreach

Columbia promotes its Universal Service programs and engages in external outreach opportunities throughout its service territory. Outreach avenues include:

- Sponsorship and participation in senior fairs
- Representation on local community assistance boards and task forces
- Participation and coordination of Be Utility Wise events
- Provision of program information on Columbia website
- Bill inserts targeted to specific Universal Service programs
- Targeted email blasts to customers for specific programs

- Promotion of programs through multiple social media channels
- Semi-annual Universal Service Advisory Council meetings
- Customer Contact Center referrals
- Bi-annual community roundtables

Columbia also sponsors outreach opportunities to support Universal Service programs on an individual program basis:

CAP

- Coordination with electric utilities to solicit CAP customers for enrollment and re-verification
- Coordination with the Dollar Energy Fund Grant Program
- Limited solicitation of targeted groups
 - Previous Dollar Energy grant customers
 - CRISIS recipients
 - Housing Authority tenants
 - CAP agency staff
- Mail solicitation of targeted groups
 - Previous and potential LIHEAP recipients
 - Inactive account customers (Cold Weather Survey packets)
- Training
 - Customer Care Center Customer Service Representatives
 - Administrating and screening agencies
 - Credit and collections representatives
 - Service department personnel
 - Construction services personnel

HARDSHIP FUNDS

- Annual bill inserts requesting contributions and encouraging application
- Monthly solicitation on bills to all non-CAP residential customers with current accounts
- Participation in multiple fundraising events
- Link to make a donation to all customers receiving e-bills

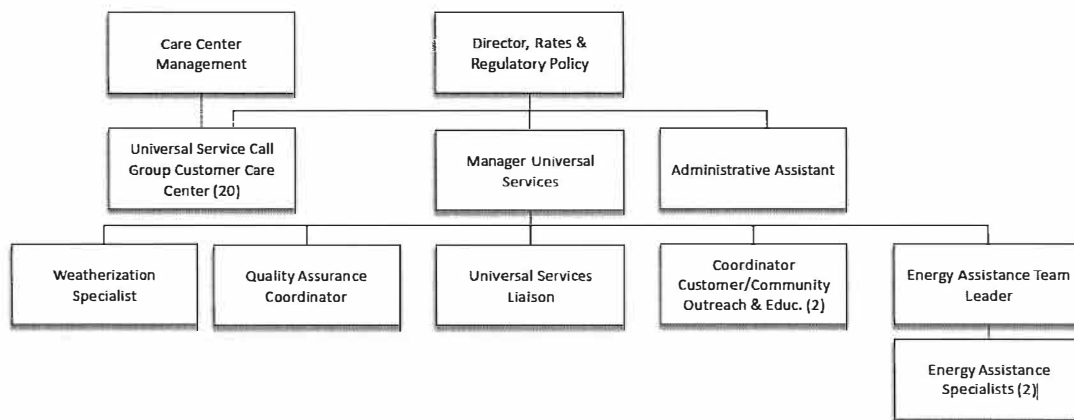
LIHEAP

- Press conference to promote LIHEAP program opening
- Press releases
- TV commercials featuring Franco Harris
- Bill inserts promoting LIHEAP
- Inserts promoting CRISIS in eligible termination notices
- Outbound calls to previous recipients reminding them to apply
- Outbound calls to identified eligible customers
- Operation of a toll-free hotline for inquiries and assistance with applications
- Outbound calls to Crisis-eligible customers as part of Direct Referral Process
- Training on LIHEAP guidelines and benefits to all call center and field service personnel

Staffing

Columbia utilizes the resources of staff employees along with the experts of community partners to implement all of its Universal Service programs.

COLUMBIA GAS UNIVERSAL SERVICES ORG.



Universal Service Program Responsibilities

Director, Rates and Regulatory Affairs	Strategic direction of all programs/policies
Manager, Universal Service	Implementation/compliance of all programs
Administrative Assistant	Program reporting for all programs
Coordinator Customer/Community Outreach and Education (2)	Outreach coordination of all programs
Columbia Customer Contact Center Universal Service Call Group	Provision of information on, referrals to and enrollment in all programs
Universal Services Liaison	Coordination of Fuel Fund and CAP processes and agencies for grants and applications
Energy Assistance Team Leader	Day to day compliance of LIHEAP vendor agreements, reconciliation of LIHEAP receipts
Energy Assistance Specialist (2)	LIHEAP hotline response, customer payment postings and response to customer inquiries
Quality Assurance Coordinator	Implementation of LIURP quality assurance program
Weatherization Specialist	Coordination of LIURP process flow from referral through completion to post inspection

Community Partnerships

Columbia partners with community organizations for both the delivery of universal service programs and feedback on program practices and policies.

CAP	
Columbia	Management
Columbia Customer Care Center Universal Service Call Group	Information, referral and enrollment
Dollar Energy Fund, Inc.	Outreach and intake administration
Dollar Energy Screening Agencies	On-site applications and referrals
Essential Energy, Inc.	Energy efficiency/consumer education and quality assurance control
LIURP	
Columbia	Management and pre-screening
Columbia Customer Care Center Universal Service Call Group	Information, referral and enrollment
12 Weatherization providers throughout Columbia's service territory (current list as of November 2019 subject to change) Not For Profit/CBO's South Central Community Action Agency Community Action Partnership for Somerset County Housing Authority of the County of Beaver Action Housing Westmoreland Housing Authority The Weatherization program of Fayette County Lawrence County Community Action For Profit Organizations Clearesult Mincin Insulation MT Tenny Fitzsimmons Energy Auditing Grindle Insulation	Weatherization, customer communication and data tracking
Conservation Consultants, Inc.	Energy efficiency education/inspections
King Conservation Group	Energy efficiency education/inspections
HARDSHIP FUNDS	
Columbia	Management, enrollment and referral
Customer Care Center Universal Service Call Group	Information, referral and enrollment
Dollar Energy Fund, Inc.	Outreach and intake administration
Dollar Energy Fund Screening Agencies	Outreach and intake implementation

CARES	
Columbia	Management
Columbia Customer Care Center Universal Service Call Group	Information, referral and enrollment
Community-based Organizations	Resource development

The list below reflects the positions held by Columbia's Universal Service team on various task forces, committees and boards within the communities Columbia serves.

<u>Task Force, Committee or Board</u>	<u>Position</u>
Human Service Forum	Member/Association
Council of Community Services	Member/Association
Be Utility Wise (SW PA)	Member/Sponsor
CARES Network	Member
Fayette County Energy Task Force	Member/Committee
Senior Expo Planning Committee, Washington County	Member/Committee
National Association of Social Workers	Member
Beaver County Homeless/Housing Coalition	Member
National Energy Utility and Affordability Coalition	Board Member
National Energy Utility and Affordability Conference	Conference Co-Chair
Department of Community and Economic Development Weatherization Assistance Program	
Policy Advisory Council	Member
York County Hispanic Coalition	Member
Children's Aid Society	Board Member
Lehman Center	Advisory Council Member
Volunteer Center, United Way of York County	Team Member

Budgets

Universal Service expenses are monitored and tracked specifically by each program with the exception of Hardship Funds. Because oversight of the Hardship Funds resides within the CARES program, all internal administrative expenses are included in the CARES budget.

PROJECTED BUDGET

	2019	2020	2021
LIURP	\$4,750,000	\$4,875,000	\$4,875,000
Energy Assistance Outreach and Processing	\$180,000	\$180,000	\$180,000
CARES Community Outreach	\$260,000	\$260,000	\$260,000
CARES Total	\$440,000	\$440,000	\$440,000
CAP Administration and Applications	\$1,300,000	\$1,300,000	\$1,300,000
Shortfall	\$20,442,928	\$20,442,928	\$20,442,928
Arrearage Retirement	\$975,247	\$975,247	\$975,247
CAP Total	\$22,718,175	\$22,718,175	\$22,718,175
Hardship Funds	\$675,000	\$675,000	\$675,000
Hardship Administrative Costs	\$34,000	\$34,000	\$34,000
Total	\$28,617,175	\$28,742,175	\$28,742,175
Number of Residential Customers	390,394	390,394	390,394
Average Spending per Customer per month	\$6.11	\$6.14	\$6.14

Universal Service Plan (USP) Rider Offset

Columbia provides an offset to its USP Rider of 7.5% for each customer enrolled in CAP over the annual participation level of 23,000. This offset (*i.e.*, credit) will be calculated in the following manner on a yearly basis:

- Sum the Total annual shortfall plus Total Annual Arrearage Forgiveness and divide by total number of customers in CAP to arrive at a per customer CAP cost.
- Multiply 23,000 by per customer CAP cost to determine 100% recovery for first 23,000 CAP customers.
- Subtract the 100% recovery from the sum of Total annual shortfall and Total annual arrearage forgiveness to determine the portion that should be offset.
- Multiply the portion to be offset by 7.5%. This equals the dollar amount not collected through the Rider as an offset.

Program Descriptions

Pursuant to 52 Pa Code §62.4(b), the components of Columbia's Universal Service and Energy Conservation Plan are described in detail. The following are program descriptions, including eligibility criteria, needs assessments, and projected enrollment levels for the programs.

CARES (Customer Assistance Referral and Evaluation Services)

Scope

CARES provides information and referrals on all programs and resources available to customers in need through a specially trained call group at the customer contact center and has been offered to Columbia customers since 1986. Since its inception, over 45,000 customers have received the assistance of staff social workers through resource referrals, consumer education, LIHEAP Outreach and affordable payment plans tailored to the customer's ability to pay. CARES is designed to be a short-term program for first time payment-troubled customers who require energy assistance and other necessary resources and referrals.

In addition, CARES assists vulnerable CAP customers who need extra protection and account monitoring. It is also the final step in the Cold Weather Survey intervention process. The Customer/Community Outreach and Education Coordinators ("Coordinators") make additional attempts to contact customers aged sixty two and over who are without heat. This intervention is continuous throughout the heating season.

Coordinators also oversee the handling and processing of all accounts protected under regulations governing customers with valid Protection from Abuse ("PFA") orders.

The Coordinators train care center and service employees on available resources.

Key Objectives

- Safe, sustained energy
- Customer self-sufficiency
- Resource development
- Successful payment recovery
- Continuous payment frequency
- Reduced credit/collection costs
- Identification and cost avoidance associated with crisis/safety issues
- Customer satisfaction
- Crisis intervention
- Reduced commission complaints
- Community networking
- Goodwill

Eligibility Criteria

CARES is designed to be a short-term or temporary program for residential-heat customers who must demonstrate one of the following scenarios:

- Payment-troubled customer, evidenced by missed payments or anticipated payment barriers due to a personal crisis that is likely to result in a financial hardship, i.e. situations involving medical, financial, employment, familial or psycho-social issues.
- Special-needs customer, evidenced by the onset of a crisis having a profound impact on an individual or family, e.g. sudden loss of income, divorce, major life-threatening illness, death of the wage earner or, service emergency during harsh weather.
- Vulnerable customer, defined as someone who possesses impaired intellect or mental health, extreme physical disability or, chronic mismanagement of finances that has the serious potential to interfere with good payment behavior. These vulnerable customers will have diminished capacity to take care of basic needs, make reasonably sound decisions, take responsibility for their own personal safety, or have barriers for communications with the outside world.
- Domestic abuse customer, with a valid and active PFA court order, who is trying to obtain or maintain gas service.
- Cold Weather Survey customer, aged sixty two or older, who is without their regular gas service and is using space heaters such as kerosene, wood, coal, or electric.

Program Components

- Case management approach to solving individual payment problems
- Home visit assessment when necessary
- Protection from service termination during program
- Short-term, affordable payment plans based on ability to pay and case specific options designed by the coordinators for each specific customer
- Budget counseling
- Referrals and linkage to community, state, and federal resources for direct and indirect monetary assistance
- Information dissemination and referrals
- Crisis intervention
- Oversight of accounts with active PFA orders

LIURP (Low Income Usage Reduction Program)

Scope

Columbia has provided the Low Income Usage Reduction Program to its customers since 1988. Approximately 10,000 homes have been weatherized since that time. Consumption savings average between 20%-24%. Average 2016 program expenditure per home was \$7,076. In accordance with existing requirements; each measure installed is projected to have a 7-12 year payback. Columbia's current level of funding is \$4,750,000 annually pursuant to the approved settlement at Docket R-2014-2406274.

Key Objectives

- Safe, affordable energy for low-income customers
- Reduced uncollectible arrearages and write-offs
- Reduced consumption
- Affordable budgets/bills for customers
- Improved payment frequency
- Reduced CAP shortfall deficit through bill reduction
- Improved customer satisfaction
- Environmental awareness/protection
- Responsible energy use

Eligibility Criteria

- Columbia residential heating customer
- Customer must not have full received weatherization services in the past seven years at their current dwelling

- 52 Pa. Code §58.2 (relating to definitions) including non-CAP low income customers who otherwise meet the LIURP eligibility requirements.
- Homeowner or renter; renter must have property owner permission.
- Average winter monthly consumption greater than 170 Therms.
- Up to ten homes per year with pre usage lower than 170 Therms may be weatherized if no gas heating system has been operating for the full pre usage period.
- A maximum of \$100,000 will be allocated for this pilot.
- Dwelling must be approved during audit to be in proper condition to weatherize.
- A premise may be disqualified if Columbia makes a determination that providing weatherization services would not be cost-effective.

Program Components

- Home Energy Audit. Each home is audited to determine if the dwelling is in proper condition for weatherization. Weatherization measures are recommended at the time of the audit. Referrals to other housing development agencies for repair work are made, if necessary. Referrals to other utility weatherization programs are made, as necessary.
- Energy education provided concurrent with audit.
- Coordination with other utilities and weatherization programs to leverage funds and increase customer satisfaction.
- Heating system is inspected, cleaned and repaired as needed prior to weatherization treatment.
- Gas furnace may be upgraded to 92% efficiency or higher if deemed to be inefficient.
- Gas boiler systems may be upgraded to 80% or higher if deemed to be inefficient.
- Health and Safety allowance up to \$650.00, not including heating system replacements, which are deemed as an efficiency measure.
- Weatherization measures are performed specific to audit recommendations. Treatment is determined based on highest efficiency results. Measures include sidewall and attic insulation, blower door guided air sealing measures such as caulking, sealing and window stripping.
- Carbon Monoxide detectors are installed on each floor level of all completed homes.
- Twenty-five percent of weatherized homes are inspected for quality and safety.
- Program is evaluated by comparing weather normalized pre-treatment usage to weather normalized post treatment usage to determine savings.

Health and Safety Pilot

The Health and Safety Pilot will begin January 2020 and run through December 2022. Columbia may propose to extend, adopt, or cancel the Health and Safety Pilot based on the 2020 data.

Key Objectives

- To decrease the number of deferred jobs due to conditions in the home such as knob and tube wiring, moisture in basement due to leaky roofs, and other minor structural issues.
- To reduce usage in CAP customers' homes with high usage that could not be weatherized without remediating identified Health and Safety issues.

Eligibility

- Must be an active CAP Customer with shortfall greater than \$1,000 per year average
- Customer must own and reside in dwelling for a minimum of six months.
- Prior annual usage must be greater than 1600 therms or 250 average therms per winter months
- A present Health and Safety issue that is preventing weatherization including but not limited to knob and tube wiring, presence of moisture, mold or mildew
- The elimination of the Health and Safety issue will result in comprehensive measure installation and expected usage reductions greater than 18% .

Program Components

- Additional Health and Safety spend will be authorized based on the following model, scenarios 2 through 5. PDV stands for Present Discounted Value (of Savings).

Variable		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
User Entered Fields	Pre-Treatment Therms	1500	1600	2500	3800	5000
	Home Age	50	30	100	100	100
	Square Feet	1500	1250	2000	3200	3200
	Air seal + Insulation Cost	\$800	\$1,400	\$1,000	\$2,700	\$5,000
	Heat Sys Replace (yes=1)	0	0	1	1	1
	Duct Sealing (yes=1)	0	1	0	1	1
	Contractor 74	0	0	0	1	0
	Contractor 102	0	1	0	0	0
	Contractor 77	0	0	0	0	1
	Contractor 103	0	0	0	0	0
	Heat Sys Cost	0	\$0	\$3,500	\$3,500	\$3,500
	Other Non H&S Costs	\$800	\$800	\$1,000	\$1,000	\$2,000
Calc Fields (5% discount)	Annual Savings (Therms)	214	301	578	1075	1536
	Calculated % Savings	14%	19%	23%	28%	31%
	PDV Savings (Therms)	1897	2672	5126	9527	13615
	Max Spending	\$1,986	\$2,798	\$5,368	\$9,977	\$14,258
	Total Non H&S Costs	\$1,600	\$2,200	\$5,500	\$7,200	\$10,500
	H&S Allowance	\$386	\$598	-\$132	\$2,777	\$3,758

Calc Fields (no discount)	12-Year Savings (Therms)	2568	3618	6940	12898	18434
	Max Spending	\$2,689	\$3,789	\$7,267	\$13,507	\$19,305
	H&S Allowance	\$1,089	\$1,589	\$1,767	\$6,307	\$8,805

- Pilot participants will be tracked separately for evaluation purposes
- The Pilot's success and cost-effectiveness will be measured the same way as LIURP
- All other traditional components of LIURP will be maintained.

Projected Enrollment

- A maximum of \$200,000 in additional Health and Safety costs may be spent per year for this pilot
- Estimate of participants is 30 homes per year

Inoperable Heating Systems Pilot

Key Objectives

- To assist customers that need LIURP services but do not meet the usage requirements due to non-working furnaces needing repair or replacement.

Eligibility

- Columbia residential heating customer
- Customer must not have received full weatherization services in the past seven years at their current dwelling
- 52 Pa. Code §58.2 (relating to definitions) including non-CAP low income customers who otherwise meet the LIURP eligibility requirements.
- Homeowner
- Up to ten homes per year with pre usage lower than 170 Therms if gas heating system has not been operating for the full pre usage period.
- Dwelling must be approved during audit to be in proper condition to weatherize.

Program Components

- Same as traditional LIURP benefits

Duration

- Up to ten homes per year for 2019, 2020 and 2021

Evaluation

- Pilot participants will be tracked separately. Actual weather normalized savings will be calculated but not included in overall company average.
- Average weather normalized savings for pre-treatment period will also be compared to post treatment savings to estimate savings impact of measures.

HARDSHIP FUND

Scope

Columbia contributes one dollar of shareholder money for every dollar contributed by its customers. Annually, Columbia raises \$75,000 to \$80,000 in customer contributions through bill solicitation. In addition, Columbia sponsors fundraising activities to increase customer contributions up to \$150,000. Combined with a shareholder match, this total of \$300,000 is available to payment-troubled, low income customers for assistance with their Columbia bill. Opening and closing dates for the availability of funds are determined annually.

Additionally, the Commission has approved Columbia's requests to direct pipeline refunds and penalty credits received by Columbia to the Dollar Energy Fund to supplement these efforts. As of January, 2018 there are \$1,172,235.29 remaining in Pipeline refunds and penalty credits to be used in increments of \$375,000 for the 2019, 2020 and 2021 program year. There will be \$47,235.29 remaining for the 2022 program year.

Approximately, ten percent of awarded grant dollars are earmarked for administration. This money is paid to the administrator, Dollar Energy Fund, for the outreach and intake application process in the community. Currently, 124 community-based organizations take applications within communities that Columbia serves.

Key Objectives

- Prevent termination
- Restore service
- Reduce outstanding balances

Eligibility Criteria

- Columbia residential heating customer
- Household income at or below 200% of Federal Poverty Level
- Must have exhausted all other available energy assistance resources first
- Minimum arrearage balance as required by Dollar Energy Fund
- Demonstrated sincere payment effort as required by Dollar Energy Fund
- Exceptions to eligibility criteria may be granted under special circumstances, which may include not requiring a sincere effort of payment, minimum arrearage balance, or non- CAP status.

Treatment of CAP Customers

Columbia only allows Hardship Funds to be applied to CAP accounts when a customer is without service for non-payment during the months of October, November or December (cold weather procedure) or if the customer has been out of the program for more than one year. At that time, Columbia will allow the Hardship Fund grant to substitute for a customer payment for the purpose of re-instatement into CAP. CAP customers receive arrearage forgiveness and CAP credits that are, on average, higher than the maximum hardship fund grant. In an effort to ensure there is some assistance available for all customers that need help, hardship funds are limited for CAP customers.

Program Components

- Screening and referrals at Columbia's Customer Care Center
- Outreach and intake at local community-based organizations
- Grant determination by Columbia employees for customers without service to expedite reconnections
- Grant amounts do not exceed \$500 per customer. A grant of \$500, regardless of the balance owed, will be accepted as sufficient to end a termination or restore service.

Fundraising

- Columbia participates in Dollar Energy Fund organized fundraisers with partial proceeds going to match Columbia's shareholder match. These efforts include:
 - WarmATHon – radio call in fundraiser Columbia assists in staffing phone lines and sponsors event
 - Cool Down for Warmth – Columbia personnel participate in Ice House fundraiser and sponsors event
 - Golf Outing – Columbia sponsors event and golf teams
 - Request-a -Thon – Radio call in fundraiser
- Columbia sponsors company specific events to raise funds for the hardship fund annually
 - Email blasts to customers
 - Social media promotions throughout the year on Facebook and twitter
 - Bill insert requesting donations
 - Thank you letters to previous donors
 - Sponsorship of TransSiberian Orchestra concert where \$.50 of every ticket sold goes to the Dollar Energy Fund. In 2017, \$12,202.37 was raised through this effort.
- Columbia has also conducted additional promotions to increase Hardship Fund donations over the past two years
 - Promotion to encourage customers to sign up for E-Bill with a donation made to Dollar Energy Fund for every customer sign up. \$5.00 for every

new E-bill participant would be donated to the Dollar Energy Fund. In 2017, Columbia raised \$4,900 through this effort.

- Through a partnership with Nest Labs, Inc., a combined donation from Nest and Columbia of \$25.00 was donated to the Dollar Energy Fund for every Nest learning thermostat sold during the promotion period. Columbia raised \$2,175 through this effort in 2017.

CAP (CUSTOMER ASSISTANCE PROGRAM)

Scope

Columbia's CAP was first established as a pilot program in 1992, at which time participation was limited to 1,000 customers. Since then, Columbia's CAP has expanded to its current active total of approximately 22,255 participants.

The program was created as an alternative to traditional credit and collection measures to assist long-term, payment-troubled customers by offering affordable payment options.

Under provisions of the 1999 Natural Gas Choice and Competition Act, Columbia filed a restructuring settlement agreement at Docket No. R-00994781 under which it expanded the CAP program from 1,000 to 22,000 customers. Through a subsequent settlement agreement approved by the Commission at Docket No. P-00032057, the enrollment limit of CAP was modified to 27,135. To date, Columbia's CAP has not reached the enrollment ceiling. In 2015, the Company was ordered to remove the enrollment ceiling.

Key Objectives

- Provide affordable payment options
- Reduce credit/collection costs
- Reduce arrearage write-off
- Administer an efficient, cost-effective program
- Enhance customer understanding of program benefits
- Increased "on time" payment frequency
- Minimize shortfall through energy efficiency programs
- Target identification of low-income, payment-troubled customers
- Reduce Commission complaints

Eligibility Criteria

- Columbia residential heating customer
- Household income at or below 150% of Federal Poverty Level. Household income is defined as all income from every household member with the exception of any wage income earned by household members less than 19 years old.

- Payment-troubled, as designated by a termination notice and or at least one failed payment agreement within past 12 months, or otherwise identified through cross utility referral or a credit score of less than 750.
- Must not reside in a multi-unit dwelling served by one meter
- Must provide either a Social Security number, driver's license number or another state identification number for all household members over the age of 18

Program Components

Administration

- A Community Based Organization (“CBO”) performs clerical and administrative duties for portions of the CAP program. These functions include screening, enrollment, and re-verification.
- The Administrating Organization (the “Administrator”) networks with over 40 designated screening agencies/CBOs to complete on-site applications when necessary. The Administrator also operates a phone enrollment process.

Columbia’s CAP payment structure maximizes customer payments while maintaining affordability for the customer. This flexibility allows the Administrator to select the most affordable option not to be less than the average amount received over the previous 12 months. Columbia offers the lowest average CAP payment in the industry and submits that the following payment options balance the goals of remaining affordable while maximizing the customers’ payments:

Option #1:	Percentage of Income.		
	0 – 110% of Poverty	=	7%
	110 – 150% of Poverty	=	9%

Option #2: Average of payments for the last 12 months prior to joining CAP. (Available for customers with at least six months of un-interrupted service.)

Option #3: Flat rate of 50% of budget billing (Adjusted annually)

A minimum payment amount of twenty-five dollars is required.

The CAP customer will be required to pay a five-dollar co-payment towards pre-program arrears until the arrears are eliminated.

Any payments made in excess of the monthly CAP bill are applied to future CAP bills.

The Administrator reviews the application and income verification, if required, confirms the payment amount, enters information into Columbia data systems and mails a confirmation letter to the customer.

Columbia's CAP plans are designed to be the most affordable (lowest) payment plan offered by Columbia. If at any time a customer's CAP payment exceeds the tariff budget, the account is reviewed by the Universal Service Liaison to determine if the customer's payment should be lowered or if the customer should be removed from the CAP.

CAP Plus Program

Every CAP customer will be assessed a flat monthly fee in addition to the payment plan options identified above. The "plus" amount is determined by dividing the total LIHEAP cash dollars received on CAP accounts in the prior heating season by the number of current CAP customers. The monthly plus amount will be 1/12 of the final total. This amount will be calculated yearly beginning with November billing cycle. The following are the CAP plus amounts for the past four years.

2014	\$	6.00
2015	\$	6.00
2016	\$	3.00
2017	\$	3.00

Intake and Enrollment

External studies support the use of telephonic applications with the intention of increasing customer ease, efficiency, and the number of applications completed while also decreasing administrative costs. While telephonic applications are encouraged, customers also have the option of applying for CAP during an on-site intake appointment or by completing and submitting a CAP application through the mail² or on-line³.

The Columbia Gas Universal Services Call Group coordinates referrals to the agencies and the Administrator for the intake and processing of CAP applications all customers, regardless of intake type, are required to provide supporting documentation.

On-site applications are generally recommended, but not required, for reconnection of service, when a Hardship Fund application is also needed, or when a customer is considered vulnerable and needs assistance completing the application and providing documentation. A customer always has the option of an on-site intake appointment.

² The Company will begin to offer mail-in applications no later than February 14, 2020.

³ The Company will begin to offer customers an on-line application to allow for electronic submission of information no later than December 1, 2020.

A non-CAP customer or applicant without service who has a balance from a prior account is required to pay no more than \$150, apply for all available energy assistance programs and complete a CAP application to restore service and re-enroll in CAP.

A removed CAP customer, who is without service may be required to pay no more than \$300, apply for all available energy assistance programs, and complete a CAP application to re-enroll in CAP.

Any customer who is found to be, or found to have been, stealing gas will be charged separately from their CAP payment and required to pay full amount of theft prior to reconnection and re-enrollment.

Customer Responsibilities

A CAP customer must agree to and uphold the following obligations:

- The initial application and subsequent re-application are subject to agreed-upon conditions, which serve as a contract between the customer and Columbia. See Attachment B.
- Income verification as required.
- The monthly payment amount and the customer five-dollar co-pay must be paid by the due date.
- Since the current average CAP bill is \$48 and CAP is designed to ask for an affordable monthly payment regardless of the total bill amount, CAP customers are not eligible for Hardship Fund grants unless one of the following conditions exist:
 - The customer's service is off in October, November or December.
 - The customer has been out of CAP for one year.
- The customer must apply for any available free weatherization services offered through the Department of Community and Economic Development State Weatherization Agencies and Columbia LIURP.
- Any customer with non-essential gas appliances such as a pool heater will agree not to use the device.

Consumer Education

- Program evaluation studies have shown that although there is some impact from energy efficiency education, weatherization remains the primary catalyst to reduce consumption.
- CAP customers will be prioritized for LIURP if usage is over 170 Therms.
- Program information and customer responsibilities continue to be emphasized to the customer along with energy efficiency materials provided at the time of intake.

- To minimize the shortfall of high consumption users, Columbia will continue to implement the Remedial Energy Efficiency Program (“REEP”) for high usage CAP customers who already received weatherization from LIURP.

Remedial Energy Efficiency Program (REEP)

Columbia will continue the REEP for customers who have received weatherization services, and whose usage still exceeds a \$1,000 annual shortfall limit.⁴

Columbia will contract with a third party contractor to provide energy efficiency education on an individual basis, up to 200 customers per year. The contractor reviews the accounts, sends letters and makes phone calls to discuss usage with the customers. During the verbal conversation and occasionally in person visits, the contractor determines whether the usage is within the customers’ control or is not. If usage continues to exceed the allowable shortfall limits, CAP Policy guidelines are reviewed and followed, and occupant health, owner status, housing conditions are all considered. The contractor may recommend an increased payment option or removal from CAP if the customer is misusing energy within their control and does not reduce usage or cease using the unnecessary energy over the course of the year. All customers receive education and follow up.

Transfer of Service

A CAP customer who requests a transfer of service from one premises to another will have the CAP plan transferred with no interruption.

For customers who opted to disconnect their service and then subsequently request service at a new address:

- If less than six months, customer will need to request to be re-instated into CAP after connection of service. The customer will be required to complete an application but not re-verify income since it was less than six months.
- If more than six months customer will need to complete a new CAP application and verify income.

Default Provisions

A CAP participant can default from the program for non-compliance of program guidelines and customer responsibilities.

⁴ The cost of natural gas is not factored into the LIURP or CAP shortfall considerations. Based on a scan of CAP customers in 2018 that had more than \$1,000 in shortfall, 4% did not meet the 170 therm requirement. The Company pre-screens from the highest usage to the lowest. These customers would more than likely not be pre-screened. It is not just the price of gas that affects shortfall, it is also the customer’s ability to pay and the amount they are paying every month.

Default Provisions for Nonpayment of CAP Budgets

April 1 through October 31: a CAP customer is in default after two missed CAP budget payments.

Columbia will issue a termination notice no sooner than 10 days after a customer fails to pay two missed CAP budget payments by the due date.

If a CAP customer does not make up all missed CAP payments within 10 days of the date of the termination notice, Columbia will attempt to terminate service for non-payment of the CAP budget bill. Columbia, in its sole discretion, may delay termination in the event of extenuating circumstances.

To restore service, must pay all missed CAP budget payments that were the subject of termination as well as any missed CAP budget payments that became past due during the termination notice period.

To restore service, a customer that was removed from CAP more than four years from request of service, will be able to enroll in CAP as if he/she was never in CAP before. Any current arrears will be treated as a new pre- program balance. *November 1 through March 31:* a CAP customer will not be removed from CAP for failing to make missed CAP payments. *Commencing February 1,* Columbia will issue termination notices to CAP customers who failed to pay CAP budget payments during the November to March period. The amount on the termination notice shall be for all missed CAP payments.

Default Provisions for Customers Requesting Removal from CAP

A customer who requests removal from CAP will be sent a letter explaining the benefits of CAP, along with a return envelope. The customer will be required to sign and return the letter and, upon Columbia's receipt of the executed letter, the customer will be removed from CAP.

The letter will confirm that the customer may not enroll in CAP for one year from the time of the customer's removal. The Company reserves the right to enroll a customer in CAP prior to one year after removal if extenuating circumstances exist. Most extenuating circumstances can be described as a hardship experienced by the customer after he/she left CAP such as a loss of income, deterioration of health of a household member or the death of a household member. A former CAP customer with no arrears that requests re-enrollment will be allowed back into CAP, subject to CAP eligibility and enrollment requirements.

Default Provisions for Customers with High Consumption

A customer refusing weatherization through Columbia without demonstration of a legitimate exemption will be reviewed by Customer/Community Outreach coordinator.

A customer may have their CAP budget payment raised to a higher payment option or may be removed from CAP as a result of the review.

A customer who does not respond to multiple attempts for weatherization will be removed from the program.

Re-connect Procedures

Reconnection and subsequent re-instatement when the applicant's gas service had been terminated after removal from CAP less than four years prior:

- All missed CAP payments must be made, including the five-dollar co-pay and the CAP Plus amount for each of the months during which gas service was retained.
- All payments made by the customer after removal from CAP will be deducted from the amount needed for program re-entry.
- Any charges incurred after the customer defaulted, which have not been paid by the customer, are treated as current bill shortfall amounts.
- An applicant will be required to re-apply, including providing proof of income, if the applicant has been without service for 6 months or more.
- These reconnect procedures also apply to defaulted CAP customers who move to a new address after termination for non-payment.

Security Deposits

- CAP customers are not charged security deposits.
- Any paid security deposits on accounts with an approved CAP application will be applied to the arrears prior to CAP enrollment.
- Past due security deposits from customers entering into CAP will be waived after income verification is complete.

Re-connect fees

- All reconnect fees will be waived for customers who are successfully enrolled in CAP.

Re-instatement

Re-instatement when the customer retained gas service after removal from CAP less than four years prior:

- The customer must pay the entire balance of missed CAP payments including the five-dollar co-pay to the pre-program arrears.
- Any payments made by the customer after removal are deducted from the amount needed for program re-entry. A customer must resolve any outstanding issues related to removal from CAP, such as verifying current income or accepting free weatherization services.
- The pre-program arrearage will be the same at the time of reinstatement as at the time of default.
- Any charges incurred after default, which are not paid by the customer, are treated as current bill shortfall.
- This process also applies to CAP customers who move to a new service address with no interruption of service due to termination.

CAP Balance Clarification for re-entry into CAP less than four years from removal date

When a customer leaves CAP, for any reason, but remains a customer, Columbia will maintain the customer's "CAP balance" separately, including CAP arrears, if any. As the customer receives a monthly non-CAP bill, [his/her] CAP balance will increase by the monthly asked-to-pay amount. As a customer makes a non-CAP payment or receives an energy assistance grant, the customer's CAP balance reduces by that payment or LIHEAP credit. In the future, should the customer reapply for CAP, [he/she] would first need to pay the full CAP balance-including amounts accrued while out of the program. The Company will accept any grant amounts in lieu of customer payments for re-enrollment.

Once the CAP balance is paid in full and the customer is re-enrolled in CAP, Columbia will retroactively apply 1/36th pre-program arrearage forgiveness for each month the customer spent out of the program. Columbia will also remove any new non-CAP arrears created since CAP removal and treat it as shortfall.

This process balances the customer's account as though the customer had remained in CAP throughout. In addition, the process encourages year round participation and avoids seasonal fluctuations in CAP participation.

CAP Reinstatement for Customers out of CAP for four years or more

Customers applying for the CAP with a removal date greater than that of four years or more will be treated as if they were never enrolled in CAP. They will follow all intake and enrollment procedures and receive the same benefits as first time enrollees.

Re-verification

Re-verification of income is necessary to ensure that only low income customers are offered a subsidized payment plan under CAP. CAP customers are required to provide proof of income annually, with the following exceptions:

- CAP customers who receive LIHEAP, Dollar Energy Fund, or another Columbia Universal Services program are required to re-verify their income once every three years at a minimum.
- CAP customers aged 60 and older who receive Social Security or Disability benefits are required to provide proof of income every other year.

Columbia issues notification letters requiring income re-verification each year to customers 30 days prior to each customer's CAP enrollment anniversary date. CAP participants are then required to mail or fax verification of their household income to the Administrating Organization for processing. In turn, the customer will receive a letter from the Administrating Organization verifying the customer's continued participation in CAP and detailing any changes made to their required CAP payment. For customers preferring to re-verify in person, appointments can be made available with a screening agency.

Columbia will remove from CAP any customer who fails to re-verify income within 30 days after the anniversary date and 60 days after the issuance of the notification letter that verified income is required.

Customers who claim zero income will be required to verify their income after six months of participation. A customer will continue to be required to verify their income every six months for as long as they verify at zero income. Income verification will include completing a form documenting zero income. See Attachment C.

Prior to removing a customer from CAP for lack of re-verification, Columbia will partner with electric utility CAP programs to obtain proper verification, in an attempt to retain the customer in CAP.

Once removed for failure to re-verify income, a customer will be re-entered into CAP immediately after eligible proof of income is received.

Arrearage Retirement

A customer's \$180.00 co-payment will be spread over a three-year time period, commencing when a customer is accepted into the program. One-thirty-sixth ($1/36$) of the unpaid pre-program arrears is forgiven for every full CAP payment received regardless of arrears and retroactively for any months missed once those months are paid. For example, if a CAP customer is delinquent for three months of payments, and makes catch-up payments for two of those three months, the customer will receive forgiveness for those two months. A customer's total pre-program arrearage will be

forgiven after thirty-six full CAP payments. The customer co-pay and retirement is clearly noted on the account summary portion of the monthly CAP bill.

CAP Shopping

As a result of the Natural Gas Choice and Competition Act, Columbia formulated a low-income aggregation for CAP customers concurrent with Columbia's Choice program.

As a condition of CAP, customers must agree to allow Columbia to act as an agent, on their behalf, to contract for the purchase of gas supplies from a licensed natural gas supplier ("NGS"). The NGS is selected by Columbia based upon responses to a Request for Proposal ("RFP"), which is sent to licensed NGSs on the Columbia system. In order to make CAP more cost-effective, the RFP seeks to obtain a cost of gas that is lower than Columbia's sales service rate. If RFP responses from NGSs do not meet this threshold (lower than Columbia's sales service rate), then no NGS is selected and the process is repeated on a quarterly basis until an NGS is chosen. Through this arrangement, CAP customers may benefit from the competitive market for gas supply, and from the economies of scale gained through the aggregation of their volumes into the larger CAP group.

As noted in the Company's triennial Universal Service and Energy Conservation Plan submissions since 2002, Columbia presented a feasibility study to the Commission on its CAP aggregation. In summary, the aggregation model proved to be a successful alternative to traditional CHOICE. External studies offered additional support for the continuance of an aggregation.

The Company agrees to adjust the program as directed by future Commission orders upon completion of any contractual obligations to which the Company is bound.

Universal Service Projected Needs Assessment

Columbia developed the projected needs assessment on the premise that Universal Service Programs should be offered as a menu of options to suit the circumstances of individual customers. Columbia assesses the potential participant and recommends the programs that best suit his or her payment-troubled situation. One size does not fit all, nor does one program suit all customers.

Columbia has implemented this philosophy through administrative processes within its customer services protocols to serve its low-income, payment-troubled customers at the first point of contact. This process was previously referred to as the One-Stop-Shop approach.

Columbia referenced two sources to complete this assessment. The first is the 2015 Federal Census Data, the most current census data available. The second is Columbia's customer information system.

The Bureau of Consumer Services' developed a Needs Assessment Proposal dated May 9, 2001 to help define and illustrate what is expected in the needs assessment. The proposal outlined the following six criteria:

1) Identified Low-Income Customers

In recognition that the CAP is designed to address the needs of chronic low-income, payment-troubled customers, Columbia began its process of identifying potential CAP customers by reviewing customers who have continued to meet certain criteria for a twelve month period. The selection criteria includes: all level 1 and 2 customers who have had payment agreements; all accounts that have received LIURP, CAP, LIHEAP or other energy assistance programs including Hardship Funds; all accounts whose financial summaries show incomes below 150% of Federal Poverty Guidelines.

The following table identifies that using this criteria, 67,711 customers are identified as low-income in Columbia's records, either through participation in a Universal Service program that confirms their income to be below 150% of federal poverty guidelines, or through non-verified self-declaration by the customer.

1) **The Number of Identified Low-income Customers**

	CAP	Non CAP Low Income	All Low Income
Jan	21,522	47,421	68,943
Feb	21,985	48,289	70,274
Mar	22,768	47,377	70,145
Apr	23,102	46,394	69,496
May	23,735	45,076	68,811
Jun	23,732	44,169	67,901
Jul	23,639	43,216	66,855
Aug	23,351	42,823	66,174
Sep	23,073	42,949	66,022
Oct	22,970	43,374	66,344
Nov	22,921	43,962	66,883
Dec	22,255	45,404	67,659

2) Estimated Low-income Customers

In addition to quantifying verified and self-declared low-income customers, Columbia also uses updated federal census data to estimate the number of low-income customers that it serves. The table below references the number of residential households that Columbia serves and equates that to a percentage (average of 19.46%) compared to the total number of households within each county. The census data indicates that there are 425,298 low-income

households within the counties Columbia serves. Using that same percentage, 101,375 households are estimated to be Columbia low-income households.

County	Customer Count	Census Household	Percent Customers CPA	Census Household Low-Income	Low-Income CPA
Adams	13852	38,459	36.02%	7477	2,693
Allegheny	100189	530,718	18.88%	133566	25,215
Armstrong	879	28,068	3.13%	7264	227
Beaver	34828	69,521	50.10%	18858	9,447
Bedford	73	20,000	0.37%	5886	21
Butler	9102	74,348	12.24%	12867	1,575
Centre	12189	56,116	21.72%	15975	3,470
Clarion	3536	15,830	22.34%	5513	1,231
Clearfield	20	30,929	0.06%	11866	8
Elk	30	13,244	0.23%	2871	7
Fayette	22088	54,391	40.61%	21436	8,705
Franklin	4416	59,486	7.42%	12690	942
Fulton	108	5,960	1.81%	1622	29
Greene	2703	14,394	18.78%	4021	755
Indiana	4	33,066	0.01%	12239	1
Jefferson	916	18,479	4.96%	6103	303
Lawrence	18053	36,138	49.96%	12562	6,275
McKean	3090	17400	17.76%	6036	1,072
Mercer	113	44,385	0.25%	12432	32
Somerset	4620	29,199	15.82%	9231	1,461
Venango	669	22129	3.02%	7246	219
Warren	2371	17113	13.85%	4902	679
Washington	41887	83,949	49.90%	19287	9,623
Westmoreland	20636	149,360	13.82%	35079	4,847
York	97566	165,672	58.89%	38269	22,537
					101,375

- 1) **Columbia Customer Count** – Number of households per county served by Columbia.
- 2) **Census Household** – Number of households per county identified by census data.
- 3) **Percent Customers Columbia** – Percent of total county households served by Columbia (#1 / #2).
- 4) **Census Household Low-Income** – Number of low-income households per county identified by census data.
- 5) **Low-Income Columbia** – Estimated number of low-income households per county served by Columbia (#3 X #4).

3) The Number of Identified Payment-troubled, Low-income Customers

Based upon the definitions at 52 Pa. Code §§ 54.72, 62.2 and 69.262, "Payment Troubled" is defined as a household that has failed to maintain one or more payment arrangements in a one-year period. Columbia used data gained from its actual experiences to identify the number of payment-troubled customers. Columbia reviewed confirmed low income accounts that are in arrears on payment agreements and not on payment agreements and took the average monthly of both to arrive at the identified, payment-troubled low-income total of 10,252.

4) Estimate of Potentially Payment-troubled, Low-income Customers

Next, Columbia compared the data obtained from its customer information system to census data. The number of customers identified as low-income based on Columbia's customer information system is 67,986. The number of customers estimated by census data to be low income is 101,375. The census figures suggest that Columbia's service territory has 33,389 more low income customers than Columbia's data indicate.

5) Number of Customers Who Still Need LIURP Services and the Cost to Serve that Number

Pursuant to BCS's May 9, 2001 Needs Assessment Proposal, Columbia identified the number of customers that meet the LIURP eligibility criteria, excluding those customers who have already received weatherization services. According to data from Columbia's customer information system, 26,499 customers meet the LIURP eligibility criteria. Of that total, 10,795 are property owners while the remaining 15,704 are renters. Columbia historically has had difficulty obtaining landlord approvals to weatherize homes. Assuming a 50% success rate, Columbia anticipates that 1/2 of the 15,704 renters in addition to the 10,795 property owners, totaling 18,647 could receive weatherization services. The estimated cost to serve these customers is \$131,946,172 at Columbia's current average expenditure per weatherized household.

6) Enrollment Size of CAP to Serve All Eligible Customers

Columbia determined the appropriate size of the CAP to serve all eligible customers. Using the data discussed above and Columbia's enrollment history, the Company submits that the projected enrollment of the CAP is 23,000. Despite ongoing enrollment efforts, the active total number of customers enrolled in CAP had remained stable at 25,000 customers up until 2010. In 2010, enrollment declined and has not rebounded to higher than 25,000 since then. This suggests that projection is adequate and that every customer who has had a need for CAP has been permitted to participate in the program; and that no customer has been turned away. Regardless of these projections, Columbia does not have a CAP enrollment ceiling.

The Universal Service Programs, CARES, CAP, Hardship Funds and LIURP respond to identified needs in different ways. Approximately 22,255 customers are currently receiving benefits from CAP, while 500 additional customers have received assistance through CARES services. Hardship Fund recipients average 2,800 annually along with an additional 600 households receiving weatherization services each year. Columbia looks to serve these customers through the menu of options available under Universal Services.

Projected Enrollment *

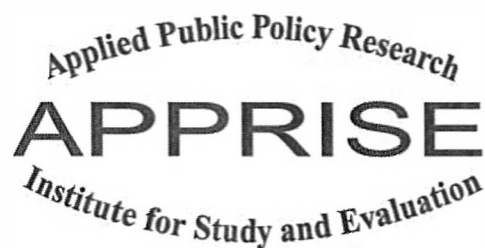
	2019	2020	2021
LIURP	525	540	540
CARES	500	500	500
CAP **	23,000	23,000	23,000
Hardship Funds	1,594	1,594	1,594

* The projected enrollments stated in this table are estimates and should not be considered ceilings. Although Columbia is estimating enrollment levels, Columbia will continue to promote programs and enroll customers needing assistance beyond these participation levels as needed.

** Although Columbia historically has enrolled approximately 6,000 new customers annually, overall participation has remained consistent or declined due to customers moving or defaulting from the CAP program

Conclusion

Columbia's Universal Service Program is designed to address the multifaceted needs of Columbia's diverse customer base. The present array of Universal Service Programs is an appropriate mix of services that meets the requirements of 66 Pa. C.S. §2203(8) and 52 Pa. Code Chapter 62. Columbia respectfully requests that the Commission approve the changes identified herein. In addition, Columbia respectfully requests that the Commission approve its 2019-2021 Universal Service and Energy Conservation Plan in its entirety and that the Commission adjust the date for submitting the Company's next triennial submission to three years from the approval date of the 2019-2021 Universal Service and Energy Conservation Plan.



MEMO

DATE: September 7, 2017
 TO: Deb Davis
 FROM: Jackie Berger
 SUBJECT: Columbia Gas LIURP Health and Safety Research

This memo provides a summary of research conducted on health and safety barriers and potential approaches in Columbia Gas of Pennsylvania's Low-Income Usage Reduction Program (LIURP).

I. Introduction

Many low-income usage reduction programs are facing increasing challenges serving customers due to the prevalence of health and safety problems that prevent major measures from being installed. As a result of serious issues in the home, customers must be deferred or are treated with only minor services, and high-usage customer with good potential for savings do not participate or only achieve low energy savings. This research provides an assessment of the circumstances under which additional cost-effective health and safety spending can be made to achieve greater savings for low-income customers and the program as a whole.

II. Research Tasks

This section provides a description of the research tasks and associated findings.

A. Assessing the Problem – Deferred Jobs and Jobs without Major Measures

The first step in the research was to assess the extent of the issue. We analyzed Columbia Gas' 2015 program database, reviewed the cancelled jobs spreadsheet, and reviewed job paperwork. We considered jobs in the following categories as the initial list of indicators that a health and safety issue prevented weatherization work.

- No measure invoice data.
- Job marked as incomplete.
- No blower door test data.
- Blower door indicator marked as not done.

Table II-1 shows that a significant percent of jobs had these issues. Overall, 46 percent of the 997 jobs in the 2015 database had one or more of the issues.

Table II-1
Assessment of 2015 Jobs with Potential Health and Safety Issues

Indicator of Potential Issue	Number	Percent
No Invoice Data	225	23%

Incomplete Job	391	39%
No Blower Door Test	398	40%
Blower Door Indicator=0	382	38%
Any of Four Issues Listed	462	46%
All Jobs	997	100%

We next identified jobs that may be limited due to health and safety issues as those where total job costs were less than \$750 or total job costs minus heating system replacement costs were less than \$750. Table II-2 shows that 35 percent of jobs had at least one of these issues.

Table II-2
Assessment of 2015 Jobs that May Have Been Limited
Due to Health and Safety Issues

Cost Issue	Number	Percent
Total Job Costs <\$750	330	33%
Non-Heating Replacement Job Costs<\$750	346	35%
Either Cost Issue	346	35%
All Jobs	997	100%

Table II-3 shows that when considering all of the issues described above, 47 percent of the 997 jobs were flagged as having a potential health and safety issue.

Table II-3
Assessment of 2015 Jobs with Potential Health and Safety Issues
Based on All Analysis Factors

Indicator of Potential Issue	Number	Percent
No Invoice Data	225	23%
Incomplete Job	391	39%
No Blower Door Test	398	40%
Blower Door Indicator =0	382	38%
Either Cost Issue	346	35%
Any of Five Issues Listed	467	47%
All Jobs	997	100%

We next merged these jobs with Columbia Gas' cancelled/deferred jobs spreadsheet. Of the 467 jobs identified as having potential health and safety issues, 329 were in Columbia Gas' cancelled/deferred jobs spreadsheet. When we assessed the reason for the cancelled job, we found that 91 of these jobs were cancelled or deferred due to health and safety issues, and the others were cancelled for other reasons including customer refusal and ineligibility.

We requested a total of 229 job files from Columbia Gas, the 91 cancelled/deferred jobs with health and safety issues and the additional 138 jobs that were identified as having potential health and safety issues, but were not in Columbia Gas' cancelled/deferred spreadsheet.

Table II-4 shows the number and percent of jobs that were initially flagged as potentially having a health and safety issue (and one additional job that was not initially flagged but was included in Columbia Gas' cancelled jobs spreadsheet.) The total number of jobs was 468. The table also shows the number and percent that were identified as having a health and safety issue that prevented energy efficiency work based upon detailed review of the customer's file. The job file usually included the audit form, work scope, and measure invoice(s). All of the materials in the file were reviewed to assess whether there was a health and safety issue that prevented work from being completed.

The table shows that overall 26 percent of the flagged jobs and 120 jobs in total had a health and safety issue that prevented weatherization.

**Table II-4
2015 Jobs with Health and Safety Issues**

Indicator of Potential Issue	All Jobs		H&S Issue	
	Number	Percent	Number	Percent
No Invoice Data	225	23%	6	3%
Incomplete Job	391	39%	70	18%
No Blower Door Test	399	40%	93	23%
Blower Door Indicator =0	382	38%	81	21%
Either Cost Issue	346	35%	48	14%
Cancelled Jobs	329	33%	30	9%
Any of Six Issues Listed	468	47%	120	26%
All Jobs	997	100%	--	--

The file review described above was also the source of information for the specific health and safety issue(s). Table II-5 displays the prevalence of major health and safety issues. Note that jobs could have more than one issue identified, so percentages do not sum to 100 percent. The most common issue was mold and/or moisture which prevented eight percent of jobs from being completed and comprised 68 percent of the health and safety issues. The other most common issues were knob and tube wiring and roof leaks.

**Table II-5
2015 Frequency of Specific Health and Safety Issues**

H&S Issue	Jobs with Health & Safety Issues that Prevented Work		
	Number	Percent of All Jobs	Percent of H&S Issues
Mold or Moisture	83	8%	68%
Knob and Tube Wiring	41	4%	34%
Roof Leak	38	4%	31%
Asbestos/Vermiculite	18	2%	15%
Sewage Leak	13	1%	11%
Infestation	12	1%	10%
Structural Issues	12	1%	10%
Holes in Attic Floor	10	1%	8%
Clutter	8	1%	7%
Other	21	2%	17%
Any Issue	122	12%	100%
All Jobs	997	100%	100%

B. Current Health and Safety Approach

Columbia Gas allows contractors to spend up to \$650 on health and safety repairs regardless of whether the customer owns or rents the home. For renters, this funding is usually related to HVAC repairs that will allow for weatherization work to be completed. If the customer owns the home, the \$650 may be used for a roof patch repair, or for a small amount of mold remediation.

Columbia Gas will approve additional spending on a case-by-case basis when contractors call to request additional funding. One of the most consistent areas where contractors ask for additional funding is for knob & tube abatement which may cost from \$1,000 to \$3,000. If Columbia Gas believes that the customer will get higher savings because there is no insulation in the attic, Columbia Gas would approve such a request. This would result in higher health and safety spending and higher total job spending above the initial calculated total spending target.

Contractors have various risk thresholds. Some will do any repairs that Columbia Gas permits so that they can proceed with the job, and some will not address the home if there is any water in the basement, for example. Columbia Gas leaves it up to the contractor to decide what issues to address because the contractor has the responsibility for the liability. Columbia Gas could potentially re-assign a job to another contractor who is willing to do the health and safety remediation work if the originally assigned contractor would not do so.

Table II-6 displays the percent of completed jobs included in the 2013-2015 evaluations with various health and safety repairs and the cost distribution for those repairs. Overall, 74 percent of the jobs had at least one of these repairs and the average cost of all repairs in the home was \$453. Ten percent of jobs had total repair costs of more than \$1,025. The most common issue was dryer venting, which was included in half of the 2013-2015 jobs. Miscellaneous repairs in the LIURP codebook include chimney, windows, and electrical repairs. Interior repairs include floor, wall, ceiling, floor under bath, wall plaster, ceiling plaster, and other pre-air sealing repairs.

**Table II-6
2013-2015 Health and Safety Repairs and Spending Distribution**

	Repair Issue		Repair Cost (For Those with Repair)							
	Number	Percent	Mean	Percentile						Max
				Min	10	25	50	75	90	
Dryer Venting	693	50%	\$91	\$10	\$57	\$75	\$90	\$91	\$119	\$635
Miscellaneous	528	38%	\$392	\$0	\$31	\$48	\$102	\$239	\$1,388	\$6,464
Interior	485	35%	\$304	\$8	\$75	\$112	\$153	\$345	\$684	\$2,654
Kitchen or Bath Exhaust	158	11%	\$236	\$28	\$82	\$125	\$202	\$350	\$420	\$1,016
Roof	68	5%	\$167	\$20	\$70	\$85	\$85	\$170	\$370	\$850
Total – Any Repair	1,028	74%	\$453	\$0	\$80	\$105	\$230	\$440	\$1,025	\$6,625

Note: One customer with a Misc. repair had no costs.

C. LIURP Savings Results

We analyzed Columbia Gas' 2013, 2014, and 2015 LIURP evaluation data to understand the level of savings achieved based on weather normalized pre-treatment usage, contractor, measures, job costs, and other characteristics.

Table II-7 displays the mean energy savings for 2015 jobs alone and the jobs completed in 2013 through 2015. We focus on the three-year analysis in this study to provide more jobs for analysis and a better prediction of energy savings based on job characteristics. While mean savings in 2015 were 258 ccf or 17.8 percent of pre-treatment usage, mean savings over the 3-year period were 304 ccf or 20.1 percent of pre-treatment usage.

**Table II-7
Weather-Normalized Gas Heating Savings Analysis**

Analysis Group	Obs.	Usage (ccf)		Savings	
		Pre	Post	ccf	%
2015	533	1,449	1,191	258**	17.8%
2013-2015	1,398	1,515	1,211	304**	20.1%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-8 displays the mean energy savings for 2013-2015 jobs by pre-treatment usage. We use the 3-year period to provide a greater number of jobs in each usage bin. The table provides the following information.

- **Job Cost:** The mean job cost does not increase linearly with the pre-treatment usage, indicating that the number and depth of measures does not increase at the same rate as pre-treatment usage. There is likely to be variance caused by differences in contractors' practices and costs, and by home conditions that impact energy-saving opportunities.
- **CCF savings:** The amount of natural gas saved does increase linearly with pre-treatment weather-normalized usage. While jobs with pre-treatment usage of less than 1,000 ccf save an average of 159 ccf, jobs with pre-treatment usage of 1,201 to 1,300 ccf save an average of 245 ccf, jobs with 1,701 to 1,800 ccf save an average of 345 ccf, and jobs with pre-treatment usage over 2,200 save an average of 629 ccf.
- **Percent savings:** The percent of pre-treatment usage saved generally increases with pre-treatment usage, but not as consistently as the amount saved.

**Table II-8
2013-2015 Savings by Pre-Treatment Usage**

Weather-Normalized Pre-Treatment Usage (ccf)	2013-2015 Participants					
	Obs.	Total Cost	Usage		Savings	
			Pre	Post	ccf	%
<1,000	104	\$5,514	927	767	159**	17.2%
1,001-1,100	122	\$4,935	1,049	877	172**	16.4%
1,101-1,200	118	\$5,672	1,151	929	222**	19.3%
1,201-1,300	136	\$5,307	1,249	1,004	245**	19.6%
1,301-1,400	159	\$5,288	1,349	1,097	252**	18.7%
1,401-1,500	125	\$5,574	1,448	1,147	301**	20.8%
1,501-1,600	151	\$5,135	1,547	1,234	313**	20.2%
1,601-1,700	112	\$5,217	1,648	1,340	308**	18.7%
1,701-1,800	89	\$5,130	1,746	1,402	345**	19.8%
1,801-1,900	67	\$5,648	1,847	1,436	410**	22.2%
1,901-2,000	54	\$6,169	1,947	1,535	412**	21.2%
2,001-2,200	60	\$6,408	2,082	1,663	419**	20.1%
2,201+	101	\$7,601	2,627	1,999	629**	23.9%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-9 displays 2013-2015 savings by contractor for all contractors who had at least 50 jobs included in the 2013-2015 evaluations. Average savings vary significantly by contractor. Contractors with the lowest savings had mean savings of about 200 ccf or 15 percent of pre-treatment usage, and one

contractor with the highest savings who had 306 jobs included in the evaluations saved an average of 433 ccf or 27.5 percent of pre-treatment usage.

**Table II-9
2013-2015 Savings by Contractor**

Contractor Code	2013-2015 Participants					
	Obs.	Mean Cost	Usage		Savings	
			Pre	Post	ccf	%
28	306	\$8,184	1,573	1,140	433**	27.5%
83	169	\$4,968	1,528	1,270	257**	16.8%
101	121	\$8,322	1,478	1,168	310**	21.0%
74	108	\$7,836	1,458	1,121	336**	23.1%
96	98	\$5,160	1,436	1,141	294**	20.5%
90	96	\$7,046	1,420	1,187	233**	16.4%
102	81	\$5,105	1,619	1,374	245**	15.1%
77	78	\$5,979	1,467	1,171	296**	20.2%
108	76	\$8,052	1,317	1,116	201**	15.3%
75	66	\$5,445	1,526	1,299	226**	14.8%
103	57	\$7,677	1,716	1,441	275**	16.0%
Others	142	\$7,852	1,558	1,306	253**	16.2%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-10 displays the savings by the total job cost. The table shows that jobs with higher costs have greater savings. While jobs with total costs under \$4,000 saved an average of 180 ccf, jobs with total costs of more than 10,000 saved an average of 458 ccf.

**Table II-10
2013-2015 Savings by Total Cost**

Total Cost	2013-2015 Participants					
	Obs.	Mean Total Cost	Usage		Savings	
			Pre	Post	ccf	%
<=\$4,000	264	\$2,806	1,492	1,312	180**	12.1%

Total Cost	2013-2015 Participants					
	Obs.	Mean Total Cost	Usage		Savings	
			Pre	Post	ccf	%
\$4,001-\$6,000	336	\$5,112	1,505	1,272	233**	15.5%
\$6,001-\$8,000	320	\$6,970	1,511	1,192	318**	21.1%
\$8,000-\$10,000	230	\$8,898	1,504	1,137	367**	24.4%
>\$10,000	248	\$12,288	1,571	1,113	458**	29.2%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-11 displays the savings by the job cost excluding the cost of heating system replacements. Savings also increase with these costs.

Table II-11
2013-2015 Savings by Total Cost
Excluding Heating System Replacement

Total Cost	Treatment Group					
	Obs.	Mean Total Cost	Usage		Savings	
			Pre	Post	ccf	%
<=\$4,000	451	\$2,434	1,505	1,271	234**	15.5%
\$4,001-\$6,000	374	\$5,101	1,497	1,218	278**	18.6%
\$6,001-\$8,000	353	\$6,966	1,488	1,131	357**	24.0%
>\$8,000	220	\$11,341	1,612	1,202	410**	25.4%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-12 displays savings by whether or not certain measures were installed. The table shows that for all measures except heating system repair, jobs with the measure saved more than those without. For example, while jobs with blower door guided air sealing saved an average of 323 ccf, jobs without that measure saved an average of 290 ccf. While jobs with a heating system replacement saved an average of 392 ccf, jobs without a heating system replacement saved an average of 239 ccf.

Table II-12
2013-2015 Savings by Measures Installed

Total Cost	2013-2015 Participants			
	Obs.	Mean	Usage	Savings

		Total Cost	Pre	Post	ccf	%
Blower Door Test						
Yes	1,282	\$7,188	1,513	1,204	310**	20.5%
No	116	\$4,902	1,537	1,291	247**	16.0%
Blower Door Guided Air Sealing						
Yes	618	\$7,110	1,517	1,195	323**	21.3%
No	780	\$6,909	1,514	1,224	290**	19.2%
Insulation						
Yes	1,116	\$7,581	1,509	1,185	323**	21.4%
No	282	\$4,692	1,542	1,312	231**	15.0%
Blower Door Guided Air Sealing & Insulation						
Yes	563	\$7,403	1,513	1,173	339**	22.4%
No	835	\$6,724	1,517	1,236	281**	18.5%
Heating System Repair						
Yes	390	\$7,394	1,467	1,191	275**	18.8%
No	1,008	\$6,845	1,534	1,218	316**	20.6%
Heating System Replacement						
Yes	599	\$8,762	1,526	1,133	392**	25.7%
No	799	\$5,676	1,508	1,269	239**	15.8%
Duct Work						
Yes	546	\$7,097	1,458	1,115	343**	23.5%
No	852	\$6,935	1,552	1,272	280**	18.0%
Health & Safety Repairs						
Yes	1,028	\$7,433	1,508	1,190	317**	21.0%
No	370	\$5,789	1,537	1,267	270**	17.5%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. †Denotes significance at the 90 percent level.

Table II-13 displays savings for 2015 jobs by the blower door measured leakage reduction (for jobs with pre- and post-treatment testing values). This table is only shown for 2015, because the additional database that contains this information was not analyzed for the other program years. The table shows that savings increase as the CFM50 reduction increases.

Table II-13
2015 Savings by Blower Door Leakage Reduction

CFM50 Reduction	2015 Participants					
	Obs.	Mean Total Cost	Usage		Savings	
			Pre	Post	ccf	%
<=500	140	\$7,183	1,437	1,224	213**	14.8%
500-1,000	80	\$6,771	1,430	1,174	257**	17.9%
1,001-2,000	111	\$7,373	1,408	1,107	300**	21.3%
>2,000	96	\$8,880	1,585	1,242	343**	21.6%
All	427	\$7,537	1,461	1,188	273**	18.7%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

D. Potential Savings for Homes with Health and Safety Problems

We conducted regression analysis to assess the job-related factors that do the best at predicting energy savings. After running several models, the following model kept the variables that were statistically significant, as shown in Table II-14.

Table II-14
2013-2015 Regression Analysis

Variable	2013-2015 Participants (1,372 observations)		
	Coefficient	95% Confidence Interval	
Pre-Treatment Usage (ccf)	0.30	0.27	0.32
Home Age	-1.06	-1.51	-0.61
Square Feet	-0.09	-0.11	-0.07
Blower Door and Air Sealing Cost	0.05	0.04	0.05
Heating System Replaced (yes/no)	154.56	131.84	177.28
Duct Sealing (yes/no)	55.80	32.41	79.19
Contractor #74	79.58	36.48	122.67
Contractor #77	73.69	23.52	123.86
Contractor # 102	-72.10	-119.97	-24.22
Contractor # 103	-106.37	-162.50	-50.24

Variable	2013-2015 Participants (1,372 observations)		
	Coefficient	95% Confidence Interval	
Constant	-73.01	-135.24	-10.79

Previous iterations of the regression included the following variables, but these were not found to be significant.

- Home Ownership
- Row Home (as opposed to single-family)
- Contractors not included above
- Blower-door reduction (2015 regression only)
- Health and Safety Repairs (yes/no)
- Health and Safety Repair Costs

E. Decision Framework for Additional Health and Safety Investments

Based on this research, we developed a decision framework for how much to spend on health and safety. Table II-15 displays some examples of model inputs and outputs. The table shows a range of pre-treatment usage, home age, home size, and measure investments. Based on the inputted fields, the model calculates the predicted annual savings and percent savings, the present discounted value of savings assuming a five percent discount rate, and the maximum spending on health and safety given the projected savings and the measure-level spending. The maximum spending is based upon the current price of \$1.04723 per therm of natural gas.

In addition to showing the discounted present value of savings, the table shows twelve years of savings without discounting, which leads to higher total savings and a greater amount allocated for health and safety spending. Under Scenario 5, a large old home with high pre-treatment usage, and a large investment in air sealing and other measures, the model shows that there can be up to \$8,805 spent on health and safety (with no discounting) and the job will still be cost-effective.

**Table II-15
Model Scenarios**

Variable	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	
User Entered Fields	Pre-Treatment Therms	1500	1600	2500	3800	5000
	Home Age	50	30	100	100	100
	Square Feet	1500	1250	2000	3200	3200
	Air seal + Insulation Cost	\$800	\$1,400	\$1,000	\$2,700	\$5,000
	Heat Sys Replace (yes=1)	0	0	1	1	1
	Duct Sealing (yes=1)	0	1	0	1	1
	Contractor 74	0	0	0	1	0
	Contractor 102	0	1	0	0	0
	Contractor 77	0	0	0	0	1
	Contractor 103	0	0	0	0	0
	Heat Sys Cost	0	\$0	\$3,500	\$3,500	\$3,500
	Other Non H&S Costs	\$800	\$800	\$1,000	\$1,000	\$2,000

Calc Fields (5% discount)	Annual Savings (Therms)	214	301	578	1075	1536
	Calculated % Savings	14%	19%	23%	28%	31%
	PDV Savings (Therms)	1897	2672	5126	9527	13615
	Max Spending	\$1,986	\$2,798	\$5,368	\$9,977	\$14,258
	Total Non H&S Costs	\$1,600	\$2,200	\$5,500	\$7,200	\$10,500
	H&S Allowance	\$386	\$598	-\$132	\$2,777	\$3,758
Calc Fields (no discount)	12-Year Savings (Therms)	2568	3618	6940	12898	18434
	Max Spending	\$2,689	\$3,789	\$7,267	\$13,507	\$19,305
	H&S Allowance	\$1,089	\$1,589	\$1,767	\$6,307	\$8,805

The model provided above is an alternative to Columbia Gas' current method of projecting job savings and an initial spending allocation. Columbia Gas' current method applies a specific savings factor to pre-treatment usage for each contractor based on their historical savings. When we run a regression that only controls for pre-treatment usage and contractor, we find that 25 percent of the variation in savings is accounted for by those factors. However, when we run the model shown in Table II-14 and used in the analysis above, we find that 43 percent of the variation of savings is explained by the model. Therefore, this model that takes account of additional factors does a better job of predicting savings. This model only includes the contractors who have statistically significant differences in savings after controlling for the other factors. Some contractors may have higher or lower savings than average, but those differences are better explained by differences in factors included in the model, and given those factors, those contractors do not have savings that are statistically different than the other contractors.

Under Columbia Gas' current method of determining the initial amount of spending, they allow for an adjustment if the contractor feels that he will be able to obtain greater savings than his usual percentage given the opportunities in the home. For example, if the contractor has historical savings of 20 percent, but feels that he can achieve 25 percent on the home, Columbia Gas may raise the spending ceiling. Under this revised approach, Columbia Gas could also provide that same flexibility if desired. However, they would use this alternative model estimate as the starting point for the spending cap, rather than the simple percentage savings based on the contractor's historical savings level.

Tables II-16A and II-16B provide information on measure costs over the three years of analysis, 2013 through 2015. There were 1,398 jobs included in this analysis. These tables provided information used in projecting costs for various measures that were included in the scenarios examined.

**Table II-16A
Measure Costs**

Costs	Mean	Min	Percentile					Max
			P10	P25	P50	P75	P90	
Blower Door Air Sealing	\$147	\$0	\$0	\$0	\$0	\$150	\$424	\$3,395
Insulation	\$2,012	\$0	\$0	\$302	\$1,686	\$3,260	\$4,664	\$10,514
BD Air Seal+Insul	\$2,159	\$0	\$0	\$487	\$1,850	\$3,439	\$4,817	\$10,854
Duct Sealing	\$84	\$0	\$0	\$0	\$0	\$89	\$180	\$6,700
Heating System Repair	\$162	\$0	\$0	\$0	\$0	\$80	\$529	\$7,269
Heating System Replacement	\$1,557	\$0	\$0	\$0	\$0	\$2,950	\$4,550	\$10,375

Health and Safety Costs	\$333	\$0	\$0	\$0	\$140	\$324	\$774	\$6,625
Total Costs-Air Sealing-Insulation	\$4,839	\$0	\$1,801	\$2,770	\$4,293	\$6,376	\$8,384	\$20,302
Total-Air Sealing-Insulation-Duct Sealing	\$4,755	\$0	\$1,781	\$2,688	\$4,226	\$6,285	\$8,296	\$20,302
Total Costs-Health & Safety	\$6,664	\$0	\$2,875	\$4,387	\$6,333	\$8,583	\$10,685	\$23,390
Total Costs	\$6,998	\$0	\$3,056	\$4,656	\$6,592	\$8,930	\$11,258	\$23,597

Table II-16B

Measure Costs

Costs	% with Measure	# with Measure	Costs Statistics for those with Measure					
			Mean	P10	P25	P50	P75	P90
Blower Door Air Sealing	44%	618	\$334	\$75	\$150	\$170	\$377	\$725
Insulation	80%	1,116	\$2,520	\$483	\$1,151	\$2,292	\$3,655	\$4,883
Duct Sealing	39%	546	\$215	\$65	\$85	\$134	\$180	\$381
Heating System Repair	28%	390	\$580	\$80	\$175	\$361	\$696	\$1,361
Heating System Replacement	43%	599	\$3,635	\$2,483	\$2,760	\$3,162	\$4,458	\$5,560
Health & Safety	74%	1,028	\$453	\$80	\$105	\$230	\$440	\$1,025
Total Costs	99%	1,395	\$7,013	\$3,094	\$4,688	\$6,602	\$8,946	\$11,258

III. Summary

This memo provided the results from a study of Columbia Gas' LIURP program, health and safety barriers, health and safety expenditures, and a new approach for determining total and health and safety spending. We find that, depending on the job characteristics, Columbia Gas may be able to spend a significant amount of funds on health and safety and still achieve cost-effective savings, given the high level of opportunities for savings found in the home. This approach would yield high energy savings, reduced costs for ratepayers who are contributing to the costs of the Customer Assistance Program (CAP), and greater likelihood that the customer may be able to afford the full bill if the household exits CAP at some point in the future. We recommend that Columbia Gas pilot this approach on high-usage homes with significant health and safety barriers and assess the level of savings that are achieved.

Columbia Gas of Pennsylvania, Inc.Customer Assistance Program (“CAP”)CUSTOMER AGREEMENT FORM

As a participant in the Columbia Gas of Pennsylvania, Inc.’s (“Columbia Gas”) Customer Assistance Program (“CAP” or “Program”), I agree to accept all of the Program conditions as listed below. Failure to agree or follow through on any of the accepted conditions will result in removal from the Program.

By signing below I agree to:

- Verify my household gross monthly income at time of submitting my CAP application.
- Re-verify gross household monthly income once a year; unless I apply and receive an energy assistance grant and it is posted to Columbia Gas.
- Notify the Columbia Gas CAP at **1-800-537-7431** of any changes in my household income, household size or my residence.
- Pay the CAP payment and \$5.00 co-payment on arrearages, monthly, by the due date.
- Apply for LIHEAP and direct the payment to Columbia Gas. I further understand that LIHEAP grants will be applied to the CAP installment portion of my natural gas utility payment. I will still be responsible for the \$5 monthly co-pay, if applicable.
- Resume paying my full CAP installment plus \$5 co-pay when my LIHEAP grant is exhausted.
- Call Columbia Gas CAP immediately if I am no longer able to afford my CAP plan so as to avoid getting behind on my bill.
- Apply for any free weatherization service including the Columbia Gas WarmWise Program and my local county weatherization program, if I meet the eligibility requirements.
- Authorize Columbia Gas to share and use data including, but not limited to, income, social security numbers, and household member information furnished by me or on my behalf regarding me or members of my household concerning any application for, or participation in, the Program, with the Public Utilities Commission and entities on which Columbia relies for Program eligibility verification. Such sharing and use of the information shall be consistent with applicable law.
- Allow Columbia Gas to purchase gas on my behalf from a third party natural gas supplier.
- Accept any Program change resulting from modifications to the Program made by Columbia Gas of Pennsylvania, Inc., that has the Pennsylvania Bureau of Consumer Services’ approval.

In addition, by signing below I confirm that the facts set forth in my CAP application are true and complete to the best of my knowledge. I also hereby authorize Columbia Gas to further verify my household income, as Columbia Gas deems appropriate. I understand, agree and accept that false or incomplete statements on my CAP application will be cause for rejecting my application or removal from the Program.

 Signature of Applicant

 Date

Reviewed by: _____

 Agency Code

Columbia Gas Account# _____

Columbia CAP
Box 42329
Pittsburgh, PA 15203

Claim of Zero Income in Household

May be completed and signed by the applicant whose household has had no income for the past 30 days.

I, _____, state that no member of my
Insert you name here

household has received any income during the past 30 days.

Our household has been without any income since _____
Date

I hope and expect to receive some income on or about _____
Date

From _____
List source of expected income

During the above period, how did your household meet their needs for:

Food:

Shelter:

Living Expenses:

I understand that I can be denied enrollment in Columbia CAP for making false statements, and do reaffirm that all claims here are complete and truthful to the best of my knowledge.

Applicant Signature _____ Date _____

Columbia Gas of Pennsylvania, Inc.

Universal Service

And

Energy Conservation Plan

2019- 2021

Columbia Gas of Pennsylvania, Inc.

Universal Service and Energy Conservation Plan

Plan Submission

Section 62.4 of the Pennsylvania Public Utility Commission's ("Commission") regulations requires natural gas distribution companies to file updated Universal Service and Energy Conservation Plans every three years. 52 Pa. Code § 62.4. On June 27, 2014, by Secretarial Letter, the Commission notified Columbia Gas of Pennsylvania, Inc. ("Columbia" or the "Company") of a new plan submission schedule. The new schedule requires Columbia to file a new plan in February 2018 for plan years 2019 through 2021. Accordingly, Columbia hereby submits its Universal Service and Energy Conservation Plan for plan years 2019 through 2021.

As Universal Service includes energy efficiency programs such as the Low Income Usage Reduction Program ("LIURP"), individual universal service and energy conservation programs referenced herein will be referred to as "Universal Service," and the Universal Service and Energy Conservation Plan will be referenced as the "Plan" or the "Universal Service and Energy Conservation Plan."

Historic Overview

Columbia submitted its first Universal Service and Energy Conservation Plan in August 1999, as part of its Restructuring Filing as required by the Natural Gas CHOICE and Competition Act in Case No. R-00994781. 66 Pa.C.S. Chapter 22. The Commission approved the Plan as part of settlement agreements from Case No. R-00994781 in October and December of 1999. Provisions within those settlements included an enrollment target for the Customer Assistance Program ("CAP") and a funding level for LIURP. Additionally, the approved settlements provided for a temporary funding source for Columbia's Universal Service Program with the expectation that a permanent funding mechanism would be developed later. The Commission approved modifications to Columbia's CAP funding mechanism in 2001 and 2002.

Columbia submitted its second Universal Service and Energy Conservation Plan in November 2002 (for the years 2003 through 2005), which the Commission approved in January 2003. In October 2003, Columbia received Commission approval for a permanent funding mechanism, which allowed for recovery of projected shortfall and application costs, based upon the current and estimated customers in the program and the cost of gas. The mechanism is part of the pass-through charge on customer bills and is adjusted at the same time as the quarterly gas cost adjustment.

In 2005, Columbia submitted its third Universal Service and Energy Conservation Plan (for years 2006 through 2008), which the Commission approved in January 2006. It

included the establishment of a remedial conservation education program for high consumption CAP customers who had already received weatherization services, along with an external evaluation of its LIURP program. Funding and enrollment remained consistent with the previously approved plan from 2003.

In 2008, Columbia filed its fourth Universal Service and Energy Conservation Plan for years 2009-2011 as part of its base rate case at Docket No. R-2008-2011621. The Plan was approved as part of the settlement of that case. The approved plan featured an increase in LIURP spending from \$1,700,000 to \$3,000,000.

In August 2010, Columbia filed a Petition to Modify its 2009-2011 Plan in order to implement the "CAP Plus" program. (Docket No. P-2010-2195759) The Commission approved Columbia's Petition in October 2010 and Columbia implemented CAP Plus in November 2010. Under CAP Plus, CAP participants are billed an applicable "Asked to Pay" amount, as well as an additional "Plus" amount that is intended to balance affordability for CAP customers and cost responsibility for non-CAP customers. The Plus amount is currently calculated as follows: (total Low Income Home Energy Assistance Program ("LIHEAP") receivables from the prior heating season divided by the number of active CAP participants at the start of the current LIHEAP season divided by 12.) As of the date of this filing, Columbia's CAP is based on the CAP Plus model approved in Docket No. P-2010-2195759.

Also, in the third quarter of 2010, Columbia secured the services of an independent third-party consultant to perform a comprehensive impact evaluation of Columbia's Universal Service Programs. In November 2010, Columbia filed its independent evaluation of the Universal Service Programs. The independent evaluator, Melanie Popovich, noted that "throughout this document, the evaluator makes note of the proactive approach taken by the Company's management team in order to address the barriers to program effectiveness. The Company is to be commended on its willingness to engage third party experts to undergo external studies for further program improvement. ... In my opinion as an evaluator, Columbia strives for continuous improvement and has one of the most efficient and effectively managed Universal Service Programs in the state."

In 2011, as part of the approved settlement of its rate case proceeding at Docket No. R-2010-2215623, Columbia agreed to increase its LIURP budget from \$3,000,000 to \$4,000,000. One party to that proceeding, the Pennsylvania Communities Organizing for Change d/b/a ACTION United ("PCOC"), challenged Columbia's CAP Plus program. Specifically, PCOC alleged that the Company's CAP Plus program did not comply with the Pennsylvania Department of Welfare requirements or Federal law. The Commission denied PCOC's challenge to Columbia's CAP Plus, and PCOC appealed the matter to the Pennsylvania Commonwealth Court. On April 10, 2014, the Commonwealth Court affirmed the Commission's decision approving Columbia's CAP Plus program.

On September 28, 2012, Columbia filed a base rate proceeding under Docket No. R-2012-2321748. In 2013, the parties to that proceeding submitted a partial settlement for the Commission's approval, which featured an increase in LIURP funding from \$4,000,000 to \$4,500,000 and the cancellation of Columbia's agreement with Citizen's Energy Corporation which had generated \$375,000 for Columbia's Fuel Fund, but which was only being recovered from Columbia's Purchased Gas Cost residential customers. The settlement provided for replacement of the proceeds of the Citizens Energy transaction with a \$375,000 increase to the Rider Universal Service Plan ("USP").

On March 21, 2014 Columbia filed a base rate proceeding under Docket No. R-2014-2406274. On December 2014, the Commission approved a settlement which included an increase in LIURP funding from \$4,500,000 to \$4,750,000.

On June 27, 2014, the Commission issued a Secretarial Letter to all energy utilities establishing a revised USECP filing schedule. As part of the new filing schedule, Columbia's then-pending proposed USECP for the plan period 2015 through 2017 would extend to include 2018. On January 16, 2015, Columbia filed and served an amended proposed USECP for 2015 through 2018. The Commission approved Columbia's amended plan for the years 2015 through 2018 on July 8, 2015.

On March 19, 2015, Columbia filed a base rate proceeding under Docket No. R- 2015-2468056. The Commission approved a settlement provision which allowed CAP's third-party administrative costs to be recovered through the Rider USP and the establishment of a Universal Service Advisory Committee.

In March 2016, Columbia filed a base rate proceeding under Docket No. R-2016-2529660. The parties agreed to allow Columbia to use the residential portion of federal pipeline credits and refunds collected by Columbia to fund the Hardship Fund. Columbia also agreed to continue to develop plans to increase donations to the Dollar Energy Fund in conjunction with its Universal Advisory Council. Further, Columbia agreed to report on any and all fundraising efforts as a part of the settlement. In addition, Columbia agreed to offset the Universal Service Rider by 7.5% for each customer enrolled over the average annual participation level of 23,000. The offset reflects anticipated savings in operation and maintenance costs gained when a customer participates in CAP.

On February 28, 2018 Columbia filed a petition under Docket No. P-2018-3000160 seeking approval to use federal pipeline penalty credits and refunds to permanently support its residential Hardship Fund. On June 14, 2018, the Commission approved Columbia's petition authorizing Columbia to use federal pipeline penalty credits and refunds to fund its Hardship Fund. Further, the Commission's order allows Columbia to maintain a Hardship Fund balance of up to \$750,000. If Columbia's penalty credit and refund balance is more than \$750,000, Columbia will flow the residential portion of the credits and refunds to its residential customers. Columbia will continue to seek opportunities to raise funds to support its Hardship Fund.

In March 2018 Columbia filed a base rate proceeding under Docket No. R-2018-2647577. The Commission approved a settlement provision which increased LIURP funding by \$125,000 beginning in the year 2020. Additionally, Columbia agreed to design and implement a process for electronic income verification for the CAP program by January, 2020. Further, Columbia and the other parties agreed to discuss the following issues including but not limited to budget billing plans, high CAP credits and CAP payment plan options within Columbia's Universal Services Advisory Committee.

Proposed Modifications to the Plan for 2019 - 2021

- I. CAP re-entry Process
 - a. Any customer out of CAP for four years or more will be treated as a customer with no prior CAP participation. Any overdue balance will be treated as Pre-program arrears and will be forgiven over three years with \$5 expected co-pay per month until pre-program arrears are eliminated.
 - b. The re-entry treatment for customers less than four years from the removal date does not change.
- II. The senior CAP payment plan option ~~has been~~will be eliminated as an option for all new CAP participants.
- III. CAP customers reporting zero income will be required to re-verify their income every six months or be removed from the program.
- ~~IV. The CAP customer agreement form will be amended to eliminate the requirement to apply for LIHEAP. See Attachment B for a copy of the form.~~
- ~~V. IV.~~ The elimination of \$375,000 Rider USP funding for the Hardship Fund.
- ~~VI. V.~~ Implementation of a Pilot program¹ to increase Health and Safety spending on individual jobs based on the model recommended by the external evaluator in the Impact Evaluation.
- ~~VII. VI.~~ Implementation of a LIURP pilot not to exceed ten customers per year accepting customers with low usage in the most recent twelve months due to inoperable heating systems.

External Studies

September, 2017 USECP Impact Evaluation conducted by Melanie Popovich

Key Recommendations affecting this plan:

CAP-06 Enrollment by FPIG and Payment Plan: Senior CAP

With so few participants in Senior CAP (5) the Company to consider phasing out this payment plan option in order to streamline the menu of CAP options

CAP-13 Default CAP Balances

¹ Costs for pilot programs described in ~~VI~~ and ~~VII~~ to be recovered through Columbia's established Rider USP, within approved Rider USP funding levels.

The Company has designed a CAP process for customers who default from CAP and retain gas service that balances customer accounts as though the customer had remained on CAP throughout. This process encourages year-round participation and avoids seasonal fluctuations in CAP participation. Currently there is no time limit imposed upon the customer as to the length of time they can remain out of CAP and still get reinstated.

- **Recommended Action(s)**

The Company should evaluate the process related to CAP reinstatement as to the allowable length of time a customer can remain out of CAP and still be reinstated.

The evaluator suggests a maximum of a four-year stay-out as it aligns with the Company's collection policy. According to the policy, balances older than four years cannot be collected as per Chapter 56.35.

LIURP-04 De Facto Heat Customers

Customers who might otherwise be eligible for LIURP except for the usage and 12-month history criteria, may be left out of receiving critical services due to non-working furnaces needing repair or replacement. Since LIURP is a 'savings driven' program focusing on usage reduction, it disallows these vulnerable customers to participate.

- **Recommended Action(s)**

The Company to consider the feasibility of a joint gas and electric utility pilot within overlapping service areas to target 'de facto' heat customers who may have received LIURP measures but have not benefited from usage reduction from their heat source.

These customers would be excluded from the expected usage reduction evaluation associated with a savings-driven program, but treated as a sub-set.

2017 Health & Safety Evaluation conducted by Apprise, Inc. (Attachment A)

On May 19, 2017, Columbia retained Apprise, Inc. to perform a Health & Safety Evaluation in order to evaluate the current costs of LIURP jobs that are deferred due to health and safety issues such as knob and tube wiring, moisture in the basement due to leaky roofs, and other minor structural issues. Columbia requested Apprise, Inc. to determine if it was possible to increase the Health and Safety budget at a job level while still maintaining cost effectiveness for the overall program. Apprise, Inc. is a non profit research institute dedicated to collecting and analyzing data and information to assess and improve public programs. On September 7, 2017, Apprise, Inc. completed its evaluation, which is provided herewith as Attachment A. In its evaluation, Apprise, Inc. recommended that, depending on the job characteristics, Columbia Gas may be able to spend a significant amount of funds on remediating health and safety issues and still achieve cost-effective savings, given the high level of opportunities for savings found in the home. In making that recommendation, Apprise, Inc. stated "We find that, depending on the job characteristics, Columbia may be able to spend a significant amount of funds on health and safety and still achieve cost-effective savings, given the high level of opportunities for savings found in the home. This approach would yield high energy savings, reduced costs for ratepayers who are contributing to the costs of the Customer Assistance Program (CAP), and greater likelihood that the customer may be able to afford the full bill if the household exits CAP at some point in the future. We recommend that Columbia Gas pilot this approach on high-usage homes with significant health and safety barriers and assess the level of savings that are achieved."

Integration

Columbia continues to use an integrated approach for outreach and solicitation for all Universal Service programs, focusing on two principle strategies: first, Columbia incorporates referrals into existing processes, and second, Columbia coordinates services with dedicated staff.

Columbia uses existing customer services processes, such as the Cold Weather Survey, collection, compliance, energy assistance receipts and contact management to create opportunities to increase enrollment in Universal Service programs.

Columbia's Contact Center has a designated call group comprised of specially trained employees who are dedicated to the promotion and enrollment of Universal Service programs. Through Universal Service Customer Service Representatives, the customer is referred to all available and appropriate programs including CAP, LIURP, Customer Assistance Referral and Evaluation Services ("CARES"), energy assistance, etc. In addition, Columbia's trained representatives refer eligible customers to non-utility assistance programs such as earned income credits, food banks and community based agencies.

This expedites the referral and intake process, resulting in efficient enrollment. Once a customer is identified as payment troubled or low income, the customer is transferred to a Universal Service Customer Service Representative. The Universal Service Representative will pre-screen a customer and, where applicable, enroll a customer in one of Columbia's Universal Service programs immediately. This "one-stop-shop" approach is administratively efficient because it identifies which programs are appropriate for the customer at the single point of contact.

Payment assistance and low income energy efficiency programs are offered simultaneously to offset program costs that good paying customers fund. Columbia prioritizes CAP customers for LIURP benefits to reduce future consumption and shortfall. This coordination occurs at the time of referral at the contact center. As a result, only one application is needed to apply for both CAP and LIURP.

Outreach

Columbia promotes its Universal Service programs and engages in external outreach opportunities throughout its service territory. Outreach avenues include:

- Sponsorship and participation in senior fairs
- Representation on local community assistance boards and task forces
- Participation and coordination of Be Utility Wise events
- Provision of program information on Columbia website
- Bill inserts targeted to specific Universal Service programs
- Targeted email blasts to customers for specific programs
- Promotion of programs through multiple social media channels
- Semi-annual Universal Service Advisory Council meetings
- Customer Contact Center referrals
- Bi-annual community roundtables

Columbia also sponsors outreach opportunities to support Universal Service programs on an individual program basis:

CAP

- Coordination with electric utilities to solicit CAP customers for enrollment and re-verification
- Coordination with the Dollar Energy Fund Grant Program
- Limited solicitation of targeted groups
 - Previous Dollar Energy grant customers
 - CRISIS recipients
 - Housing Authority tenants
 - CAP agency staff
- Mail solicitation of targeted groups
 - Previous and potential LIHEAP recipients
 - Inactive account customers (Cold Weather Survey packets)
- Training
 - Customer Care Center Customer Service Representatives
 - Administrating and screening agencies
 - Credit and collections representatives
 - Service department personnel
 - Construction services personnel

HARDSHIP FUNDS

- Annual bill inserts requesting contributions and encouraging application
- Monthly solicitation on bills to all non-CAP residential customers with current accounts
- Participation in multiple fundraising events
- Link to make a donation to all customers receiving e-bills

LIHEAP

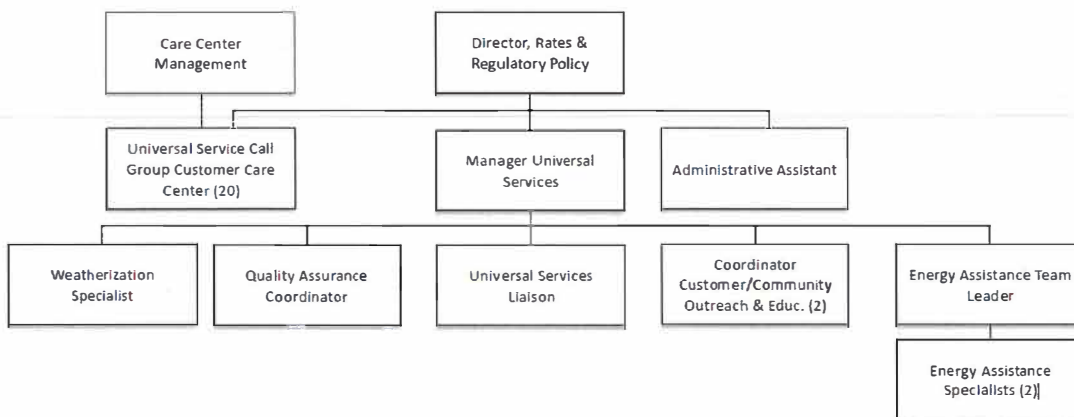
- Press conference to promote LIHEAP program opening
- Press releases
- TV commercials featuring Franco Harris
- Bill inserts promoting LIHEAP
- Inserts promoting CRISIS in eligible termination notices

- Outbound calls to previous recipients reminding them to apply
- Outbound calls to identified eligible customers
- Operation of a toll-free hotline for inquiries and assistance with applications
- Outbound calls to Crisis-eligible customers as part of Direct Referral Process
- Training on LIHEAP guidelines and benefits to all call center and field service personnel

Staffing

Columbia utilizes the resources of staff employees along with the experts of community partners to implement all of its Universal Service programs.

COLUMBIA GAS UNIVERSAL SERVICES ORG.



Universal Service Program Responsibilities

Director, Rates and Regulatory Affairs	Strategic direction of all programs/policies
Manager, Universal Service	Implementation/compliance of all programs
Administrative Assistant	Program reporting for all programs
Coordinator Customer/Community Outreach and Education (2)	Outreach coordination of all programs
Columbia Customer Contact Center Universal Service Call Group	Provision of information on, referrals to and enrollment in all programs
Universal Services Liaison	Coordination of Fuel Fund and CAP processes and agencies for grants and applications
Energy Assistance Team Leader	Day to day compliance of LIHEAP vendor agreements, reconciliation of LIHEAP receipts
Energy Assistance Specialist (2)	LIHEAP hotline response, customer payment postings and response to customer inquiries
Quality Assurance Coordinator	Implementation of LIURP quality assurance program
Weatherization Specialist	Coordination of LIURP process flow from referral through completion to post inspection

Community Partnerships

Columbia partners with community organizations for both the delivery of universal service programs and feedback on program practices and policies.

CAP	
Columbia	Management
Columbia Customer Care Center Universal Service Call Group	Information, referral and enrollment
Dollar Energy Fund, Inc.	Outreach and intake administration
Dollar Energy Screening Agencies	On-site applications and referrals
Essential Energy, Inc.	Energy efficiency/consumer education and quality assurance control
LIURP	
Columbia	Management and pre-screening
Columbia Customer Care Center Universal Service Call Group	Information, referral and enrollment
12 Weatherization providers throughout Columbia's service territory <u>(current list as of November, 2019 subject to change)</u> <u>Not For Profit/CBO's</u> <u>South Central Community Action Agency</u> <u>Community Action Partnership for Somerset County</u> <u>Housing Authority of the County of Beaver</u> <u>Action Housing</u> <u>Westmoreland Housing Authority</u> <u>The Weatherization program of Fayette County</u> <u>Lawrence County Community Action</u> <u>For Profit Organizations</u> <u>Clearesult</u> <u>Mincin Insulation</u> <u>MT Tenny</u> <u>Fitzsimmons Energy Auditing</u> <u>Grindle Insulation</u>	Weatherization, customer communication and data tracking
Conservation Consultants, Inc.	Energy efficiency education/inspections
Pure Energy Coach <u>King Conservation Group</u>	Energy efficiency education/inspections
HARDSHIP FUNDS	
Columbia	Management, enrollment and referral
Customer Care Center Universal Service Call Group	Information, referral and enrollment
Dollar Energy Fund, Inc.	Outreach and intake administration

Dollar Energy Fund Screening Agencies	Outreach and intake implementation
CARES	
Columbia	Management
Columbia Customer Care Center Universal Service Call Group	Information, referral and enrollment
Community-based Organizations	Resource development

The list below reflects the positions held by Columbia's Universal Service team on various task forces, committees and boards within the communities Columbia serves.

<u>Task Force, Committee or Board</u>	<u>Position</u>
Human Service Forum	Member/Association
Council of Community Services	Member/Association
Be Utility Wise (SW PA)	Member/Sponsor
CARES Network	Member
Fayette County Energy Task Force	Member/Committee
Senior Expo Planning Committee, Washington County	Member/Committee
National Association of Social Workers	Member
Beaver County Homeless/Housing Coalition	Member
National Energy Utility and Affordability Coalition	Board Member
National Energy Utility and Affordability Conference	Conference Co-Chair
Department of Community and Economic Development Weatherization Assistance Program Policy Advisory Council	Member
York County Hispanic Coalition	Member
Children's Aid Society	Board Member
Lehman Center	Advisory Council Member
Volunteer Center, United Way of York County	Team Member

Budgets

Universal Service expenses are monitored and tracked specifically by each program with the exception of Hardship Funds. Because oversight of the Hardship Funds resides within the CARES program, all internal administrative expenses are included in the CARES budget.

PROJECTED BUDGET

	2019	2020	2021
LIURP	\$4,750,000	\$4,875,000	\$4,875,000
Energy Assistance Outreach and Processing	\$180,000	\$180,000	\$180,000
CARES Community Outreach	\$260,000	\$260,000	\$260,000
CARES Total	\$440,000	\$440,000	\$440,000
CAP Administration and Applications	\$1,300,000	\$1,300,000	\$1,300,000
Shortfall	\$20,442,928	\$20,442,928	\$20,442,928
Arrearage Retirement	\$975,247	\$975,247	\$975,247
CAP Total	\$22,718,175	\$22,718,175	\$22,718,175
Hardship Funds	\$675,000	\$675,000	\$675,000
Hardship Administrative Costs	\$34,000	\$34,000	\$34,000
Total	\$28,617,175	\$28,742,175	\$28,742,175
Number of Residential Customers	390,394	390,394	390,394
Average Spending per Customer per month	\$6.11	\$6.14	\$6.14

Universal Service Plan (USP) Rider Offset

Columbia provides an offset to its USP Rider of 7.5% for each customer enrolled in CAP over the annual participation level of 23,000. This offset (i.e., credit) will be calculated in the following manner on a yearly basis:

- Sum the Total annual shortfall plus Total Annual Arrearage Forgiveness and divide by total number of customers in CAP to arrive at a per customer CAP cost.
- Multiply 23,000 by per customer CAP cost to determine 100% recovery for first 23,000 CAP customers.
- Subtract the 100% recovery from the sum of Total annual shortfall and Total annual arrearage forgiveness to determine the portion that should be offset.
- Multiply the portion to be offset by 7.5%. This equals the dollar amount not collected through the Rider as an offset.

Program Descriptions

Pursuant to 52 Pa Code §62.4(b), the components of Columbia's Universal Service and Energy Conservation Plan are described in detail. The following are program descriptions, including eligibility criteria, needs assessments, and projected enrollment levels for the programs.

CARES (Customer Assistance Referral and Evaluation Services)

Scope

CARES provides information and referrals on all programs and resources available to customers in need through a specially trained call group at the customer contact center and has been offered to Columbia customers since 1986. Since its inception, over 45,000 customers have received the assistance of staff social workers through resource referrals, consumer education, LIHEAP Outreach and affordable payment plans tailored to the customer's ability to pay. CARES is designed to be a short-term program for first time payment-troubled customers who require energy assistance and other necessary resources and referrals.

In addition, CARES assists vulnerable CAP customers who need extra protection and account monitoring. It is also the final step in the Cold Weather Survey intervention process. The Customer/Community Outreach and Education Coordinators ("Coordinators") make additional attempts to contact customers aged sixty two and over who are without heat. This intervention is continuous throughout the heating season.

Coordinators also oversee the handling and processing of all accounts protected under regulations governing customers with valid Protection from Abuse ("PFA") orders.

The Coordinators train care center and service employees on available resources.

Key Objectives

- Safe, sustained energy
- Customer self-sufficiency
- Resource development
- Successful payment recovery
- Continuous payment frequency
- Reduced credit/collection costs
- Identification and cost avoidance associated with crisis/safety issues
- Customer satisfaction
- Crisis intervention
- Reduced commission complaints
- Community networking
- Goodwill

Eligibility Criteria

CARES is designed to be a short-term or temporary program for residential-heat customers who must demonstrate one of the following scenarios:

- Payment-troubled customer, evidenced by missed payments or anticipated payment barriers due to a personal crisis that is likely to result in a financial hardship, i.e. situations involving medical, financial, employment, familial or psycho-social issues.
- Special-needs customer, evidenced by the onset of a crisis having a profound impact on an individual or family, e.g. sudden loss of income, divorce, major life-threatening illness, death of the wage earner or, service emergency during harsh weather.
- Vulnerable customer, defined as someone who possesses impaired intellect or mental health, extreme physical disability or, chronic mismanagement of finances that has the serious potential to interfere with good payment behavior. These vulnerable customers will have diminished capacity to take care of basic needs, make reasonably sound decisions, take responsibility for their own personal safety, or have barriers for communications with the outside world.
- Domestic abuse customer, with a valid and active PFA court order, who is trying to obtain or maintain gas service.
- Cold Weather Survey customer, aged sixty two or older, who is without their regular gas service and is using space heaters such as kerosene, wood, coal, or electric.

Program Components

- Case management approach to solving individual payment problems
- Home visit assessment when necessary
- Protection from service termination during program
- Short-term, affordable payment plans based on ability to pay and case specific options designed by the coordinators for each specific customer
- Budget counseling
- Referrals and linkage to community, state, and federal resources for direct and indirect monetary assistance
- Information dissemination and referrals
- Crisis intervention
- Oversight of accounts with active PFA orders

LIURP (Low Income Usage Reduction Program)

Scope

Columbia has provided the Low Income Usage Reduction Program to its customers since 1988. Approximately 10,000 homes have been weatherized since that time. Consumption savings average between 20%-24%. Average 2016 program expenditure per home was \$7,076. In accordance with existing requirements; each measure installed is projected to have a 7-12 year payback. Columbia's current level of funding is \$4,750,000 annually pursuant to the approved settlement at Docket R-2014-2406274.

Key Objectives

- Safe, affordable energy for low-income customers
- Reduced uncollectible arrearages and write-offs
- Reduced consumption
- Affordable budgets/bills for customers
- Improved payment frequency
- Reduced CAP shortfall deficit through bill reduction
- Improved customer satisfaction
- Environmental awareness/protection
- Responsible energy use

Eligibility Criteria

- Columbia residential heating customer
- Customer must not have full received weatherization services in the past seven years at their current dwelling
- 52 Pa. Code §58.2 (relating to definitions) including non-CAP low income customers who otherwise meet the LIURP eligibility requirements.
- Homeowner or renter; renter must have property owner permission.
- Average winter monthly consumption greater than 170 Therms.
- Up to ten homes per year with pre usage lower than 170 Therms may be weatherized if no gas heating system has been operating for the full pre usage period.
- A maximum of \$100,000 will be allocated for this pilot.
- Dwelling must be approved during audit to be in proper condition to weatherize.
- A premise may be disqualified if Columbia makes a determination that providing weatherization services would not be cost-effective.

Program Components

- Home Energy Audit. Each home is audited to determine if the dwelling is in proper condition for weatherization. Weatherization measures are recommended at the time of the audit. Referrals to other housing development agencies for repair work are made, if necessary. Referrals to other utility weatherization programs are made, as necessary.
- Energy education provided concurrent with audit.
- Coordination with other utilities and weatherization programs to leverage funds and increase customer satisfaction.
- Heating system is inspected, cleaned and repaired as needed prior to weatherization treatment.
- Gas furnace may be upgraded to 92% efficiency or higher if deemed to be inefficient.
- Gas boiler systems may be upgraded to 80% or higher if deemed to be inefficient.
- Health and Safety allowance up to \$650.00, not including heating system replacements, which are deemed as an efficiency measure.
- Weatherization measures are performed specific to audit recommendations. Treatment is determined based on highest efficiency results. Measures include sidewall and attic insulation, blower door guided air sealing measures such as caulking, sealing and window stripping.
- Carbon Monoxide detectors are installed on each floor level of all completed homes.
- Twenty-five percent of weatherized homes are inspected for quality and safety.
- Program is evaluated by comparing weather normalized pre-treatment usage to weather normalized post treatment usage to determine savings.

Health and Safety Pilot

The Health and Safety Pilot will begin January 2020 and run through December 2022. Columbia may propose to extend, adopt, or cancel the Health and Safety Pilot based on the 2020 data.

Key Objectives

- To decrease the number of deferred jobs due to conditions in the home such as knob and tube wiring, moisture in basement due to leaky roofs, and other minor structural issues.
- To reduce usage in -CAP customers' homes with high usage that could not be weatherized without remediating identified Health and Safety issues.

Eligibility

- Must be an active CAP Customer with shortfall greater than \$1,000 per year average
- Customer must own and reside in dwelling for a minimum of six months.
- Prior annual usage must be greater than 1600 therms or 250 average therms per winter months

- A present Health and Safety issue that is preventing weatherization including but not limited to knob and tube wiring, presence of moisture, mold or mildew
- The elimination of the Health and Safety issue will result in comprehensive measure installation and expected usage reductions greater than 18% .

Program Components

- Additional Health and Safety spend will be authorized based on the following model, scenarios 2 through 5. PDV stands for Present Discounted Value (of Savings).

Variable		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
User Entered Fields	Pre-Treatment Therms	1500	1600	2500	3800	5000
	Home Age	50	30	100	100	100
	Square Feet	1500	1250	2000	3200	3200
	Air seal + Insulation Cost	\$800	\$1,400	\$1,000	\$2,700	\$5,000
	Heat Sys Replace (yes=1)	0	0	1	1	1
	Duct Sealing (yes=1)	0	1	0	1	1
	Contractor 74	0	0	0	1	0
	Contractor 102	0	1	0	0	0
	Contractor 77	0	0	0	0	1
	Contractor 103	0	0	0	0	0
	Heat Sys Cost	0	\$0	\$3,500	\$3,500	\$3,500
	Other Non H&S Costs	\$800	\$800	\$1,000	\$1,000	\$2,000
Calc Fields (5% discount)	Annual Savings (Therms)	214	301	578	1075	1536
	Calculated % Savings	14%	19%	23%	28%	31%
	PDV Savings (Therms)	1897	2672	5126	9527	13615
	Max Spending	\$1,986	\$2,798	\$5,368	\$9,977	\$14,258
	Total Non H&S Costs	\$1,600	\$2,200	\$5,500	\$7,200	\$10,500
	H&S Allowance	\$386	\$598	-\$132	\$2,777	\$3,758
Calc Fields (no discount)	12-Year Savings (Therms)	2568	3618	6940	12898	18434
	Max Spending	\$2,689	\$3,789	\$7,267	\$13,507	\$19,305
	H&S Allowance	\$1,089	\$1,589	\$1,767	\$6,307	\$8,805

- Pilot participants will be tracked separately for evaluation purposes
- The Pilot's success and cost-effectiveness will be measured the same way as LIURP
- All other traditional components of LIURP will be maintained.

Projected Enrollment

- A maximum of \$200,000 in additional Health and Safety costs may be spent per year for this pilot

- Estimate of participants is 30 homes per year

Inoperable Heating Systems Pilot

Key Objectives

- To assist customers that need LIURP services but do not meet the usage requirements due to non-working furnaces needing repair or replacement.

Eligibility

- Columbia residential heating customer
- Customer must not have received full weatherization services in the past seven years at their current dwelling
- 52 Pa. Code §58.2 (relating to definitions) including non-CAP low income customers who otherwise meet the LIURP eligibility requirements.
- Homeowner
- Up to ten homes per year with pre usage lower than 170 Therms if gas heating system has not been operating for the full pre usage period.
- Dwelling must be approved during audit to be in proper condition to weatherize.

Program Components

- Same as traditional LIURP benefits

Duration

- Up to ten homes per year for 2019, 2020 and 2021

Evaluation

- Pilot participants will be tracked separately. Actual weather normalized savings will be calculated but not included in overall company average.
- Average weather normalized savings for pre-treatment period will also be compared to post treatment savings to estimate savings impact of measures.

HARDSHIP FUND

Scope

Columbia contributes one dollar of shareholder money for every dollar contributed by its customers. Annually, Columbia raises \$75,000 to \$80,000 in customer contributions through bill solicitation. In addition, Columbia sponsors fundraising activities to increase customer contributions up to \$150,000. Combined with a shareholder match, this total of \$300,000 is available to payment-troubled, low income customers for assistance with their Columbia bill. Opening and closing dates for the availability of funds are determined annually.

Additionally, the Commission has approved Columbia's requests to direct pipeline refunds and penalty credits received by Columbia to the Dollar Energy Fund to supplement these efforts. As of January, 2018 there are \$1,172,235.29 remaining in Pipeline refunds and penalty credits to be used in increments of \$375,000 for the 2019, 2020 and 2021 program year. There will be \$47,235.29 remaining for the 2022 program year.

Approximately, ten percent of awarded grant dollars are earmarked for administration. This money is paid to the administrator, Dollar Energy Fund, for the outreach and intake application process in the community. Currently, 124 community-based organizations take applications within communities that Columbia serves.

Key Objectives

- Prevent termination
- Restore service
- Reduce outstanding balances

Eligibility Criteria

- Columbia residential heating customer
- Household income at or below 200% of Federal Poverty Level
- Must have exhausted all other available energy assistance resources first
- Minimum arrearage balance as required by Dollar Energy Fund
- Demonstrated sincere payment effort as required by Dollar Energy Fund
- Exceptions to eligibility criteria may be granted under special circumstances, which may include not requiring a sincere effort of payment, minimum arrearage balance, or non- CAP status.

Treatment of CAP Customers

Columbia only allows Hardship Funds to be applied to CAP accounts when a customer is without service for non-payment during the months of October, November or December (cold weather procedure) or if the customer has been out of the program for more than one year. At that time, Columbia will allow the Hardship Fund grant to substitute for a customer payment for the purpose of re-instatement into CAP. CAP customers receive arrearage forgiveness and CAP credits that are, on average, higher than the maximum hardship fund grant. In an effort to ensure there is some assistance available for all customers that need help, hardship funds are limited for CAP customers.

Program Components

- Screening and referrals at Columbia's Customer Care Center
- Outreach and intake at local community-based organizations
- Grant determination by Columbia employees for customers without service to expedite reconnections
- Grant amounts do not exceed \$500 per customer. A grant of \$500, regardless of the balance owed, will be accepted as sufficient to end a termination or restore service.

Fundraising

- Columbia participates in Dollar Energy Fund organized fundraisers with partial proceeds going to match Columbia's shareholder match. These efforts include:
 - WarmAThon – radio call in fundraiser Columbia assists in staffing phone lines and sponsors event
 - Cool Down for Warmth – Columbia personnel participate in Ice House fundraiser and sponsors event
 - Golf Outing – Columbia sponsors event and golf teams
 - Request-a -Thon – Radio call in fundraiser
- Columbia sponsors company specific events to raise funds for the hardship fund annually
 - Email blasts to customers
 - Social media promotions throughout the year on Facebook and twitter
 - Bill insert requesting donations
 - Thank you letters to previous donors
 - Sponsorship of TransSiberian Orchestra concert where \$.50 of every ticket sold goes to the Dollar Energy Fund. In 2017, \$12,202.37 was raised through this effort.
- Columbia has also conducted additional promotions to increase Hardship Fund donations over the past two years
 - Promotion to encourage customers to sign up for E-Bill with a donation made to Dollar Energy Fund for every customer sign up. \$5.00 for every new E-bill participant would be donated to the Dollar Energy Fund. In 2017, Columbia raised \$4,900 through this effort.
 - Through a partnership with Nest Labs, Inc., a combined donation from Nest and Columbia of \$25.00 was donated to the Dollar Energy Fund for every Nest learning thermostat sold during the promotion period. Columbia raised \$2,175 through this effort in 2017.

CAP (CUSTOMER ASSISTANCE PROGRAM)

Scope

Columbia's CAP was first established as a pilot program in 1992, at which time participation was limited to 1,000 customers. Since then, Columbia's CAP has expanded to its current active total of approximately 22,255 participants.

The program was created as an alternative to traditional credit and collection measures to assist long-term, payment-troubled customers by offering affordable payment options.

Under provisions of the 1999 Natural Gas Choice and Competition Act, Columbia filed a restructuring settlement agreement at Docket No. R-00994781 under which it expanded the CAP program from 1,000 to 22,000 customers. Through a subsequent settlement agreement approved by the Commission at Docket No. P-00032057, the enrollment limit of CAP was modified to 27,135. To date, Columbia's CAP has not reached the enrollment ceiling. In 2015, the Company was ordered to remove the enrollment ceiling.

Key Objectives

- Provide affordable payment options
- Reduce credit/collection costs
- Reduce arrearage write-off
- Administer an efficient, cost-effective program
- Enhance customer understanding of program benefits
- Increased "on time" payment frequency
- Minimize shortfall through energy efficiency programs
- Target identification of low-income, payment-troubled customers
- Reduce Commission complaints

Eligibility Criteria

- Columbia residential heating customer
- Household income at or below 150% of Federal Poverty Level. Household income is defined as all income from every household member with the exception of any wage income earned by household members less than 19 years old.
- Payment-troubled, as designated by a termination notice and or at least one failed payment agreement within past 12 months, or otherwise identified through cross utility referral or -a credit score of less than 750.
- Must not reside in a multi-unit dwelling served by one meter
- Must provide either a Social Security number, driver's license number or another state identification number for all household members over the age of 18

Program Components

Administration

- A Community Based Organization (“CBO”) performs clerical and administrative duties for portions of the CAP program. These functions include screening, enrollment, and re-verification.
- The Administrating Organization (the “Administrator”) networks with over 40 designated screening agencies/CBOs to complete on-site applications when necessary. The Administrator also operates a phone enrollment process.

Columbia’s CAP payment structure maximizes customer payments while maintaining affordability for the customer. This flexibility allows the Administrator to select the most affordable option not to be less than the average amount received over the previous 12 months. Columbia offers the lowest average CAP payment in the industry and submits that the following payment options balance the goals of remaining affordable while maximizing the customers’ payments:

Option #1: Percentage of Income.
 0 – 110% of Poverty = 7%
 110 – 150% of Poverty = 9%

Option #2: Average of payments for the last 12 months prior to joining CAP.
 (Available for customers with at least six months of un-interrupted service.)

Option #3: Flat rate of 50% of budget billing
 (Adjusted annually)

~~Senior — Flat rate of 75% of budget billing for customers over 60
 CAP: — years of age with no arrears or payment plan default — No new enrollees allowed at this option~~

A minimum payment amount of twenty-five dollars is required.

The CAP customer will be required to pay a five-dollar co-payment towards pre-program arrears until the arrears are eliminated.

Any payments made in excess of the monthly CAP bill are applied to future CAP bills.

The Administrator reviews the application and income verification, if required, confirms the payment amount, enters information into Columbia data systems and mails a confirmation letter to the customer.

Columbia’s CAP plans are designed to be the most affordable (lowest) payment plan offered by Columbia. If at any time a customer’s CAP payment exceeds the tariff budget, the account is reviewed by the Universal Service Liaison to determine if the customer’s payment should be lowered or if the customer should be removed from the CAP.

CAP Plus Program

Every CAP customer will be assessed a flat monthly fee in addition to the payment plan options identified above. The “plus” amount is determined by dividing the total LIHEAP cash dollars received on CAP accounts in the prior heating season by the number of current CAP customers. The monthly plus amount will be 1/12 of the final total. This amount will be calculated yearly beginning with November billing cycle. The following are the CAP plus amounts for the past four years.

2014	\$	6.00
2015	\$	6.00
2016	\$	3.00
2017	\$	3.00

Intake and Enrollment

External studies support the use of telephonic applications with the intention of increasing customer ease, efficiency, and the number of applications completed while also decreasing administrative costs. While telephonic applications are encouraged, customers also have the option of applying for CAP during an on-site intake appointment or by completing and submitting a CAP application through the mail² or on-line³.

The Columbia Gas Universal Services Call Group coordinates referrals to the agencies and the Administrator for the intake and processing of CAP applications. All customers, regardless of intake type, are required to provide supporting documentation.

On-site applications are generally recommended, but not required, for reconnection of service, when a Hardship Fund application is also needed, or when a customer is considered vulnerable and needs assistance completing the application and providing documentation. A customer always has the option of an on-site intake appointment.

A non-CAP customer or applicant without service who has a balance from a prior account is required to pay no more than \$150, apply for all available energy assistance programs and complete a CAP application to restore service and re-enroll in CAP.

A removed CAP customer, who is without service may be required to pay no more than \$300, apply for all available energy assistance programs, and complete a CAP application to re-enroll in CAP.

² The Company will begin to offer mail-in applications no later than February 14, 2020.

³ The Company will begin to offer customers an on-line application to allow for electronic submission of information no later than December 1, 2020.

Any customer who is found to be, or found to have been, stealing gas will be charged separately from their CAP payment and required to pay full amount of theft prior to reconnection and re-enrollment.

Customer Responsibilities

A CAP customer must agree to and uphold the following obligations:

- The initial application and subsequent re-application are subject to agreed-upon conditions, which serve as a contract between the customer and Columbia. See Attachment B.
- Income verification as required.
- The monthly payment amount and the customer five-dollar co-pay must be paid by the due date.
- Since the current average CAP bill is \$48 and CAP is designed to ask for an affordable monthly payment regardless of the total bill amount, CAP customers are not eligible for Hardship Fund grants unless one of the following conditions exist:
 - The customer's service is off in October, November or December.
 - The customer has been out of CAP for one year.
- The customer must apply for any available free weatherization services offered through the Department of Community and Economic Development State Weatherization Agencies and Columbia LIURP.
- Any customer with non-essential gas appliances such as a pool heater will agree not to use the device.

Consumer Education

- Program evaluation studies have shown that although there is some impact from energy efficiency education, weatherization remains the primary catalyst to reduce consumption.
- CAP customers will be prioritized for LIURP if usage is over 170 Therms.
- Program information and customer responsibilities continue to be emphasized to the customer along with energy efficiency materials provided at the time of intake.
- To minimize the shortfall of high consumption users, Columbia will continue to implement the Remedial Energy Efficiency Program ("REEP") for high usage CAP customers who already received weatherization from LIURP.

Remedial Energy Efficiency Program (REEP)

Columbia will continue the REEP for customers who have received weatherization services, and whose usage still exceeds a \$1,000 annual shortfall limit.⁴

Columbia will contract with a third party contractor to provide energy efficiency education on an individual basis, up to 200 customers per ~~year~~.

~~year. The contractor reviews the accounts, sends letters and makes phone calls to discuss usage with the customers. During the verbal conversation and occasionally in person visits, the contractor determines whether the usage is within the customers' control or is not. The contractor will also monitor usage and provide feedback on an on-going basis for one year.~~

If usage continues to exceed the allowable shortfall limits, CAP Policy guidelines are reviewed and followed, and occupant health, owner status, housing conditions are all considered. The contractor may recommend an increased payment option or removal from CAP if the customer is misusing energy within their control and does not reduce usage or cease using the unnecessary energy over the course of the year. All customers receive education and follow up.

Transfer of Service

A CAP customer who requests a transfer of service from one premises to another will have the CAP plan transferred with no interruption.

For customers who opted to disconnect their service and then subsequently request service at a new address:

- If less than six months, customer will need to request to be re-instated into CAP after connection of service. The customer will be required to complete an application but not re-verify income since it was less than six months.
- If more than six months customer will need to complete a new CAP application and verify income.

Default Provisions

A CAP participant can default from the program for non-compliance of program guidelines and customer responsibilities.

Default Provisions for Nonpayment of CAP Budgets

⁴ The cost of natural gas is not factored into the LIURP or CAP shortfall considerations. Based on a scan of CAP customers in 2018 that had more than \$1,000 in shortfall, 4% did not meet the 170 therm requirement. The Company pre-screens from the highest usage to the lowest. These customers would more than likely not be pre-screened. It is not just the price of gas that affects shortfall, it is also the customer's ability to pay and the amount they are paying every month.

April 1 through October 31: a CAP customer is in default after two missed CAP budget payments.

Columbia will issue a termination notice no sooner than 10 days after a customer fails to pay two missed CAP budget payments by the due date.

If a CAP customer does not make up all missed CAP payments within 10 days of the date of the termination notice, Columbia will attempt to terminate service for non-payment of the CAP budget bill. Columbia, in its sole discretion, may delay termination in the event of extenuating circumstances.

To restore service, must pay all missed CAP budget payments that were the subject of termination as well as any missed CAP budget payments that became past due during the termination notice period.

To restore service, a customer that was removed from CAP more than four years from request of service, will be able to enroll in CAP as if he/she was never in CAP before. Any current arrears will be treated as a new pre- program balance.

November 1 through March 31: a CAP customer will not be removed from CAP for failing to make missed CAP payments. *Commencing February 1,* Columbia will issue termination notices to CAP customers who failed to pay CAP budget payments during the November to March period. The amount on the termination notice shall be for all missed CAP payments.

Default Provisions for Customers Requesting Removal from CAP

A customer who requests removal from CAP will be sent a letter explaining the benefits of CAP, along with a return envelope. The customer will be required to sign and return the letter and, upon Columbia's receipt of the executed letter, the customer will be removed from CAP.

The letter will confirm that the customer may not enroll in CAP for one year from the time of the customer's removal. The Company reserves the right to enroll a customer in CAP prior to one year after removal if extenuating circumstances exist. Most extenuating circumstances can be described as a hardship experienced by the customer after he/she left CAP such as a loss of income, deterioration of health of a household member or the death of a household member. A former CAP customer with no arrears that requests re-enrollment will be allowed back into CAP, subject to CAP eligibility and enrollment requirements.

Default Provisions for Customers with High Consumption

A customer refusing weatherization through Columbia without demonstration of a legitimate exemption will be reviewed by Customer/Community Outreach coordinator.

A customer may have their CAP budget payment raised to a higher payment option or may be removed from CAP as a result of the review.

A customer who does not respond to multiple attempts for weatherization will be removed from the program.

Re-connect Procedures

Reconnection and subsequent re-instatement when the applicant's gas service had been terminated after removal from CAP less than four years prior:

- All missed CAP payments must be made, including the five-dollar co-pay and the CAP Plus amount for each of the months during which gas service was retained.
- All payments made by the customer after removal from CAP will be deducted from the amount needed for program re-entry.
- Any charges incurred after the customer defaulted, which have not been paid by the customer, are treated as current bill shortfall amounts.
- An applicant will be required to re-apply, including providing proof of income, if the applicant has been without service for 6 months or more.
- These reconnect procedures also apply to defaulted CAP customers who move to a new address after termination for non-payment.

Security Deposits

- CAP customers are not charged security deposits.
- Any paid security deposits on accounts with an approved CAP application will be applied to the arrears prior to CAP enrollment.
- Past due security deposits from customers entering into CAP will be waived after income verification is complete.

Re-connect fees

- All reconnect fees will be waived for customers who are successfully enrolled in CAP.

Re-instatement

Re-instatement when the customer retained gas service after removal from CAP less than four years prior:

- The customer must pay the entire balance of missed CAP payments including the five-dollar co-pay to the pre-program arrears.
- Any payments made by the customer after removal are deducted from the amount needed for program re-entry. A customer must resolve any outstanding issues related to removal from CAP, such as verifying current income or accepting free weatherization services.
- The pre-program arrearage will be the same at the time of reinstatement as at the time of default.
- Any charges incurred after default, which are not paid by the customer, are treated as current bill shortfall.
- This process also applies to CAP customers who move to a new service address with no interruption of service due to termination.

CAP Balance Clarification for re-entry into CAP less than four years from removal date

When a customer leaves CAP, for any reason, but remains a customer, Columbia will maintain the customer's "CAP balance" separately, including CAP arrears, if any. As the customer receives a monthly non-CAP bill, [his/her] CAP balance will increase by the monthly asked-to-pay amount. As a customer makes a non-CAP payment or receives an energy assistance grant, the customer's CAP balance reduces by that payment or LIHEAP credit. In the future, should the customer reapply for CAP, [he/she] would first need to pay the full CAP balance-including amounts accrued while out of the program. The Company will accept any grant amounts in lieu of customer payments for re-enrollment.

Once the CAP balance is paid in full and the customer is re-enrolled in CAP, Columbia will retroactively apply 1/36th pre-program arrearage forgiveness for each month the customer spent out of the program. Columbia will also remove any new non-CAP arrears created since CAP removal and treat it as shortfall.

This process balances the customer's account as though the customer had remained in CAP throughout. In addition, the process encourages year round participation and avoids seasonal fluctuations in CAP participation.

CAP Reinstatement for Customers out of CAP for four years or more

Customers applying for the CAP with a removal date greater than that of four years or more will be treated as if they were never enrolled in CAP. They will follow all intake and enrollment procedures and receive the same benefits as first time enrollees.

Re-verification

Re-verification of income is necessary to ensure that only low income customers are offered a subsidized payment plan under CAP. CAP customers are required to provide proof of income annually, with the following exceptions:

- CAP customers who receive LIHEAP, Dollar Energy Fund, or another Columbia Universal Services program are exempt, and required to re-verify their income once every three years at a minimum.
- CAP customers aged 60 and older who receive Social Security or Disability benefits are required to provide proof of income every other year.

Columbia issues notification letters requiring income re-verification each year to customers 30 days prior to each customer's CAP enrollment anniversary date. CAP participants are then required to mail or fax verification of their household income to the Administrating Organization for processing. In turn, the customer will receive a letter from the Administrating Organization verifying the customer's continued participation in CAP and detailing any changes made to their required CAP payment. For customers preferring to re-verify in person, appointments can be made available with a screening agency.

Columbia will remove from CAP any customer who fails to re-verify income within 30 days after the anniversary date and 60 days after the issuance of the notification letter that verified income is required.

Customers who claim zero income will be required to verify their income after six months of participation. A customer will continue to be required to verify their income every six months for as long as they verify at zero income. Income verification will include completing a form documenting zero income. See Attachment C.

Prior to removing a customer from CAP for lack of re-verification, Columbia will partner with electric utility CAP programs to obtain proper verification, in an attempt to retain the customer in CAP.

Once removed for failure to re-verify income, a customer will be re-entered into CAP immediately after eligible proof of income is received.

Arrearage Retirement

A customer's \$180.00 co-payment will be spread over a three-year time period, commencing when a customer is accepted into the program. One-thirty-sixth (1/36) of the unpaid pre-program arrears is forgiven for every full CAP payment received regardless of arrears and retroactively for any months missed once those months are paid. For example, if a CAP customer is delinquent for three months of payments, and makes catch-up payments for two of those three months, the customer will receive forgiveness for those two months. A customer's total pre-program arrearage will be

forgiven after thirty-six full CAP payments. The customer co-pay and retirement is clearly noted on the account summary portion of the monthly CAP bill.

CAP Shopping

As a result of the Natural Gas Choice and Competition Act, Columbia formulated a low-income aggregation for CAP customers concurrent with Columbia's Choice program.

As a condition of CAP, customers must agree to allow Columbia to act as an agent, on their behalf, to contract for the purchase of gas supplies from a licensed natural gas supplier ("NGS"). The NGS is selected by Columbia based upon responses to a Request for Proposal ("RFP"), which is sent to licensed NGSs on the Columbia system. In order to make CAP more cost-effective, the RFP seeks to obtain a cost of gas that is lower than Columbia's sales service rate. If RFP responses from NGSs do not meet this threshold (lower than Columbia's sales service rate), then no NGS is selected and the process is repeated on a quarterly basis until an NGS is chosen. Through this arrangement, CAP customers may benefit from the competitive market for gas supply, and from the economies of scale gained through the aggregation of their volumes into the larger CAP group.

As noted in the Company's triennial Universal Service and Energy Conservation Plan submissions since 2002, Columbia presented a feasibility study to the Commission on its CAP aggregation. In summary, the aggregation model proved to be a successful alternative to traditional CHOICE. External studies offered additional support for the continuance of an aggregation.

The Company agrees to adjust the program as directed by future Commission orders upon completion of any contractual obligations to which the Company is bound.

Universal Service Projected Needs Assessment

Columbia developed the projected needs assessment on the premise that Universal Service Programs should be offered as a menu of options to suit the circumstances of individual customers. Columbia assesses the potential participant and recommends the programs that best suit his or her payment-troubled situation. One size does not fit all, nor does one program suit all customers.

Columbia has implemented this philosophy through administrative processes within its customer services protocols to serve its low-income, payment-troubled customers at the first point of contact. This process was previously referred to as the One-Stop-Shop approach.

Columbia referenced two sources to complete this assessment. The first is the 2015 Federal Census Data, the most current census data available. The second is Columbia's customer information system.

The Bureau of Consumer Services' developed a Needs Assessment Proposal dated May 9, 2001 to help define and illustrate what is expected in the needs assessment. The proposal outlined the following six criteria:

1) Identified Low-Income Customers

In recognition that the CAP is designed to address the needs of chronic low-income, payment-troubled customers, Columbia began its process of identifying potential CAP customers by reviewing customers who have continued to meet certain criteria for a twelve month period. The selection criteria includes: all level 1 and 2 customers who have had payment agreements; all accounts that have received LIURP, CAP, LIHEAP or other energy assistance programs including Hardship Funds; all accounts whose financial summaries show incomes below 150% of Federal Poverty Guidelines.

The following table identifies that using this criteria, 67,711 customers are identified as low-income in Columbia's records, either through participation in a Universal Service program that confirms their income to be below 150% of federal poverty guidelines, or through non-verified self-declaration by the customer.

1) **The Number of Identified Low-income Customers**

	CAP	Non CAP Low Income	All Low Income
Jan	21,522	47,421	68,943
Feb	21,985	48,289	70,274
Mar	22,768	47,377	70,145
Apr	23,102	46,394	69,496
May	23,735	45,076	68,811
Jun	23,732	44,169	67,901
Jul	23,639	43,216	66,855
Aug	23,351	42,823	66,174
Sep	23,073	42,949	66,022
Oct	22,970	43,374	66,344
Nov	22,921	43,962	66,883
Dec	22,255	45,404	67,659

2) Estimated Low-income Customers

In addition to quantifying verified and self-declared low-income customers, Columbia also uses updated federal census data to estimate the number of low-income customers that it serves. The table below references the number of

residential households that Columbia serves and equates that to a percentage (average of 19.46%) compared to the total number of households within each county. The census data indicates that there are 425,298 low-income households within the counties Columbia serves. Using that same percentage, 101,375 households are estimated to be Columbia low-income households.

County	Customer Count	Census Household	Percent Customers CPA	Census Household Low-Income	Low-Income CPA
Adams	13852	38,459	36.02%	7477	2,693
Allegheny	100189	530,718	18.88%	133566	25,215
Armstrong	879	28,068	3.13%	7264	227
Beaver	34828	69,521	50.10%	18858	9,447
Bedford	73	20,000	0.37%	5886	21
Butler	9102	74,348	12.24%	12867	1,575
Centre	12189	56,116	21.72%	15975	3,470
Clarion	3536	15,830	22.34%	5513	1,231
Clearfield	20	30,929	0.06%	11866	8
Elk	30	13,244	0.23%	2871	7
Fayette	22088	54,391	40.61%	21436	8,705
Franklin	4416	59,486	7.42%	12690	942
Fulton	108	5,960	1.81%	1622	29
Greene	2703	14,394	18.78%	4021	755
Indiana	4	33,066	0.01%	12239	1
Jefferson	916	18,479	4.96%	6103	303
Lawrence	18053	36,138	49.96%	12562	6,275
McKean	3090	17400	17.76%	6036	1,072
Mercer	113	44,385	0.25%	12432	32
Somerset	4620	29,199	15.82%	9231	1,461
Venango	669	22129	3.02%	7246	219
Warren	2371	17113	13.85%	4902	679
Washington	41887	83,949	49.90%	19287	9,623
Westmoreland	20636	149,360	13.82%	35079	4,847
York	97566	165,672	58.89%	38269	22,537
					101,375

- 1) **Columbia Customer Count** – Number of households per county served by Columbia.
- 2) **Census Household** – Number of households per county identified by census data.
- 3) **Percent Customers Columbia** – Percent of total county households served by Columbia (#1 / #2).
- 4) **Census Household Low-Income** – Number of low-income households per county identified by census data.
- 5) **Low-Income Columbia** – Estimated number of low-income households per county served by Columbia (#3 X #4).

3) The Number of Identified Payment-troubled, Low-income Customers

Based upon the definitions at 52 Pa. Code §§ 54.72, 62.2 and 69.262, "Payment Troubled" is defined as a household that has failed to maintain one or more payment arrangements in a one-year period. Columbia used data gained from its actual experiences to identify the number of payment-troubled customers. Columbia reviewed confirmed low income accounts that are in arrears on payment agreements and not on payment agreements and took the average monthly of both to arrive at the identified, payment-troubled low-income total of 10,252.

4) Estimate of Potentially Payment-troubled, Low-income Customers

Next, Columbia compared the data obtained from its customer information system to census data. The number of customers identified as low-income based on Columbia's customer information system is 67,986. The number of customers estimated by census data to be low income is 101,375. The census figures suggest that Columbia's service territory has 33,389 more low income customers than Columbia's data indicate.

5) Number of Customers Who Still Need LIURP Services and the Cost to Serve that Number

Pursuant to BCS's May 9, 2001 Needs Assessment Proposal, Columbia identified the number of customers that meet the LIURP eligibility criteria, excluding those customers who have already received weatherization services. According to data from Columbia's customer information system, 26,499 customers meet the LIURP eligibility criteria. Of that total, 10,795 are property owners while the remaining 15,704 are renters. Columbia historically has had difficulty obtaining landlord approvals to weatherize homes. Assuming a 50% success rate, Columbia anticipates that 1/2 of the 15,704 renters in addition to the 10,795 property owners, totaling 18,647 could receive weatherization services. The estimated cost to serve these customers is \$131,946,172 at Columbia's current average expenditure per weatherized household.

6) Enrollment Size of CAP to Serve All Eligible Customers

Columbia determined the appropriate size of the CAP to serve all eligible customers. Using the data discussed above and Columbia's enrollment history, the Company submits that the projected enrollment of the CAP is 23,000. Despite ongoing enrollment efforts, the active total number of customers enrolled in CAP had remained stable at 25,000 customers up until 2010. In 2010, enrollment declined and has not rebounded to higher than 25,000 since then. This suggests that projection is adequate and that every customer who has had a

need for CAP has been permitted to participate in the program; and that no customer has been turned away. Regardless of these projections, Columbia does not have a CAP enrollment ceiling.

The Universal Service Programs, CARES, CAP, Hardship Funds and LIURP respond to identified needs in different ways. Approximately 22,255 customers are currently receiving benefits from CAP, while 500 additional customers have received assistance through CARES services. Hardship Fund recipients average 2,800 annually along with an additional 600 households receiving weatherization services each year. Columbia looks to serve these customers through the menu of options available under Universal Services.

Projected Enrollment *

	2019	2020	2021
LIURP	525	540	540
CARES	500	500	500
CAP **	23,000	23,000	23,000
Hardship Funds	1,594	1,594	1,594

* The projected enrollments stated in this table are estimates and should not be considered ceilings. Although Columbia is estimating enrollment levels, Columbia will continue to promote programs and enroll customers needing assistance beyond these participation levels as needed.

** Although Columbia historically has enrolled approximately 6,000 new customers annually, overall participation has remained consistent or declined due to customers moving or defaulting from the CAP program

Conclusion

Columbia's Universal Service Program is designed to address the multifaceted needs of Columbia's diverse customer base. The present array of Universal Service Programs is an appropriate mix of services that meets the requirements of 66 Pa. C.S. §2203(8) and 52 Pa. Code Chapter 62. Columbia respectfully requests that the Commission approve the changes identified herein. In addition, Columbia respectfully requests that the Commission approve its 2019-2021 Universal Service and Energy Conservation Plan in its entirety and that the Commission adjust the date for submitting the Company's next triennial submission to three years from the approval date of the 2019-2021 Universal Service and Energy Conservation Plan.

MEMO

DATE: September 7, 2017

TO: Deb Davis

FROM: Jackie Berger

SUBJECT: Columbia Gas LIURP Health and Safety Research

This memo provides a summary of research conducted on health and safety barriers and potential approaches in Columbia Gas of Pennsylvania's Low-Income Usage Reduction Program (LIURP).

I. Introduction

Many low-income usage reduction programs are facing increasing challenges serving customers due to the prevalence of health and safety problems that prevent major measures from being installed. As a result of serious issues in the home, customers must be deferred or are treated with only minor services, and high-usage customer with good potential for savings do not participate or only achieve low energy savings. This research provides an assessment of the circumstances under which additional cost-effective health and safety spending can be made to achieve greater savings for low-income customers and the program as a whole.

II. Research Tasks

This section provides a description of the research tasks and associated findings.

A. Assessing the Problem – Deferred Jobs and Jobs without Major Measures

The first step in the research was to assess the extent of the issue. We analyzed Columbia Gas' 2015 program database, reviewed the cancelled jobs spreadsheet, and reviewed job paperwork. We considered jobs in the following categories as the initial list of indicators that a health and safety issue prevented weatherization work.

- No measure invoice data.
- Job marked as incomplete.
- No blower door test data.
- Blower door indicator marked as not done.

Table II-1 shows that a significant percent of jobs had these issues. Overall, 46 percent of the 997 jobs in the 2015 database had one or more of the issues.

Table II-1
Assessment of 2015 Jobs with Potential Health and Safety Issues

Indicator of Potential Issue	Number	Percent
No Invoice Data	225	23%

Incomplete Job	391	39%
No Blower Door Test	398	40%
Blower Door Indicator=0	382	38%
Any of Four Issues Listed	462	46%
All Jobs	997	100%

We next identified jobs that may be limited due to health and safety issues as those where total job costs were less than \$750 or total job costs minus heating system replacement costs were less than \$750. Table II-2 shows that 35 percent of jobs had at least one of these issues.

**Table II-2
Assessment of 2015 Jobs that May Have Been Limited
Due to Health and Safety Issues**

Cost Issue	Number	Percent
Total Job Costs <\$750	330	33%
Non-Heating Replacement Job Costs<\$750	346	35%
Either Cost Issue	346	35%
All Jobs	997	100%

Table II-3 shows that when considering all of the issues described above, 47 percent of the 997 jobs were flagged as having a potential health and safety issue.

**Table II-3
Assessment of 2015 Jobs with Potential Health and Safety Issues
Based on All Analysis Factors**

Indicator of Potential Issue	Number	Percent
No Invoice Data	225	23%
Incomplete Job	391	39%
No Blower Door Test	398	40%
Blower Door Indicator =0	382	38%
Either Cost Issue	346	35%
Any of Five Issues Listed	467	47%
All Jobs	997	100%

We next merged these jobs with Columbia Gas' cancelled/deferred jobs spreadsheet. Of the 467 jobs identified as having potential health and safety issues, 329 were in Columbia Gas' cancelled/deferred jobs spreadsheet. When we assessed the reason for the cancelled job, we found that 91 of these jobs were cancelled or deferred due to health and safety issues, and the others were cancelled for other reasons including customer refusal and ineligibility.

We requested a total of 229 job files from Columbia Gas, the 91 cancelled/deferred jobs with health and safety issues and the additional 138 jobs that were identified as having potential health and safety issues, but were not in Columbia Gas' cancelled/deferred spreadsheet.

Table II-4 shows the number and percent of jobs that were initially flagged as potentially having a health and safety issue (and one additional job that was not initially flagged but was included in Columbia Gas' cancelled jobs spreadsheet.) The total number of jobs was 468. The table also shows the number and percent that were identified as having a health and safety issue that prevented energy efficiency work based upon detailed review of the customer's file. The job file usually included the audit form, work scope, and measure invoice(s). All of the materials in the file were reviewed to assess whether there was a health and safety issue that prevented work from being completed.

The table shows that overall 26 percent of the flagged jobs and 120 jobs in total had a health and safety issue that prevented weatherization.

**Table II-4
2015 Jobs with Health and Safety Issues**

Indicator of Potential Issue	All Jobs		H&S Issue	
	Number	Percent	Number	Percent
No Invoice Data	225	23%	6	3%
Incomplete Job	391	39%	70	18%
No Blower Door Test	399	40%	93	23%
Blower Door Indicator =0	382	38%	81	21%
Either Cost Issue	346	35%	48	14%
Cancelled Jobs	329	33%	30	9%
Any of Six Issues Listed	468	47%	120	26%
All Jobs	997	100%	--	--

The file review described above was also the source of information for the specific health and safety issue(s). Table II-5 displays the prevalence of major health and safety issues. Note that jobs could have more than one issue identified, so percentages do not sum to 100 percent. The most common issue was mold and/or moisture which prevented eight percent of jobs from being completed and comprised 68 percent of the health and safety issues. The other most common issues were knob and tube wiring and roof leaks.

**Table II-5
2015 Frequency of Specific Health and Safety Issues**

H&S Issue	Jobs with Health & Safety Issues that Prevented Work		
	Number	Percent of All Jobs	Percent of H&S Issues
Mold or Moisture	83	8%	68%
Knob and Tube Wiring	41	4%	34%
Roof Leak	38	4%	31%
Asbestos/Vermiculite	18	2%	15%
Sewage Leak	13	1%	11%
Infestation	12	1%	10%
Structural Issues	12	1%	10%
Holes in Attic Floor	10	1%	8%
Clutter	8	1%	7%
Other	21	2%	17%
Any Issue	122	12%	100%
All Jobs	997	100%	100%

B. Current Health and Safety Approach

Columbia Gas allows contractors to spend up to \$650 on health and safety repairs regardless of whether the customer owns or rents the home. For renters, this funding is usually related to HVAC repairs that will allow for weatherization work to be completed. If the customer owns the home, the \$650 may be used for a roof patch repair, or for a small amount of mold remediation.

Columbia Gas will approve additional spending on a case-by-case basis when contractors call to request additional funding. One of the most consistent areas where contractors ask for additional funding is for knob & tube abatement which may cost from \$1,000 to \$3,000. If Columbia Gas believes that the customer will get higher savings because there is no insulation in the attic, Columbia Gas would approve such a request. This would result in higher health and safety spending and higher total job spending above the initial calculated total spending target.

Contractors have various risk thresholds. Some will do any repairs that Columbia Gas permits so that they can proceed with the job, and some will not address the home if there is any water in the basement, for example. Columbia Gas leaves it up to the contractor to decide what issues to address because the contractor has the responsibility for the liability. Columbia Gas could potentially re-assign a job to another contractor who is willing to do the health and safety remediation work if the originally assigned contractor would not do so.

Table II-6 displays the percent of completed jobs included in the 2013-2015 evaluations with various health and safety repairs and the cost distribution for those repairs. Overall, 74 percent of the jobs had at least one of these repairs and the average cost of all repairs in the home was \$453. Ten percent of jobs had total repair costs of more than \$1,025. The most common issue was dryer venting, which was included in half of the 2013-2015 jobs. Miscellaneous repairs in the LIURP codebook include chimney, windows, and electrical repairs. Interior repairs include floor, wall, ceiling, floor under bath, wall plaster, ceiling plaster, and other pre-air sealing repairs.

**Table II-6
2013-2015 Health and Safety Repairs and Spending Distribution**

	Repair Issue		Repair Cost (For Those with Repair)							
	Number	Percent	Mean	Percentile						
				Min	10	25	50	75	90	Max
Dryer Venting	693	50%	\$91	\$10	\$57	\$75	\$90	\$91	\$119	\$635
Miscellaneous	528	38%	\$392	\$0	\$31	\$48	\$102	\$239	\$1,388	\$6,464
Interior	485	35%	\$304	\$8	\$75	\$112	\$153	\$345	\$684	\$2,654
Kitchen or Bath Exhaust	158	11%	\$236	\$28	\$82	\$125	\$202	\$350	\$420	\$1,016
Roof	68	5%	\$167	\$20	\$70	\$85	\$85	\$170	\$370	\$850
Total – Any Repair	1,028	74%	\$453	\$0	\$80	\$105	\$230	\$440	\$1,025	\$6,625

Note: One customer with a Misc. repair had no costs.

C. LIURP Savings Results

We analyzed Columbia Gas’ 2013, 2014, and 2015 LIURP evaluation data to understand the level of savings achieved based on weather normalized pre-treatment usage, contractor, measures, job costs, and other characteristics.

Table II-7 displays the mean energy savings for 2015 jobs alone and the jobs completed in 2013 through 2015. We focus on the three-year analysis in this study to provide more jobs for analysis and a better prediction of energy savings based on job characteristics. While mean savings in 2015 were 258 ccf or 17.8 percent of pre-treatment usage, mean savings over the 3-year period were 304 ccf or 20.1 percent of pre-treatment usage.

**Table II-7
Weather-Normalized Gas Heating Savings Analysis**

Analysis Group	Obs.	Usage (ccf)		Savings	
		Pre	Post	ccf	%
2015	533	1,449	1,191	258**	17.8%
2013-2015	1,398	1,515	1,211	304**	20.1%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-8 displays the mean energy savings for 2013-2015 jobs by pre-treatment usage. We use the 3-year period to provide a greater number of jobs in each usage bin. The table provides the following information.

- Job Cost: The mean job cost does not increase linearly with the pre-treatment usage, indicating that the number and depth of measures does not increase at the same rate as pre-treatment usage. There is likely to be variance caused by differences in contractors' practices and costs, and by home conditions that impact energy-saving opportunities.
- CCF savings: The amount of natural gas saved does increase linearly with pre-treatment weather-normalized usage. While jobs with pre-treatment usage of less than 1,000 ccf save an average of 159 ccf, jobs with pre-treatment usage of 1,201 to 1,300 ccf save an average of 245 ccf, jobs with 1,701 to 1,800 ccf save an average of 345 ccf, and jobs with pre-treatment usage over 2,200 save an average of 629 ccf.
- Percent savings: The percent of pre-treatment usage saved generally increases with pre-treatment usage, but not as consistently as the amount saved.

**Table II-8
2013-2015 Savings by Pre-Treatment Usage**

Weather-Normalized Pre-Treatment Usage (ccf)	2013-2015 Participants					
	Obs.	Total Cost	Usage		Savings	
			Pre	Post	ccf	%
<1,000	104	\$5,514	927	767	159**	17.2%
1,001-1,100	122	\$4,935	1,049	877	172**	16.4%
1,101-1,200	118	\$5,672	1,151	929	222**	19.3%
1,201-1,300	136	\$5,307	1,249	1,004	245**	19.6%
1,301-1,400	159	\$5,288	1,349	1,097	252**	18.7%
1,401-1,500	125	\$5,574	1,448	1,147	301**	20.8%
1,501-1,600	151	\$5,135	1,547	1,234	313**	20.2%
1,601-1,700	112	\$5,217	1,648	1,340	308**	18.7%
1,701-1,800	89	\$5,130	1,746	1,402	345**	19.8%
1,801-1,900	67	\$5,648	1,847	1,436	410**	22.2%
1,901-2,000	54	\$6,169	1,947	1,535	412**	21.2%
2,001-2,200	60	\$6,408	2,082	1,663	419**	20.1%
2,201+	101	\$7,601	2,627	1,999	629**	23.9%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-9 displays 2013-2015 savings by contractor for all contractors who had at least 50 jobs included in the 2013-2015 evaluations. Average savings vary significantly by contractor. Contractors with the lowest savings had mean savings of about 200 ccf or 15 percent of pre-treatment usage, and one

contractor with the highest savings who had 306 jobs included in the evaluations saved an average of 433 ccf or 27.5 percent of pre-treatment usage.

Table II-9
2013-2015 Savings by Contractor

Contractor Code	2013-2015 Participants					
	Obs.	Mean Cost	Usage		Savings	
			Pre	Post	ccf	%
28	306	\$8,184	1,573	1,140	433**	27.5%
83	169	\$4,968	1,528	1,270	257**	16.8%
101	121	\$8,322	1,478	1,168	310**	21.0%
74	108	\$7,836	1,458	1,121	336**	23.1%
96	98	\$5,160	1,436	1,141	294**	20.5%
90	96	\$7,046	1,420	1,187	233**	16.4%
102	81	\$5,105	1,619	1,374	245**	15.1%
77	78	\$5,979	1,467	1,171	296**	20.2%
108	76	\$8,052	1,317	1,116	201**	15.3%
75	66	\$5,445	1,526	1,299	226**	14.8%
103	57	\$7,677	1,716	1,441	275**	16.0%
Others	142	\$7,852	1,558	1,306	253**	16.2%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-10 displays the savings by the total job cost. The table shows that jobs with higher costs have greater savings. While jobs with total costs under \$4,000 saved an average of 180 ccf, jobs with total costs of more than 10,000 saved an average of 458 ccf.

Table II-10
2013-2015 Savings by Total Cost

Total Cost	2013-2015 Participants					
	Obs.	Mean Total Cost	Usage		Savings	
			Pre	Post	ccf	%
<=\$4,000	264	\$2,806	1,492	1,312	180**	12.1%

Total Cost	2013-2015 Participants					
	Obs.	Mean Total Cost	Usage		Savings	
			Pre	Post	ccf	%
\$4,001-\$6,000	336	\$5,112	1,505	1,272	233**	15.5%
\$6,001-\$8,000	320	\$6,970	1,511	1,192	318**	21.1%
\$8,000-\$10,000	230	\$8,898	1,504	1,137	367**	24.4%
>\$10,000	248	\$12,288	1,571	1,113	458**	29.2%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-11 displays the savings by the job cost excluding the cost of heating system replacements. Savings also increase with these costs.

**Table II-11
2013-2015 Savings by Total Cost
Excluding Heating System Replacement**

Total Cost	Treatment Group					
	Obs.	Mean Total Cost	Usage		Savings	
			Pre	Post	ccf	%
<=\$4,000	451	\$2,434	1,505	1,271	234**	15.5%
\$4,001-\$6,000	374	\$5,101	1,497	1,218	278**	18.6%
\$6,001-\$8,000	353	\$6,966	1,488	1,131	357**	24.0%
>\$8,000	220	\$11,341	1,612	1,202	410**	25.4%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-12 displays savings by whether or not certain measures were installed. The table shows that for all measures except heating system repair, jobs with the measure saved more than those without. For example, while jobs with blower door guided air sealing saved an average of 323 ccf, jobs without that measure saved an average of 290 ccf. While jobs with a heating system replacement saved an average of 392 ccf, jobs without a heating system replacement saved an average of 239 ccf.

**Table II-12
2013-2015 Savings by Measures Installed**

Total Cost	2013-2015 Participants			
	Obs.	Mean	Usage	Savings

		Total Cost	Pre	Post	ccf	%
Blower Door Test						
Yes	1,282	\$7,188	1,513	1,204	310**	20.5%
No	116	\$4,902	1,537	1,291	247**	16.0%
Blower Door Guided Air Sealing						
Yes	618	\$7,110	1,517	1,195	323**	21.3%
No	780	\$6,909	1,514	1,224	290**	19.2%
Insulation						
Yes	1,116	\$7,581	1,509	1,185	323**	21.4%
No	282	\$4,692	1,542	1,312	231**	15.0%
Blower Door Guided Air Sealing & Insulation						
Yes	563	\$7,403	1,513	1,173	339**	22.4%
No	835	\$6,724	1,517	1,236	281**	18.5%
Heating System Repair						
Yes	390	\$7,394	1,467	1,191	275**	18.8%
No	1,008	\$6,845	1,534	1,218	316**	20.6%
Heating System Replacement						
Yes	599	\$8,762	1,526	1,133	392**	25.7%
No	799	\$5,676	1,508	1,269	239**	15.8%
Duct Work						
Yes	546	\$7,097	1,458	1,115	343**	23.5%
No	852	\$6,935	1,552	1,272	280**	18.0%
Health & Safety Repairs						
Yes	1,028	\$7,433	1,508	1,190	317**	21.0%
No	370	\$5,789	1,537	1,267	270**	17.5%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

Table II-13 displays savings for 2015 jobs by the blower door measured leakage reduction (for jobs with pre- and post-treatment testing values). This table is only shown for 2015, because the additional database that contains this information was not analyzed for the other program years. The table shows that savings increase as the CFM50 reduction increases.

**Table II-13
2015 Savings by Blower Door Leakage Reduction**

CFM50 Reduction	2015 Participants					
	Obs.	Mean Total Cost	Usage		Savings	
			Pre	Post	ccf	%
<=500	140	\$7,183	1,437	1,224	213**	14.8%
500-1,000	80	\$6,771	1,430	1,174	257**	17.9%
1,001-2,000	111	\$7,373	1,408	1,107	300**	21.3%
>2,000	96	\$8,880	1,585	1,242	343**	21.6%
All	427	\$7,537	1,461	1,188	273**	18.7%

**Denotes significance at the 99 percent level. *Denotes significance at the 95 percent level. #Denotes significance at the 90 percent level.

D. Potential Savings for Homes with Health and Safety Problems

We conducted regression analysis to assess the job-related factors that do the best at predicting energy savings. After running several models, the following model kept the variables that were statistically significant, as shown in Table II-14.

**Table II-14
2013-2015 Regression Analysis**

Variable	2013-2015 Participants (1,372 observations)		
	Coefficient	95% Confidence Interval	
Pre-Treatment Usage (ccf)	0.30	0.27	0.32
Home Age	-1.06	-1.51	-0.61
Square Feet	-0.09	-0.11	-0.07
Blower Door and Air Sealing Cost	0.05	0.04	0.05
Heating System Replaced (yes/no)	154.56	131.84	177.28
Duct Sealing (yes/no)	55.80	32.41	79.19
Contractor #74	79.58	36.48	122.67
Contractor #77	73.69	23.52	123.86
Contractor # 102	-72.10	-119.97	-24.22
Contractor # 103	-106.37	-162.50	-50.24

Variable	2013-2015 Participants (1,372 observations)		
	Coefficient	95% Confidence Interval	
Constant	-73.01	-135.24	-10.79

Previous iterations of the regression included the following variables, but these were not found to be significant.

- Home Ownership
- Row Home (as opposed to single-family)
- Contractors not included above
- Blower-door reduction (2015 regression only)
- Health and Safety Repairs (yes/no)
- Health and Safety Repair Costs

E. Decision Framework for Additional Health and Safety Investments

Based on this research, we developed a decision framework for how much to spend on health and safety. Table II-15 displays some examples of model inputs and outputs. The table shows a range of pre-treatment usage, home age, home size, and measure investments. Based on the inputted fields, the model calculates the predicted annual savings and percent savings, the present discounted value of savings assuming a five percent discount rate, and the maximum spending on health and safety given the projected savings and the measure-level spending. The maximum spending is based upon the current price of \$1.04723 per therm of natural gas.

In addition to showing the discounted present value of savings, the table shows twelve years of savings without discounting, which leads to higher total savings and a greater amount allocated for health and safety spending. Under Scenario 5, a large old home with high pre-treatment usage, and a large investment in air sealing and other measures, the model shows that there can be up to \$8,805 spent on health and safety (with no discounting) and the job will still be cost-effective.

**Table II-15
Model Scenarios**

Variable	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	
User Entered Fields	Pre-Treatment Therms	1500	1600	2500	3800	5000
	Home Age	50	30	100	100	100
	Square Feet	1500	1250	2000	3200	3200
	Air seal + Insulation Cost	\$800	\$1,400	\$1,000	\$2,700	\$5,000
	Heat Sys Replace (yes=1)	0	0	1	1	1
	Duct Sealing (yes=1)	0	1	0	1	1
	Contractor 74	0	0	0	1	0
	Contractor 102	0	1	0	0	0
	Contractor 77	0	0	0	0	1
	Contractor 103	0	0	0	0	0
	Heat Sys Cost	0	\$0	\$3,500	\$3,500	\$3,500
	Other Non H&S Costs	\$800	\$800	\$1,000	\$1,000	\$2,000

Calc Fields (5% discount)	Annual Savings (Therms)	214	301	578	1075	1536
	Calculated % Savings	14%	19%	23%	28%	31%
	PDV Savings (Therms)	1897	2672	5126	9527	13615
	Max Spending	\$1,986	\$2,798	\$5,368	\$9,977	\$14,258
	Total Non H&S Costs	\$1,600	\$2,200	\$5,500	\$7,200	\$10,500
	H&S Allowance	\$386	\$598	-\$132	\$2,777	\$3,758
Calc Fields (no discount)	12-Year Savings (Therms)	2568	3618	6940	12898	18434
	Max Spending	\$2,689	\$3,789	\$7,267	\$13,507	\$19,305
	H&S Allowance	\$1,089	\$1,589	\$1,767	\$6,307	\$8,805

The model provided above is an alternative to Columbia Gas' current method of projecting job savings and an initial spending allocation. Columbia Gas' current method applies a specific savings factor to pre-treatment usage for each contractor based on their historical savings. When we run a regression that only controls for pre-treatment usage and contractor, we find that 25 percent of the variation in savings is accounted for by those factors. However, when we run the model shown in Table II-14 and used in the analysis above, we find that 43 percent of the variation of savings is explained by the model. Therefore, this model that takes account of additional factors does a better job of predicting savings. This model only includes the contractors who have statistically significant differences in savings after controlling for the other factors. Some contractors may have higher or lower savings than average, but those differences are better explained by differences in factors included in the model, and given those factors, those contractors do not have savings that are statistically different than the other contractors.

Under Columbia Gas' current method of determining the initial amount of spending, they allow for an adjustment if the contractor feels that he will be able to obtain greater savings than his usual percentage given the opportunities in the home. For example, if the contractor has historical savings of 20 percent, but feels that he can achieve 25 percent on the home, Columbia Gas may raise the spending ceiling. Under this revised approach, Columbia Gas could also provide that same flexibility if desired. However, they would use this alternative model estimate as the starting point for the spending cap, rather than the simple percentage savings based on the contractor's historical savings level.

Tables II-16A and II-16B provide information on measure costs over the three years of analysis, 2013 through 2015. There were 1,398 jobs included in this analysis. These tables provided information used in projecting costs for various measures that were included in the scenarios examined.

**Table II-16A
Measure Costs**

Costs	Mean	Min	Percentile					Max
			P10	P25	P50	P75	P90	
Blower Door Air Sealing	\$147	\$0	\$0	\$0	\$0	\$150	\$424	\$3,395
Insulation	\$2,012	\$0	\$0	\$302	\$1,686	\$3,260	\$4,664	\$10,514
BD Air Seal+Insul	\$2,159	\$0	\$0	\$487	\$1,850	\$3,439	\$4,817	\$10,854
Duct Sealing	\$84	\$0	\$0	\$0	\$0	\$89	\$180	\$6,700
Heating System Repair	\$162	\$0	\$0	\$0	\$0	\$80	\$529	\$7,269
Heating System Replacement	\$1,557	\$0	\$0	\$0	\$0	\$2,950	\$4,550	\$10,375

Health and Safety Costs	\$333	\$0	\$0	\$0	\$140	\$324	\$774	\$6,625
Total Costs-Air Sealing-Insulation	\$4,839	\$0	\$1,801	\$2,770	\$4,293	\$6,376	\$8,384	\$20,302
Total-Air Sealing-Insulation-Duct Sealing	\$4,755	\$0	\$1,781	\$2,688	\$4,226	\$6,285	\$8,296	\$20,302
Total Costs-Health & Safety	\$6,664	\$0	\$2,875	\$4,387	\$6,333	\$8,583	\$10,685	\$23,390
Total Costs	\$6,998	\$0	\$3,056	\$4,656	\$6,592	\$8,930	\$11,258	\$23,597

Table II-16B

Measure Costs

Costs	% with Measure	# with Measure	Costs Statistics for those with Measure					
			Mean	P10	P25	P50	P75	P90
Blower Door Air Sealing	44%	618	\$334	\$75	\$150	\$170	\$377	\$725
Insulation	80%	1,116	\$2,520	\$483	\$1,151	\$2,292	\$3,655	\$4,883
Duct Sealing	39%	546	\$215	\$65	\$85	\$134	\$180	\$381
Heating System Repair	28%	390	\$580	\$80	\$175	\$361	\$696	\$1,361
Heating System Replacement	43%	599	\$3,635	\$2,483	\$2,760	\$3,162	\$4,458	\$5,560
Health & Safety	74%	1,028	\$453	\$80	\$105	\$230	\$440	\$1,025
Total Costs	99%	1,395	\$7,013	\$3,094	\$4,688	\$6,602	\$8,946	\$11,258

III. Summary

This memo provided the results from a study of Columbia Gas' LIURP program, health and safety barriers, health and safety expenditures, and a new approach for determining total and health and safety spending. We find that, depending on the job characteristics, Columbia Gas may be able to spend a significant amount of funds on health and safety and still achieve cost-effective savings, given the high level of opportunities for savings found in the home. This approach would yield high energy savings, reduced costs for ratepayers who are contributing to the costs of the Customer Assistance Program (CAP), and greater likelihood that the customer may be able to afford the full bill if the household exits CAP at some point in the future. We recommend that Columbia Gas pilot this approach on high-usage homes with significant health and safety barriers and assess the level of savings that are achieved.

Columbia Gas of Pennsylvania, Inc.
Customer Assistance Program (“CAP”)
CUSTOMER AGREEMENT FORM

As a participant in the Columbia Gas of Pennsylvania, Inc.’s (“Columbia Gas”) Customer Assistance Program (“CAP” or “Program”), I agree to accept all of the Program conditions as listed below. Failure to agree or follow through on any of the accepted conditions will result in removal from the Program.

By signing below I agree to:

- Verify my household gross monthly income at time of submitting my CAP application.
- Re-verify gross household monthly income once a year; unless I apply and receive an energy assistance grant and it is posted to Columbia Gas.
- Notify the Columbia Gas CAP at **1-800-537-7431** of any changes in my household income, household size or my residence.
- Pay the CAP payment and \$5.00 co-payment on arrearages, monthly, by the due date.
- Apply for LIHEAP and direct the payment to Columbia Gas. I further understand that LIHEAP grants will be applied to the CAP installment portion of my natural gas utility payment. I will still be responsible for the \$5 monthly co-pay, if applicable.
- Resume paying my full CAP installment plus \$5 co-pay when my LIHEAP grant is exhausted.
- Call Columbia Gas CAP immediately if I am no longer able to afford my CAP plan so as to avoid getting behind on my bill.
- Apply for any free weatherization service including the Columbia Gas WarmWise Program and my local county weatherization program, if I meet the eligibility requirements.
- Authorize Columbia Gas to share and use data including, but not limited to, income, social security numbers, and household member information furnished by me or on my behalf regarding me or members of my household concerning any application for, or participation in, the Program, with the Public Utilities Commission and entities on which Columbia relies for Program eligibility verification. Such sharing and use of the information shall be consistent with applicable law.
- Allow Columbia Gas to purchase gas on my behalf from a third party natural gas supplier.
- Accept any Program change resulting from modifications to the Program made by Columbia Gas of Pennsylvania, Inc., that has the Pennsylvania Bureau of Consumer Services’ approval.

In addition, by signing below I confirm that the facts set forth in my CAP application are true and complete to the best of my knowledge. I also hereby authorize Columbia Gas to further verify my household income, as Columbia Gas deems appropriate. I understand, agree and accept that false or incomplete statements on my CAP application will be cause for rejecting my application or removal from the Program.

Signature of Applicant

Date

Reviewed by: _____

Agency Code

Columbia Gas Account# _____

Columbia CAP
Box 42329
Pittsburgh, PA 15203

Claim of Zero Income in Household

May be completed and signed by the applicant whose household has had no income for the past 30 days.

I, _____, state that no member of my
Insert your name here

household has received any income during the past 30 days.

Our household has been without any income since _____
Date

I hope and expect to receive some income on or about _____
Date

From _____
List source of expected income

During the above period, how did your household meet their needs for:

Food:

Shelter:

Living Expenses:

I understand that I can be denied enrollment in Columbia CAP for making false statements, and do reaffirm that all claims here are complete and truthful to the best of my knowledge.

Applicant Signature _____ Date _____

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the foregoing document upon the participants, listed below, in accordance with the requirements of § 1.54 (relating to service by a participant)

VIA E-MAIL and FIRST CLASS MAIL

Christy M. Appleby
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Date: November 25, 2019



Amy E. Hirkis