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Government of the District of Columbia
ADVISORY NEIGHBORHOOD COMMISSION 3/4G

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**Appealing to Maret School to Reconsider Its Use of Artificial Turf
at the Episcopal Center for Children
June 24, 2024**

WHEREAS:

- ANC 3/4G has long been attentive to the environmental and other effects posed by Maret School's proposed use of artificial turf for its playing fields at the Episcopal Center for Children (ECC).
- Emerging discoveries about hazardous chemicals, notably PFAS, and microplastic pollutants associated with artificial turf heighten these concerns and provide new, urgent reasons for taking precautions to protect both athletes and the community from unnecessary exposure.
- The Chevy Chase community wants reliably playable yet safe athletic fields; more than one thousand neighbors having signed petitions in support of natural grass at Lafayette and ECC.
- ANC 3/4G has passed three resolutions this year advocating for natural grass at Lafayette Elementary School, contributing to legislation enacted by the Council to this effect.
- Three ANC 3/4G 02 public town halls from March-May with experts from industry, science, and environmental organizations assessing the relative merits of artificial turf vs natural grass playing fields substantiate and support this resolution.

BE IT RESOLVED:

ANC 3/4G urges Maret to reconsider its use of artificial turf at ECC in favor of natural grass.

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BACKGROUND AND KEY FACTORS

Maret School's Project at the Episcopal Center for Children and Rationale for Artificial Turf

Maret School is constructing a [sports complex](#) on five acres of land at the Episcopal Center for Children (ECC). The school is leasing the property from ECC for ten years with the option to renew in ten-year increments for up to 50 years. Approximately 3.7 acres of the leased land will consist of a baseball field and an overlapping multipurpose sports field. Maret is planning to use artificial turf for both fields.

Maret has indicated its intention to use artificial turf since the school's initial [presentation](#) on September 27, 2021 to ANC 3/4G and its [application](#) on November 1, 2021 to the DC Board of Zoning Adjustment (BZA) for a zoning Special Exception to pursue the development.

Maret's rationale for artificial turf has centered on durability and playability as well as maintenance. The school explained its use case and decision to use artificial turf most recently on April 9, 2024 at the ANC 3/4G 02 [town hall](#) (10:10 minute mark). Assistant Head of School Trey Holloway referenced Maret's experience with artificial turf at the school's main campus in Cleveland Park and the facility it co-operates with the District's Department of Parks and Recreation at the Jelleff Recreational Center in Glover Park. He noted Maret would use the ECC fields for both boys' and girls' baseball, softball, football, soccer, and lacrosse for up to six days a week; would often have more than one team practicing on the fields at the same time; and would provide access to the fields for use by third-party sports organizations and the community when Maret was not using them. All told, he said, the fields would be used 25-35 hours weekly, necessitating artificial turf. Mr. Holloway has noted separately that, in his view, sustaining reliably playable grass fields for the school's use case would be difficult and require expert groundskeeping with commensurate budget outlays.

ANC 3/4G's Support for the Maret Project

ANC 3/4G heard testimony in January and February 2022 on Maret's BZA application, including from the school as well as a wide range of proponents and opponents in Chevy Chase and the broader DC area. [Testimony from neighbors](#) adjacent to ECC included concerns about the health and environmental risks posed by Maret's proposed use of artificial turf for the development.

On February 28, 2022, the Commission approved a [resolution](#) in support of Maret's BZA application. It included numerous terms conditioning the ANC's approval. Among those, the resolution noted, "Maret has agreed to use state-of-the-art artificial turf, which will meet the requirements for the use that it proposes. The Commission's proposed conditions will provide assurances that the artificial turf provides the necessary environmental protections and will satisfy the community's needs better than a natural grass field."

Following the March 9, 2022 BZA hearing on Maret's special exception application, on March 15, 2022, ANC 3/4G and Maret codified the conditions for development of the athletic fields in a joint [Memorandum of Understanding](#). The MOU became operational with BZA's [approval](#) of the application on April 6, 2022. The MOU addresses "the (artificial) turf field" in section 1(h). Among other provisions, it stipulates that "Maret shall observe 'best practices' regarding the composition and installation of the field, including consideration of chemical and bacterial factors."

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Community Interests

Playing sports is healthy exercise, and facilitating it is important. Chevy Chase needs reliably playable fields and, at the same time, wants to ensure they are safe for both athletes and the environment. While Maret's fields are primarily for the school's own use, again, it has indicated it will sublease their use to third-party sports organizations and provide free access at certain times of the week to neighborhood residents.

Many neighbors have witnessed the poor condition of fields in the District, notably the field at Lafayette Elementary School, and concluded only artificial turf will meet the community's needs. Other neighbors have been vocal in their opposition to artificial turf at Lafayette and ECC. Together, the two projects would add roughly five acres of plastic grass to the more than five acres already on the ground at St. John's College High School and the small soccer field at Blessed Sacrament. More than 1000 neighbors have signed petitions in support of natural grass playing fields in the community.

There are two group of constituents whose interests and voices merit special consideration. Neighbors near ECC as with those near Lafayette will have the greatest exposure to any adverse environmental effects associated with the use of artificial turf. Parents with children want them to be safe regardless of the type of field. Safety issues regarding artificial turf predominate. However, barren, rutted, and compacted natural grass fields present their own safety issues.

It bears noting that selected neighbors adjacent to ECC have long asked Maret to reconsider its decision to use artificial turf – with no success.

ANC 3/4G and DC Government Actions

ANC 3/4G, hearing growing community concerns about artificial turf, has passed three resolutions this year – on [February 26](#) and [March 25](#) and June 10 – in support of natural grass at Lafayette. The resolutions have cited faulty construction and chronic lack of proper maintenance by District agencies for the poor condition of the field (as opposed to the inherent limitations of natural grass to accommodate school and community use). The resolutions have thus called on the District to use natural grass for the renovation of the Lafayette ball field. Ward Four Councilmember Janeese Lewis George cited community and ANC 3/4G support for natural grass in the emergency and temporary legislation she proposed and the DC Council approved on May 7 and June 11, respectively, mandating natural grass at Lafayette.

Given the intense community interest in and questions about the proposed use of artificial turf at Lafayette and ECC, ANC 3/4G 02 Commissioner Sherman organized three public town halls on [March 25](#), [April 9](#), and [May 30](#), assessing the relative merits of artificial turf and natural grass. The town halls featured presentations from 15 artificial turf industry executives and representatives, nationally recognized independent scientists, environmentalists, natural grass specialists and practitioners, and Maret School officials. More than 300 members of the public attended one or all three events. The video recordings at the ANC 3/4G YouTube channel have been viewed nearly 600 times. The town halls have informed and substantiated this resolution.

Last July (2023), DC's Office of the Attorney General [initiated a lawsuit](#) against more than 25 chemical companies "for manufacturing, marketing, distributing, and selling products containing dangerous PFAS chemicals which now pollute the District's natural resources." In announcing the suit, AG Brian Schwalb said, "Compounding their illegal conduct, these companies for decades misled the public about the health and safety threats they knew their products posed."

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Chemical Contaminants, Including PFAS, in Artificial Turf

Artificial turf is a man-made product, synthesized from petroleum. It contains a variety of chemicals of concern for human health and the environment. Sarah Evans, PhD MPH, at the Institute for Climate Change, Environmental Health, and Exposomics at the Icahn School of Medicine at Mount Sinai identified the range of chemical contaminants in artificial turf in her presentation at the first ANC 3/4G 02 [town hall](#) (44:08 minute mark) on March 26, 2024.

Among the chemicals, [PFAS](#) stand out due to their extreme toxicity and longevity. Known as “forever chemicals” because they break down very slowly over time, PFAS have been in a wide range of consumer and industrial products since the 1940s. However, they were only [discovered](#) in artificial turf in 2019, marking the beginning of efforts by researchers to understand their possible effects.

Maret [informed](#) the ANC Field Task Force on January 10, 2024 that it had chosen Shaw Sports Turf as its vendor for the product it intends to use at ECC and subsequently provided spec sheets for the product and the infill. It affirmed at the time that the Shaw product contains PFAS.

All artificial turf contains PFAS, in fact, not just the Shaw product. PFAS chemicals are intrinsic to the manufacturing process, enabling clean extrusion of the plastic blades. The Synthetic Turf Council acknowledged the presence of PFAS in artificial turf in a [letter](#) (pg. 14) to the California State Legislature in 2023, arguing industry would need time to meet proposed PFAS-free regulatory standards.

PFAS in artificial turf is thus a function of how the plastic is manufactured irrespective of the type of infill (e.g., crumb rubber, which DC [banned](#) in 2017) used to stabilize and cushion the use of turf, although the infill itself might also contain PFAS.

The presence of PFAS in artificial turf has been the focus of widespread media coverage in [The Washington Post](#), [The Philadelphia Inquirer](#), [The Guardian](#), [ABC News](#), et al, raising public awareness and posing serious questions as to the risks.

Risks to the Environment

The US Environmental Protection Agency has taken this [position](#) on PFAS: “PFAS, the common term used for per- and poly- fluoroalkyl substances, are an urgent threat to public health and the environment. Communities across the nation are discovering them in their air, land, and water.”

On April 10, 2024, EPA [issued](#) “the first-ever national, legally enforceable drinking water standard to protect communities from exposure” to six types of PFAS. For two (PFOA and PFOS), EPA [set a goal](#) of zero, recognizing there was “no level of exposure to these two PFAS without risk of health impacts.” For four other types of PFAS the goal is 10 parts per *trillion*.

[Dr. Graham Peaslee](#), Professor of Physics at the University of Notre Dame and one of the foremost US experts on PFAS testing, has quantified the impact of PFAS leaching from artificial turf. He detailed his calculation at the March 26, 2024 [town hall](#) (1:07:20 minute mark). PFAS leaching from a single artificial turf field, he estimated, would contaminate 800,000 gallons of ground water annually.

Artificial turf, as plastic, presents other environmental risks, notably microplastic and nanoplastic pollutants.

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Plastic pollution has now been expressly linked to artificial turf. Research conducted in river and sea surface waters in Europe and published in [Environmental Pollution](#) in October 2023 concluded: “Until now, the concerns associated to AT (artificial turf) surfaces dealt with sociocultural aspects ([Francis, 2018](#)), their end-of-life treatment ([Francis, 2018](#); [Ramboll, 2020](#)), the increase of urban runoff ([Chang et al., 2021](#)), potential impacts on local biodiversity ([Francis, 2018](#); [Sánchez-Sotomayor et al., 2023](#)), leaching of potentially toxic chemicals ([Cheng and Reinhard, 2010](#); [Gomes et al., 2021](#); [Källqvist, 2005](#); [Lauria et al., 2022](#)), and their contribution to climate change ([Jim, 2017](#)). We can now state that the risks of impact extend also to surrounding ecosystems due to the release and dispersal of AT debris. Extensive replacement of natural land covers by AT surfaces will likely add a significant and irreparable plastic legacy to the global nature.”

This year’s [Earth Day](#) theme was “Planet vs Plastics.” EARTHDAY.ORG, the global event organizer, has demanded a “60% reduction in the production of **ALL** plastics by 2040.” They noted, “Plastics extend beyond an imminent environmental issue; they present a grave threat to human health as alarming as climate change. As plastics break down into microplastics, they release toxic chemicals into our food and water sources and circulate through the air we breathe.”

In her presentation to the March 26 [town hall](#) (28:51 minute marker), [Dr. Kyla Bennett](#), Director of Science Policy at [Public Employees for Environmental Responsibility](#), put a number on the amount of plastic pollution stemming from artificial turf. One artificial turf field, she said, will shed 480 pounds of microplastics per year. Those plastic particles will fill the air athletes and neighbors on and near the ECC fields breathe and will flow into the DC water system as well as the Rock Creek watershed.

Risks to Human Health from PFAS and Plastic Pollution

The [EPA has underscored](#), “The science is clear: exposure to certain PFAS poses significant risks to human health, including cancer, even at very low levels.” Citing “peer-reviewed scientific studies,” it [has noted](#):

- “Reproductive effects such as decreased fertility or increased high blood pressure in pregnant women.
- Developmental effects or delays in children, including low birth weight, accelerated puberty, bone variations, or behavioral changes.
- Increased risk of some cancers, including prostate, kidney, and testicular cancers.
- Reduced ability of the body’s immune system to fight infections, including reduced vaccine response.
- Interference with the body’s natural hormones.
- Increased cholesterol levels and/or risk of obesity.”

This said, the science is rapidly evolving on the full range of effects and exposure levels to PFAS as well as microplastic pollutants. Much remains unknown.

On artificial turf, players are exposed to the chemicals through inhalation, ingestion, and dermal absorption, and open wounds or broken skin. [Preliminary research](#) conducted by [Public Employees for Environmental Responsibility](#) (PEER) has found, “Soccer players and coaches on artificial turf pick up toxic PFAS on their skin,” pointing to the need “for additional studies to determine what risk there is of dermal absorption of PFAS from artificial turf.”

The Icahn School of Medicine at Mount Sinai has [determined](#) the following as to the special risks to children: “Children are uniquely vulnerable to harmful exposures from artificial turf surfaces because of their unique physiology and behaviors, rapidly developing organ systems, and immature detoxification mechanisms ... Children and young athletes breathe faster than adults, putting them at greater risk for

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inhalation of chemicals that off-gas from turf fields. Small children put their hands and other objects in their mouths, increasing the risk of exposure via ingestion ... Vulnerability to turf chemicals persists through the teen years as the reproductive and nervous systems continue to develop beyond the first two decades of life. Lastly, children have more future years of life over which chronic diseases linked to the chemicals in turf develop.”

The health effects of plastic pollution, while preliminary and emerging, are nonetheless equally concerning. An [exposé](#) in The Washington Post on June 10, 2024 noted, “In recent years, research has shown for the first time that humans are breathing, eating and drinking microplastics in much larger quantities than previously thought. And that plastic is burrowing its way into almost [every major organ](#).” A landmark [study](#) in The New England Journal of Medicine on March 6, 2024 has linked microplastics and nanoplastics to a potential increased risk of heart attack, stroke or death. A [research review](#) in The Lancet in December 2023, concluded “MNPs (microplastics and nanoplastics) are ubiquitous in the environment ... The growing evidence suggests that exposure to MPs and NPs may cause adverse effects in different human organ systems.” Related articles have appeared in [Fortune](#), [Nature](#), among many other outlets.

Actions by States and Municipalities to Ban or Restrict PFAS

The threat of toxic PFAS exposure and contamination has led cities and states across the US to act against PFAS generally and artificial turf specifically. Boston was among the first to [order](#) in 2022 that no new artificial turf fields be installed in the city. New York state has [banned](#) carpets (including artificial turf) containing PFAS as of 2026. California enacted [legislation](#) last year allowing its cities to ban artificial turf. [Maine](#) and [Minnesota](#) are prohibiting all products with intentionally added PFAS by 2030 and 2032, respectively. Nearly [everywhere one looks](#), states are taking matters into their own hands to regulate and eliminate PFAS. Increasingly, they are allowing only “unavoidable use” of PFAS such as in medical instruments. Vermont just [joined](#) the growing list.

Other Concerns and Health Effects

While PFAS and microplastic pollutants have emerged as pressing new concerns regarding artificial turf, [increased injuries](#), [heat effects](#), and [disposal challenges](#) have been longstanding problem areas that continue to call attention. They merit greater discussion than this short paragraph provides. One area is worth noting is heat.

Penn State’s Center for Sports Surface Research has [assessed](#) heat and artificial turf. They note artificial turf generally runs 35-55° hotter than grass. The report explains the plastic fibers themselves are a problem as they absorb heat, compared to natural grass, which through transpiration (evaporation of water moving through plants) prompts cooling.

The differential between the surface temperatures of artificial turf and natural grass means on 85° days, artificial turf will be 120-140°. On average since 2020, Washington has [experienced](#) 82 days of temperatures at 85° or greater and 41 days at 90° or great.

[Heat-related illnesses](#) can include rash, cramps, exhaustion or stroke, which can be deadly. Heat illness is the number one cause of death and disability in high school athletes. First-degree burns can occur at 118°, second-degree burns at 131°.

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Jurisdictions vary in their restrictions on the use of artificial turf during hot weather. DC's advisory is [generic](#), calling for no use between 10 AM and 2 PM without specifying the temperature. Montgomery County [restricts artificial field](#) use whenever the air temperature is 90° or higher. In either case, play on artificial turf will be limited during hot weather, offsetting its comparative advantage over natural grass when it rains.

Natural Grass as an Alternative to Artificial Turf

Given the health and environmental risks associated with artificial turf as well as the merits for its use, which were fully explored in the ANC 3/4G 02 town halls on March 26 and April 9, the [third town hall](#) on May 30 focused exclusively on natural grass. It posed this question: Considering all factors – design, construction, maintenance, playability, and cost – are natural grass playing fields a viable alternative to artificial turf playing fields?

The town hall featured presentations from leading national experts: [Michael Goatley](#), Professor and Turfgrass Extension Specialist, School of Plant and Environmental Sciences, Virginia Tech University, Blacksburg, VA; [Drew Miller](#), Teacher/Director, Brentsville District High School Turfgrass Management Program, Nokesville, VA; [Jared Minnick](#), Director, Grounds and Environmental Management, [Maryland SoccerPlex](#), Boyd, MD; [Charles “Chip” Osborne, Jr.](#), President, Osborne Organics, LLC, Cape Neddick, ME; [Sun Roesslein](#), President, Board of Directors, Sports Field Management Association and Sports Stadium Manager, [North Area Athletic Complex](#), Jefferson County School District, Golden, CO; [Pamela Sherratt](#), Turfgrass Specialist, Department of Horticulture and Crop, The Ohio State University, Columbus, OH; and [Rebekah Thomson](#), Founding Member, [The Field Fund](#), Martha's Vineyard, MA.

Across a host of natural grass use cases, from a single high school to a regional sports complex to state-wide athletic facilities, the experts concurred that natural grass fields, if properly constructed and maintained, are not only a viable and sustainable alternative to artificial turf but also an affordable alternative.

A successful natural grass field can be built to accommodate every use profile, they concurred. [Michael Goatley](#), citing one of northern Virginia's premier field construction companies, gave this recipe for a one-acre field providing 25-35 hours of use weekly: use native field fine grade soil, blend in soil amendments such as 2" specified sand and 1/2" compost, layer in irrigation, install drainage (e.g., [Cambridge drainage system](#)), and lay sod. Initial cost would be ~\$300K. Maintenance consisting of aeration 3-4x a year and scheduled overseeding and fertilizing would run \$15-20K annually.

As the number of desired playable hours rises, Jared Minnick counseled, augment the irrigation and drainage. The Maryland Soccerplex just completed a multi-year upgrade of the drainage for their 21 fields at a cost of ~\$100K per field. They use their fields 25-30 hours per week. This spring it rained every weekend except one, and they had no rainouts, Minnick reported.

Minnick took pains to say at the May 30 town hall ([here](#) at 1:32:42 minute mark), “It never is cheaper, ever, to build an artificial turf field than it is to build and/or maintain a natural grass field.”

The experts repeatedly stressed the importance of proper construction and maintenance. They also underscored there is science involved. But, they said, it's not rocket science.

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Rebekah Thomson described the Field Fund's restoration of the Oak Bluffs School fields on the Vineyard. The project could readily apply to either ECC or Lafayette. The step-by-step case study of the project, completed at \$180,000 (in 2018), is laid out [here](#).

Sun Roesslein operates both a natural grass football field and soccer field, serving not one or two but *six* local high schools at the [North Area Athletic Complex](#) in Golden, CO. During the ten-week fall football season, her program supports on average five games per week on the one field. It's the same field that's been in use for the last 24 years and has been replaced only once during that time.

Drew Miller is the 30-year-old director of the [Turfgrass Management Program](#) at Brentsville High School in Nokesville, VA. His [award-winning](#) program oversees acres of natural grass fields with student practitioners. They maintain the fields under his supervision as part of their academic studies, demonstrating apprentices as well as professionals can do the job.

Organic principles and practices are no longer esoteric. Synthetic herbicides and pesticides are not essential. The Field Fund is 100% organic. The Maryland Soccerplex is 95% organic. Chip Osborne, one of the country's leading exponents of organic natural grass management, gave a tutorial on organic turfgrass management practices (22:33 minute marker). Going organic, he noted, mitigates soil and ground water contamination. It also aids the transition to a world free of toxic pesticides and thus serves a broader environmental purpose.

Pamela Sherratt noted the many important environmental benefits of grass in addition to supporting robust school and recreational sports programs. Natural grass reduces atmospheric carbon dioxide and releases oxygen; dissipates heat; reduces noise levels by absorbing, deflecting, reflecting, and refracting sound; decomposes bacteria-producing bodily fluids such as blood, vomit, spit, and phlegm; improves soil by the addition of organic matter as the plant tissue dies; etc. These and other attributes are [catalogued](#) by the Sports Field Management Association.

Examples of Successful Natural Grass Fields Close to Home

While the case studies above are all dispositive on the viability of natural grass fields, one need not look so far to see successful natural grass fields. There are noteworthy examples across the District that stand in stark contrast to the circumstance of grass currently at Lafayette or Hearst. The [Dwight-Mosely Field and Playground](#) at 20th and Otis Sts in northeast and [Friendship \("Turtle"\) Park](#) at 45th and Van Ness Sts in NW offer diverse examples of current DC government-maintained fields that thrive.

A little known fact is that Maret [helped rehabilitate](#) the Dwight-Mosely Field more than 25 years ago and shared use of the property with the local community through 2004. Once upon a time, then, Maret itself demonstrated natural grass was a serviceable option. That was long before today's advances in natural grass technology that the seven panelists on May 30 described in detail, making natural grass even more viable today.

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Photos of diverse, thriving local (DC area) natural grass playing fields



Three of the 21 natural grass playing fields at the Maryland Soccerplex in Boyds, MD, May 25, 2024. All 21 fields are in similar condition.



The grounds at Dwight Mosley-Taft Field and Playground, 20th and Otis Sts, NE, May 24, 2024. The balance of the grounds is in similar condition. Maintained by the DC Department of Parks and Recreation (DPR).



The fields at Friendship Park, 45th and Van Ness Sts, NW, June 8, 2024. Maintained by DPR in partnership with the Friends of Friendship Park.