CLEAN AIR PRINCE GEORGES

PATUXENT RIVERKEEPER

Testimony of Henry S. Cole, Ph.D.
In Support of House Bill 531
Utility Regulation
Consideration of Climate and Labor
February 27, 2020

I write to strongly support House Bill 531 that would require the MD Public Service Commission (PSC) and state agencies to evaluate the impact of proposed energy-related projects on Greenhouse Gas Emissions and Climate Change. I would also recommend amendments that would bolster the bill's ability to fast-track the transition from fossil fuels to renewable energy sources—a transformation urgently needed to combat the accelerating climate crisis and to protect public health. Adding more fossil fuel plants, including gas-fired power plants will not only add large volumes of greenhouse gases (GHGs) but will also hinder the transition despite the rapidly advancing technologies and diminishing costs.

The Legislative Branch must act to rein in the Executive Branch's unabashed support for power generation based on fossil fuels. Case in point—"the Brandywine Sacrifice Zone". The PSC and the Maryland Department of the Environment (MDE) in the past few years have granted the necessary certificates and permits for three large power plants in the Brandywine area with utter disregard for the accelerating climate crisis and for the public health and well being of the residents of Southern Maryland. The latest travesty is PSC and MDE approval of the Mattawoman/Panda corporation's Mattawoman 990 MW gas-fired power plant. The company has received all necessary permits despite the plant's enormous emission of greenhouse gases (GHG) *but has yet to start construction*.

If the Mattawoman plant is built, it would be the fifth large fossil fuel power plant within 13 miles of Brandywine, an area that with an African-American majority. The PSC and MDE previously approved two additional mega-gas-fired power plants which are in operation: the Keys Energy Center in Brandywine and the Charles Energy Center about 8 miles away in Waldorf. Together these two plants will in combination emit 80-million tons of greenhouse gas emissions (GHG) over a minimum 20-year operational period. The Mattawoman Power Plant if built would add another 80-million tons of CHG.

The Administration's policies and decisions to expand the fracked gas power infrastructure are reprehensible. Either these Administration agencies are unaware of the accelerating climate crisis, are in denial, or have turned a blind eye to this existential threat.

Clean Air Prince George's, the Patuxent Riverkeeper, and the other organizations and individuals listed in Attachment 1 are strongly opposed to Mattawoman Power Plant. We have voiced are opposition numerous times in PSC hearings and in writing to MDE (Attachment 1). We are not only concerned with the plant's impact on the climate crisis, but on its impact on air quality, public health and the environment.

Strengthen the Bill: We encourage the Maryland House and Senate to pass the strongest possible bills to ensure that any applications involving fracked-gas installations receive highest level of scrutiny. I recommend several amendments that would ensure that:

- The PSC and applicable agencies determine the impact of any proposal, i.e. for a gas-fired power plant, *compressor station* and/or transmission pipelines on GHG emissions and their impact on climate. *Such analyses should be cumulative—that is include all proposed CHG emissions in combination with those of existing sources*. Such analyses should also examine the current effects of climate change and the future impacts based on the most recent national and international scientific studies.

- The current bill requires an analysis to determine the effect of a proposed facility would have on the transition to renewable energy sources required in previous legislation—will the facility deter the state's mandate to obtain 50% of its electrical energy from renewable sources by 2030—ten years from now. HB 531 and a similar Climate Test bill in the Senate should include a clear preference for renewable sources over new fossil fuel sources.

- Assessments should be fully open to the public and should involve a Citizens Oversight Committee, to ensure that assessments fully address the cumulative impacts of all proposed energy sources.

- **Finally, the Climate Test Bill should be amended to require reconsideration of any fossil fuel project that received a CPCN or MDE permit but for which actual, verifiable construction at the proposed site has not commenced. This would clearly apply to the pending Mattawoman Energy Center site in Brandywine.**

The climate crisis is not the only environmental concern. Each year the pending Mattawoman plant would emit hundreds of tons of pollutants including nitrogen dioxide (NO2), hydrocarbons, and carbon monoxide, and hazardous pollutants all of which adverse effects on residents, especially sensitive people including young children, senior citizens, and those with chronic respiratory and cardiovascular diseases. Even short-term exposures of these pollutants can send those with childhood asthma to the emergency room.

Maryland Department of Environment's (2015 PPRP) impact report states that the plant's 3-year construction would require hundreds of worker-trips on a daily basis. Construction will also require frequent transport of materials, equipment and supplies resulting in a large increase in the number of diesel trucks. The construction period traffic will greatly aggravate congestion and air pollution along the Brandywine Road corridor—which includes the Brandywine Elementary School (located about ½ mile from the power plant site). The area also includes a senior home, Community Support Systems, the Chapel of the Incarnation, and the County's brand-new swim and recreation center (SAARC).

In conclusion we urge the Maryland House and Senate to pass a Climate Test strengthened with the above stated amendments. The Hogan Administration envisions an energy future built on fracked natural gas piped into the state. It is up to the Legislature to ensure that decisions are made in the public interest—not to boost the profits of corporate utilities and their investors.

Attachment 1 (following pages) includes a letter written by organizations and individuals to MDE Secretary Ben Grumbles opposing the Mattawoman Power Plant.

Attachment 1:

CLEAN AIR PRINCE GEORGES

PATUXENT RIVERKEEPER

January 2, 2020

Mr. Ben Grumbles, Secretary Maryland Department of Environment
1800 Washington Blvd.
Baltimore, MD 21230
By email: mde.secretary@maryland.gov

RE: Secretary Grumbles response to Senator Miller's October 9 raising concerns over the impact of the Mattawoman Energy Center Impact on the Environment, Public Health and Climate

Dear Secretary Grumbles,

We the undersigned write to express our extreme disappointment in your November 22 response to Senator Thomas V. Mike Miller, Jr.'s October 9 letter of regarding the Mattawoman Energy Center. Your letter fails to address in a meaningful way a number of critical issues raised in Senator Miller's letter—issues of major concern to residents of the area. As Senator Miller's letter (Attachment 1) states, the plant's installation "still raises concerns surrounding its impacts" on climate change, renewable energy infrastructure, and the health impacts on citizens, "particularly to children and seniors with pre-existing conditions."

We therefore ask that MDE conduct a detailed review of the assessments used to issue environmental permits for the Mattawoman Energy Center and determine whether they are fully capable of protecting the environment and the public's health and wellbeing. Given the urgency of this matter we respectfully request that you meet with us *in person* at your earliest convenience.

The Brandywine Area Environmental Sacrifice Zone. As Senator Miller's letter notes, the Panda-Mattawoman Energy LLC facility would be the *fifth* fossil fuel power plant in the Brandywine area. The map in Fig. 1 shows the location of this unprecedented cluster, located within 13-miles of Brandywine. We refer to the area as a " sacrifice zone" because it has one of the densest concentrations of fossil fuel power plants in the nation—meaning that its residents must endure a disproportionate adverse impact of power plant emissions on their health and wellbeing.

Sadly, this area—with a predominantly African-American population—has been impacted by a host of adverse land uses including a coal ash landfill, a Superfund site, and numerous abandoned sand and gravel pits and rubble disposal sites—all which deteriorate the environment and property values.

Our concerns go well beyond air quality and the climate crisis. Brandywine is in the midst of a revitalization process to make the area more walkable, bikeable and livable. As the following sections make clear, the Mattawoman Energy Center would be detrimental to these critical goals.

Air Quality Impacts from Mattawoman Energy Center Operation*:* Unfortunately, your letter fails to respond to Senator Miller's request that MDE review "the impact this Power Plant will have on the environment and its impact on climate change…" over twenty or thirty years of operation. There is no such analysis that addresses any of these critical concerns. The Mattawoman plant would emit hundreds of tons of pollutants including nitrogen dioxide ($NO_{2)}$, hydrocarbons, and carbon monoxide, and hazardous pollutants all of which impact health; they also react in the atmosphere to form secondary pollutants including ozone, and ultrafine

particulates with additional health effects.

NO_2 is critical, because as EPA reports, exposure to NO_2 is known to cause and aggravate respiratory diseases and increase the frequency of childhood asthma especially among sensitive populations including children, elderly and those with chronic disease. The standard is for one-hour due to adverse impacts of short-term exposures.

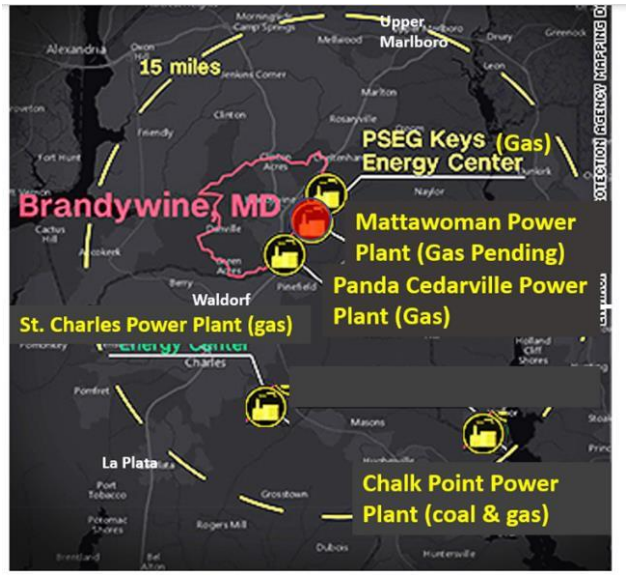


***Figure 1**: Cluster of existing and planned power plant within 15 miles of Brandywine, MD.*

According to the PPRP Environmental Review, the plant would emit 242 tons per year of NO_2. PPRP's air quality modeling predicts a maximum concentration of 180.2 µg/m^3 based on a maximum plant contribution of 128.2 µg/m3 and a background concentration of 52 µg/m^3. This result raises serious concerns because the result is only a few micrograms per cubic meter less than the 1-hour NO_2 NAAQS[1] of 188 µg/m^3.

The background concentration that PPRP used, 52 µg/m^3, was from a monitor located in Prince William County, Virginia some 70 km from Brandywine and 200 meters from the nearest artery. This monitor location clearly underestimates background conditions immediately adjacent to Brandywine Road where sensitive populations live, work and go to school and are subjected to emissions from frequently congested traffic with a heavy load of diesel trucks . (See Figure 2). Note that even a background concentration of 72 µg/m^3 would be sufficient to bring the total NO_2 concentration to 200 µg/m^3 in excess of the 1-hr NO_2 standard.[2]

Neither Mattawoman nor PPRP included local motor vehicles in the emissions used for the air quality modeling for the plant's operational period. This is a critical omission given the combined emissions of multiple power plants and expected increased traffic levels over the operational life time of the Mattawoman Energy Center. Moreover, motor vehicles and fossil fuel power plants emit NO_2 , hydrocarbons, and carbon monoxide, all of which contribute to the formation of ground-level ozone which, like NO_2, contributes to respiratory disease.

Noise pollution: In 2019, the Public Service Commission approved an amended CPCN that changes the cooling system from water-cooled to air-cooled. To our knowledge, MDE has not conducted an analysis to determine how this change may affect noise close to the power plant, a serious oversight given the proximity of homes to the site. Dry cooling generates greater noise levels due to the large size of the fans required.[3]

[1] An exceedance occurs when the 98th percentile of 1-hour daily maximum concentrations averaged over 3 years is greater than 188 µg/m^3

[2] Sum of max plant impact on 1-hr NO_2 concentration with more representative background conc. 128+72= 200 µg/m^3

[3] https://ww2.energy.ca.gov/sitingcases/palomar/documents/applicants_files/2002-11-14_ADV_DIS_DRY_WET.PDF

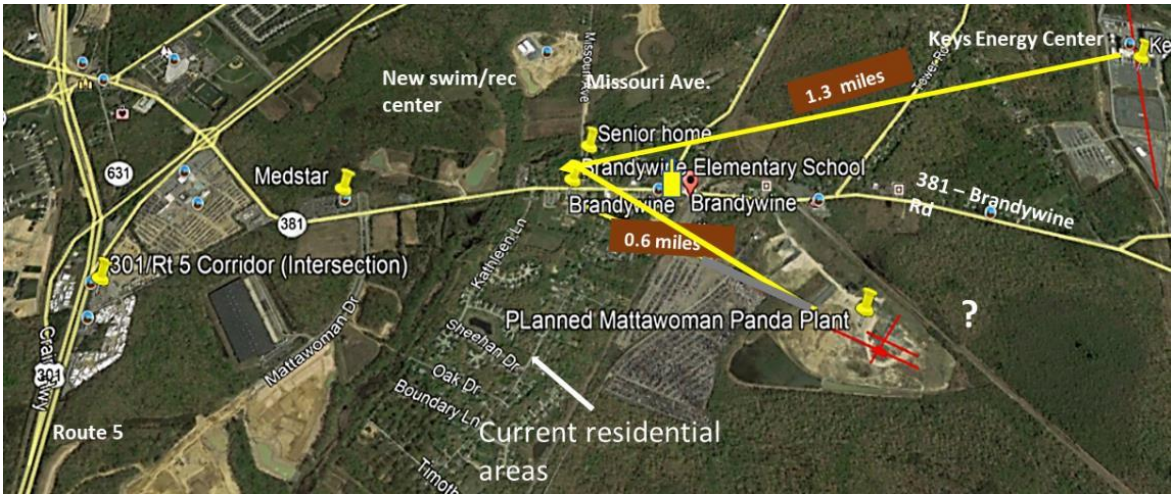


Figure 2: *Brandywine and facilities in relationship to the planned Mattawoman Power Plant and Keys Energy Center. Mattawoman Plan is 0.6 miles from the Brandywine Elementary School; the Keys Energy Center is about 1.3 miles from the school.*

Construction Period traffic: Neither your letter nor the Power Plant Research Program's (PPRP) Environmental Reviews (2015a[4], 2015b[5]) address the air quality impact stemming from greatly increased traffic during the plant's 3-year construction period. PPRP's 2015 report states that the plant's construction would require an average of 275 employees over a three-year period. During the peak construction period, up to 645 construction workers and other personnel would commute to and from the site.

Construction will also require frequent transport of materials, equipment and supplies resulting in a large increase in the number of diesel trucks. PPRP's 2015 report concedes that parts of Brandywine are already subject to traffic congestion. According to residents, there has been a noticeable increase in the number of heavy trucks on Brandywine Road (MD 381) over the past several years.

PPRP's environmental report acknowledges that, during the construction, intersections of MD 381 with Missouri Avenue and with the site's access driveway would operate at unacceptable levels of service during rush hour traffic. Further congestion is likely at the intersections of MD 381 with U.S. 301 and Rt 5, approximately 1 mile to the west.

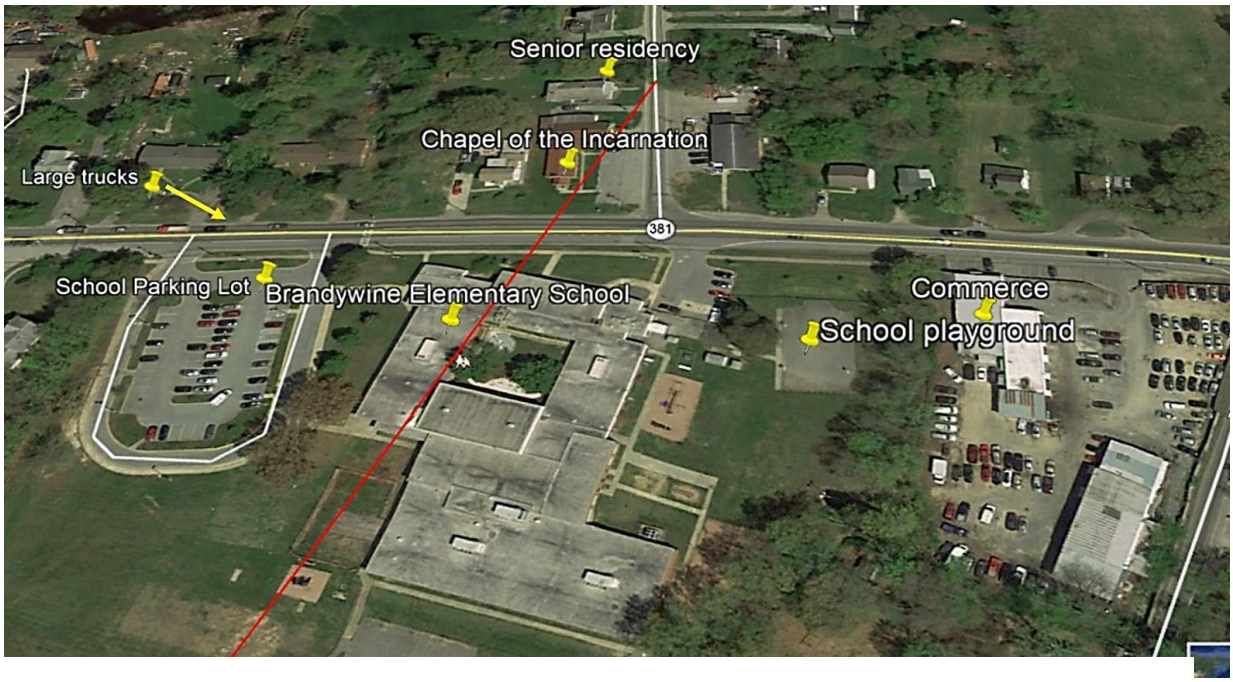
Given current levels of congestion there it is near certain that increased numbers of employee cars and numerous trucks will cause significant slow-downs, long backups, stop and go traffic—conditions that create maximum emission rates, pollutant concentrations and exposures.

As Figure 3 shows, facilities with sensitive populations are located along Brandywine Road (Rt. 381) including: Brandywine Elementary School, a housing facility for seniors, the Chapel of the Incarnation, Community Support Systems, a non-profit which provides, food, shelter and other assistance to residents in need. A large MedStar Health facility is also along Rt. 381, about a mile west of the power plant site.

The most vulnerable includes school children (4-12 years old), senior citizens and low-income residents—all sensitive to the impacts of air pollution emitted from motor vehicles and from power plants operating during the Mattawoman construction period. There are also safety concerns given that the Brandywine Elementary School and a senior home are located so close to currently congested intersection of Rt 381 and Missouri Avenue.

[4] PPRP, Environmental Review of the Proposed Mattawoman Energy Center Project, July 10, 2015

[5] Mattawoman.PSC9330.PPRP.Repsponse.toPublic.Comments.Air.10.9.2015.pdf - Adobe Acrobat Reader DC



We have observed dozens of passenger cars that line up along Brandywine Road every week-day morning and afternoon to drop off and pick up the elementary school students. We believe that the children will be vulnerable to harmful pollutant levels from increased traffic congestion and diesel emissions from trucks. We also note that students are likely to walk from the elementary school to use the new aquatic and recreation center (SAARC)[6] raising additional concerns about air pollution exposure and safety.

PPRP's 2015 response[7] to public comments on its Mattawoman Environmental Review[8] fails to consider the impact of increased congestion during the construction period. For example, there is no discussion of the impact of diesel exhaust (a human carcinogen according to the World Health Organization). Clearly the exhausts containing ultrafine particulates in combination with NO_2 emissions from vehicles (as well as existing power plants) will have an adverse impact on the sensitive populations located adjacent to Brandywine Road (MD 381) as discussed above. The following excerpt is from a journal article written by U.S. EPA and NOAA scientists.

> *"Mobile sources are ubiquitous and major contributors to U.S. air pollution emission inventories for criteria and air toxic pollutants. A growing number of health studies have linked an increased occurrence of adverse health effects with proximity to heavily traveled roadways. These health studies have focused on populations living, working, or going to school in the first several hundred meters of the road, where emissions from motor vehicles may not yet be fully diluted with background air." [9] (emphasis added).*

Increased traffic levels during the construction period will also increase noise levels to which residents, students, and workers will be subjected.

[6] South Area Aquatic and Recreation Center, located about 1700 feet north of Brandywine Elementary School along Missouri Avenue.

[7] Mattawoman.PSC9330.PPRP.Repsponse.toPublic.Comments.Air.10.9.2015.pdf -

[8] PPRP, Environmental Review of the Proposed Mattawoman Energy Center Project, July 10, 2015

[9] https://www.tandfonline.com/doi/pdf/10.3155/1047-3289.58.7.865?needAccess=true

The Accelerating Climate Crisis: in response to Senator Miller's concerns regarding climate change, your letter touts natural gas as a clean energy source—one that will reduce greenhouse gas (GHG) emissions and help the state meet the state's renewable energy goals. However, the fact is that the 990 Megawatt Mattawoman Energy Center will add nearly four million tons of GHGs per year[10]— about 100 million tons over an operational life of 25 years.

In essence, your letter to Senator Miller argues that natural gas is a "transition" or "bridge" to a renewable energy future. However, a November 2019 UN "Production Report" disputes that natural gas is a "bridge fuel to lower-carbon future."

> *However, more recent studies have increasingly questioned the extent to which gas can play a bridging role. Research has found that increasing natural gas production and the resulting decrease in gas prices may instead lead to a net increase in global emissions and risk delaying the introduction of near-zero-emission energy systems. [11]*

A detailed analysis of U.S. energy trends demonstrates that natural gas for coal is not the way to promote renewables, but a path to increased GHG emissions with disastrous consequences.

> *While a record number of coal-fired power plants were retired last year, natural gas not only beat out renewables to replace most of this lost generation but also fed most of the growth in electricity demand. As a result, power sector emissions overall rose by 1.9%."[12]*

The UN report also warns that methane leakage rates from natural gas systems are 60% higher than official estimates, but will have a comparable impact on climate as much higher CO_2 emissions due to methane's potency as a GHG. The report also questions the wisdom of investing heavily in a natural gas infrastructure when the rapid advance of renewable energy and battery technologies (and decreasing costs) have decreased the need for a potential gas bridge. The Mattawoman Energy Center will cost on the order of $1.16 billion[13] -- capital that could be invested more judiciously in solar and wind power.

Thus, the continued expansion of gas supplies and systems will impede reduction of GHG emissions to levels necessary to avoid the most severe impacts of climate change which will occur if global temperature is allowed to increase by 1.5°C. To do this, UN warns that the world's nations must cut fossil fuel greenhouse gas emissions by 7.6% each year – starting in 2020.[14] How is this possible to meet the required reduction with a plan to add more fracked gas infrastructure including power plants?

The Center for Climate Strategies (CCS) released a detailed analysis of the Hogan Administration 2019 Draft Plan to Implement the Maryland Greenhouse Gas Reduction Act[15] which concludes that the Hogan Plan.

- Provides little confidence it can meet the state's mandated 50% renewable electricity by 2030.
- Relies on an outdated GHG inventory that neglects to add 2-million tons/year of leaked-methane.
- Fails to consider high renewable energy market penetration approaches or carbon pricing options
- Fails to implement stricter GHG reduction programs set by leading states and nations

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[10] PPRP, Environmental Review of the Proposed Mattawoman Energy Center Project, July 10, 2015

[11] http://productiongap.org/wp-content/uploads/2019/11/Production-Gap-Report-2019.pdf

[12] https://rhg.com/research/preliminary-us-emissions-estimates-for-2018/

[13] http://www.koreaninvestors.com/?p=3319

[14] Good Summary, *Forbes*: https://www.forbes.com/sites/lisettevoytko/2019/11/26/un-climate-report-says-destructive-global-warming-will-result-from-unchecked-emissions/#6242c1052715

[15] https://chesapeakeclimate.org/assets/uploads/2019/12/MD-GGRA-Draft-Plan-CCS-Policy-Review-Final.pdf

The answer is not substituting one polluting fuel for another, but the elimination of all fossil fuels as rapidly as possible. Moreover, while Maryland has barred fracking in the state, its use in bordering states creates serious land and water contamination impacts. Moreover, both compressor stations and pipelines required to transmit gas leak large quantities of methane and have a record of deadly explosions. Mattawoman Energy Center will require the construction of a 7-mile pipeline between Forest Park and Brandywine to receive its gas supply for decades.

Conclusion: We are providing Senator Miller with a copy of this letter to let him know our position—your letter fails to provide what the Senator has requested—a meaningful review of the pending Mattawoman Energy Center's impact on the health and wellbeing of Brandywine area residents—who have already endured the impacts of the four existing fossil fuel power plants in the area.

In closing, we respectfully request that you agree to meet with our representatives at your earliest convenience. Thank you for your consideration and timely response to our requests.

Sincerely,

Steve Kensinger, Greater Baden Area Citizens Association (GBACA), Board of Directors
Joanne Flynn, President GBACA
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Southern Maryland Audubon Society
Frederick Tutman, Patuxent Riverkeeper
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MD. Delegate Susie Proctor, District 27A
MD. Delegate Michael A. Jackson, District 27B
MD. Delegate Mary Lehman, District 21
Md. Senator Paul Pinsky, District 22
Members, Prince George's County Council

1 Attachment