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RE: Comments Opposing Proposed Regulation to Withdraw Virginia from the Regional Greenhouse Gas Initiative ("RGGI");

9 VAC 5-140. Regulation for Emissions Trading Programs (adding 9VAC5-140-6445; repealing 9 VAC 5-140-6010 through 9VAC5-140-6440).

The Virginia Clinicians for Climate Action ("Virginia Clinicians"), by counsel, respectfully submits these comments in opposition to the proposed action, "Repeal CO2 Budget Trading Program as required by Executive Order 9 (Revision A2)," which purports to repeal Part VII of 9 Va. Admin. Code § 5-140, also known as Virginia's Emissions Reduction Program or the CO2 Budget Trading Program.

Founded in 2017, Virginia Clinicians aims to bring the health voice to climate change advocacy in the state of Virginia.¹ Virginia Clinicians' nearly 500 medical professionals and allies are concerned about climate change and the worsening health impacts of increasing greenhouse gas pollution.² By emphasizing the need for climate solutions, Virginia Clinicians' advocacy seeks to protect patients, their families, and their communities from the public and environmental health impacts of climate change.

Virginia Clinicians urges the State Air Pollution Control Board ("Air Board") and the Virginia Department of Environmental Quality ("DEQ") to reject the proposed regulations and support Virginia's ongoing participation in the Regional Greenhouse Gas Initiative ("RGGI"), which has already provided tangible benefits to improve public health in the Commonwealth. In Virginia, RGGI has proven to be a vital source of funds to address the Social Determinants of Health.

¹ *About Us*, VA. CLINICIANS FOR CLIMATE ACTION, <https://www.virginiaclinicians.org/about> (last visited Mar. 15, 2023).

² *Id.*

A large body of literature suggests that factors separate from medical care and biological well-being—called “Social Determinants of Health”—can play a strong role in shaping an individual’s health.³ Social Determinants of Health are “the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.”⁴ Often, Social Determinants of Health are grouped into five broad categories: economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context.⁵ Examples of common Social Determinants of Health include safe housing, income, job opportunity, pollution levels, and access to nutritious foods.

In these comments, Virginia Clinicians highlights **(1)** the adverse and immediate impacts of climate change on the health of Virginians; **(2)** the public health benefits that RGGI has helped to deliver thus far; and **(3)** the importance of RGGI-funded programs—including efforts to weatherize low-income homes, construct efficient affordable housing, and increase flood resilience—to address key Social Determinants of Health.

Executive Order 9 (“EO 9”), the directive on which this proposed repeal is premised, asserts that RGGI operates as a “burden on the Commonwealth’s households and businesses.” See Exec. Order No. 9, *Protecting Ratepayers from the Rising Cost of Living Due to the Regional Greenhouse Gas Initiative* (2022). Virginia Clinicians strenuously disagrees. To the contrary, RGGI has already succeeded in reducing harmful emissions and providing critical funding to address the Social Determinants of Health among the state’s most overburdened communities. Climate change poses an imminent threat to the health of Virginians, and RGGI helps equip Virginia communities with the resources needed to cope with these dangers.

I. Climate Change Adversely Impacts the Health of Virginians

The medical literature has documented that climate change is contributing to a range of adverse health impacts in Virginia. From heat-related illnesses and injuries from flooding to the increased spread of infectious diseases, Virginians today are experiencing direct and concrete effects from a changing climate. Further, the scientific literature has unquestionably established the connection between fossil fuel consumption and climate change.⁶ Together, the peer-reviewed, scientific and medical literature reveal that the public health impacts of human-induced climate change are here and being experienced by Virginians now.

³ See generally Paula Braveman & Laura Gottlieb, *The Social Determinants of Health: It’s Time to Consider the Causes of the Causes*, 129 PUB. HEALTH REP. 19, 27 (2014) (“The consistency and reproducibility of strong associations between social (including socioeconomic) factors [e.g., income, wealth, and education] and a multitude of health outcomes in diverse settings and populations have been well documented....”).

⁴ *Social Determinants of Health*, U.S. DEP’T OF HEALTH & HUM. SERVS., <https://health.gov/healthypeople/priority-areas/social-determinants-health> (last accessed Mar. 15, 2023).

⁵ *Id.*

⁶ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SYNTHESIS REPORT OF THE IPCC SIXTH ASSESSMENT REPORT (AR6): SUMMARY FOR POLICYMAKERS 4 (2023) (“Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020.”).

A. Heat Waves and Heat Related Illnesses

The scientific evidence documents that the impacts of climate change are here. Since the beginning of the twentieth century, temperatures in Virginia have risen more than 0.8 degrees Celsius (°C), and average temperatures in the state are predicted to reach historic highs by the middle of the twenty-first century.⁷ As warming continues, extreme heat events are already exacerbating adverse health outcomes for Virginians. Longer and more intense heat waves increase the number of patients presenting with heat-related illnesses, including heat cramps, heatstroke, heat exhaustion, kidney-associated diseases, and asthma.⁸ These effects are especially likely in vulnerable populations such as children, outdoor workers, and the elderly.⁹ In the United States, “heat waves kill more people than any other weather-related disaster,” with children and babies at the greatest increased risk of mortality.¹⁰ Low-income households also face heightened risks because their homes tend to be concentrated in city neighborhoods with a high density of buildings and heat-absorbing surfaces, and they may further lack access to cooling centers and air conditioning.¹¹ A study of Richmond, Virginia has highlighted the health impacts of “heat islands,” which are exacerbated by global warming.¹²

B. The Health Effects of Flooding

In Virginia, climate change has also increased the frequency of extreme precipitation events.¹³ These incidents of heavy rainfall, combined with sea level rise, lead to a higher likelihood of coastal and inland flooding events.¹⁴ More frequent and intense flooding endangers the health of coastal Virginia communities.

Recurrent flooding and storm events, for example, have caused water damage to residential properties, which has led to mold growth as waters recede.¹⁵ Exposure to mold and

⁷ Jennifer Runkle et al., *State Climate Summary 2022: Virginia*, NOAA NAT’L CTRS. FOR ENV’T INFO 1, 1–3 (2022), <https://statesummaries.ncics.org/downloads/Virginia-StateClimateSummary2022.pdf>.

⁸ See generally Mary L. Williams, *Global Warming, Heat-Related Illnesses, and the Dermatologist*, 7 INT’L J. WOMEN’S DERMATOLOGY 70 (2021). See also Daniel Helldén et al., *Climate Change and Child Health: A Scoping Review and an Expanded Conceptual Framework*, 5 LANCET PLANETARY HEALTH 164, 166 (2021); Courtney W. Mangus & Therese L. Canares, *Heat-Related Illness in Children in an Era of Extreme Temperatures*, 409 PEDIATRICS REV. 97, 98 (2019).

⁹ *Id.*

¹⁰ See MARGARETHA BARKHOF ET AL., THE COLDEST YEAR OF THE REST OF THEIR LIVES, UNITED NATIONS CHILDREN’S FUND 14 (2022), <https://www.unicef.org/reports/coldest-year-rest-of-their-lives-children-heatwaves>.

¹¹ Mohammad Reza Alizadeh et al., *Increasing Heat-Stress Inequality in a Warming Climate*, 10 EARTH’S FUTURE 1, 8 (2022).

¹² See Brad Plumer & Nadja Popovich, *How Decades of Racist Housing Policy Left Neighborhoods Sweltering*, N.Y. TIMES (Aug. 24, 2020), <https://www.nytimes.com/interactive/2020/08/24/climate/racism-redlining-cities-global-warming.html>.

¹³ JONATHAN L. GOODALL ET AL., THE IMPACT OF CLIMATE CHANGE ON VIRGINIA’S COASTAL AREAS, at vi, 4 (2021). See also Runkle et al., *supra* note 7, at 2–4.

¹⁴ GOODALL ET AL., *supra* note 13 at 14; DAVE REIDMILLER ET AL., U.S. GLOB. CHANGE RSCH. PROGRAM, SOUTHEAST: IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES: FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME II (2018).

¹⁵ See Kellogg J. Schwab, et al., *Microbial and Chemical Assessment of Regions within New Orleans, LA Impacted by Hurricane Katrina*, 41 ENV’T SCI. & TECH. 2401, 2405 (2007); Shi-Zhou Deng et al., *Climate Change, Air*

mycotoxins risks nose and throat irritation, immune suppression, and respiratory problems like asthma.¹⁶ Moreover, the aftermath of flood-related property damage often leads to costly home repairs or even the loss of a family home, which may result in mental health problems including depression and anxiety.¹⁷

An increase in flooding events linked to climate change also risks harming infrastructure. In some cases, floods may cause failures of drinking water systems and wastewater treatment facilities.¹⁸ When heavy precipitation results in sewer overflow, untreated sewage and other contaminants are dumped into rivers and lakes, causing waterborne illnesses such as *salmonellosis*, *shigellosis*, *Escherichia coli*, and *Campylobacter* infection.¹⁹ These threats are especially acute for communities like Richmond, which still use combined sewer systems.²⁰ Additionally, frequent flooding can block off or damage roads, making evacuation more dangerous and disrupting emergency health services like ambulances.²¹

C. Increased Exposure to Environmental Hazards

Even in the absence of extreme weather, climate change magnifies the daily hazards posed to Virginians. For example, rising temperatures lead to increased pollen counts and earlier, more severe allergy seasons.²² Research published in the Proceedings of the National Academy of Sciences has shown that longer pollen seasons and greater pollen concentrations have major consequences for respiratory health, including increased allergies, asthma, viral infections, and emergency room visits.²³ Further, warming temperatures linked to climate change are contributing to tick-range expansion and increased transmission of tick-borne illnesses in Virginia.²⁴ The Virginia Department of Health has reported rising rates of Lyme

Pollution, and Allergic Respiratory Diseases: A Call to Action for Health Professionals, 133 CHINESE MED. J. 1552, 1554 (2020).

¹⁶ Deborah N. Barbeau et al., *Mold Exposure and Health Effects Following Hurricanes Katrina and Rita*, 31 ANN. REV. PUB. HEALTH 165, 168 (2010).

¹⁷ Carla Stanke et al., *The Effects of Flooding on Mental Health: Outcomes and Recommendations from a Review of the Literature*, PLOS CURRENTS DISASTERS 2, 13 (2012).

¹⁸ Hayley T. Olds et al., *High Levels of Sewage Contamination Released from Urban Areas After Storm Events: A Quantitative Survey with Sewage Specific Bacterial Indicators*, 15 PLOS MED. 1, 13–15 (2018).

¹⁹ *Id.* at 16; see also G. Brooke Anderson, et al., *Projecting the Impacts of a Changing Climate: Tropical Cyclones and Flooding*, 9 ENV'T DISASTERS 244, 247 (2022).

²⁰ Gabriella Balasa et al., *Diversity of Multidrug-Resistant Bacteria in an Urbanized River: A Case Study of the Potential Risks from Combined Sewage Overflows* 15 WATER 2122, 2123 (2021) (explaining the prevalence of water contamination in communities with combined sewer systems using Richmond's James River as a case study).

²¹ Maria Luskova & Bohus Leitner, *Methodology for Measuring Social Vulnerability Due to Failure of Critical Land Transport Infrastructure Elements*, 1 INT'L J. OPERATIONS MGMT. 19, 20–22 (2020).

²² William R. Anderegg, *Anthropogenic Climate Change is Worsening North American Pollen Seasons*, 118 PNAS 1–2 (2021).

²³ *Id.*

²⁴ Rebecca J. Eisen et al., *Linkages of Weather and Climate with Ixodes scapularis and Ixodes pacificus (Acari: Ixodidae) in the Continental United States*, 53 J. MED. ENTOMOLOGY 349, 351 tbl.1 (2016) (reporting that in 1996 ticks were reported or established in twelve Virginia counties, whereas in 2015 ticks were reported or established in seventy-two counties). See also generally Dorothy Wallace et al., *Effect of Rising Temperature on Lyme Disease: Ixodes scapularis Population Dynamics and Borrelia burgdorferi Transmission and Prevalence*, CANADIAN J. INFECTIOUS DISEASES & MED. MICROBIOLOGY (2019); Daniel E. Sonenshine, *Range Expansion of Tick*

disease and other tick-borne illnesses in recent years, with the expectation that the problem will persist.²⁵ Finally, rising temperatures also increase concentrations of *Vibrio vulnificus* bacteria in Virginia waters, potentially causing nausea, vomiting, and skin infections among consumers of Virginia's fish and shellfish.²⁶

D. Respiratory Impacts of Fossil Fuels

In addition to the immediate effects of climate change, air pollution from fossil fuel combustion, the underlying *cause* of climate change, also directly harms the health of Virginia communities. Burning fossil fuels releases air pollutants such as particulate matter (including PM₁₀ and PM_{2.5}), nitrogen oxides, and ozone. As Virginia DEQ is well-aware, these criteria air pollutants have been strongly linked to increased incidences of asthma and cardiovascular disease, reduced lung function, and a greater number of overall hospitalizations.²⁷ These respiratory impacts are particularly serious for sensitive groups like children,²⁸ senior citizens, environmental justice communities, communities of color, and those with preexisting medical conditions.²⁹

E. RGGI Has Already Benefited Health Outcomes in Virginia

Reducing carbon emissions in order to reduce climate change impacts is imperative to protecting public health. Since its inception in 2009, RGGI has effectively reduced greenhouse gas pollution from electricity generating facilities. States participating in the RGGI program have reduced their power plant carbon emissions by nearly 50 percent, outpacing the rest of the country by 22 percent.³⁰ After remaining constant over the last decade,³¹ power plant emissions in Virginia have consistently decreased in the first two years of RGGI participation—by 12.5 percent between 2020 and 2021 and by nearly 8 percent between 2021 and 2022.³²

Disease Vectors in North America: Implications for Spread of Tick-Borne Disease, 15 INT'L J. ENV'T RSCH. & PUB. HEALTH 478 (2018).

²⁵ *Lyme Disease and Other Tickborne Illnesses are Increasing*, VA. DEP'T HEALTH (Aug. 22, 2019), <https://www.vdh.virginia.gov/news/archived-news-releases/2019-regional-news-releases/lyme-disease-and-other-tickborne-illnesses-are-increasing/>.

²⁶ GOODALL ET AL., *supra* note 13, at 18. This is particularly a problem for Virginia's oyster industry.

²⁷ Aaron S. Bernstein & Mary B. Rice, *Lungs in a Warming World Climate Change and Respiratory Health*, 143 CHEST 1455, 1456 (2013).

²⁸ Caroline J. Smith, *Pediatric Thermoregulation: Considerations in the Face of Global Climate Change*, 11 NUTRIENTS 1, 12 (2019) (indicating that children are increasingly vulnerable to fossil fuel-related health impacts as they have "immature immune responses, small lung volumes, higher respiratory rates, tendency for mouth breathing, and longer time periods spent outside.").

²⁹ See *Health Impact of Air Pollution*, AMERICAN LUNG ASS'N (2022), <https://www.lung.org/research/sota/health-risks>.

³⁰ ACADIA CTR., *THE REGIONAL GREENHOUSE GAS INITIATIVE: 10 YEARS IN REVIEW 1* (2022).

³¹ See *VIRGINIA CARBON TRADING RULE AND REGIONAL GREENHOUSE GAS INITIATIVE (RGGI) PARTICIPATION: COSTS AND BENEFITS*, VA. DEP'T OF ENV'T QUALITY 10, 14 (2022), <https://www.deq.virginia.gov/home/showpublisheddocument/13813/637829669069026180>.

³² *EPA's Clean Markets Air Program Data*, U.S. ENV'T PROT. AGENCY, <https://campd.epa.gov/data/custom-data-download> (last visited, Mar. 15, 2023).

Decreased emissions result in a range of avoided health effects, with researchers having already begun quantifying the health-related benefits delivered by RGGI.³³ One study estimated that in just six years, participating states realized at least \$5.7 billion in health benefits from reduced emissions, including the avoidance of 39,000 lost work/school days, a reduction of over 8,200 asthma attacks, and the avoidance of 300–830 excess deaths.³⁴

II. RGGI Funding Programs Effectively Safeguard Against Detrimental Climate Impacts by Addressing Critical Social Determinants of Health

Alongside the health benefits of climate change mitigation and reduced criteria air pollutants, RGGI-funded programs also help address the direct effects of climate change on public health. By funding programs that support safe, affordable housing and lower electricity costs, RGGI is improving key Social Determinants of Health for the most vulnerable Virginians.

When allowances are sold at RGGI auctions, states earn significant revenues from those sales, all while providing a free market-oriented economic incentive to reduce harmful emissions of greenhouse gas pollution. To date, Virginia has participated in seven RGGI auctions and has gained over \$452 million in revenue through the sale of 40 million allowances.³⁵

Virtually all of these funds support communities identified for protection in the Virginia Environmental Justice Act.³⁶ The 2020 Clean Energy and Community Flood Preparedness Act (“Act”)—the very statute that mandated Virginia’s participation in RGGI—also determined where RGGI-derived funds would be allocated. *See* VA. CODE ANN. § 10.1-1330(C). The Act requires 50 percent of Virginia’s RGGI proceeds to be directed to low-income energy efficiency programs and 45 percent to the Virginia Community Flood Preparedness Fund. *Id.* That is, the majority of RGGI revenues are being used to respond to critical needs of Virginians—helping low-income households to weatherize their homes and reduce their energy bills. RGGI’s efforts to improve housing conditions and reduce electricity bills through investments in energy-efficient measures undeniably tackles important Social Determinants of Health and advances health outcomes in the Commonwealth.

³³ *See, e.g.,* Frederica Perrera et al., *Co-Benefits to Children’s Health of the U.S. Regional Greenhouse Gas Initiative*, 128 ENV’T HEALTH PERSPECTIVES 1; ABT ASSOCS., ANALYSIS OF THE PUBLIC HEALTH IMPACTS OF THE REGIONAL GREENHOUSE GAS INITIATIVE, 2009–2014 (2017).

³⁴ ABT ASSOCS., ANALYSIS OF THE PUBLIC HEALTH IMPACTS OF THE REGIONAL GREENHOUSE GAS INITIATIVE, 2009–2014 1–2 (2017).

³⁵ *Auction 57: State Proceeds and Allowances*, RGGI, INC. (2023), https://www.rggi.org/sites/default/files/Uploads/Auction-Materials/57/Auction_57_State_Proceeds_and-Allowances.pdf.

³⁶ *See* VA. CODE §§ 2.2-234, 235 (promoting environmental justice efforts in the Commonwealth with a focus on environmental justice communities [defined as “any low-income community or community of color”] and fenceline communities).

A. Low-Income Energy Efficiency Programs Funded by RGGI Help Improve Housing Conditions and Provide Economic Security

Under the Act, the General Assembly allocated 50 percent of RGGI funds to support energy efficient housing investments under the Housing Innovations in Energy Efficiency (“HIEE”) Program. *See* VA. CODE ANN. § 10.1-1330(C)(2). The HIEE Program divides those funds between two primary initiatives: the Weatherization Deferral Repair Program and the Affordable and Special Needs Housing Program, each of which addresses two concerns tied to the Social Determinants of Health: housing conditions and economic security.

1. *The Weatherization Deferral Repair Program (“WDR”)*

The Weatherization Deferral Repair Program (“WDR”), which is entirely funded by RGGI proceeds, serves as a vital source of funding for low-income households that are not covered by the federal Weatherization Assistance Program.³⁷ The federal program is a longstanding effort focused on assisting low-income Americans with upgrades to reduce their utility bills. However, about one-fifth of qualifying households are left out of the program as a result of a deferral provision.³⁸ Where a dwelling has roof leaks, biological contaminants such as mold, unsafe HVAC units, issues with moisture, or electrical/plumbing issues, that household is “deferred” from receiving federal funding for weatherization until repairs are made.³⁹ But many of these low-income homes never receive necessary repairs and, in turn, remain perpetually ineligible for weatherization. Virginia’s WDR Program thus closes a substantial gap in the federal weatherization program—thanks to the availability of RGGI funds. Under the state WDR Program, after needed repairs are made and the home is “weatherization-ready,” clients can then receive energy efficiency and weatherization services such as insulation, air sealing, energy efficient light bulbs, and carbon monoxide detectors.⁴⁰

These types of low-cost weatherization and repair programs—which rely on funding by RGGI—help protect the most overburdened families from rising heat and precipitation exposure associated with climate change. Inadequate and inefficient housing conditions such as cracked walls or improperly sealed windows create difficulties in regulating home temperatures and subsequently expose residents to the health risks associated with severe weather.⁴¹ Adding insulation and sealing air leaks in homes protects low-income Virginians from the health hazards of extreme heat waves and cold blasts.

³⁷ VIRGINIA DEP’T OF HOUSING AND COMM. DEV., VA. WEATHERIZATION DEFERRAL REPAIR PROGRAM GUIDELINES: 2021–2022 3 (2021) (hereinafter “WDR Guidelines”).

³⁸ Chase Counts, *Utilizing Virginia RGGI Revenue to Support Existing Low-Income Energy Efficiency Programs*, CMTY. HOUS. PARTNERS, (Dec. 11, 2020), archived at <https://perma.cc/PB3C-VSHW/>.

³⁹ WDR Guidelines, *supra* note 37, at 6–7.

⁴⁰ *Weatherization Deferral Repair Program*, VA. DEP’T OF HOUS. & CMTY. DEV., <https://www.dhcd.virginia.gov/wdr> (last visited Mar. 15, 2023).

⁴¹ Diana Hernández, *Understanding ‘Energy Security’ and Why it Matters to Health*, 167 SOC. SCI. & MED. 1, 12 (2016) (“[E]nergy insecurity encompasses inadequate housing conditions such as drafts from windows/doors and holes/cracks in the walls, floors or ceilings that induce energy inefficiencies and reduce “tightness” in the home.”).

Contrary to EO 9’s suggestion that RGGI is a “financial burden,” *see* Exec. Order No. 9, *Protecting Ratepayers from the Rising Cost of Living Due to the Regional Greenhouse Gas Initiative* (2022), a recent study estimates that RGGI-funded low-income energy efficiency programs produce over \$676 in customer bill *savings* per household per year.⁴² Currently, there are over 160,000 Virginians that are disproportionately exposed to extreme heat—and that situation is anticipated to worsen.⁴³ By 2050, Virginia is projected to experience six times as many heat-wave days per year as compared to current conditions.⁴⁴ The RGGI-funded WDR Program helps qualifying families lower their electricity bills and stay safe during these increasing periods of dangerous heat.⁴⁵

2. *The Affordable and Special Needs Housing Program (“ASNH”)*

The second low-income energy efficiency program funded by RGGI, the Affordable and Special Needs Housing Program (“ASNH”), directs the Department of Housing and Community Development to fund highly efficient affordable housing units. ASNH funds “assist affordable housing project development teams in completing energy efficiency upgrades that would not have been feasible otherwise.” *See* VA. DEP’T OF HOUSING & CMTY. DEV., *AFFORDABLE AND SPECIAL NEEDS HOUSING: CONSOLIDATED APPLICATION PROGRAM GUIDELINES: 2021-2022* 6 (2021). Thus far, the Department of Housing and Community Development has received over \$29 million from RGGI revenues—these resources have funded over 40 high-efficiency affordable housing projects and over 2,200 affordable housing units in counties across the Commonwealth.⁴⁶

The energy efficient housing opportunities made possible by Virginia’s participation in RGGI help confront the problem of energy insecurity in low-income Virginia communities. Households are identified to have a “high” energy burden if they spend more than 6 percent of their income on home energy/utility costs, or a “severe” energy burden if those costs exceed 10 percent of their income.⁴⁷ In Virginia, the average low-income household spends 7 percent of their income on those energy costs, while extremely low-income households spend 17 percent.⁴⁸ (On average, all Virginia families spend about 2 percent of their income on utilities.⁴⁹) Because over 579,000 low-income Virginia households live in census tracts with a high or severe energy burden,⁵⁰ poor Virginia families are increasingly devoting substantial portions of their income to their electricity bills.

⁴² DAMIAN PITT ET AL., VA. COMMONWEALTH UNIV., *INVESTING IN VIRGINIA THROUGH ENERGY EFFICIENCY: AN ANALYSIS OF THE IMPACTS OF RGGI AND THE HIEE PROGRAM* 37 (2023).

⁴³ *America’s Preparedness Scorecard: Virginia*, STATES AT RISK (2015), <https://reportcard.statesatrisk.org/report-card/virginia/extreme-heat-grade>.

⁴⁴ *Id.*

⁴⁵ *See supra*, Section I, Part A (discussing the health effects of heat waves in Virginia).

⁴⁶ *Affordable & Special Needs Housing (ASNH) Funds by Locality*, VA. ENERGY EFFICIENCY COUNCIL (Jan. 10, 2023), <https://vaeec.org/wp-content/uploads/2023/01/ASNH-Map-1.13.23.pdf>.

⁴⁷ PITT ET AL., *supra* note 42, at 23.

⁴⁸ *Id.* at 2.

⁴⁹ *Id.*

⁵⁰ *Id.* at 23.

Indeed, families facing energy insecurity will sacrifice comfort and safety in response to high energy costs. This phenomenon is known as “behavioral energy insecurity”⁵¹ and helps explain why addressing the Social Determinants of Health is so important. During periods of extreme heat, low-income families simply cannot afford to turn the thermostat down. Access (or the lack of access) to potentially life-saving air conditioning underscores the socioeconomic factors that influence climate vulnerability.⁵² To the detriment of their well-being, under-resourced families also tend to compromise spending money on nutritious meals, health insurance, and medical expenses to meet the more immediate need posed by utility bills.⁵³

Through the ASNH Program, not only does RGGI reduce housing costs for already disadvantaged families, but it also provides these families with *efficient* housing units. As a result, fewer families face unjust energy burdens and less household income is funneled into housing and utilities costs. In turn, low-income families are able to dedicate a greater portion of their income to purchase needed medications and healthcare.⁵⁴ By addressing high housing and utility costs, RGGI revenue helps tackle another important Social Determinant of Health—economic insecurity.

B. Virginia Community Flood Preparedness Fund (“Flood Fund”)

Another 45 percent of RGGI funds are distributed to the Virginia Community Flood Preparedness Fund, or “Flood Fund,” “for the purpose of assisting localities and their residents affected by recurrent flooding, sea level rise, and flooding from severe weather events.” VA. CODE ANN. § 10.1-1330(C)(1). This program allows Virginia’s towns, cities and counties to apply for funds to implement “flood prevention and protection projects and studies in areas that are subject to recurrent flooding.” *Id.* § 10.1-603.25(E). Once a locality receives funding, the Department of Conservation and Recreation, charged with carrying out the Flood Fund, must ensure that “[n]o less than 25 percent of the moneys disbursed... [are targeted at] low-income geographic areas.” *Id.*

Notably, RGGI provides the *only* source of General Assembly funding allocated to flood resilience,⁵⁵ offering a critical means for local governments to fund some of their most important infrastructure resiliency projects. Thus far, Flood Fund grants have been employed to improve infrastructure in low-lying areas, implement nature-based solutions to increase stormwater capacity, build shoreline protection and floodwalls, and develop

⁵¹ Hernández, *supra* note 41, at 6 (defining behavioral energy insecurity as “strategies [such as using stoves and space heaters to heat homes] used to cope, improvise and counteract the impacts of economic and physical energy insecurity”).

⁵² Kazuhiko Ito, Kathryn Lane & Carolyn Olson, *Equitable Access to Air Conditioning: A City Health Department’s Perspective on Preventing Heat-Related Deaths*, 29 EPIDEMIOLOGY 749, 750–51 (2018).

⁵³ Tony G. Reames, Dorothy M. Daley & John C. Pierce, *Exploring the Nexus of Energy Burden, Social Capital, and Environmental Quality in Shaping Health in US Counties*, 18 INT’L J. ENV’T RSCH. & PUB. HEALTH 1, 3 (2021) (“More than 25 million US households reduce or forgo food or medicine in order to pay energy costs.”).

⁵⁴ *Id.* (establishing the relationship between a household’s energy burden and their medical expenses).

⁵⁵ Grace Tucker, *Virginia Must Stay in the Regional Greenhouse Gas Initiative to Successfully Address its Flood Crisis*, ENV’T DEF. FUND (Jan. 13, 2022), <https://blogs.edf.org/growingreturns/2022/01/13/virginia-greenhouse-gas-initiative-flood-crisis/>.

resilience planning. The majority of Flood Fund projects are located along Virginia’s coastline in the Greater Hampton Roads region: the cities of Norfolk, Suffolk, Virginia Beach, and Chesapeake.⁵⁶ Given the high flood risks and vast number of environmental justice communities in the region, the Flood Fund is quickly proving to be an essential resource for those most susceptible to climate-induced flooding.

Similar to other RGGI-funded programs, the Flood Fund also protects two important Social Determinants of Health in these high-risk communities—housing conditions and financial insecurity. First, flood mitigation projects reduce exposure to mold, waterborne bacteria, and other injuries and infectious diseases caused by damp conditions and stagnant floodwater in the home.⁵⁷ Second, Flood Fund interventions reduce the out-of-pocket expenses for low-income families who are continually paying for home repairs and reconstruction due to flooding damage. By lowering the recurring costs of flooding and making flood-prone homes more habitable, the Flood Fund addresses important indicators of health for at-risk Virginians.

C. RGGI Provides Critical Revenue That Exceeds All Other Sources of Funding

Climate change is here, and its impacts are being felt by Virginians now.⁵⁸ As the above discussion makes clear, Virginia’s participation in RGGI has emerged as a vital source of funding for the Commonwealth’s most high-risk communities.

Proponents of RGGI withdrawal have suggested that other funding sources might be able to replace RGGI as a revenue stream—but the data says otherwise. The estimated \$125 million annual revenue from RGGI for energy efficiency programs far exceeds the total funding otherwise available via existing state, federal, and utility programs in the Commonwealth.⁵⁹ Collectively, all of Virginia’s other low-income energy efficiency programs provide less than \$55 million each year.⁶⁰ In other words, RGGI funds provide more than double all other state funds combined to make low-income Virginia homes more livable, safe, and energy efficient.

Likewise, RGGI is currently the sole, dedicated source of revenue for statewide flood resilience.⁶¹ If left unchecked, flooding-related damages could cost Virginia over \$79 billion.⁶² Given the inevitable impacts of flooding in coastal Virginia, local governments and coastal communities are relying on long-term funding streams to develop resiliency plans.

⁵⁶ Nicole Duimstra, *Community Flood Preparedness Fund Projects*, VA. CONSERVATION NETWORK, (Jan. 10, 2022), <https://vcnva.org/cfpf-projects-virginia/> (mapping out the location of projects funded through the Flood Fund so far).

⁵⁷ See *supra* Section I, Part B (outlining the health effects of flooding).

⁵⁸ See *supra* Section I.

⁵⁹ PITT ET AL., *supra* note 42, at 37.

⁶⁰ *Id.*

⁶¹ Tucker, *supra* note 55.

⁶² Kaicey Baylor, *ODU Researchers Release New Flooding Costs Report for Virginia*, 13 NEWS NOW (Sept. 15, 2022), <https://www.13newsnow.com/article/money/economy/odu-researchers-new-flooding-costs-report/291-059df778-b823-42c3-bf20-72b73f7ffb45>.

Withdrawing from RGGI would leave many flood-prone communities without some of the most successful tools available to adapt to climate change.

III. Conclusion

Virginia's participation in RGGI is critical to funding efforts that protect public health in the state and help address the Social Determinants of Health. Virginia Clinicians for Climate Action thus urges both the State Air Pollution Control Board and the Virginia Department of Environmental Quality to reject efforts to remove the Commonwealth from participation in this remarkably successful, multi-state effort.

Respectfully submitted,



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