Richmond City Council

The Voice of the People

Richmond, Virginia

2025 ANNUAL REPORT

Richmond City Public Utilities and Services Commission

A summary of the actions, concerns, conversations, and recommendations made by the Richmond Public Utilities and Services Commission in 2025; including Gas, Water, Stormwater, and Wastewater utilities. This commission consists of dedicated volunteer members from the Richmond Community as well as staff from throughout the Administration.

Table of Contents

Acknowledgements

The Commission would like to thank the City for its staff support and guidance throughout the year which culminates in this annual report. In particular, the Commission thanks the representatives from the Department of Public Utilities, the Department of Public Works, the Office of Sustainability, and the Office of City Council Chief of Staff.

Glossary

Term	Definition
CCF	The unit of measurement for the City's gas bills. Equivalent to 100 cubic feet.
Cost of service	A crucial concept used in utility rate setting that plays a significant role in determining the charges imposed on customers. It is a calculation of the expenses incurred by a utility in delivering service to customers.
Customer class	The differentiation between customers of an energy utility. Customer classes are determined by usage patterns, usage levels, the type of the customer (residential, commercial, industrial, or municipal), or the conditions of service.
Energy burden	The percentage of a household's income spent on energy or utility costs.
Gas main	A natural gas distribution line that serves as a common source of supply for more than one service line.
Heating degree day	A measurement designed to quantify demand for energy needed to heat a building. A heating degree day is defined relative to a base outside temperature, and its units represent how much (in degrees) and for how long (in hours) the outside air temperature was lower than the base temperature.
Leak-prone pipe	A pipe that is considered at high-risk of leaking by the federal Pipeline and Hazardous Materials Safety Administration. These pipes are often made of materials known to corrode easily, such as cast iron. Richmond City is under a consent decree to remove these pipes from service by the year 2032.
Service line	A distribution line that transports gas from a common source of supply (e.g. a gas main) to (1) a customer meter or the connection to a customer's piping, whichever is farther downstream, or (2) the connection to a customer's piping if there is no customer meter.
Service territory	The land area that a utility is obligated to service customers within. Typically, service territories do not overlap with other utilities' service territories and therefore grants a utility exclusive access to customers.
Stranded asset	An asset that is no longer used before the end of its anticipated economic lifetime and therefore may become a financial liability.
MCF	1,000 cubic feet.

Executive Summaries

Water

- Continued focus on the Lead Line Replacement Program with a focus on informing constituents of this program and timeline related to funding releases.
- Building a partnership with the Virginia Health Catalyst with focus on informing constituents of fluoride levels, which could result in legislation recommendations.
- Helping promote DPU efforts within the public purview on executing infrastructure improvements, including items such as water meter replacement.

Wastewater

- Create a public outreach campaign that engages with local High school, Vo Tech center and community Colleges to address continuing education and training needs of workers present and future.
- RVA Public citizens annual invite tour to facilities as to participate in a physical update on systems and components present health, capacity and forecasted life expectancy and the like.

Stormwater

- Identifying funding opportunities and technical support for stormwater best management practice implementations for individual property owners.
- Aiding in the identification of stormwater best management practices throughout the City, including innovative partnerships like the Greening Richmond Public Libraries initiative.
- Ensuring sufficient funding and staffing to continue complying with the City's Municipal Separate Storm Sewer System permit obligations.
- Public notification of active combined sewer overflow events and review signage requirements for outfalls.

Gas

The Public Utilities and Services Commission is charged with responsibilities that include providing City Council and the Mayor recommendations which “ensure the fiscal integrity and viability of each of the City’s utilities” and “advice on how the City may facilitate a transition of the gas utility in accordance with the City’s climate and ecological emergency declaration.” This report focuses on the fiscal integrity of the utility and, by extension, the affordability of the services it provides.

The Commission finds that the utility’s rate increases, which have outpaced inflation, are explained by increased utility spending alongside a minimum 26-year trend of declining natural gas consumption for the vast majority of the utility’s customers. Decreasing gas demand was confirmed by reviewing both local and federal data, and the Commission confirmed this trend exists in gas distribution utilities across the nation during meetings with Massachusetts’ top utility regulator and two national nonprofits with technical expertise in utility regulation and energy policy. For Richmond, much of this decreased demand is explained by increased customer preference for electric over gas space heating in pursuit of monetary savings. Finally, the reliance on a very small industrial customer base to subsidize residential customers presents a diversification risk for the City; without them, residential rate increases would be much more severe.

Policymakers can act to avoid stranded assets and prevent untenable rate increases. The Commission offers the following recommendations to the Mayor and Council:

1. The City evaluate establishing an energy efficiency program which targets those most affected by the utility’s affordability issues (see **Gas Recommendation 2.3.1**).
2. The City require that new gas customers pay the upfront costs required to connect them to the distribution system (see **Gas Recommendation 2.3.3**).
3. The City procure an analysis of cost-effective leak-prone pipe replacement which considers the effects of accelerated depreciation for new gas assets (see **Gas Recommendation 2.3.4**).

Taken together, these recommendations will curb utility spending, help alleviate rate increases for existing customers in the short- and medium-term, and help mitigate stranded asset risk for the City’s utility customers. These policies are also on the pathway towards the utility “transition” noted in the Commission’s enabling ordinance and the City’s climate emergency resolution.

Chapter 1. Water

Water Subcommittee Members

Adriano Vieira	Bill Nickerson	Christopher Rashad Green
Jacquelyn Johnson (Chair)	Patrick Fanning	

1.1 January Water Emergency

Much time and effort have been spent by the Department of Public Utilities (DPU) stabilizing Richmond's water infrastructure after the January Water Crisis. The Commission will continue to stay engaged in unfolding efforts, as well as assuring budget commitments are met, and appropriate funding is secured for future infrastructure improvements. These include, but are not limited to:

- 2025 Water Crisis | Richmond
- Preliminary After-Action Report
- Adopted Annual Fiscal Plan for Fiscal Year 2025
- Integrated Annual Report
- Water Crisis Reading Room
- Mayor requests $80M in state funds for water infrastructure programs
- Next Phase of Planning for Resilient Water Future Launched | Richmond
- Mayor Avula Opens Invitation for Regional Group on Drinking Water Strategy

According to DPU Director Scott Morris, this emergency occurred primarily because of a decision to run in winter-mode for cost-saving purposes, thereby saving approximately $60,000 annually. A secondary cause was the undersized uninterrupted power supplies; these have subsequently been upgraded and tested. These were deemed as ill-advised decisions that effective management oversight could have prevented.

1.2 Boil Advisory

According to DPU, the contributing factors for the May 27 Boil Water Advisory were delayed maintenance and poor water quality. During the after action review it was determined that Water Treatment Plant could have recovered from the event had Henrico County not increased their demands instead of reducing as requested by DPU. Approximately 2.07 million gallons in additional demand was pulled from the Henrico point of entry during this period. Had that volume been available to the City of Richmond, no boil water advisory would have occurred. Subsequently a comprehensive review of maintenance activities at the water treatment plant has occurred and the plate settler maintenance activity that was previously deferred was changed to a reoccurring preventative maintenance activity instead of a corrective maintenance activity, ensuring it is completed on a routine basis. Robust efforts have since been taken to foster and strengthen open communication channels and lessons learned that can be shared between the City and counties.

1.3 Regional Coordination

DPU held joint Capital Improvement Plan (CIP) meetings with regional partners on May 25, 2025 and August 18, 2025. During these meetings the upcoming infrastructure projects were discussed and DPU presented their 10-year plan. DPU also hosted the first Utility Regional Tabletop exercise on August 25, 2025, where the following topics were discussed:

- Cybersecurity
- Scenario Planning
- Interruption of Service
- Water Quality Parameters
- Scheduling of next Utility Regional Tabletop

1.4 City Rezoning

The Commission requested utility preparedness details from the Department of Planning and Development Review to ensure that DPU was consulted in creating rezoning drafts. The level of coordination was a high-level coordination and not a detailed review. The Commission recommends a much more detailed review, a method to complete this review could entail the use of hydraulic models. The estimated cost of this effort is $99,000. While the “assessment” methods used by the planning review office are deemed as adequate by DPU, the technology has improved to performed to a more detailed review in advance of development. ~ Director of Planning and Development Review, Kevin Vonck

1.5 Lead Line Replacement Program

The Lead and Copper Rule (LCR), first established by the U.S. Environmental Protection Agency (EPA) in 1991 under the Safe Drinking Water Act, aims to reduce exposure to lead and copper in drinking water systems. In December 2021, the EPA finalized the Lead and Copper Rule Revisions (LCRR), which introduced new requirements for lead service line inventories, public outreach, and sampling protocols. Building on this, the Lead and Copper Rule Improvements (LCRI), announced in 2023 and set to take effect on November 1st, 2027, will lower the lead action level to 10 parts per billion and mandate full lead service line replacement. These updates reflect a growing national commitment to proactive infrastructure renewal and environmental justice in drinking water management.

Status:

City of Richmond Service Line Status

- 81,772 total service lines
    - 65,749 Unknown (at least one side is unknown)
    - 13,776 Non-lead (both sides are non-lead)
    - 2,200 Lead service lines (at least one side is lead)
    - 57 Galvanized requiring replacement (at least one side is GRR)

Lead Elimination Assistance Program Funding

- Phase V
    - The City is working on closing on the $5M funding provided by VDH.
- Phase VI
    - City has received approval from VDH for $20M in funding
    - Drafting ordinances for City Council approval to accept the funding
    - Drafting Invitation for Bids to secure contractors to performs the work of Lead Service Line Replacement and to provide the materials for the replacement effort.

Fines are associated with non-compliance with the requirement for the public sector component.

City Lead Free Water Program Website

Here citizens can find information on the health effects of lead, read about some of the City's efforts to date, as well as view the map that shows what we know about their water service line. If citizens are unable or not comfortable to identify lead pipes, they can seek assistance from a plumber at no cost. The map and identification information can all be assessed from the block on the left side of the page. The Commission's 2026 agenda will include the releasing of funds and meeting EPA mandates to avoid fees.

The Commission recommends that the City exhaust all avenues of public outreach regarding the lead line replacement program.

1.6 Fluoride

Fluoride is a naturally occurring mineral found in lakes, rivers, and groundwater across the U.S.—including here in Virginia. Community water fluoridation simply adjusts fluoride to a safe and optimal level (0.7 mg/L), based on decades of research and monitoring, to help prevent tooth decay. In the U.S, people who have access to fluoridated water experience 25% fewer cavities across all age groups. Water fluoridation is our first and best line of defense against tooth decay, a condition that can and often does lead to much more significant overall health problems.

Fluoride helps reduce the need for costly dental treatments, which means families spend less and children miss fewer school days due to dental pain. Richmond currently saves an estimated $7.4 million each year in avoided dental treatment costs—about $32 per person—thanks to fluoridated water. Without fluoride, those costs shift back to families, particularly affecting households with limited access to preventive care or other barriers to accessing health. Choosing to continue fluoridating water is a decision to support health equity and long-term well-being for the Richmond community.

The April 23, "RVA fluoride event" refers to an incident at the Richmond water treatment plant where a new fluoride pump installation caused an accidental over-addition of fluoride into the water supply. The incident resulted in excessive fluoride dosing in the City's water for about five hours, leading to a state notice of violation from the Virginia Department of Health (VDH) for delayed reporting and other communication failures. While some levels in parts of Richmond's system temporarily exceeded the recommended 2.0 mg/L, the City and the VDH have stated that the water remained safe to drink throughout, with levels reduced through flushing and then monitored to be below the action threshold.

An improper valve lineup during the installation of a new fluoride pump on April 23, 2025. The period of over-fluoridation lasted for approximately five hours. The city's water treatment plant experienced increased fluoride levels, and some samples in the distribution system temporarily exceeded the 2.0 mg/L secondary maximum contaminant level. There was a significant delay in reporting the incident, with the city not notifying the Virginia Department of Health (VDH) and regional partners until April 27-28, five days after the event. The city took corrective actions, including flushing the system to lower fluoride levels and monitoring the entire distribution system. Fluoride levels were reported to be below the 2.0 mg/L threshold by April 30, 2025. The VDH issued a Notice of Alleged Violation to the City of Richmond for not reporting the incident within the required 24-hour timeframe. The city has committed to reinforcing its procedures to prevent future incidents, no further action was required by VDH to address the Notice of Alleged Violation.

The committee will be partnering with Virginia Health Catalyst to validate constituent cost savings with potential legislative recommendations to City Council next year. More on CDC findings on this topic here: **CDC Community Water Fluoridation Facts.**

1.7 Water Utilities Guidance Manual

DPU promulgated the Water Resource Guidance Manual for public comment on July 29, 2025. DPU has created a rules and regulation webpage for the public to access all the rules and regulations that fall under the authority of DPU. The webpage has current rules and regulations, proposed rules and regulations, information on how to participate

and comment on any action being taken by DPU. All materials and more information are provided via DPU's Rules and Regulation webpage.

Chapter 2. Natural Gas

Natural Gas Subcommittee Members

Andrew Grigsby (Secretary)	Joe Lerch	John Russell
Kajsa Foskey	Kevin Cianfarini (Chair)	Tracey Thayer
Trieste Lockwood		

2.1 Affordability

2.1.1 Rates Are Rising Faster Than Inflation

Richmond's gas utility rates have been increasing faster than inflation since at least 2011. These increasing costs worsen the ongoing housing affordability crisis affecting the City, particularly for low-income households.

Over the past 14 years Richmond's gas rates have steadily increased. While the City passes those costs directly onto customers with no markup, the cost of gas itself is highly variable and subject to many geopolitical conditions like the war in Ukraine. The delivery charges on a gas bill, the volumetric charge and the monthly service charge, are set by the City and fund the City's gas distribution infrastructure. Since September of 2011, delivery charges for typical[1] residential and commercial customers have risen 56% and 65% respectively, outpacing inflation at only 43%.[1-3]

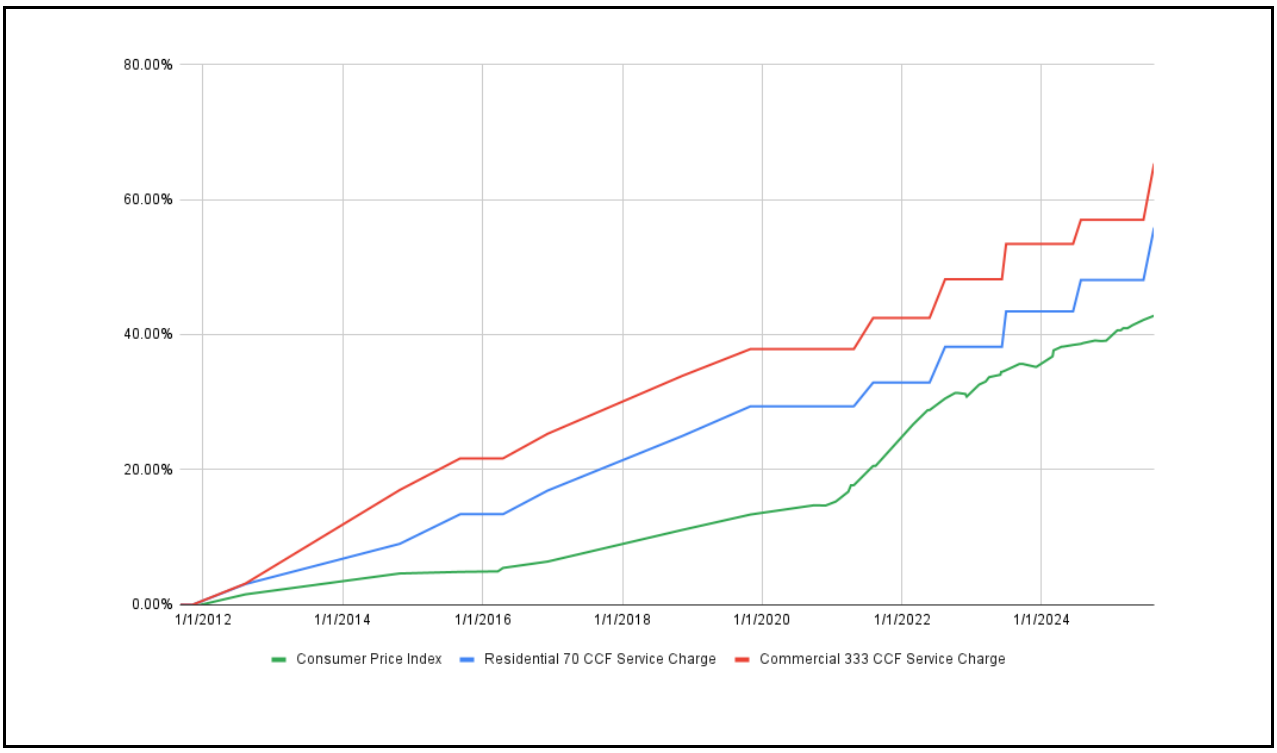


Figure 1. The relative percentage increase of delivery charges for a 70 CCF residential gas bill, delivery charges for a 333 CCF commercial gas bill, and inflation from a baseline of 2011.

This trend represents a notable shift in the proportional composition of a customer's gas bill. **Both residential and commercial gas customers now consistently pay more for their use of the distribution system than they pay for the gas it delivers.** Since 2011, delivery costs

[1] Typical usage numbers were taken from rva.gov/public-utilities/utility-rates. They are 70 CCF for residential gas customers and 333 CCF for commercial gas customers.

for a typical residential customer have risen from 48% to 63% of a bill, while a typical commercial customer has seen delivery costs increase from 39% to 55% of a bill.

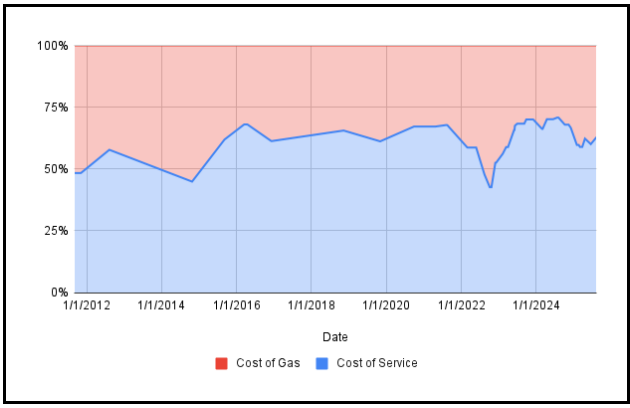


Figure 2. The proportions of a 70 CCF residential gas bill over time.

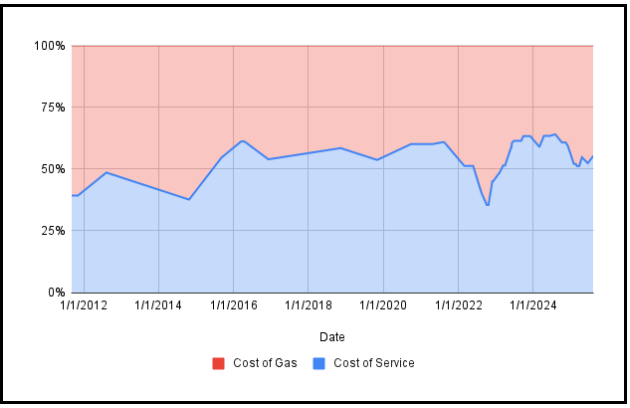


Figure 3. The proportions of a 333 CCF commercial gas bill over time.

The Community Climate Collaborative (C3), a local nonprofit, studied energy burdens of City residents in 2025. Their findings note that energy affordability is deeply inequitable in the City. C3 reports that 28% of City households have a high energy burden and 20% have a very high energy burden, as defined by the American Council for an Energy-Efficiency Economy (ACEEE).[4] A separate ACEEE report ranks Richmond among the top energy burdened cities in the United States.[5] These analyses are inclusive of other fuel sources like electricity, which is also experiencing affordability issues, but Richmond's gas rate increases contribute to financial insecurity for City residents.

It's clear that the City's gas rate increases are financially unsustainable for a large portion of Richmond's population. High energy burdens contribute to housing instability in the City, further compounding the housing affordability crisis.[4] The Commission recommends that policymakers enact, fund, and implement an energy efficiency program for energy-burdened and low-income households (see **Gas Recommendation 2.3.1**).

Additionally, Richmond's rising gas delivery costs warrant research over a longer time period than this report considers. The Department of Public Utilities (DPU) provided rates dating back to 2015, and Commission members sourced rates dating back to 2011 from publicly available information. If additional data were available, the Commission could have conducted an analysis over a 30-year time period. The Commission recommends the City increase the document retention time period for its enterprise utilities so that such analyses may be conducted in the future (see **Gas Recommendation 2.3.2**).

2.1.2 Explaining the Rate Setting Process

Every five years, DPU procures a Cost of Service (COS) study that identifies rates sufficient to cover the utility's costs. The analysis does not consider costs of gas which are passed on to customers with no markup. In the years between each COS study, customer class rates are adjusted by a fixed percentage without a proportional reallocation of costs.

The 2024 COS study identified rates using the following methodology: (1) it determined the revenue requirements for the utility which included costs associated with operations and maintenance, payments in lieu of taxes, customer-funded capital improvements, and debt service associated with the distribution system; (2) it calculated the costs to serve each customer class based on the proportional benefits that customer class received from the system; and, (3) it proposed various rate structures that would generate the revenue necessary to cover the utility's costs based on those proportional benefits.

Different utility customer classes imposed different costs on the utility. For example, the residential customer class was responsible for a large majority of the utility's costs. Contributing to those costs was the more expensive infrastructure built in order to serve higher wintertime gas demand that doesn't exist during the summertime. Despite higher capacity infrastructure not being necessary throughout the whole year, its costs were allocated to residential customers. These analyses were performed for all of the utility's customer classes.

In general, current and previous COS studies have concluded that the residential customer class does not fully recover the costs necessary to serve it. This dynamic placed upward pressure on gas rates for all customer classes and is explored further in this report (see section 2.1.3.3).

2.1.3 Why Rates Are Rising

The Commission has identified three causes for routinely rising rates: (1) the long-term decline of per-customer gas consumption; (2) increased utility spending to remediate leak-prone pipes; and (3) residential rate structures which do not fully recover their cost of service. In addition, the City's current Gas Main Extension Policy specifies in part when a connection will be provided to new gas customers at no or a significantly reduced upfront cost. This policy incurs debt to extend infrastructure to residential customers who, on average, purchase ever less gas over time.

2.1.3.1 Long-Term Trends of Gas Usage Reduction

Data reported by the City to the federal Energy Information Administration (EIA) indicates that residential and commercial gas consumption has been trending down for more than twenty-five years. Between 1997 and 2023, per-customer residential gas demand declined 58% and per-customer commercial gas demand declined 50%. Richmond is among many gas distribution utilities around the nation that have experienced declining gas sales over this time period. Philadelphia, which has the largest municipal gas distribution utility in the nation, saw a 39% and 44% decrease in its per-customer residential and commercial gas consumption, respectively. Likewise, Charlottesville's municipally owned utility experienced a 51% drop in residential sales per customer.[6]

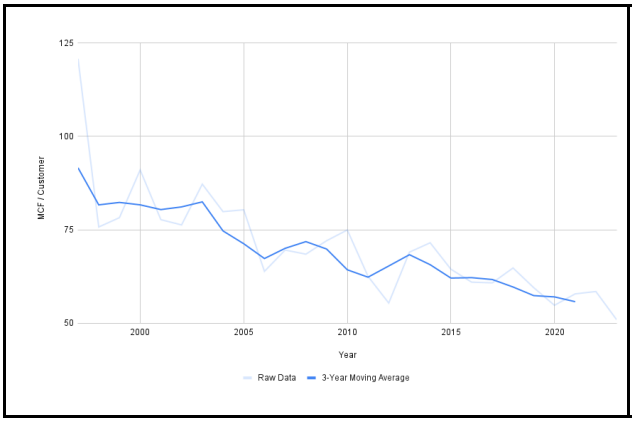


Figure 4. The amount of gas delivered on a per-customer basis to Richmond's residential customers.

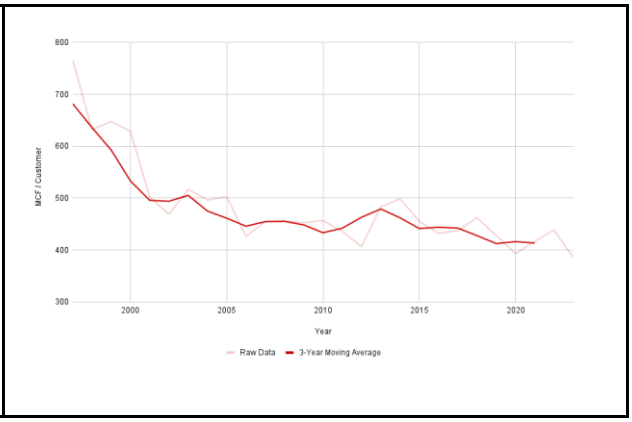


Figure 5. The amount of gas delivered on a per-customer basis to Richmond's commercial customers.

DPU staff acknowledge that this trend forced rate increases to cover fixed costs.[7] Those fixed costs include principal and interest payments on revenue bonds used to install infrastructure under the expectation that new gas infrastructure generates revenue sufficient to cover the resulting debt. However, reduced demand for that infrastructure also reduces recovery of its associated costs and, therefore, necessitates raising rates.

Similarly, the City reports data about its gas pipelines to the federal Pipeline and Hazardous Materials Safety Administration, and these data are a useful proxy for the fixed costs cited by DPU. Comparing these data against the delivery data reported to EIA clearly illustrates a long-term trend of reduced average utilization of the City's gas distribution infrastructure: from 1997 to 2023 residential and commercial customer classes saw a 53% and 50% decrease in gas delivered per mile of gas main, respectively.[6][8] Rates have increased to compensate for this reduction.

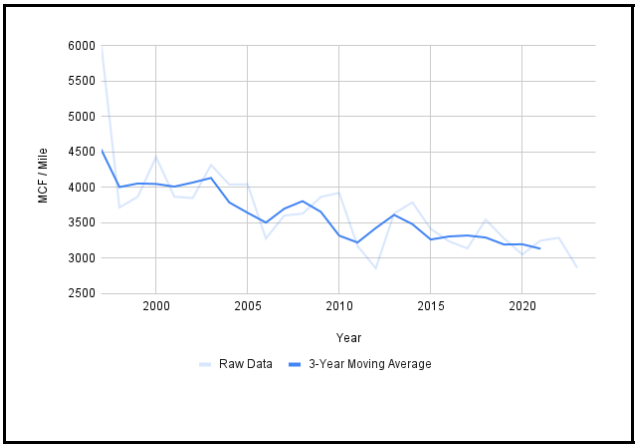


Figure 7. The amount of gas delivered to residential customers per mile of gas main.

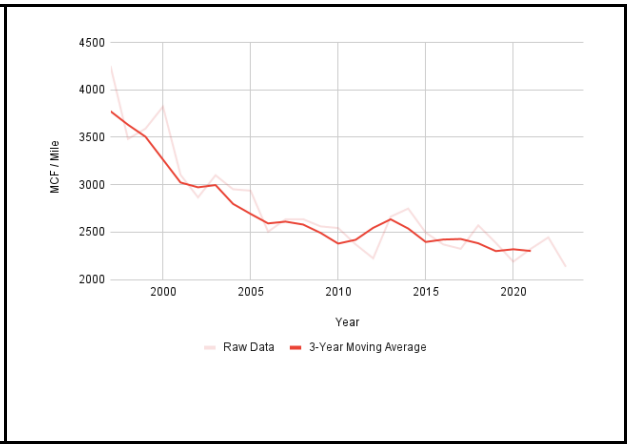


Figure 8. The amount of gas delivered to commercial customers per mile of gas main.

Additionally, the impacts of climate change have made Richmond's winters warmer and placed downward pressure on gas demand. Annual heating degree days, a proxy for the amount of energy required to heat a building, have declined 15% since the year 2000.[9] As a result, customers are using less gas for space heating than in previous decades. This is important for the City's utility because space heating is the largest end use for residential and commercial gas connections, and therefore the source of most cost recovery for these customer classes.[10][11]

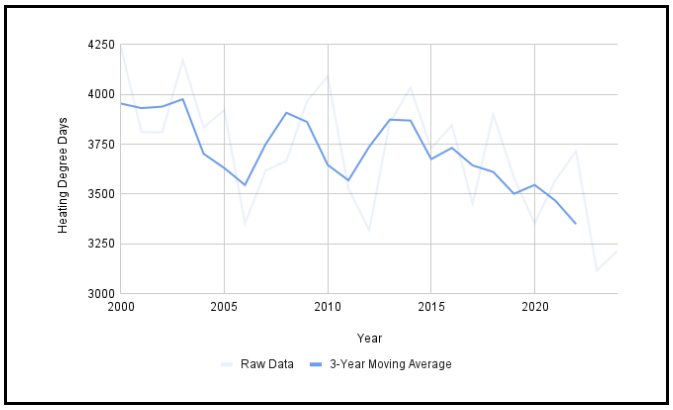


Figure 9. Heating degree days per year measured by the KRIC weather station with a baseline temperature of 65°F.

The warming climate only partially explains reduced gas demand, as the data show that demand is falling even after controlling for weather. From 2000 to 2023, average weather normalized gas demand declined 24% for residential customers and 17% for commercial customers.[6][9]

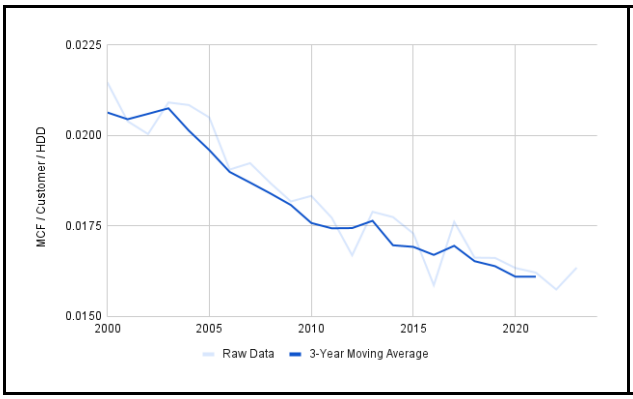


Figure 10. Weather normalized gas consumption per residential customer.

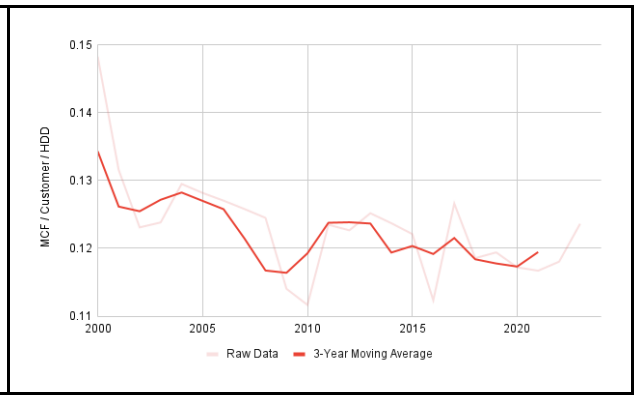


Figure 11. Weather normalized gas consumption per commercial customer.

This observation shows that the vast majority of the City's gas customers are increasingly less reliant on gas regardless of weather conditions. Responding to this persistent trend requires changing City policies and practices. The Commission recommends that policymakers plan for the continued decline in gas demand by requiring upfront payment when connecting a new customer to the distribution system (see **Gas Recommendation 2.3.3**).

2.1.3.2 Increased Spending to Remediate Leak-Prone Pipes

Gas utilities across the nation face worsening financial positions due to increased per-customer spending, driven by spending growth that far outpaces new customer growth. An analysis by RMI, a national nonprofit with expertise in utility regulation and energy policy, shows that "investments in the gas distribution system have increased five-fold, while the number of customers is only up 17%".[12]

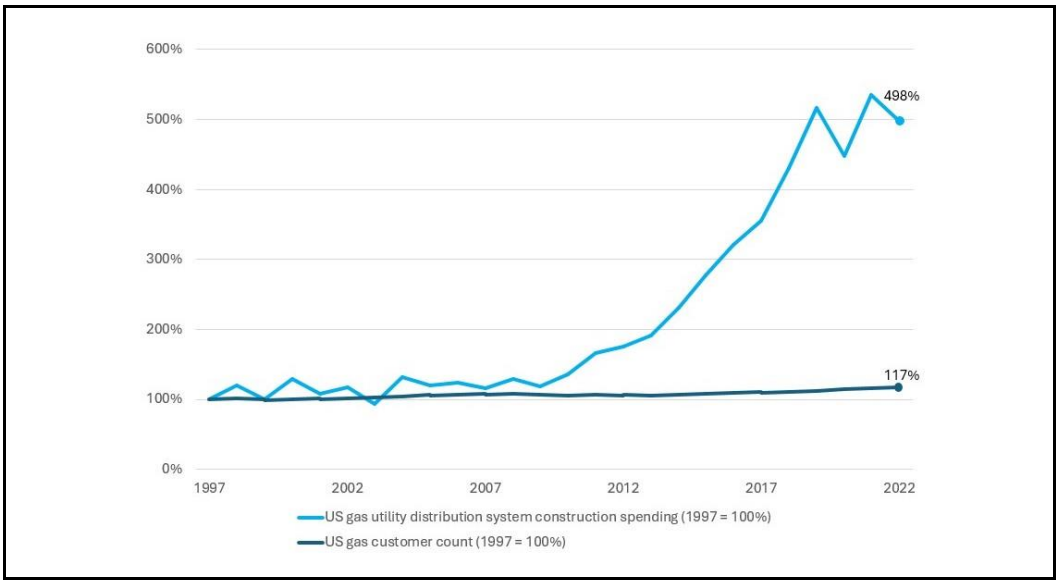


Figure 12. Growth in U.S. gas utility distribution infrastructure spending has vastly outpaced growth in the number of gas customers.

In 1992 the City entered into a consent agreement with the federal government to remediate 650 miles of leak-prone pipes by 2032. At the time of this report, the City has removed 495 miles of leak-prone pipes at a total cost of $170 million. Addressing the remaining 155 miles of pipe is estimated to cost $149 million.[13] While the City has been awarded $65 million in federal grant dollars to remediate the remaining leak-prone pipes, the awards are insufficient and no future awards are guaranteed.[14-16] That federal grant program has already distributed 80% of its allocated funding as of FY2024.[17]

The hundreds of millions of dollars spent on removing leak-prone pipes in the past raised customer rates. Similarly, the tens of millions of dollars that may be necessary in the absence of grant funding to address the remaining leak-prone pipes will drive up customer rates even further. Policymakers should ensure that the City chooses the least-cost option for the remaining leak-prone pipes to reduce the severity of future rate increases (see **Gas Recommendation 2.3.4**).

2.1.3.3 Interclass Subsidies

The 2024 COS study calculated that the residential customer class recovers only 90% of the costs necessary to serve it and that residential customer costs "are offset to varying degrees by the DPU's other customer classes".[11] That report proposed rates which ensured the residential customer class was self-sustaining and, separately, rates which were an incremental step towards residential customer self-sufficiency. The full COS rate structure calculated a much higher monthly charge than either the existing FY2024 or the adopted FY2025 rates and reflects the high infrastructure costs necessary to support residential wintertime demand.

Rate Structure Option	Monthly Charge	Volumetric Charge
FY2024	$15.38	$0.654
FY2025 COS	$35.73	$0.343
FY2025 Adopted	$16.38	$0.668

Table 1. The residential rate structures compared within the 2024 Cost of Service study.

The City adopted the incremental step rates for FY2025 and, while this shifted some of the cost of service burden onto residential customers, $7.1 million was shifted from residential to roughly 10,000 (8% of total) non-residential customers.[11] Implementing true cost of service rates for residential customers would lead to a comparatively large rate increase.

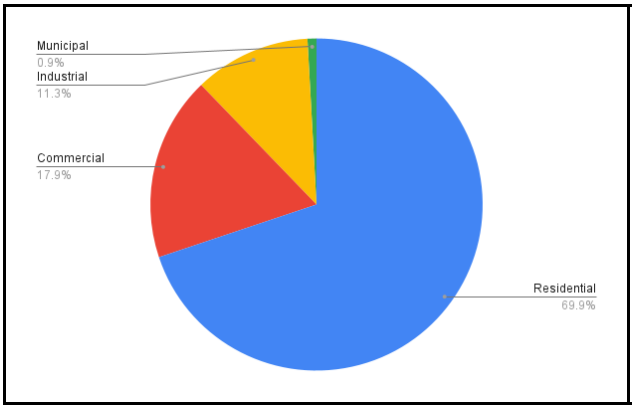


Figure 13. The proportion of costs imposed by each customer sector.

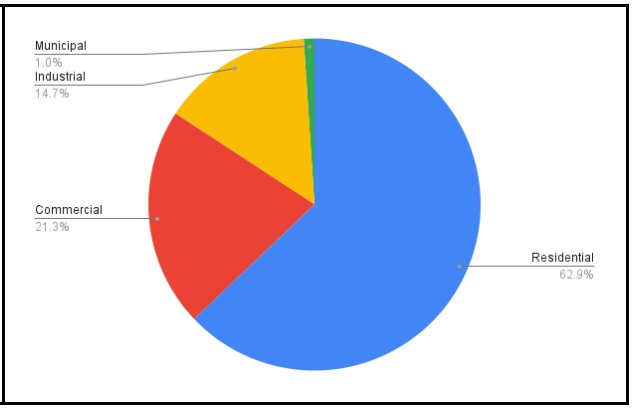


Figure 14. The proportion of revenue recovered by each customer sector with the adopted FY2025 rates.

The COS study mentions that the under-recovery of residential costs "is not uncommon and consistent with prior DPU natural gas cost of service studies;" however, the Commission was unable to review those prior studies as the City did not retain them pursuant to current record retention policies.[11] If those records had been retained, the Commission would have researched trends for the service costs of each customer class. The Commission recommends the City increase the document retention schedule for its enterprise utilities to enable such analyses in the future (see **Gas Recommendation 2.3.2**).

Importantly, the interaction between these subsidies and the current Gas Main Extension Policy, adopted September 29, 2017, risks stranded assets for the utility's customers and the City. Pursuant to Section 3 of that policy, new gas distribution system connections are made at no or reduced upfront cost under many circumstances, thus raising the utility's fixed costs in the near-term. In an era of declining gas usage, this business practice is subject to a high degree of financial uncertainty. Each additional connection provided at no or reduced upfront cost is a potential financial liability that existing utility customers will pay for if those new customers don't use as much gas as projected.

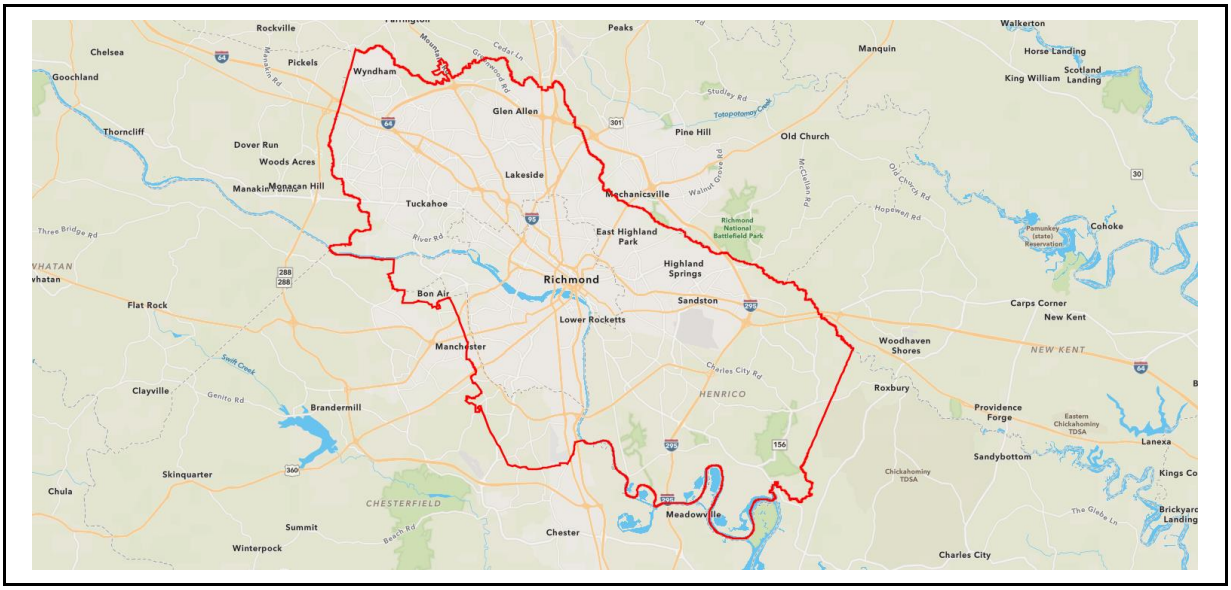
Finally, steadily rising rates incentivize customers to reduce or even discontinue gas usage in favor of electricity and is explored further in section 2.1.4 *Explaining Reduced Demand.* While the Commission recognizes these interclass subsidies help alleviate the ongoing affordability crisis for residential customers, it notes that action is required by policymakers to ensure the addition of new utility customers does not burden existing customers with higher costs or stranded asset risks (see **Gas Recommendation 2.3.3)**.

2.1.4 Explaining Reduced Demand

The Commission has identified building stock changes as having drastic impacts on the reduced weather normalized per-customer gas demand from the City's utility. The U.S. Census' American Community Survey (ACS) estimates that homes within the City's gas utility service territory are increasingly abandoning gas space heating in favor of electric space heating. Even the homes that don't switch are installing higher efficiency appliances. These long-term trends help explain why even weather-normalized per-customer residential and commercial gas demand is declining. It is imperative that City policymakers acknowledge and address the broader market trends facing the gas utility in order to alleviate the severity of future rate increases.

2.1.4.1 Gas Space Heating Is On the Decline

Richmond's gas service territory spans four jurisdictions: the entirety of Richmond City and Henrico County, and a small portion of Chesterfield County and even smaller portion of Hanover County.[18] Accordingly, the Commission analyzed ACS building stock data for Richmond City, Henrico County, and Chesterfield County.



Map 1. The service territory of the City's gas utility.

Estimates provided by the ACS show that in both absolute and proportional terms, the prevalence of gas space heating in Richmond City and Henrico County is declining. Richmond City and Henrico County are estimated as of 2023 to have 21,436 and 11,076 fewer homes heated by gas than in 2005, respectively. In proportional terms, gas space heating in Richmond City is estimated to have lost 22% in market share while gas space heating in Henrico County has declined an estimated 10%. Chesterfield County experienced a slight increase in homes using gas space heating and, in proportional terms, maintained a nearly identical market share between 2005 and 2023.[19] While the City serves gas to a small portion of Chesterfield County, the majority portion is served by Columbia Gas of Virginia, an investor-owned utility.[20]

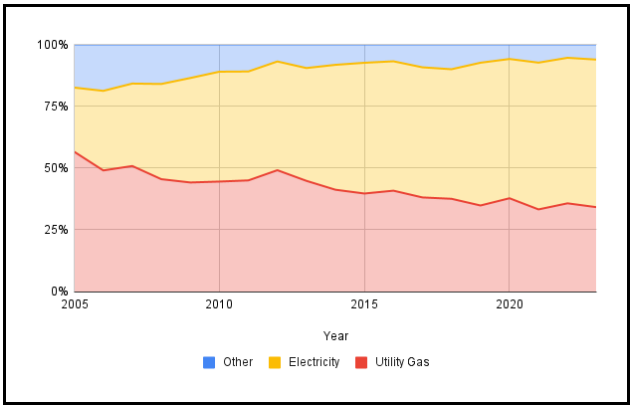


Figure 15. The proportional share of space heating fuels in Richmond City.

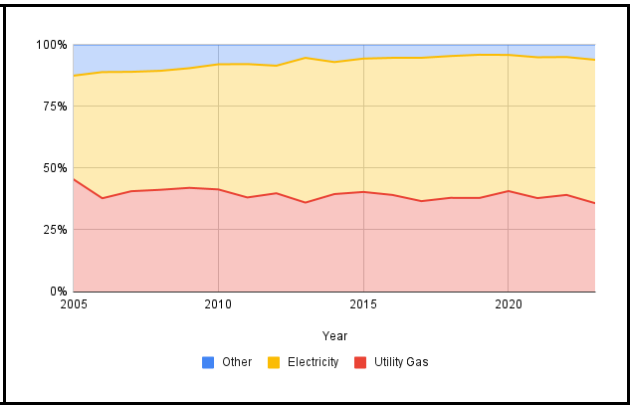


Figure 16. The proportional share of space heating fuels in Henrico County.

The Commission finds two explanations for the decreasing market share of gas space heating: (1) newer homes in the City are overwhelmingly built with electric space heating from the outset; and (2) existing homes in the region are switching from gas to electric space heating. Of the homes built in Richmond City between 2010 and 2019, only 12% used gas space heating. **This**

is the lowest proportional market share of any building age surveyed by the ACS in the City.[19]

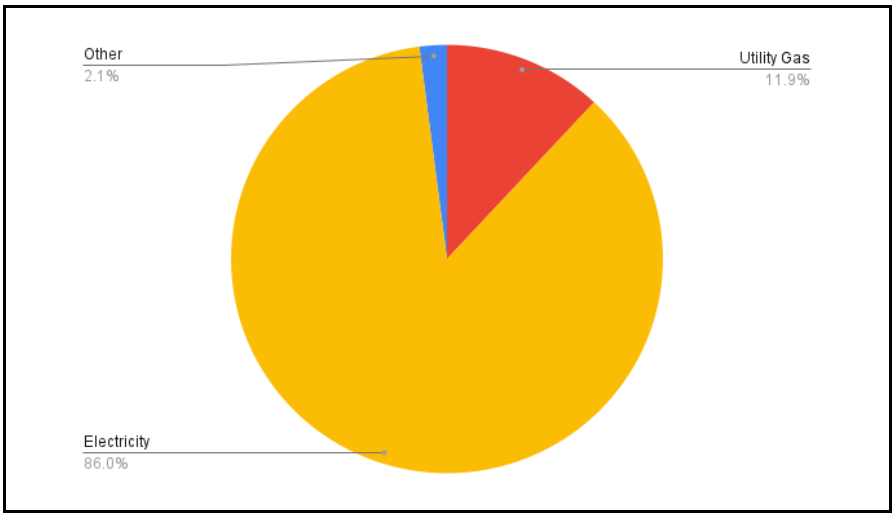


Figure 17. The estimated proportional share of space heating fuel for all homes built between 2010 and 2019 in Richmond City in 2023.

Homebuilders' burgeoning preference for electric space heating is partially explained by two factors. First, all-electric single-family homes are generally more affordable to build compared to homes built using gas appliances, and this allows homebuilders to address a wider market.[21] This trend is further underscored by data showing that the household incomes for recently built homes with gas space heating was very high compared to homes heated with electricity. Richmond City's estimated average household income in 2023 for homes built between 2010 and 2019 with gas space heating was $174k while those with electric space heating averaged $64k. Likewise, in Henrico County homes built between 2010 and 2019, the estimated average household income in 2023 for homes with gas heat was $255k while those using electricity averaged $116k.[19] **These data suggest that, while gas space heating was previously used in homes of all incomes, new gas space heating primarily services high-income households.**

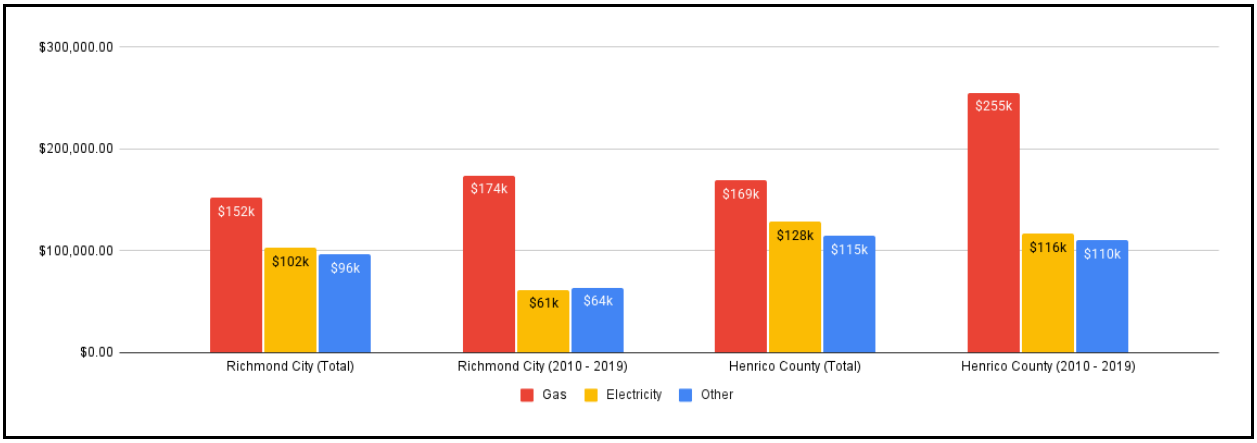


Figure 18. The estimated average household income in 2023 for homes in Richmond City and Henrico County grouped by space heating fuel type. The above graphic depicts the total number of households in each jurisdiction as well as households residing in homes built between the years 2010 and 2019.

This switch from gas to electric heating has coincided with heat pumps' decade-long rise in popularity in the US, and in 2024 air-source heat pumps outsold gas furnaces by 32%.[22] Conceptually, heat pumps work by running an air conditioner in reverse and, therefore, can perform both cooling and heating functions. Although the uptake of this technology in Richmond will further shrink the gas utility's space heating market share, it also presents an important opportunity to address equity issues for residents who lack access to air conditioning and who already face a high energy burden from space heating.[4]

Second, higher density buildings in Richmond overwhelmingly use electricity as their primary heating fuel type. About 10% of City buildings with 20 or more units use gas for space heating while 41% of single-family detached homes use gas space heating in the City, and similar trends can be seen in Henrico.[23] Furthermore, the jurisdictions served by the gas utility are allowing increased density at the time of this report. Chesterfield County enacted a denser zoning ordinance in September 2025, Richmond City's zoning rewrite is underway, and Henrico County's current draft of their comprehensive plan update identifies "land use management that facilitates redevelopment and infill" as a key planning influence.[24-26] **These data suggest that the region's gradual redevelopment and densification may further reduce demand for gas.**

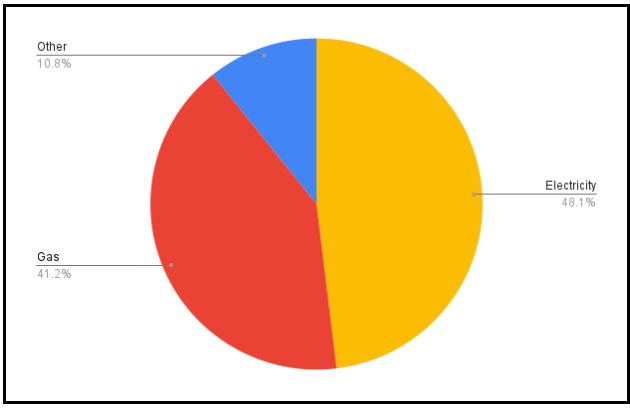


Figure 19. Heating fuel type breakdown for single-family detached homes in Richmond City.

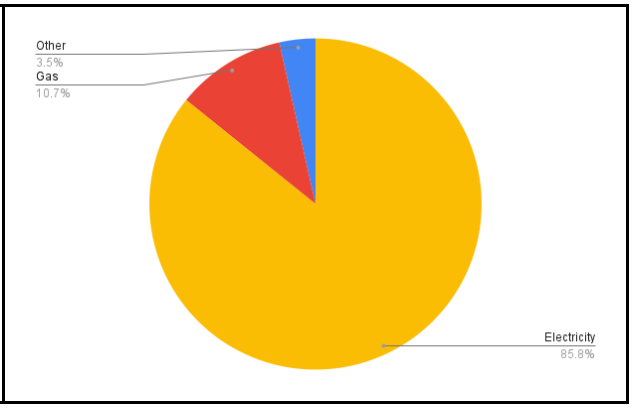


Figure 20. Heating fuel type breakdown for 20+ unit buildings in Richmond City.

New construction does not entirely explain the market's shift away from gas space heating. The Commission analyzed ACS estimates for space heating fuel sources used in homes and partitioned the data by building age. This analysis shows that, for every building age decade the ACS surveys, existing homes are increasingly switching to electric space heating. For example, the ACS estimates that homes built between the years 1950 and 1959 experienced a 17% decline in gas space heating for the City and a slightly lower 8% decline for Henrico between 2005 and 2023.[19]

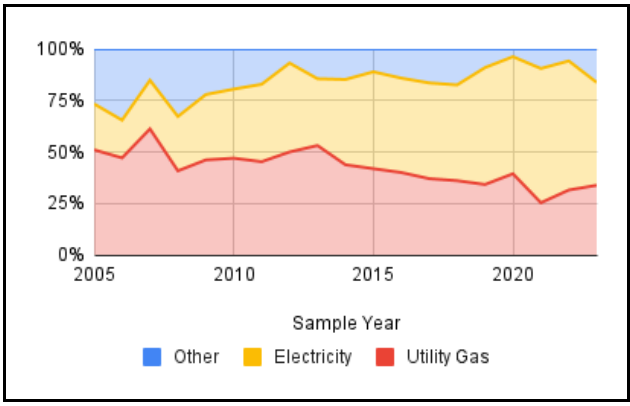


Figure 21. The proportion of gas, electricity, and other fuel sources used to heat homes built between 1950 and 1959 in Richmond City.

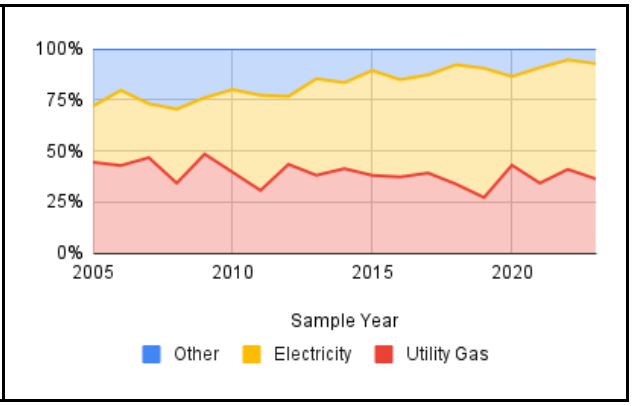


Figure 22. The proportion of gas, electricity, and other fuel sources used to heat homes built between 1950 and 1959 in Henrico County.

The financial advantage offered by highly efficient heat pumps over gas heating appliances may contribute to the observed switch from gas to electric space heating. The Commission was presented the results of a fuel switching cost advantage data analysis covering Richmond City and Henrico County by the national nonprofit Rewiring America. Their results suggest that switching from a gas furnace to an air-source heat pump in Richmond City or Henrico County would result in an annual operating bill savings of $299, and that replacing all of a home's gas appliances with electric appliances could yield $616 in savings.

Upgrade Option	Annual Operating Bill Savings
Air-source heat pump	$299
Heat pump water heater	$87
Whole-home	$528[2]
Whole-home + light air insulation	$616[2]

Table 2. Estimated annual bill savings for Richmond Gas Works based on Rewiring America's analysis on the National Renewable Energy Laboratory publicly available ResStock dataset and energy prices from the Energy Information Administration.

These savings are one of the motivations behind the nationwide electrification movement in which fossil-fuel powered appliances are replaced with those powered by electricity. The Commission was unable to obtain data on water heating, cooking, or clothes drying fuel sources, but it's important to note that customers who switch from gas space heating remove the largest end use of customer's gas connection.[10][11]

Historically, utilities were granted monopoly service territories due to the significant benefits obtained by economies of scale. In return, those monopoly utilities were regulated to ensure that rates are fair, just, and reasonable.[27] For municipal utilities, the savings generated by maintaining a monopoly status are to be passed onto their customers. However, when gas demand declines as a result of increased competition from electricity, particularly for space heating, those economies of scale may be dampened or nullified. **Broad fuel-switching encouraged by financial savings, particularly from heat pumps, may be contributing to the unmanaged decline in the utilization of the City's gas infrastructure and, with it, unmanaged rate increases for its customers.** This is a long-term trend that is not explained by federal policy incentives for heat pumps which were passed in 2022 and repealed in 2025.

In order to understand this trend further, the Commission met with Massachusetts' top utility regulator, James Van Nostrand, in September 2025. In that conversation, Chair Van Nostrand stated unequivocally that electricity and gas fuel sources are competing with each other, and that electricity has won.[28] In response to these market trends, the Commission recommends that policymakers plan for the continued decline in gas demand by requiring upfront payment when connecting a new customer to the distribution system (see **Gas Recommendation 2.3.3**) and re-evaluating the fiscal impacts of new gas infrastructure investment (see **Gas Recommendation 2.3.4**).

[2] Savings include eliminating the monthly service charge of $17.24, a value of $206.88 annually, by terminating gas service.

2.1.4.3 Energy Efficiency is Reducing Demand

Buildings that don't switch from gas to electric space heating tend to use less gas over time. Residential and commercial buildings trend towards higher efficiency as building codes are updated, older buildings get renovated, and older appliances are replaced with higher-efficiency models.

Contemporary gas appliances are much more efficient than their legacy counterparts. For example, 1970s era gas furnaces were about 70% efficient and are no longer produced by manufacturers. In contrast, homes can install 98% efficient gas space heating equipment in 2025.[29] **When existing homes replace gas appliances, regardless of whether they switch to electric appliances, their gas demand tends to decrease.**

Furthermore, newer buildings are subject to stricter building codes that impose higher energy efficiency requirements. Virginia's building energy codes are updated every 3 years to incorporate most elements of model residential and commercial building codes. Compared to model building codes from the year 1975, residential model codes from 2024 provide an approximate 50% reduction in energy use. Likewise, model commercial codes from 2022 obtain a cumulative 60% reduction.[30]

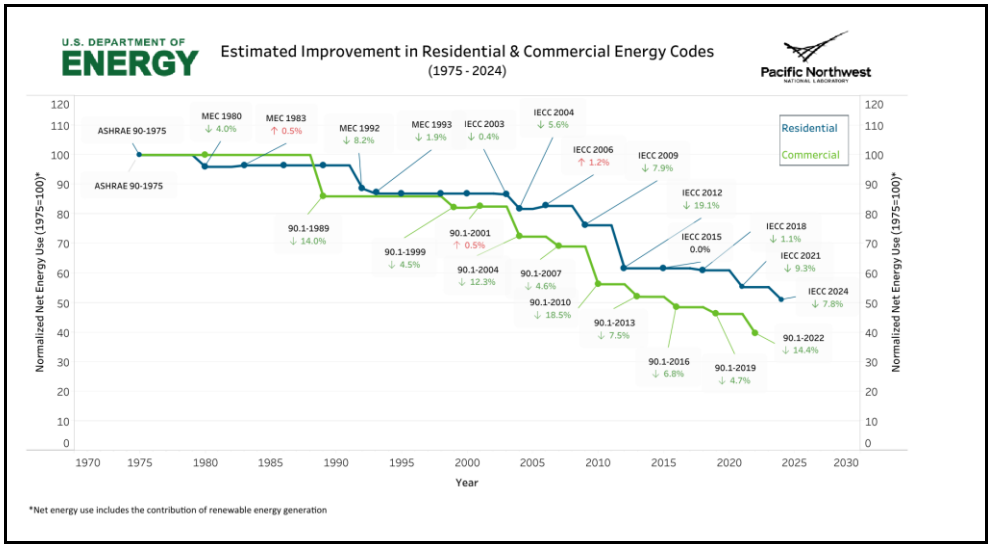


Figure 23. the energy efficiency impacts of the different editions of model residential and commercial building codes.

2.1.5 Industrial Customer Concentration Risks

Prior sections of this report have focused on residential and commercial customers because, combined, those sectors account for 87% of the utility's costs and have demonstrated a long-term decline in utilization of the utility's infrastructure. In contrast, the City's' 376 industrial utility customers, such as DuPont, account for 11% of the utility's cost of service.[11] While only a small fraction of both the customer base and the utility's costs, industrial customers have driven the overall demand for gas from the utility upwards starting around 2012. As of 2023, these customers account for nearly 50% of all gas delivered by the utility.[6]

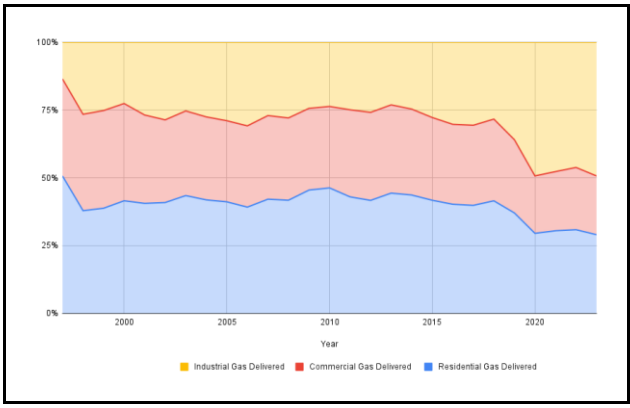


Figure 24. Proportional gas deliveries by sector between the years 1997 and 2023.

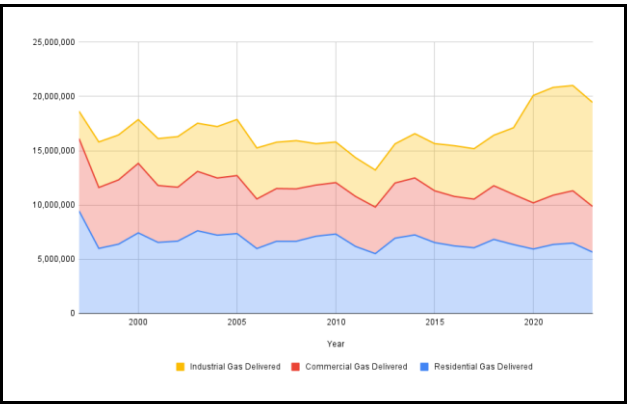


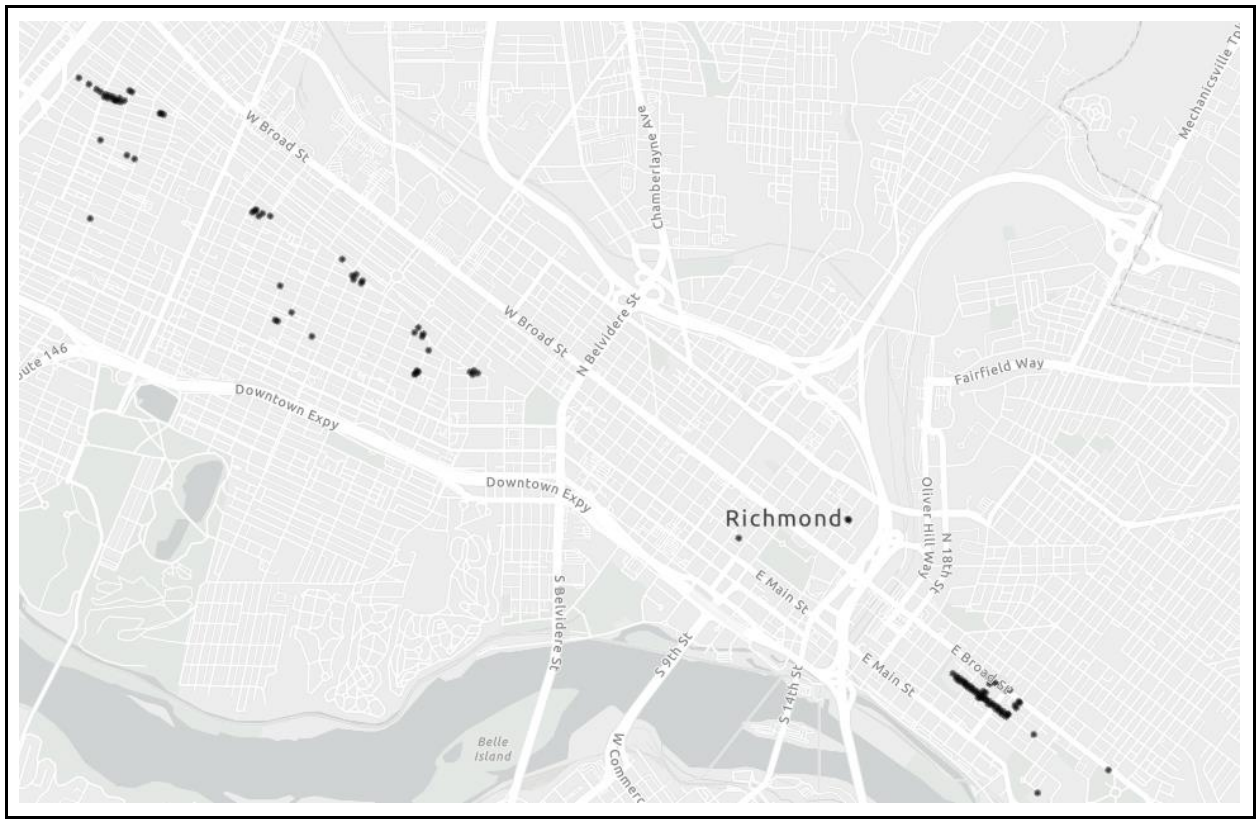
Figure 25. Absolute gas deliveries by sector between the years 1997 and 2023.

Without considering industrial gas deliveries, demand for gas among the City's customers has declined 39% between 1997 and 2023.[6] Had it not been for the City's ability to shift costs from its residential customers onto other customer classes, like industrial customers, rate increases to-date would have been more severe than what has already transpired.[11] The City has 59 "Large Volume Sales Service" customers and 4 "Very Large Volume Sales Service" customers. Should some of those customers choose to relocate, innovate, or otherwise decrease their usage, the utility's remaining customer base may face severely increased costs.

To mitigate this risk, the Commission recommends action to reduce overall system costs (see **Gas Recommendations 2.3.3 and 2.3.4**).

2.1.6 Gas Street Lamps

The City provides gas services to approximately 111 gas streetlamps in some of its historic neighborhoods. These streetlamps are unmetered, and the charges associated with their operation are applied to bills of nearby customer bills. Ensuring the responsible customer information is up to date for both maintenance and payment purposes requires a manual audit, and DPU is in the process of implementing a yearly review to ensure the proper utility customers are paying for and maintaining these streetlamps.



Map 2. The locations of gas streetlamps in Richmond City.

On occasion, DPU has expressed concern that residents are unaware of their maintenance and payment obligations for these streetlamps. Given that assigning responsibility for these gaslights to customers requires a manual audit which is not currently performed on any regular cadence, it's possible that customers may not be aware they are paying for these services or may not want to continue to be responsible for their maintenance. The Commission recommends that DPU finalize their audit process and engage with the community to discuss alternatives to gas streetlamps that align with these neighborhoods' historic character.

2.2 Energy Transition

2.2.1 The Transition is Already Underway

Gas sales and building stock trends over the last several decades demonstrate that the City's gas utility is undergoing a transition. These changes can be proactively managed by policymakers with forward thinking policy and detailed planning. Failure to plan risks reactive responses by the City from known vulnerabilities such as the loss of key industrial customers, declining or termination of grant funding for leak-prone pipe replacement, and accelerating decline in gas demand from the loss of space heating.

To help manage this transition, the Commission has recommended several measures that help reduce system costs and avoid stranded assets (see **Gas Recommendations 2.3.3 and 2.3.4**). While these proposed policies are primarily aimed at alleviating affordability concerns for existing customers, they are also the low-hanging fruit on the pathway to transition. Investing in the expansion of the gas distribution system via the existing Gas Main Extension Policy, depreciating new gas infrastructure for up to 50 years, and unconditionally replacing leak-prone pipes with new long-lived gas infrastructure are all existing practices that directly conflict with the City's goal of net-zero climate pollution by 2050. **Changing these practices is necessary to align DPU with the City's climate goals and, with it, mitigate stranded asset risk for the City and its utility customers.**

The Commission will continue working to provide advice on how the City may facilitate a clean energy transition of the gas utility. Future interest areas will include transitioning low-income residential customers, transitioning rental customers, and backfilling the funds currently contributed to the general fund from the utility via its payment in lieu of taxes and dividend. Identifying policies that help low-income customers replace their appliances and rental customers address the split incentives with their landlords is of special interest to the Commission.

2.2.2 Transitioning the Workforce

The current trajectory of the gas utility, if left unmanaged, presents a job security risk to the hundreds of staff members employed by DPU.[31] While the transition has been ongoing for decades and its completion won't happen overnight, **proactive action is paramount for centering equity in the City's utility transition.**

Although the Commission has not yet studied workforce transition opportunities in depth, it hopes to work with the Future of Workforce Commission and make recommendations in the future that ensure no net losses of jobs alongside job transition and training guarantees. In partnership with local labor unions, like the International Brotherhood of Electrical Workers Local 666 and the United Association Local 10, the City can leverage the enormous amount of work necessitated by the transition to build a strong union workforce in partnership with DPU in the utility space of the future.

2.3 Gas Recommendations

2.3.1 Provide an Energy Efficiency Program

The Commission has reviewed C3's report on energy burdens and unaffordability in Richmond City and agrees with their recommendation to implement an energy efficiency program run by the City. C3's energy efficiency program recommendations include, but are not limited to:

1. The program should work in partnership with local nonprofits.[3]
2. Commit to funding across multiple years in order to grant stability for energy efficiency service providers.
3. Primarily target energy-burdened and low-income households.
4. Provide at least $1 million per year to start.
5. Develop energy efficiency and weatherization opportunities that address the split incentives between renters and landlords.

2.3.2 Lengthen DPU's Record Retention Schedule

Pursuant to the Virginia Public Records Act (*Va. Code sec. 42.1-76 et seq.*), the Library of Virginia issues record retention schedules that DPU must adhere to. Those schedules have proven insufficient in a number of instances while evaluating financial trends affecting the gas utility and its customers. In order for the City to make more informed decisions about its enterprise utilities, longer data retention schedules are necessary. The Commission recommends that the City amend its Administrative Regulation regarding Virginia's Public Records Policy (A.R. 7.2) to ensure a 30-year retention schedule for DPU's budgeting and planning records. Such records should include rate structures, cost of service studies, revenue bond issuance documents, and gas delivery data.

[3] Commission member Andrew Grigsby is employed by the local energy efficiency nonprofit Viridiant and has therefore recused himself from voting on this report.

2.3.3 Require Upfront Payment For New Gas Connections

The City's current Gas Main Extension Policy provides free or reduced upfront costs for connections in many circumstances. Known elsewhere as Line Extension Allowances (LEAs), these policies have recently experienced increased scrutiny across the nation. Six states — California, Colorado, Maryland, Massachusetts, Oregon, and Washington State — have all eliminated or restricted LEAs.[32-39] Furthermore, both New York State and Minnesota are currently considering eliminating LEAs.[40][41] Among their reasons for eliminating LEAs were addressing the inequitable subsidization for new gas customers by existing customers, stranded asset risks for an industry in decline, and conflicts between incentivizing gas system expansion and climate targets.

For example, the Maryland Office of People's Council estimated that eliminating LEAs would save Maryland's gas customers tens of millions of dollars per year.[42] The Commission has worked with the Regulatory Assistance Project (RAP), a national nonprofit with technical expertise in utility regulation and energy policy, to estimate those savings for the City's utility customers. Using an estimated addition of 1,000 to 2,000 new customers annually and an estimated cost of $1,000 to $2,000 per gas service line installation, RAP estimates that City utility customers would avoid between $1 million to $4 million in capital costs annually by eliminating LEAs.[6][43-45] Doing so could prevent unnecessary rate increases and mitigate stranded asset risk. After eliminating LEAs, developers and building owners will pay those costs, but they can be avoided by choosing to forego gas appliances.

The Commission makes this recommendation in accordance with its responsibilities to provide advice on how the City may facilitate a clean energy transition for its gas utility and make recommendations that ensure the fiscal integrity of the City's utilities (see *City Code Sec. 2-1202.7(a)(7-8)*. Eliminating LEAs in Richmond can reduce pressure to raise existing customer rates in the future, mitigate stranded asset risk, align gas connection policies with standard ratemaking principles, and help the City achieve its climate goals. While new customers will have to pay thousands of dollars in lieu of leveraging funds from the existing ratebase, the Commission has shown that new gas connections overwhelmingly service high-income households. Eliminating LEAs does not restrict customer choice by banning or otherwise restricting new gas line extensions.

States across the nation have eliminated or restricted LEAs using both legislation and regulation. As a result, the Commission offers a draft ordinance titled *An Ordinance to Eliminate Gas Line Extension Allowances* for City Council's consideration below and, furthermore, notes that DPU may also eliminate LEAs by promulgating an updated Gas Main Extension Policy.

The Commission is excited to collaborate with policymakers to ensure energy affordability and low-income households remain a top priority for the City.

An Ordinance to Eliminate Gas Line Extension Allowances

Section 1. Purpose

The City of Richmond seeks to align Richmond Gas Works' ("RGW") infrastructure investment policies with the City's equity, affordability, and climate goals under RVAgreen 2050 and the Climate and Equity Plan, Resolution No. 2021-R049, adopted September 13, 2021. Line extension allowances ("LEAs"), which subsidize the cost of connecting new developments to the gas distribution system, create cross-subsidies borne by existing customers, encourage uneconomic expansion, and increase the risk of stranded infrastructure costs. Eliminating LEAs protects current and future customers from stranded costs, promotes fairness among new and existing customers, and supports the City's long-term clean energy goals.

Section 2. Definitions

(a) Line Extension Allowance means any utility policy or tariff provision under which all or part of the cost of new gas mains, service lines, or related infrastructure is subsidized or recovered from existing customers rather than the applicant requesting service.
(b) Applicant means any developer, property owner, or entity requesting new gas service that requires extension of mains or service lines.
(c) Grandfathered Development means any development for which a complete application for building or site plan was filed prior to the effective date of this ordinance.
(d) Contribution in Aid of Construction ("CIAC") refers to monetary contributions from new customers that offset the cost of building new gas lines, mains or other infrastructure necessary to serve them.

Section 3. Elimination of Line Extension Allowances

(a) Effective immediately upon adoption of this ordinance, RGW shall no longer provide LEAs for new gas service.
(b) All costs associated with new gas mains, service lines, or other infrastructure necessary to serve an applicant shall be borne in full by the applicant through a CIAC or equivalent mechanism.
(c) RGW shall not recover from existing customers any portion of the costs of new line extensions initiated after the effective date of this ordinance.

Section 4. Grandfathering

(a) Developments that qualify as Grandfathered Developments may continue to receive line extension allowances consistent with policies in effect prior to this ordinance.
(b) RGW shall publish within 60 days of the effective date of this ordinance a list of all Grandfathered Developments, including project name, location, and expected completion date.
(c) No development shall qualify for grandfathering unless a complete building or site plan application was filed prior to the effective date of this ordinance.

Section 5. Reporting and Transparency

(a) RGW shall file with City Council and the Public Utilities and Services Commission an annual report detailing:
    (i) All line extensions completed during the prior year, with cost allocation between applicant and utility.
    (ii) Status of Grandfathered Developments and the total allowance provided.
    (iii) Projected avoided costs resulting from elimination of LEAs.
(b) RGW shall maintain an open, public record of all CIAC agreements executed under this ordinance.

Section 6. Effective Date

This ordinance shall take effect immediately upon adoption by Council.

2.3.4 Procure a Non-Pipeline Alternatives and Depreciation Analysis

The City currently has 155 miles of leak-prone pipes it is required to remove from service by 2032 for an estimated cost of $149 million. This issue is not unique to Richmond and is impacting both municipally owned and investor-owned utilities around the nation. Philadelphia's municipal gas utility is on track to spend between $6 and $8 billion customer dollars on leak-prone pipe replacement during the next 30 years, and Massachusetts' Gas System Enhancement Program has charged customers of investor-owned utilities with the pipe replacement costs.[46][47]

Three states — California, Colorado, and Massachusetts — now require gas distribution companies to consider Non-Pipeline Alternatives (NPAs) in their planning processes.[46][48][49] NPAs evaluate the cost-effectiveness of alternatives to replacing portions of the gas system, such as direct electrification of buildings or district heating systems, in order to conserve utility funds while also advancing climate goals. Consequently, utilities including PG&E, Con Edison, Xcel Energy, and National Grid are exploring NPAs as a mechanism to remediate deteriorating infrastructure at a lower cost than replacing pipes.[50] Likewise, a study focused on Philadelphia's municipal gas utility cites considering alternatives to gas pipeline replacement as a recommendation to moderate capital expenditures.[47]

Additionally, Massachusetts and Washington State both have moved to accelerate gas utility depreciation schedules, and robust modeling for Minnesota's Clean Heat Initiative cites accelerated depreciation of gas infrastructure as possibly necessary during their clean energy transition.[33][46][51] Richmond depreciates new gas infrastructure for up to 50 years, and the Commission is concerned that new investment in gas infrastructure, like replacing leak-prone pipes, risks stranded assets for utility customers and the City given long-term declining gas demand.

The Commission worked with RAP understand the impacts of shortening depreciation schedules to 20 years for new gas infrastructure investments. Although their research underscores that accelerated depreciation substantially reduces long-term stranded asset risk and promotes intergenerational equity, it would likely raise rates in the short-term.

The Commission recommends that the City obtain a comprehensive NPAs analysis for the remaining 155 miles of leak-prone pipe, in accordance with *City Code Section 2-1202.7(a)(7-8)*. This analysis should also evaluate the short-term and long-term bill impacts of accelerating depreciation schedules for new gas assets and the effects of accelerated depreciation on NPAs analyses.

Chapter 3. Wastewater and Stormwater

Wastewater Subcommittee Members

Adriano Vieira	Bill Nickerson (Chair)	Christopher Rashad Green
Jacquelyn Johnson	Patrick Fanning	

Stormwater Subcommittee Members

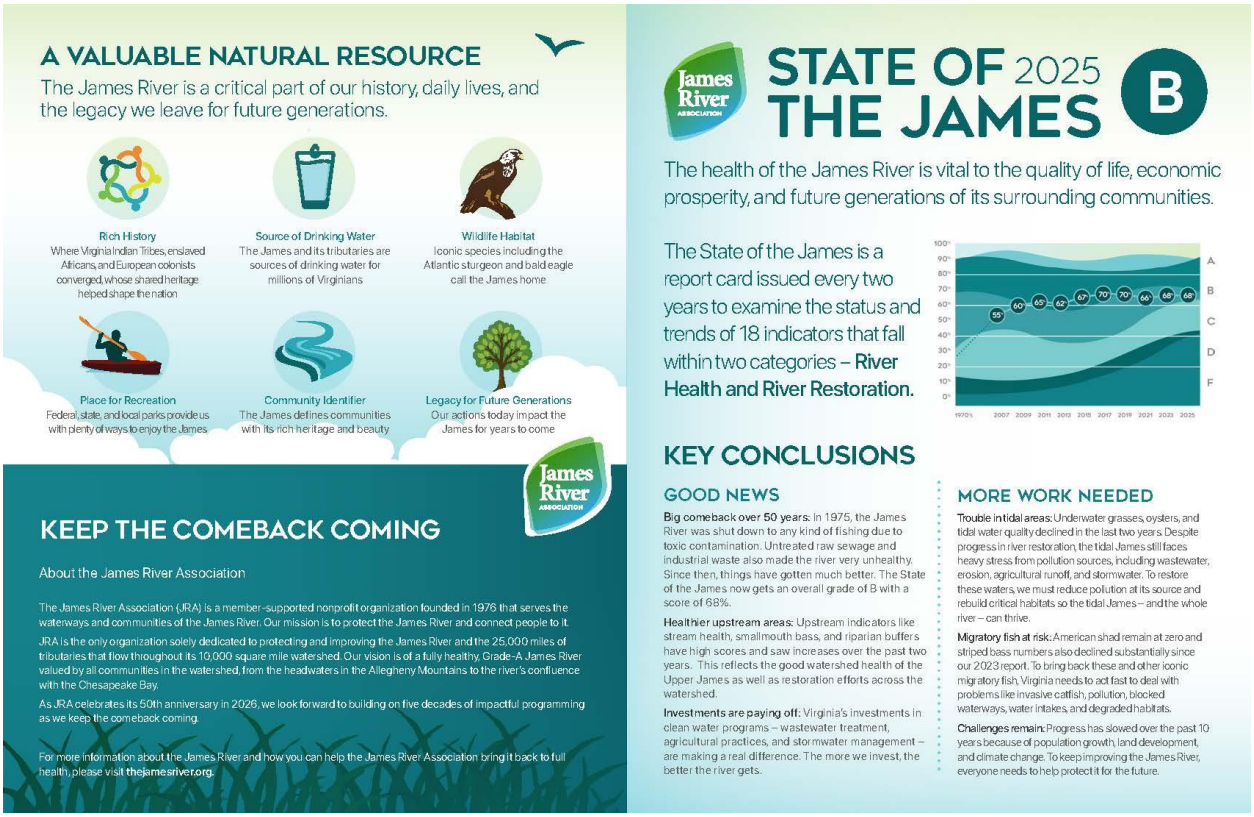
Adriano Vieira	Bill Nickerson	Christopher Rashad Green
Jacquelyn Johnson	Patrick Fanning (Chair)	

"*The Rivers of Virginia are the God-given sewers of the State*" 1912' quote from a Virginia Legislator.

"*Our river is a sewer*" Richmond News Leader 1963'

Opened in 1958, the Sewage treatment plant was said to handle 55% of Richmond's flow and 33% of Henrico's. Today, serving more than 230,000 meters with 1,500 miles of pipe 38 miles of intersecting sewer, this is the largest sewage treat plant of its kind in Virginia. In 2017 a $120 million upgrade alongside another in 2020 increased capacity to 140 million gallons of combined waste and stormwater per day before returning treated water back to James. The financial scale of the project overshadows all other Utility services by itself. The need for the Combined Sewer Overflow project stems from the inability to treat the last 2% of combined waste and storm during the heaviest rains. The combined storm sewer overflow system is one of over 700 across the country.

The purpose of the Wastewater treatment plant is to clean this water before it enters the James River. The State of the James report card is one of the best resources to give a snapshot view of these efforts.



The City has a significant infrastructure system of stormwater conveyances and best management practices (BMPs) across the City both within and outside of the Combined Sewer

portion of the City. The primary driver for stormwater management in the City is the City's Municipal Separate Storm Sewer System General Permit issued by the VA Department of Environmental Quality (VA DEQ). The City is unique among Virginia localities because it has an Integrated Permit issued by VA DEQ integrating its wastewater and stormwater permits into a single permit. The permit includes minimum control measures like public education, illicit discharge identification and elimination, and other requirements as well as a special condition to address nutrient and sediment discharges from the system which contribute to impairment of the Chesapeake Bay.

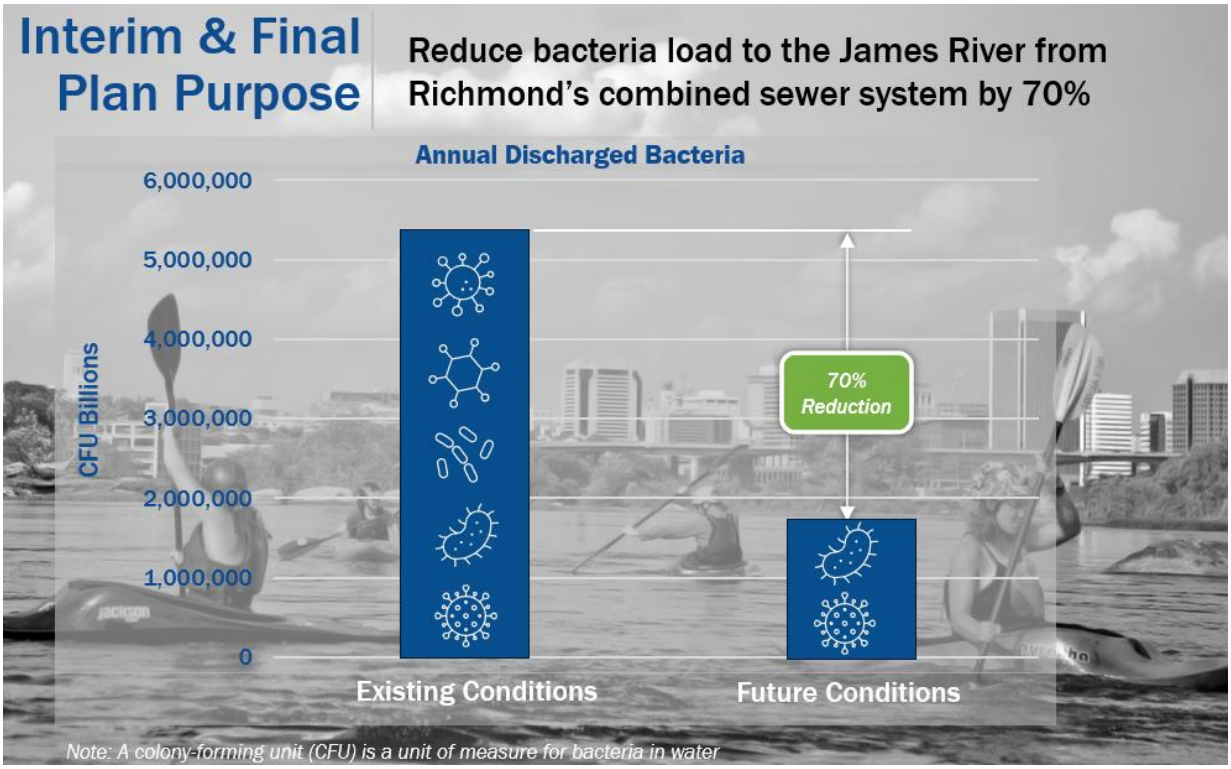
Under Virginia's Phase III Watershed Implementation Plan for the Chesapeake Bay Total Maximum Daily Load (TMDL), the City is required to achieve a sixty percent reduction in nutrient and sediment discharges. The City submits an annual report to VA DEQ showing its annual compliance with the Integrated Permit and the projects it has and will implement to achieve the Bay TDML nutrient and sediment reductions.

The most recent report for 2024 demonstrates that the City has achieved and exceeded its Bay TMDL reduction goals and has done so by implementing projects throughout the City. The reductions were largely achieved through implementing large-scale stream restoration projects on incised streams on city-owned property. Importantly, the City did not rely on the acquisition of nutrient credits to achieve compliance. The report also highlights that the City does not have any additional nutrient and sediment stormwater projects in the queue. The Commission remains interested in the implementation of stormwater BMPs throughout the City on public and private lands. DPU supports and catalogues through its RVAH2O website stormwater projects being carried out by DPU partners such as the Greening Richmond Public Libraries projects, a series of projects being implemented by partners at Richmond public libraries throughout the City. The Commission is interested in how DPU can leverage partnerships like this to implement stormwater BMPs at additional sites throughout the City, which also promote public education at highly visible sites like libraries.

The Commission is also interested in how DPU can work with partners and individual property owners to implement BMPs on their properties. Through meetings this year, the Commission learned about potential funding opportunities for helping individual property owners implement BMPs, and it remains interested in how the City, along with partners like the James River Soil and Water Conservation District (JRSWCD), can secure external funding, including from state funding programs like the Virginia Conservation Assistance Program (VCAP). We understand that funding and capacity for the JRSWCD to implement support for VCAP has been challenging and the Commission is interested in how DPU can help continue this program.

The City's work on stormwater projects is intertwined with the upgrades being implemented on the Combined Sewer System. As one of the largest single utility projects in the City's history, the Interim and Final Plan projects are understandably a primary focus of DPU. The Commission hopes to work with the Administration to understand these upgrades and additionally aid in crafting and supporting requests for State and Federal assistance. **At present, the Commission recommends that both current and future City Council members and Mayors continue advocating for grant funding that lessens the financial burden of this**

project on utility customers. This is consistent with the $200 Million request Mayor Avula recently outlined to the General Assembly during the next budget biennium.



Chapter 4. Solid Waste

As of this report the Solid Waste Standing Subcommittee has not yet met, but it hopes to begin meeting in 2026. Accordingly, the Commission offers no recommendation to City Council and the Mayor relating to solid waste.

Chapter 5. Full Commission

Public Utilities and Services Commission Members

Adriano Vieira	Andrew Grigsby (Secretary)	Bill Nickerson
Christopher Rashad Green	Jacquelyn Johnson	Joe Lerch
John Russell	Kajsa Foskey	Kevin Cianfarini (Chair)
Patrick Fanning	Sudhir Paladugu	Tracey Thayer
Trieste Lockwood (Vice Chair)		

In the past, the Commission has encountered issues interpreting quorum as specified in *City Code Section 2-1202.8(1)*. This was particularly evident when the Commission had vacancies, and as a result, **it recommends that City Council amend that code section to specify quorum applies to currently appointed voting members.**

Conflicts of Interest Disclosure

The Commission's voting members are volunteers from the community and therefore those members maintain separate employment. Pursuant to *City Code Section 2-1202.6(d)* those employment relations are disclosed below.

Commission Member	**Work Affiliation**
Adriano Vieira	Veolia
Andrew Grigsby	Viridiant
Bill Nickerson	Bay Aging
Christopher Rashad Green	Legal Aid Justice Center
Jacquelyn Johnson	Retired
Joe Lerch	Virginia Association of Counties
John Russell	Timmons Group
Kajsa Foskey	Virginia Energy Consumer Alliance
Kevin Cianfarini	Optiwatt
Patrick Fanning	Chesapeake Bay Foundation
Sudhir Paladugu	U.S. Department Housing and Urban Development
Tracey Thayer	Retired
Trieste Lockwood	Lockwood Strategies

Citations

1. City of Richmond, “Utility Rates”, October 2025, https://web.archive.org/web/20250000000000*/https://www.rva.gov/public-utilities/utility-rates
2. City of Richmond, “Utility Rates”, October 2025, https://web.archive.org/web/20110901000000*/http://www.richmondgov.com/PublicUtilities/UtilityRates.aspx
3. U.S. Bureau of Labor Statistics, “CPI Inflation Calculator”, October 2025, https://www.bls.gov/data/inflation_calculator.htm
4. Community Climate Collaborative, “Lessening the Load: Energy Burden and Unaffordability in Richmond, VA,” September 2025, https://www.theclimatecollaborative.org/richmond-energy-burden
5. American Council for an Energy-Efficient Economy (ACEEE), “How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States,” September 2020, https://www.energy.gov/sites/default/files/2021-12/ACEEE%2C%20Household%20Enegy%20Burdens.pdf
6. U.S. Energy Information Administration, “Natural Gas Annual Respondent Query System,” October 2025, https://www.eia.gov/naturalgas/ngqs
7. City of Richmond, “FY24 Proposed Utility Rate Increases,” CD.2023.091, March 2023, https://richmondva.legistar.com/View.ashx?M=F&ID=11749520&GUID=313BB83D-1D42-4212-BBF0-65E538A45124
8. U.S. Pipeline and Hazardous Materials Safety Administration, “Gas Distribution, Gas Gathering, Gas Transmission, Hazardous Liquids, Liquefied Natural Gas (LNG), and Underground Natural Gas Storage (UNGS) Annual Report Data,” October 2025, https://www.phmsa.dot.gov/data-and-statistics/pipeline/gas-distribution-gas-gathering-gas-transmission-hazardous-liquids
9. Degree Days, “Weather Data for Energy Saving,”, Weather Station KRIC, September 2025, https://www.degreedays.net/
10. U.S. Energy Information Administration, “Annual household site end-use consumption by fuel in the United States—totals, 2020,” March 2024, https://www.eia.gov/consumption/residential/data/2020/c&e/pdf/ce4.1.pdf
11. City of Richmond and Raftelis, “Natural Gas Cost of Service Study,” April 2024
12. RMI, “Bringing Gas Utility Planning into the 21st Century,” June 2024, https://rmi.org/bringing-gas-utility-planning-into-the-21st-century/
13. City of Richmond Public Utilities and Services Commission, “Meeting Minutes,” March 20, 2025
14. Richmond City Council, “Ordinance No. 2024-191,” July 2024, https://richmondva.legistar.com/View.ashx?M=F&ID=13166739&GUID=1F0F3BD0-40E3-4222-B4EE-BAC886C9B0D6
15. Richmond City Council, “Ordinance No. 2025-158,” July 2025, https://richmondva.legistar.com/View.ashx?M=F&ID=14554853&GUID=41687BE9-95BC-405B-BDC0-558BC77D5B0B

16. Richmond City Council, “Ordinance No. 2025-159,” July 2025, https://richmondva.legistar.com/View.ashx?M=F&ID=14554855&GUID=E7F6B747-1C5F-48DC-9E04-012A6CBBEA86
17. U.S. Pipeline and Hazardous Materials Safety Administration, “PHMSA FY2024 Natural Gas Distribution Infrastructure Safety and Modernization Grants,” October 2024, https://www.phmsa.dot.gov/news/phmsa-fy2024-natural-gas-distribution-infrastructure-safety-and-modernization-grants
18. Richmond Gas Works, “Natural Gas Availability Tool,” October 2025, https://cor.maps.arcgis.com/apps/webappviewer/index.html?id=32fb679315c0451e88f80402a4deb1a5
19. IPUMS, “IPUMS USA: Version 16.0 [dataset],” October 2025, https://doi.org/10.18128/D010.V16.0
20. Virginia State Corporation Commission, “Natural Gas Service Territories,” 2020, https://www.scc.virginia.gov/consumers/public-utility/natural-gas-faqs/natural-gas-companies-regulated-by-the-scc/
21. RMI, “The Economics of Electrifying Buildings: Residential New Construction,” December 2022, https://rmi.org/insight/the-economics-of-electrifying-buildings-residential-new-construction
22. Canary Media, “Heat pumps outsold gas furnaces by their biggest-ever margin in 2024,” February 2025, https://www.canarymedia.com/articles/heat-pumps/heat-pumps-keep-widening-their-lead-on-gas-furnaces
23. U.S. Department of Energy, “Low-Income Energy Affordability Data Tool,” October 2025, https://www.energy.gov/scep/slsc/lead-tool
24. CBS 6 News Richmond, “Chesterfield County approves major zoning overhaul after 6-year community process,” September 2025, https://www.wtvr.com/news/local-news/chesterfield-rezoning-meeting-sept-18-2025
25. City of Richmond, “Code Refresh,” October 2025, https://rva.gov/planning-development-review/code-refresh
26. Henrico County, “Review Draft | Chapter 2 - Henrico County 2045 Comprehensive Plan,” 2025, https://www.henriconext.us/copy-of-resources-1
27. Supreme Court of the United States, “Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia,” 262 U.S. 679, 1923, https://www.loc.gov/item/usrep262679/
28. City of Richmond Public Utilities and Services Commission, “Meeting Minutes,” September 18, 2025
29. U.S. Department of Energy, “Furnaces and Boilers,” Accessed October 2025, https://www.energy.gov/energysaver/furnaces-and-boilers
30. U.S. Department of Energy Office of Energy Efficiency and Renewable Energy, “Codes 101,” Accessed October 2025, https://www.energycodes.gov/codes-101
31. City of Richmond, “Fiscal Year 2026 Adopted Annual Fiscal Plan,” July 2025, https://www.rva.gov/sites/default/files/2025-07/2026%20Adopted%20Annual%20Fiscal%20Plan%20Web%20Version.pdf
32. Massachusetts Department of Public Utilities, “Interlocutory Order on Policies and Practices for Line Extension Allowances and Contributions in Aid of Construction for Gas Local Distribution Companies,” D.P.U 20-80-E, August 8, 2025,

https://fileservice.eea.comacloud.net/V3.1.0/FileService.Api/file/aeeihejhj?uRXzsILsjxK5GZlirOGyh/Qhs/2b91Ji2Ak1vuq3aS6PcSxI+blU344Khxm+qpOeg0hKFj9M9l/xQR8+/8GqPvdGgrFe6XR6ngIfa80wd3rxFD8G4j981M2Rna9aVTXA
33. Washington State Legislature, “Supporting Washington's clean energy economy and transitioning to a clean, affordable, and reliable energy future,” H.B. 1589, March 2024, https://lawfilesext.leg.wa.gov/biennium/2023-24/Pdf/Bills/Session%20Laws/House/1589-S.SL.pdf#page=1
34. Washington Utilities and Transportation Commission, “State regulators approve new rates for Cascade Natural Gas,” February 2025, https://www.utc.wa.gov/news/2025/state-regulators-approve-new-rates-cascade-natural-gas
35. Public Utility Commission of Oregon, “Order No. 23-384”, October 2023, https://apps.puc.state.or.us/orders/2023ords/23-384.pdf
36. Public Utility Commission of Oregon, “Order No. 24-359”, October 2024, https://apps.puc.state.or.us/orders/2024ords/24-359.pdf
37. Colorado General Assembly, “An Act Concerning the Public Utilities Commission’s Regulation of Energy Utilities, and, in Connection Therewith, Making an Appropriation,” SB23-291, https://leg.colorado.gov/sites/default/files/2023a_291_signed.pdf
38. California Public Utilities Commission, “Order Instituting Rulemaking Regarding Building Decarbonization,” Decision 22-09-026, September 2022, https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M496/K987/496987290.PDF
39. Maryland Public Service Commission, “Maryland PSC Orders Revisions to Gas System Connection Policies,” June 2025, https://www.psc.state.md.us/wp-content/uploads/MD-PSC-Orders-Changes-to-Gas-Connection-Policies_06132025.pdf
40. Minnesota Public Utilities Commission, “In the Matter of a Commission Evaluation of Changes to Natural Gas Utility Regulatory and Policy Structures To Meet State Greenhouse Gas Reduction Goals,” Docket No. G999/CI-21-565, June 2025, https://efiling.web.commerce.state.mn.us/documents/%7B60E2EB97-0000-C717-AA9B-F620C46786CE%7D/download?contentSequence=0&rowIndex=27
41. The New York State Senate, “Relates to the provision of gas service to new customers,” Assembly Bill A8888, June 2025, https://www.nysenate.gov/legislation/bills/2025/A8888
42. Maryland Office of People’s Council, “Public Service Commission Order No. 91683: Estimated savings from the PSC's new policy eliminating ratepayer subsidies for new-customer gas lines,” July 2025, https://opc.maryland.gov/Portals/0/Files/Publications/Final_MD%20Line%20Extension%20Policy%20Changes_252%20PM_7.1.2025.pdf?ver=kBgOCB9k00NM3-EIu1sUtA%3d%3d
43. H2O Pro, “How Much Does It Cost to Install A Gas Line In Virginia?” June 2025, https://h2oprofessionalservices.com/how-much-does-it-cost-to-install-a-gas-line/#:~:text=%231%20Length%20Of%20The%20Gas,line%2C%20or%20starting%20from%20scratch
44. Michael & Son, “Gas Line Installation in Richmond, VA,” Accessed October 2025, https://michaelandson.com/richmond/plumbing/gas-line-installation#:~:text=How%20much%20does%20it%20cost%20to%20have,price%20range:%20Low%20$975.%20Our%20Average%20$1%2C800

45. Robinson's Plumbing Service, "Gas Line Installation Costs [Propane & Natural]" September 2025, https://www.robinsonsplumbingservice.com/how-much-does-it-cost-to-install-a-new-gas-line/
46. Massachusetts Department of Public Utilities, "Order on Regulatory Principles and Framework," D.P.U 20-80-B, December 6, 2023, https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/18297602
47. Dorie Seavey, PHD, "Philadelphia's Gas Pipe Replacement Plan: How much will it cost and does it make sense?" March 2023, https://uploads-ssl.webflow.com/649aeb5aaa8188e00cea66bb/64ed1923d85ca415b290215e_Report_PGW-pipeline-replacement-costs.pdf
48. California Public Utilities Commission, "Decision Adopting Gas Infrastructure General Order," Rulemaking 20-01-007, November 30, 2022, https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M499/K396/499396103.PDF
49. Colorado Public Utilities Commission, "Commission Decision Adopting Rules," Proceeding No. 21R-0449G, December 1, 2022, https://www.dora.state.co.us/pls/efi/EFI_Search_UI.Show_Decision?p_session_id=&p_dec=29605
50. RMI and National Grid, "Non-Pipeline Alternatives: Emerging Opportunities in Planning for U.S. Gas System Decarbonization," May 2024, https://www.nationalgridus.com/media/pdfs/other/CM9904-RMI_NG-May-2024.pdf
51. Synapse Energy Economics, Inc., "Minnesota Building Decarbonization Analysis," June 2024, https://www.synapse-energy.com/sites/default/files/MN%20Decarbonization%20Report_June%202024%2023-074.pdf