

11. Approve referral to Administration to report to the Board with options for consideration relating to a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property. (Lee)
(ID# 24-5361)

BoardOperations

From: Andrea Wald
Sent: Thursday, April 11, 2024 8:31 PM
To: BoardOperations
Subject: [EXTERNAL] re: Item 11 on the agenda for Tuesday's meeting (4-16-24)

Dear County Board Members,

I am writing on my own behalf but also as part of a small group of environmentally concerned individuals who belong to a group called: Community for Natural Play Surfaces. Our mission:

We advocate for safe natural play surfaces. We educate public and private stakeholders on the harms of artificial turf and other artificial materials. We strive to increase the amount of grass and natural materials in our playing fields, playgrounds, parks, and towns.

We have been going city by city, school district by school district, and board meeting by board meeting to make our voices heard. It has been extremely frustrating and time consuming. The vendors and all their supporting entities are pushing Artificial Turf as a viable solution for increased playing time, less maintenance and less water. They are actually pushing false narratives to many who are not as educated as needed (they are volunteers doing their best to make decisions and policies to help the people they are representing - but are not landscape experts, research scientists, environmental specialists, chemists, doctors, etc.) to fight these falsehoods and simply believe what they are being told - even though many who have studied and researched AT are doing our best to counter these falsehoods and provide valid, researched reasons why AT is bad - for the environment and for the health and safety of all.

I understand that at Tuesday's meeting (4-16-24) Supervisor Lee will be asking the administration to explore options for an ordinance, should the Board vote to approve this request, relating to Artificial Turf and a possible ban throughout Santa Clara County. This is item #11, LF 24-5361.

I urge you to keep artificial turf (toxic plastic grass) out of our playgrounds, sports fields and outdoor areas. I urge a total ban throughout Santa Clara County including county and city properties and residences. Multiple studies have shown that, contrary to the green-washed claims of industry salespeople, plastic grass is unhealthy and unsafe, especially for children whose systems are still developing, and is harmful to the environment and climate as well.

Plastic grass is hazardous to health:

- Artificial turf plastics are mixed with specialized, proprietary chemicals, like PFAS (forever chemicals), that are harmful to public health. The [EPA has taken notice](#), and water intended for drinking will now need new methods for removing PFAS and other chemicals.

- CALMatters published an [eye-opening article](#) on the environmental health hazard posed by plastic grass.

Plastic grass is unsafe for kids:

- Plastic in sunlight heats up - causing heat islands that can be seen from satellites in space. For example, [satellite images](#) from San Francisco Estuary Institute reveal that synthetic turf fields at Twin Creeks Sports Complex had the highest surface temperatures ever seen in the area.
- The heat island effect causes our kids to overheat on hot days while playing on the artificial turf and can cause burns when kids fall on it.

Plastic grass is bad for the environment and climate:

- Artificial turf is a plastic petroleum product, and [its manufacture and entire lifecycle pollutes our air and water](#).
- Unlike [plants](#) it cuts off air and light from the soil and thus cannot sequester carbon, worsening global heating.
- As plastics degrade, [microplastics](#) permeate the air and soil and wash into our watersheds. Microplastics are now found in the [food we eat and even in newborns](#).
- The turf industry claims they are recycling old fields but have yet to provide the name or exact location of facilities that are doing this. After its 8-10-year lifespan it's buried in a [landfill or incinerated](#), releasing CO2 into the atmosphere. Even the most "advanced" "chemical" recycling causes more pollution than was caused during the plastic's original production. What's as alarming are the rolls of old AT that are being stockpiled because the facilities that are supposed to be recycling them are not opened. These rolls have been sitting around for years and are leaching toxic chemicals into the ground upon which they sit and eventually the watershed. The following link summarizing an undercover operation says it all:

<https://drive.google.com/file/d/1rvGngHf-JGzim6ipwxUbFyV0NStJuZly/view?usp=sharing>

In short, artificial turf has no place in our landscapes, in our parks, on our playgrounds or on our athletic playing fields. For residences there are drought tolerant plants and for other areas - those most likely with more foot traffic or needed for sports play, there are natural sports-grasses available.

For all the reasons stated above, I ask that you support Supervisor Lee's referral to direct administration to create options for an ordinance to prohibit new installation of artificial turf on County property. Leading in this effort would be amazing as then those of use who oppose this toxic, environmentally bad product, will be able to use this momentum with other cities/counties. Covering our precious earth in toxic plastic is simply a terrible idea.

Sincerely,
Andrea Wald

From: [Dashiell Leeds](#)
To: [Arenas, Sylvia](#); [Chavez, Cindy](#); [Lee, Otto](#); [Ellenberg, Supervisor](#); [Supervisor Simitian](#); [BoardOperations](#)
Cc: [James Eggers](#); [Gita Dev](#); [Mike Ferreira](#); [Alice Kaufman](#)
Subject: [EXTERNAL] Sierra Club + Green Foothills Joint-Letter to SCC BOS re: Artificial Turf Referral
Date: Friday, April 12, 2024 2:14:03 PM
Attachments: [Joint letter to SCC BOS re artificial turf ordinance.pdf](#)

Dear President Ellenberg, Vice President Lee, and Supervisors,

The Sierra Club Loma Prieta Chapter and Green Foothills heartily endorse the April 16, 2024 Agenda Item #11 (LF 24-5361) to direct the Administration to report to the Board on options for consideration relating to a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

Please read the attached letter for our full comments.

Sincerely,
Susan Hinton
Chair, Plastic Pollution Prevention Team
Sierra Club Loma Prieta Chapter

Alice Kaufman
Policy and Advocacy Director
Green Foothills

Email sent from account of
Dashiell Leeds
Conservation Coordinator
Sierra Club Loma Prieta Chapter



SIERRA CLUB
LOMA PRIETA CHAPTER



**green
foothills**

SAN MATEO, SANTA CLARA & SAN BENITO COUNTIES

April 12, 2024

Santa Clara County Board of Supervisors
70 West Hedding, East Wing, 10th Floor
San Jose, CA 95110

Via email: BoardOperations@cob.sccgov.org

Dear President Ellenberg, Vice President Lee, and Supervisors,

The Sierra Club Loma Prieta Chapter and Green Foothills heartily endorse the April 16, 2024 Agenda Item #11 (LF 24-5361) to direct the Administration to report to the Board on options for consideration relating to a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

We support this referral for the following reasons:

- The Santa Clara County Medical Association's opposition to artificial turf on playing fields for reasons relating to public health
(<https://www.sccma.org/Portals/19/Artificial%20Turf%20Article.pdf>)
- The Santa Clara Valley Water District's rejection of artificial turf as a sustainable alternative to non functional turf
(https://www.valleywater.org/sites/default/files/01_Artificial%20Turf%20Fact%20Sheet_030614%20BA.pdf)
- The NFL Players Union members overwhelmingly prefer natural grass
(<https://abcnews.go.com/Sports/nflpas-howell-92-players-grass-fields-turf/story?id=107045615>)
- A sports field wears out every 8-10 years necessitating disposal of 40,000 pounds of plastic and more than 10 times as many pounds of infill, and that there is no method for sustainable recycling of these materials, which then winds up in landfill and, in turn, breaks into microplastics that wash into our waterways
(<https://www.smithsonianmag.com/smart-news/the-us-recycled-just-5-percent-of-its-plastic-in-2021-180980052/>,
<https://www.theguardian.com/environment/2023/may/23/recycling-can-release-huge-quantities-of-microplastics-study-finds>,
https://www.turi.org/var/plain_site/storage/original/application/64eb18d6cea7b44882fae71855c79.pdf)

- That microplastic from artificial turf have been found in oceans, in clouds, and in carotid artery plaque during open heart surgery (<https://www.sciencedirect.com/science/article/pii/S0269749123010965>, <https://futurism.com/the-byte/scientists-find-microplastics-inside-clouds>, <https://www.nejm.org/doi/full/10.1056/NEJMoa2309822>)
- That artificial turf contributes to greenhouse gas emissions (<https://doi.org/10.1371/journal.pone.0200574>, <https://www.mvtimes.com/2019/02/20/synthetic-turf-will-contribute-greenhouse-gas-problems/>)
- That artificial turf comes with chemical additives, such as PFAS chemicals, to reduce flammability, to provide color, to provide structure etc., and these additives are not tested in advance by the artificial turf industry for their public health effects as, for example, the plastic heats in sunlight (<https://cen.acs.org/environment/New-method-spots-unreported-forever/101/i36>, <https://ceh.org/latest/press-releases/new-testing-reveals-high-levels-of-toxic-pfas-in-artificial-turf/>)

There are reasonable alternatives to artificial turf. Artificial turf is not a necessary product. In the past decade natural grass growers and researchers have categorized and bred cultivars that are meant for a drier warmer climate, such as exists in the Western U.S.

(<https://ipm.ucanr.edu/TOOLS/TURF/TURFSPECIES/charhighht.html>, <https://www.nimss.org/projects/view/mrp/outline/18821>)

- Successful cultivars have been grown and placed in California athletic fields, including San Diego State University's Snapdragon Stadium and Manteca's East Union High School's Dino Cunial Stadium (<https://www.sandiegouniontribune.com/sports/aztecs/story/2022-06-02/snapdragon-stadium-update-grass-latitude-36-bermudagrass-american-sod-farms-san-diego-state-aztecs-sdsu-arizona>), <https://www.mantecausd.net/post-details/~board/district-news/post/east-union-high-school-unveils-renovated-dino-cunial-stadium>)
- There are sustainable, low pesticide and fertilizer growing methods, even athletic field grass grown using the same organic management techniques used in agriculture (<https://www.beyondpesticides.org/resources/power-organic-parks-program>)

For all of the foregoing reasons, the Sierra Club looks forward to having the Santa Clara County Board of Supervisors agree to look at options relating to a County ordinance prohibiting new installation of artificial turf and synthetic grass on Santa Clara County property.

Sincerely,

Susan Hinton
Chair, Plastic Pollution Prevention Team
Sierra Club Loma Prieta Chapter

Alice Kaufman
Policy and Advocacy Director
Green Foothills

CC:

James Eggers, Chapter Director, Sierra Club Loma Prieta Chapter

Gita Dev, Chair, Conservation Committee, Sierra Club Loma Prieta Chapter

From: [Susan Casner-Kay](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Artificial turf: re meeting 4/16/2024, Item #11, LF 24-5361
Date: Friday, April 12, 2024 2:30:13 PM

I am a Sunnyvale resident, and a Santa Clara County Master gardener. I am very concerned about our environment and our changing climate.

October 2023 legislation allows California cities and counties to ban synthetic grass due to environmental and health concerns. Some cities have banned new installations, including Millbrae in the county of San Mateo.

Marketing has promoted artificial turf as an environmentally conscious alternative to lawn, primarily due to lower water consumption. Less maintenance may be seen as a reason to consider artificial turf, with a decrease in need for weekly lawn service or mowing and trimming. But the plastic lawn is not without maintenance, and requires cleaning, weeding, and brushing to maintain appearance. It also can require irrigation to cool the surface before use.

The potential environmental and health problems associated with artificial turf have been revealed with more recent research. The Bay Area Water Supply and Conservation Agency does not include artificial turf in the 'Lawn be Gone' rebate program, indicating that drought tolerant plantings specifically do not include synthetic grass. Santa Clara Valley Water District discourages use of artificial turf, and instead offers rebates to promote the use of living plants in a sustainable drought tolerant landscape.

As our climate continues to change, so does awareness of the need for carbon sequestration in the soil, with the goal of limiting CO2 in the atmosphere. Living plants use carbon dioxide to grow, and transfer the carbon into the soil via the microbes living around the roots of the plants. These growing plants are therefore excellent carbon sequestrators. Living plants support biodiversity with benefits for birds, insects, and earthworms, as well as the soil microbes. Laying a plastic carpet over the soil inhibits or prevents any carbon being removed from the environment.

Plastic lawn in sunny areas can cause heating of the surface temperature and of the underlying soil. The high soil and air temperatures can have a negative impact on nearby plants and trees, damaging previously existing root systems. Temperature studies reveal that artificial turf in the sun can reach temperatures of 180 degrees.

Pollution of the air, water, and ocean from the chemicals found in plastics, including plastic grass, is a concern for many, and there is a growing body of information about the potential negative impacts for human health. Pollutants from these materials can move into the air and leach into the water. Though it may look similar to a healthy lawn, artificial turf is made from polyethelyne, polyester, polypropylene, and nylon, or some combination of these

materials. Many of these materials have the ability to leach per/polyfluorinated alkyl (PFAS) and other long lasting chemicals into our environment.

The lifespan of artificial turf varies according to how it was installed, and potential wear and tear. Estimates range from 8 to 15 years before the quality has degraded such that the owner may prefer to have the turf removed. Disposal of plastics remains a big problem, with the only alternative for synthetic lawn being removal to the landfill. This can be a large unforeseen expense, as well as a contribution to ground, air and water pollution. After removal, it takes time, money and effort to restore life to the damaged soil where the turf had been installed.

Thank you for considering my concerns.

Susan Casner-Kay
Sunnyvale resident

From: [Kathleen Meagher](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Please support Item#11 on 4-16-24
Date: Saturday, April 13, 2024 12:53:05 PM

Dear Santa Clara County Board of Supervisors:

We are longtime residents of Santa Clara County and are writing to express our support for Item #11 (4-16-24; LF24-5361), the referral on an ordinance prohibiting installation of artificial turf. This referral directs the Administration to report to the Board with options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

From a public health perspective - synthetic grass contains PFAS ("forever chemicals"). These chemicals are known carcinogens which can cause developmental delays in children, interfere with hormones, reproduction, and immunity.

According to experts, these chemicals can enter the human body through contact with skin and by breathing in the particles. Anyone in contact with this material can experience deleterious effects but any health problems will be most pronounced in children and young adults who are still growing.

In addition to direct contact, these chemicals can also leach in or through water sources, especially groundwater sources, making their way away from their source and potentially contaminating others not exposed to direct contact.

The dangers of artificial turf are well-documented in a letter from the Santa Clara County Medical Association to the Sunnyvale City Council when it was considering approval of the installation of artificial turf at Lakewood Park. [SCCMA Letter to Sunnyvale](#).

From an environmental perspective – this turf cannot be recycled. Also, it becomes much hotter than natural grass, absorbing heat and radiating it back slowly over time contributing to the urban heat island effect. Nor will this turf absorb carbon. All of these negative characteristics of synthetic turf are in direct conflict with the sustainability and climate action goals of many county communities and the county itself.

There are alternatives that you should consider. There are newly-developed natural grasses designed for athletic and other fields that can withstand year-long play and engineered wood fiber for use in playgrounds.

Putting in artificial grass is not a decision that can easily be undone. Please, carefully consider the harmful health and environmental effects of synthetic turf, all which are long term, and vote for the prohibition of any future installation of artificial turf on Santa Clara County property.

Thank you for the time and consideration of our views.

Respectfully,

Kathleen and Paul Meagher

From:
To: [BoardOperations](#)
Subject: [EXTERNAL] April 16 meeting: (ID# 24-5361) Item 11, artificial turf
Date: Saturday, April 13, 2024 10:05:46 PM

Hello:

This message pertains to artificial turf.

Please consider the following negative attributes of artificial turf during your deliberations and decision making.

Background

Artificial Turf has been used as a landscaping method to reduce water consumption.

Scientists discovered the plastic blades contain unsafe levels of carcinogenic forever chemicals.

There is now a movement to prohibit new installations of Artificial Turf:

- a) Governor Newsom signed Senate Bill SB676 in October 2023 giving local jurisdictions authority to ban Artificial Turf installations.
- b) Valley Water advocates against Artificial Turf and their rebate program does not provide any rebate if one chooses this material.

Problems with Artificial Turf

1. Contains a class of chemicals called PFAS.

The F stands for fluorine. Fluorine atoms combine with carbon atoms in the polyethylene grass blades to create chemicals known to be harmful to humans.

CDC found PFAS chemicals in the blood 97% of Americans and in mother's milk.

2. Negative health effects from PFAS chemicals (N.I.H).

Epidemiological studies have revealed associations between exposure to specific PFAS and a variety of health effects, including:

- Liver disease
- Kidney disease
- Cancer
- Lipid and insulin dysregulation
- Adverse reproductive and developmental outcomes
- Altered immune and thyroid function.

3. Artificial Turf is considered a hardscape.

- Rainwater runs off and the biome in the soil beneath it dies.

- Does not sequester carbon like natural grass – rather emits CO₂ and methane.
 - Plastic ‘blades’ degrade into microplastics and nanoplastics that infiltrate sources of drinking water and leach toxic chemicals used to make the Artificial Turf. Also, they are washed into the Bay where they can be consumed by aquatic life thinking its food.
4. Emits climate warming gases methane and ethylene and is much hotter than the ambient air around it causing a “heat island” effect.
 5. Cannot be recycled and ends up in landfill, burned or simply dumped.

Regards,
Steve Hill

From: [Kristina Pistone](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Comment on 4/16/2024, Item #11, LF 24-5361
Date: Sunday, April 14, 2024 2:01:52 PM

Dear Santa Clara County Board of Supervisors,

My name is Kristina Pistone, and I'm a resident of Santa Clara County (Sunnyvale). I also have a PhD in climate and atmospheric science, and I serve on Sunnyvale's Sustainability Commission although I'm currently emailing in my own capacity. I see that at your meeting on Tuesday you will be discussing a proposal by Supervisor Lee to potentially ban artificial turf on county property, and I would like to **strongly advocate for this measure**.

Last year, Sunnyvale's Sustainability Commission proposed a Study Issue which would assess the overall impacts of artificial turf compared with other ground cover. In researching for that issue, I began as fairly agnostic but the more I read, the more I found (as it seems Sup. Lee has) that the answer is likely that **AT is never the better option compared to living grass, even with water conditions in the state**. If the city council decides to fund that Study Issue, there may be some relevant synergies that apply to the County case as well.

The proposal in the agenda packet summarizes the various issues with AT well, so I won't reiterate them here. One thing I would like to point out beyond what's written in the agenda item is the passage "The process to recycle artificial turf is also very intensive, and artificial turf recycling is not widely available. As a result of limited recycling plant availability for turf, the need to ship all or parts of artificial turf to be recycled results in greenhouse gas emissions and pollution from transportation emissions." I would go farther to say that plastic recycling overall is extremely limited (even for "easy" plastics like water bottles and yogurt tubs) and when it comes to recycling mixed-type plastics which have been exposed to sunlight and weather for an 8-10 year lifetime, I don't think any such procedures currently exist anywhere, beyond landfilling. Hopefully this will change in the future, but it will be a long road. One of the Sunnyvale Speaker Series events also touched on the issue that even if supposedly "PFAS-free" products exist (which they may not even for this case), that may not actually not be dangerous because it's replacing one chemical formulation with another, only slightly different one which may also be unknown as to its impacts (see: https://www.youtube.com/watch?v=-3hXxi1kf_g&list=PLGJ-ThSMJyqMcsJTcTNQuzHy3cYyMpCHb&index=1). **The safest option is to minimize plastics usage altogether.**

While at one point it seemed like the water usage question would outweigh the issues of plastic manufacturing and installation, I think current best practices have come to the conclusion that for all these reasons, AT is worse than natural grass, even in sports field contexts which are necessarily a one-type grass monoculture (as opposed to yards, gardens, and other landscaping which can be populated with native plants, the best of the options). Since I've become aware of this issue, I've seen the FUHSD discussion on replacing their existing AT fields at the end of their lifetime, and the discussion was frankly shockingly framed, and essentially came down to the sunk cost fallacy: **once AT is installed, it will be exponentially more difficult and expensive to convert those fields back to natural grass even in light of new evidence on the various harms of plastic grass since the initial installation**. This to my mind makes it all the more imperative that this issue be considered, before more infrastructure is committed to producing tons of plastic waste every ~8ish years.

As a scientist, I am a strong believer that everyone should make decisions using the best available information and research, and I've seen how much Silicon Valley likes to pride itself on always being ahead of the curve on many issues, especially sustainability. While I'm not always convinced that a ban is the correct way to bring about desired changes, in this case I do support banning installation of AT, or at the very least exploring the options further.

Thanks for your time,

Kristina Pistone

Some brief further reading/listening:

—<https://gimletmedia.com/shows/howtosaveaplanet/2ohrl58/is-my-lawn-bad-for-the-climate>: interview with an ecologist regarding grass and land cover options in drought-prone climates

—<https://calmatters.org/environment/2023/10/california-synthetic-turf-pfas/>: you may have already seen this article on state movements towards a ban, due to the concerns about PFAS among other environmental issues described in the piece. Also, when Famed Scientist/Absolute Legend Sylvia Earle says something is bad, you listen to her!

From: [Bill DeVincenzi](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Prohibit new installation of artificial turf in Santa Clara County
Date: Sunday, April 14, 2024 8:54:49 PM

I wish to express my concern over the installation of new artificial turf in Santa Clara County. I would like to support Supervisor Otto Lee referral. Artificial turf is bad for the climate, bad for the environment and bad for human health. It contains “forever chemicals” which are very harmful to all who come in contact, but especially our youth who frequent the playing fields that this turf is used on. Microplastics are infesting our lives and need to be regulated to mitigate the harm they are causing. Thank you for your attention to this matter.

William Devincenzi
Founder and President, Sustainable Villages Community club

From: [Cheryl Weiden](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Support for Item 11 on the April 16th, 2024 BOS Agenda
Date: Sunday, April 14, 2024 9:05:06 PM



Dear Santa Clara County Board of Supervisors:

I am writing to express our strong support for Item 11, the referral regarding an ordinance to prohibit the installation of artificial turf. This referral specifically directs the Administration to present options for a County ordinance aimed at preventing the installation of artificial turf and synthetic grass on Santa Clara County property.

Artificial turf and synthetic grass pose significant risks to both human health and the environment. They contribute to chemical runoff, microplastic pollution, and exacerbate the heat island effect, all of which have detrimental effects on our well-being.

Chemical runoff from artificial turf contains substances such as PFAS, commonly known as "forever chemicals," which have been linked to various health issues including lower antibody response to vaccines and liver damage. Microplastics, another byproduct of artificial turf, have been found to cause decreased immune response and organ dysfunction in humans.

Moreover, these pollutants harm our environment by affecting organisms such as small birds and fish, as well as restricting access to soil for insects and worms. Additionally, the elevated surface temperatures of artificial turf contribute to equipment damage, skin burns, and an increased risk of heat-related illnesses.

Given these concerns, it is imperative that Santa Clara County follows the lead of cities like Millbrae and takes decisive action to prohibit the installation of artificial turf. By doing so, we not only protect public health and the environment but also align ourselves with sustainability and climate goals.

350 Silicon Valley urges you to support this referral. Implementing an ordinance to prohibit artificial turf installation will safeguard our community's health, preserve our environment, and demonstrate our commitment to a sustainable future.

Sincerely,

Cheryl Weiden
350 Silicon Valley
Steering Committee

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From: [Emily Becker](#)
To: [Arenas, Sylvia](#); [Chavez, Cindy](#); [Lee, Otto](#); [Ellenberg, Supervisor](#); [Supervisor Simitian](#); [BoardOperations](#)
Subject: [EXTERNAL] Support for a ban on artificial turf: 4/16/2024, Item #11, LF 24-5361
Date: Sunday, April 14, 2024 10:20:44 PM

Dear Supervisors Arenas, Chavez, Lee, Ellenberg, and Simitian:

As a resident of Santa Clara County Supervisorial District 1 and a member of Mothers Out Front Silicon Valley, I urge you to support Supervisor Lee's referral to create options for a ban on the installation of new artificial turf on County property.

Plastic grass poses a significant health risk due to the use of artificial chemicals including PFAS, a known carcinogen. Its use also contributes to water pollution and increases the urban heat island effect, as it can reach much higher surface temperatures than natural grass. In addition, it damages the climate due to the use of fossil fuels in its production and its displacement of natural grass, which naturally draws down carbon pollution.

This is important to me because all children deserve a safe space to play. Today's children are poised to bear the brunt of so many poor environmental decisions made by their elders. The ability of the County to avoid the further production and use of plastic, and instead prioritize natural grass and its many environmental advantages - from the lack of fossil fuels and toxic chemicals, to the increased carbon and rainfall absorption - is a unique opportunity to protect children's health today, while simultaneously lessening their future burden.

Therefore, I ask that you support Supervisor Lee's referral to direct County administration to create options for an ordinance to prohibit new installation of artificial turf on County property.

Thank you,

Emily Becker

From: [Kanika Rawat](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Public Comment on Prohibiting Artificial Turf for 4/16 Meeting
Date: Monday, April 15, 2024 8:01:08 AM

Hello,

My name is Kanika Rawat and I am a sophomore at Notre Dame High School San Jose. I live in San Jose District 4 and am a member of the Silicon Valley Youth Climate Action San Jose team.

I have full support for Otto Lee's referral (Item 11) proposing a "*County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.*" Artificial turf should not be installed because of its negative effects on human health and the environment. It is made of and produced with harmful chemicals that affect both the workers who manufacture and the people, especially children in schools, exposed to it in its daily use. People can also be harmed by its dangerously high surface temperatures. I recall that my middle school's turf would become very hot during the hotter months, smelled like rubber, and would leave residues from the crumb rubber on my hands after we played outside: I now realize that this was exposing me and my schoolmates to harmful chemicals. Artificial turf harms our environment because it releases greenhouse gasses and other polluting chemicals and becomes plastic waste after about 10-years. Artificial turf should be prohibited because it's not environmentally friendly and not safe. Natural grass is a much more sustainable and safe solution.

Thank you,
Kanika

From: [chantalvs \(null\)](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] 4/16/2024, Item #11, LF 24-5361
Date: Monday, April 15, 2024 10:17:09 AM

Dear Board members,

I am writing as a resident of Sunnyvale whose kids attended Fremont High School. I understand the board will be voting on the issue of artificial fields. Even though artificial turf seemed like the ideal solution to saving water, it all turned out to be not such a healthy alternative to grass after all. Since the first artificial turf fields got put in a lot more has become known to us about this product.

I am keenly aware, as I'm sure you are too, of all the negative environmental, health and safety aspects of artificial turf. I am urging you to thoroughly investigate more sustainable, healthy options - e.g. natural grass. There are newer types that require less water, less maintenance, can be played on for longer periods of time (contrary to what is the current complaint of coaches, district staff, etc), don't need to be replaced every 7-10 years and will not pollute the environment nor attribute to possible health related issues years from now. Our kids deserve to be kept safe from the highly possible negative health issues currently being linked to artificial turf and chemicals it is made with - not to mention the small blades of plastic (microplastics) that are breaking off and ending up in our water supply and aquatic life - and eventually in our own bodies!

This is your time to make an impact on the environment and childrens' health for the better. As a voter in the district, I am counting on you to do the right thing and hopefully will not be misled by artificial turf companies. Thank you for the time and energy you put into investigating all the data on artificial turf and making the right decision for Santa Clara County.

Best regards,
Chantal van Schooten



Re: Support for Item 11 (re. artificial turf) on April 16th, 2024 BOS Agenda, LF 24-5361

Dear Santa Clara County Supervisors Arenas, Chavez, Lee, Ellenberg, and Simitian:

Mothers Out Front Silicon Valley wishes to express our strong support for Item 11, the referral on an ordinance prohibiting installation of artificial turf. This referral directs the Administration to report to the Board with options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

This year, Mothers Out Front Silicon Valley has chosen the promotion of healthy, natural play surfaces as one of our top priorities. That's because the use of artificial turf (plastic grass) is harmful to people (especially children), to the environment, and to the climate.

Artificial turf and synthetic grass contribute to chemical runoff, microplastic pollution, and the heat island effect, all of which are harmful to human health. Some of the chemical runoff from artificial turf includes PFAS, or "forever chemicals." Many health impacts from PFAS and microplastics have been consistently identified in humans, although research on these impacts is ongoing. Some of these reported impacts for microplastics include decreased immune response, oxidative stress, and organ dysfunction. For PFAS, a few reported impacts include lower antibody response to some vaccines, lower birth weights, and liver damage. Additionally, the elevated surface temperatures of artificial turf that cause the heat island effect have the potential to damage equipment, burn skin, and increase the risk of heat-related illness.

The chemical runoff and microplastic pollution also harm organisms in our environment. PFAS and microplastics have been found to harm the health of animals, with microplastics blocking the gastrointestinal tract of small birds and fish and sometimes causing physical damage internally. Plastic turf also restricts access to the soil and out of the soil for insects and worms, respectively. On top of preventing these harmful environmental impacts, this ordinance would reduce potential greenhouse gas

emissions by preventing further demand for plastic and preventing the replacement of natural plants with a synthetic surface that cannot sequester carbon.

These health concerns and the environmental impacts have already led the city of Millbrae to prohibit the installation of artificial turf. Santa Clara County should lead the way for counties and set an example for our cities by taking this step as well.

Therefore, on behalf of our 2000+ local supporters, we urge you to support this referral. An ordinance prohibiting artificial turf is essential to protect children, community and environmental health, as well as advance County sustainability and climate goals.

Sincerely,

Linda Hutchins-Knowles
Co-Founder and Team Coordinator
Mothers Out Front Silicon Valley



April 15, 2024

Santa Clara County Board of Supervisors
70 West Hedding, East Wing, 10th Floor
San Jose, CA 95110
Via email: BoardOperations@cob.sccgov.org

Re: Support for Item 11 on the April 16 th , 2024 BOS Agenda: Plastic Turf

Dear President of the Board Ellenberg, Vice President Lee, and Supervisors,

On behalf of the Santa Clara Valley Audubon Society, I write to express our support for Item 11, Referral on an ordinance prohibiting installation of artificial turf. This referral directs the Administration to report to the Board with options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

Artificial turf and synthetic grass contribute to chemical runoff, microplastic pollution, and the heat island effect, all of which are harmful to human and environmental health. Some of the chemical runoff from artificial turf includes PFAS, or “forever chemicals.” Many health impacts from PFAS and microplastics have been consistently identified in humans, although research on these impacts is ongoing. Some of these reported impacts for microplastics include decreased immune response, oxidative stress, and organ dysfunction. For PFAS, a few reported impacts include lower antibody response to some vaccines, lower birth weights, and liver damage. Additionally, the elevated surface temperatures of artificial turf that cause the heat island effect have the potential to damage equipment, burn skin, and increase the risk of heat-related illness.

The chemical runoff and microplastic pollution also harm organisms in our environment. PFAS and microplastics have been found to harm the health of animals, with microplastics blocking the gastrointestinal tract of small birds and fish and sometimes causing physical damage internally. Plastic turf also restricts access to the soil and out of the soil for insects and worms, respectively. On top of preventing these harmful environmental impacts, this ordinance would reduce potential greenhouse gas emissions by preventing further demand for plastic and preventing the replacement of natural plants with a synthetic surface that cannot sequester carbon.

Concerns for human health motivated the Santa Clara County Medical Association to oppose installation of artificial turf on playing fields¹. Environmental concerns for watershed-wide impacts to water quality and environmental health caused Valley Water to reject artificial turf as a sustainable alternative to non functional turf².

The Santa Clara Valley Audubon Society urges you to support this referral. An ordinance prohibiting artificial turf will protect community and environmental health, as well as advance County sustainability and climate goals. Your leadership can help change a harmful trend, and serve as a model to other jurisdictions in our county.

Sincerely,

Shani Kleinhaus
Environmental Advocate
Santa Clara Valley Audubon Society

¹ <https://www.sccma.org/Portals/19/Artificial%20Turf%20Article.pdf>

²

https://www.valleywater.org/sites/default/files/01_Artificial%20Turf%20Fact%20Sheet_030614%20BA.pdf

Safe Healthy Playing Fields Inc.



www.safehealthyplayingfields.org

16 April 2024

Proposed Ordinance Prohibiting Artificial Turf Installation on County Property

Support

President Ellenburg, Vice President Lee, and Supervisors Arenas, Chavez and Simitian:

Thank you for the opportunity to submit these comments on behalf of Safe Healthy Playing Fields, Inc (SHPFI).

SHFPI is an all-volunteer 501-c-3 non-profit. We are committed to educating communities, policy-makers and elected officials about the health, safety and financial realities of plastic fields versus grass fields and other synthetic surfaces for their parks and schools. Our constituency ranges from concerned individuals to community and civic organizations, legal, healthcare and science professionals, municipal leaders and state legislators.

We applaud the proactive initiative to ban synthetic turf on all Santa Clara County owned properties and hope it will serve as a model for counties throughout the state. We ask that you consider inclusion of Santa Clara County leased properties as well as other super heated, toxic and carcinogenic rubberized playground surfacing, including used tire crumb poured-in-place (PIP) surfaces.

The proposed ordinance is in alignment with:

[Santa Clara County Board of Health](#)¹ position statement on synthetic turf

[Valley Water's](#)² fact sheet on synthetic turf

[CA Statewide Microplastics Strategy](#)³- Senate Bill No. 1263, Chapter 609, 2018

[CA DTSC](#)⁴ - Microplastics planned addition to Priority Chemicals List

[CA DTSC](#)⁵ - PFAS and other chemicals in synthetic turf (pg. 14).

[CA 30x30 Plan](#)⁶

[Santa Clara County Sustainability Master Plan](#)⁷

[Santa Clara County Zero Waste Policy](#)⁸

[Intergovernmental Negotiating Committee on Plastic Pollution](#)⁹

[Pending](#)¹⁰ and future litigation; decreased liability

Synthetic turf is made of mixed plastics. There are over 16,000 known chemicals found in plastics. Of the known chemicals, 4,200 are considered "highly hazardous" to human and environmental health. Of these 4,200 chemicals, only 980 have been regulated by any global agency. Per- and polyfluoroalkyl substances (PFAS) are amongst the 15 categories of chemicals of concern in plastics.¹¹

Chemicals in plastics add disease burden and health care costs. In the United States (US), for 2018, the attributable cost of plastics to disease and health care related costs was \$249 billion (sensitivity analysis: \$226 billion-\$289 billion); for PFAS alone, it was \$22.4 billion.¹² The societal cost globally is estimated at \$16 trillion USD annually for PFAS clean ups and health care for impacted individuals.¹³

PFAS:

The need to stop further PFAS exposure cannot be overstated. PFAS can cause multiple reproductive disorders¹⁴ (including a 40% decrease in female fertility¹⁵; a decrease of 62.3% total sperm count in males¹⁶); Crohn's disease¹⁷; breast¹⁸, testicular, kidney¹⁹, prostate²⁰ and liver²¹ cancers. PFAS cross the blood-brain barrier and are related to Autism Spectrum Disorder²², Attention Deficit Hyperactivity Disorder²³, increased deaths from Parkinson's and Alzheimer's diseases²⁴; immunological effects²⁵; increased serum cholesterol²⁶; effects on infant birth weights²⁷; impaired glucose metabolism, insulin resistance, dyslipidemia and adiposity in children and adolescents²⁸; thyroid hormone disruption (including neonatal)²⁹; thyroid cancer³⁰ and brain tumors (glioblastoma).³¹ Because they are bioaccumulative, PFAS exposure can impact multiple generations³². Babies are being born pre-polluted with PFAS.³³

Multiple studies have confirmed PFAS,³⁴ heavy metals, PAHs, phthalates and Volatile Organic Compounds leach into water and soil and aerosolize from plastics. Recent research from the University of Stockholm indicates that synthetic turf fields contain from **1 to 38 pounds** of PFAS, per regulation sized playing field.³⁵ Whether short or long chain, polymeric or non-polymeric, PFAS chemicals are so toxic they are not measured in pounds, but in parts per trillion (ppt). One ppt is the equivalent of a single drop of water in 20 olympic sized swimming pools. CA DTSC is working to regulate PFAS as a class at the Parts Per Quadrillion (ppq)³⁶ level due to their extreme toxicity and bioaccumulative effects.

Children are exposed to toxic and carcinogenic chemicals from synthetic products in utero, at home, daycare and preschools, from elementary through high school, in parks- often for hours per day, week on week, year on year. Their exposures can continue through college and beyond. Because of younger children's hand-to-mouth developmental tendencies (ingestion), smaller stature and developmental windows, they are more likely to be exposed to PFAS and other toxic chemicals that leach into air, water and soil from synthetic turf and other plastic products.

In a small study undertaken in San Diego in 2023, soccer players were found to have dermal exposure to PFOS from playing on synthetic turf, whereas playing on natural grass resulted in significantly less PFOS exposure.³⁷ It was also noted that the soccer balls had PFOS. The study is being replicated by researchers at Wayne State University, Detroit, MI and hopefully by additional research institutions.

During the last legislative session, forty-two organizations were in support of AB1423-Schiavo,³⁸ PFAS in synthetic turf, while more than 60 environmental and advocacy organizations signed on in support of SB499-Menjivar³⁹ to protect students, staff and faculty against overheated schools and play areas. While the former was vetoed⁴⁰ by the governor and the latter died in the final committee due to efforts by the California Coalition for Adequate School Housing (CASH) in a campaign of disinformation,⁴¹ both bills are back in new form under other authors in the current legislative session.

The President and CEO of the Synthetic Turf Council has admitted to PFAS in synthetic turf in a letter sent to Senator Ben Allen in June of 2023.⁴²

100% of synthetic turf tested contains PFAS.⁴³ A partial list of PFAS found in synthetic turf and components to date (from public records):

- | | | |
|-------------|------------|------------|
| • PFOS | • PFHpA | • 13C2-4:2 |
| • PFOA | • PFBS | FTS |
| • 6:2 FTSA | • PFBA | • 12C2-6:2 |
| • GenX | • PFNA | FTS |
| • D3-N-MeFO | • PFDA | • 13C2-8:2 |
| SAA | • PFHxS | FTS |
| • D2-N-EtFO | • PPF Acid | • 8:2 FTOH |
| SAA | • R-EVE | • PMPA |
| • PFPeA | • PTFE | |
| • PFHxA | • PVDF | |

Additional Chemicals of Concern: (not comprehensive)

In synthetic turf:

- | | | |
|----------------------|--------------------|---------------------|
| • Phthalates | • Di/Isocyanates | • e 1,2-cyclohexane |
| • Latex | • Formaldehyde | dicarboxylic acid |
| • Polyvinyl chloride | • Fungicides | • Dibutyltin |
| • Naptha | • Flame retardants | • Ethylene glycol |
| • Siloxanes | • Coal fly ash | • Triclosan |
| • Talc | | |

In used tire crumb playground surfacing:

- | | | |
|----------------|----------------------|----------------------|
| • Lead | • Copper | • Hexamethoxymeth |
| • Benzene | • Benzothiazole (BT) | ylmelamine |
| • Formaldehyde | • 2-Mercapto-benzot | (HMMM) |
| • Chromium | hiazole (MBT) | • Short chain (SCCP) |
| • Arsenic | • 1,3-Diphenylguanid | and long chain |
| • Mercury | ine (DPG) | (LCCP) chlorinated |
| • Cadmium | | paraffin |

Drinking water standards:

On 5 April 2024, the California Office of Environmental Health Hazard Assessment (OEHHA) issued Protective Health Goals (PHGs) for two PFAS chemicals: PFOA and PFOS.⁴⁴ The PHGs are for use by the State Water Resources Control Board (SWRCB) in establishing primary drinking water standards. PHGs are based solely on scientific and public health considerations without regard to economic considerations. Maximum Contaminant Levels (MCLs) adopted by SWRCB consider economic factors and technological feasibility. However, CA SWRCB is required, by law, to set MCLs at a level as close as feasible to corresponding PHGs and with an emphasis on the protection of public health. CA MCLs established by SWRCB must be at least as stringent as the federal MCLs.

The PHGs put forth by OEHHA call for 0.0078 ppt for PFOA and 1.0 ppt for PFOS.

On 10 April 2024, the US EPA issued Maximum Contaminant Level Goals (MCLG) and Maximum Contaminant Levels (MCLs) for both PFOA and PFOS.⁴⁵

The MCLGs are non-enforceable health based goals. The US EPA set MCLGs for both PFOA and PFOS at zero, reflective of the latest science, which shows that there is no safe level of exposure to either chemical without risk of health impacts.

Additionally, the US EPA is setting enforceable Maximum Contaminant Levels (MCLs) at 4.0 ppt for PFOA and PFOS, individually.

Four additional PFAS chemicals, PFNA, PFHxS, PFBS and “GenX” Chemicals, MCLGs and MCLs were established at 10 ppt. The MCLGs and MCLs have been added as PFAS are often found together in mixtures and may have combined health impacts. The federal MCLs set a limit of 10 ppt for any mixture of two or more of PFNA, PFHxS, PFBS, and “GenX” Chemicals.

All six of the named PFAS chemicals, a mere sliver of the over 16,000 in this chemical family, have been found in synthetic turf.

Impervious Surfacing:

Synthetic turf is classified as impervious by the US EPA⁴⁶ and state of California⁴⁷:

*“...areas such as gravel roads...that will be compacted through design or use to reduce their impermeability.” It further has defined impervious surfaces as...[a]ny surface that prevents or significantly impedes the infiltration of water into the underlying soil. This can include but is not limited to: roads, driveways, parking areas and other areas created using non porous material; buildings, rooftops, structures, **artificial turf** and compacted gravel or soil.”*

Potential for Erosion:

“As impervious surfaces increase, stormwater runoff increases in quantity, speed, temperature, and pollutant load. When impervious surfaces reach 10–20% of local watershed area, surface runoff doubles and continues to increase until, at 100% impervious surface coverage, runoff is five times that of a forested watershed. Excessive stormwater runoff also increases the potential for flooding.” US EPA Impervious Surface Fact Sheet⁴⁸

Synthetic turf does not save water and will generate 27,000 gallons of toxic runoff per 1 acre of plastic for every one inch of rainfall.⁴⁹ The toxic mix of chemicals that leach from and runoff of synthetic surfacing is augmented by pollutants that accumulate on these surfaces, including vehicle exhaust and aviation fuels. A regulation sized soccer field is 80k square feet (1.84 acres). Most synthetic fields being installed exceed this size. For areas where snow accumulates on synthetic surfaces, the situation is even more dire as one inch of snow can equal up to 13 inches of rain,⁵⁰ significantly increasing the toxic runoff.

Microplastics:

Research by the Department of Civil and Environmental Engineering, University of California at Los Angeles, CA, and the Moore Institute for Plastic Pollution Research, Long Beach, CA, found *“Children’s playgrounds contain more microplastics than other areas in urban parks.”*⁵¹

In addition to the CA Statewide Microplastics Strategy - Senate Bill No.1263, Chapter 609, 2018,⁵² CA DTSC recently announced its intent to regulate Microplastics as a Chemical of Concern.⁵³

Microplastic blade loss from synthetic turf is estimated at 551-661 pounds per playing field per year.⁵⁴ Microplastics not only leach PFAS and other chemicals, they adsorb other chemicals and bacteria, posing particular risk to the food chain.

Micro- and nano-plastics have been found in:

- Heart⁵⁵
- Liver and spleen⁵⁶
- Lungs⁵⁷
- Blood⁵⁸
- Placenta (maternal and fetal sides)⁵⁹
- Newborn and adult feces⁶⁰
- Breastmilk⁶¹
- Brain⁶²
- Testes and semen⁶³

Microplastic synthetic turf blades have been found in Lake Tahoe,⁶⁴ where researchers found high levels of polyethylene and polypropylene in the lake and ***“...recorded plastics concentrations more than three times higher than those sampled using a similar method in the North Atlantic subtropical gyre.”***⁶⁵ In 2021, researchers found that synthetic turf fields in Toronto contribute the 2nd highest amount of microplastics to the environment with only litter contributing a higher amount.⁶⁶

Published in June 2023, research by the University of Barcelona found:

*“AT [artificial turf] fibers - composed mainly of polyethylene and polypropylene - can constitute over 15% of the mesoplastics and macroplastics content, suggesting that AT fibers may contribute significantly to plastic pollution. Up to 20,000 fibers a day flowed down through the river, and up to 213,200 fibers per km2 were found floating on the sea surface of nearshore areas. AT, apart from impacting on urban biodiversity, urban runoff, heat island formation, and hazardous chemical leaching, is a major source of plastic pollution to natural aquatic environments.”*⁶⁷

The CA Coastal Commission conditioned a permit for UC Santa Barbara’s baseball stadium in December 2023 for natural grass only and no tree removal, citing microplastic pollution as the primary concern in the staff report.

Synthetic turf is clearly a major point source of PFAS and microplastic pollution that cannot go unaddressed.

Heat/Heat Islands:

Synthetic turf off-gasses both methane and ethylene and continues throughout the night, in ever increasing amounts for the 1,000 years it takes for it to decompose.⁶⁸ Methane traps 90% more heat than carbon dioxide and is 21 times more potent. Land based plastics produce 2 times more methane and 76 times more ethylene than plastics found in waterways and oceans.⁶⁹

A 2017 Swedish study of total life cycle emissions on a modeled 7881m² synthetic field concluded GHG emissions would be 527 tons of CO₂e for a ten year use period,⁷⁰ exclusive of manufacturing, transport, construction, removal and disposal. The heat islands created by synthetic playing fields extend beyond the footprint of the field, impacting surrounding communities. The heat islands they create are visible from satellites.

Synthetic turf can readily become much hotter than asphalt, reaching temperatures of 160°F to 180°F (regardless of infill type) and have even reached 222.8°F.⁷¹ Thermal burns on synthetic surfaces have required hospitalization and admission to burn and intensive care units. At a surface temperature of 118°F a first-degree burn occurs in 15 minutes, becoming a 3rd degree burn (full skin-thickness) in 20 minutes; at a temperature of 140°F, 1st degree burns occur in 3 seconds, and 3rd degree burns in 5 seconds.⁷²

Pets and wildlife can also sustain burns and are exposed to the toxic and carcinogenic chemicals from these petrochemical surfaces. Use in dog parks is particularly concerning. Dogs have rapid metabolisms and live shorter lives. In addition to dermal exposure and inhalation, they lick their paws, ensuring ingestion of carcinogenic chemicals.

Not Recyclable:

CA Commission on Recycling Markets Curbside Recycling designated synthetic turf a single-use plastic.⁷³ They are made of mixed petrochemical based plastics, rendering them unrecyclable.

Landfilling, donating, selling, improperly or illegally disposing of synthetic turf continues to contribute to greenhouse gas emissions, as well as PFAS and other toxic and carcinogenic chemical leachate and continuous microplastic pollution. Tracking, reporting and following up on improper and illegal dump sites, often comprising hundreds of rolls of used plastic turf carpet, has proven difficult and time consuming.

When “mechanically” recycled (chopped up, essentially) for use in other products, the toxic and carcinogenic effects are added to the new product. When shipped out of state for “advanced chemical recycling” (banned in CA under SB54-Allen, signed into law in 2022), they contribute to the negative human and environmental health effects of Environmental and Social Justice (EJ/SJ) communities. Landfilling and dumping used rolls also often occurs in EJ/SJ communities.

A used synthetic turf field removed in 2023 from Saratoga High School and dumped on agricultural land in at least two different locations in Senators Cortese and Laird’s districts are currently under investigation. With likely thousands of plastic playing fields scheduled for removal this summer, and at least three in Santa Clara County, it is incumbent on decision makers to turn off the tap on these dangerous, highly polluting, unnecessary plastic grass carpets.

Of the four self proclaimed synthetic turf recyclers in CA, Re-Match, a Danish company that received a \$2 million tax incentive from CA as well as in PA, France and the Netherlands. They have been delisted from the Copenhagen Stock Exchange and recently settled litigation in PA,

where they moved thousands of rolls of used turf from location to location. There is no address listed with the CA Secretary of State for this business and no evidence that they ever broke ground for a business in CA.

TenCate, FieldTurf and Target Technologies Intl., Inc. (TTII) all claim to be doing mechanical recycling in CA and shipping chopped up fields to Houston, TX to Cyclyx and then to the ExxonMobil Olefins plant in Baytown, TX for “advanced chemical recycling.” There is no proof that the process, which would require addition of virgin plastics and yet more PFAS chemicals, is being done at scale. What is known is that the Baytown facility has been cited numerous times for violation of air standards and fined in the millions for contaminating the surrounding community, where there is a high level of cancer.

There is no known location for TenCate or TTII recycling plants in CA.

FieldTurf, a Tarkett company, claims to be recycling at Circular Polymers by Ascend in Lincoln, CA. There is video footage of old synthetic turf rolls being chopped up and clear OSHA violations. FieldTurf has also made claims of transporting old fields to Cyclyx in Houston, TX and then ExxonMobil in Baytown, TX for “advanced chemical recycling.”

Industry claims of a TRP (Turf Recycling Products) location in Banning, CA have been proven false. TRP is not licensed to do business in CA. Phone calls to Banning and surrounding towns confirmed no licenses or so-called recycling businesses exist in the area. They are in Dalton, GA and a subsidiary of Consan USA. There is no evidence that any type of recycling is occurring there, either.

A Chain of Custody document for a portion of the old field removed from Saratoga High School lists TurfCycle and is signed by an individual in Temecula, CA.⁷⁴ The letter is addressed to FieldTurf in Calhoun, GA and was forwarded to Saratoga High School. TurfCycle is licensed in CA and reports “turf recycling” on documents filed with the SOS.⁷⁵ TurfCycle clearly states on the “chain of custody”

“...materials are being stored at this facility and will be re-purposed into the local community for general landscaping, batting cages, gym flooring, cross-fit, sport related ground coverings and erosion control. None of these materials were or will be sent to a landfill.”

The used plastic turf rolls delivered to Pescadero, CA are on land zoned for residential/agricultural use, and like the final three semi-trucks that delivered 54 rolls to San Martin, also zoned for residential/agricultural use, is under investigation by the County. In both instances, the used rolls have been noted to be listed for sale on Facebook Marketplace. As in multiple other locations up and down the state and across the country, a physical address or true property owner is never listed in such ads (also found on Craigslist).

Alternative options:

Grass fields actively sequester carbon dioxide and provide a cooling function that is especially dramatic when compared to the heat generated by synthetic turf. Grass naturally filters toxins,

performs important eco-services for the soil beneath, and provides widely dispersed rainwater infiltration allowing absorption and recharging of the water table. Additionally⁷⁶:

- Research suggests that grasses can accumulate and deposit carbon into the soil by approximately one-half ton of carbon per acre for 30 to 40 years.
- Grasses are estimated to accumulate and deposit carbon into the soil by approximately one-half ton of carbon per acre year for 30 to 40 years.
- Organic management and zero emission maintenance equipment mitigate emissions and reduce costs over time, and increase carbon sequestration.
- Electric mowers for playing fields and chalk markers are also available.
- Drought⁷⁷ and desert tolerant⁷⁸ varieties of natural grass appropriate for lawns, parks and high use playing fields are available.
- An 82,622 ft² natural grass field would produce enough daily oxygen for nearly 463 people.

A turfgrass manager (not gardeners and landscapers) can generally manage 5 natural grass playing fields. Hiring or training a turf grass manager would be a cost effective investment with the savings realized from drought tolerant natural grass rather than the exorbitant expense for plastic fields that last from 8-12 years on average (some have failed as early as 1 to 4 years).

Programs in natural turf management include UC Riverside, Washington State University, Oregon State University (online certificate program), University of Arizona, Colorado State University and Texas A&M, to name a few.

Organically managed, high use fields utilized by park goers and organized sports teams have been in use for years in many areas across the country,⁷⁹ Once established, organically managed fields become increasingly more cost effective. There are opportunities for two year pilot projects with expert guidance. Two to three parks are generally preferred. One example is Beyond Pesticides, a non-profit that provides expertise and training in organic management for parks and schools.⁸⁰

Open Green Space Has Mental Health Benefits:

Natural green spaces have been shown to mitigate aggressive behavior in adolescents⁸¹ and significantly reduce the growing risk of psychiatric disorders⁸² and suicide mortality.⁸³ Natural green spaces also reduce health risks such as asthma.⁸⁴

The American Psychological Association finds:

“...exposure to nature has been linked to a host of benefits, including improved attention, lower stress, better mood, reduced risk of psychiatric disorders and even upticks in empathy and cooperation.” American Psychological Association⁸⁵

Initially published in Center for Climate, Health, and the Global Environment, Harvard⁸⁶:

“Studies have found that students who attend schools with green spaces tend to have better grades, higher test scores, and better attendance rates than those who do not.”

In addition to Millbrae’s ordinance and San Marino’s interim ordinance, ordinances are being considered in Sunnyvale and Pasadena. There is an ever growing number of moratoriums and ordinances against synthetic turf and legislation passed and in progress affecting sale and use in multiple states.

Scripps Institute of Oceanography, University of California San Diego, reported 46 total atmospheric rivers along the U.S. West Coast, causing disastrous flooding and loss of property and life during the 2022 to 2023 rainy season. With what has now been categorized as a Super El Niño year currently, and increasing frequency and severity of atmospheric events overall, consideration of synthetic turf is antithetical to environmental responsibility and an even poorer choice for a product that must be replaced every 8 to 10 years on average. Rubberized playground surfacing has an even shorter life span.

SHPFI urges you to adopt the proposal before you on 16 April 2024.

Respectfully submitted,

Diana Conway, President
Dianne Woelke MSN, Board Member
Safe Healthy Playing Fields, Inc.
<https://www.safehealthyplayingfields.org>
SHPFI is an all-volunteer nonprofit 501-c-3



¹<https://drive.google.com/file/d/1DyvD3vyHJNFyE88A2tbenuh0Fp7Mr3CL/view?usp=drivesdk>

²https://s3.us-west-2.amazonaws.com/valleywater.org.if-us-west-2/f2-live/s3fs-public/Artificial%20Turf%20Fact%20Sheet_042922%20SL.pdf

³https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1263

⁴https://dtsc.ca.gov/wp-content/uploads/sites/31/2023/04/Background-Document-Proposal-to-Add-Microplastics-to-the-Candidate-Chemical-List_May272023.pdf

⁵<https://dtsc.ca.gov/wp-content/uploads/sites/31/2021/04/Final-2021-2023-Priority-Product-Work-Plan.pdf>

⁶<https://www.gov.ca.gov/2020/10/07/governor-newsom-launches-innovative-strategies-to-use-california-land-to-fight-climate-change-protect-biodiversity-and-boost-climate-resilience/>

⁷<https://www.sccsustainabilityplan.org>

⁸<https://files.santaclaracounty.gov/migrated/Board-Policy-8.4-Zero-Waste-Policy-For-County-Facilities-and-Operations.pdf>

⁹<https://www.unep.org/inc-plastic-pollution>

¹⁰<https://ceh.org/wp-content/uploads/2024/03/2024-03-04-Notice-PFOS-in-Turffx.pdf>

¹¹https://www.cnn.com/2024/03/14/health/toxic-unregulated-chemicals-report-wellness/?cid=ios_app

¹²<https://doi.org/10.1210/jendso/bvad163>

¹³<https://chemsec.org/chemsec-identifies-the-top-12-pfas-producers-in-the-world-and-reveals-shocking-social-costs/#:~:text=Twelve%20chemical%20companies%20are%20responsible%20for%20the%20majority,PFA%20chemicals%20amount%20to%20€16%20trillion%20per%20year.>

¹⁴<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8743032/>

¹⁵<https://www.mountsinai.org/about/newsroom/2023/exposure-to-chemicals-found-in-everyday-products-is-linked-to-significantly-reduced-fertility>

¹⁶<https://academic.oup.com/humupd/article/29/2/157/6824414?login=false>

¹⁷https://journals.lww.com/environepidem/Fulltext/2019/10001/Ulcerative_colitis_Crohn_s_disease_and_others.1369.aspx#:~:text=Background%3A%20Per-%20and%20polyfluoroalkyl%20substances%20%28PF

[AS%29%20can%20act.Disease%20%28CD%29%20and%20other%20inflammatory%20bowel%20disease%20%28IBD%29](#)

¹⁸<https://www.bcpp.org/resource/pfas-forever-chemicals-pfoa-pfos/>

¹⁹<https://www.sciencedirect.com/science/article/abs/pii/S0013935120315899>

²⁰<https://journals.sagepub.com/doi/10.1177/11786302221076707>

²¹<https://cdas.cancer.gov/approved-projects/2555/>

²²<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7856021/#:~:text=Prenatal%20exposure%20to%20per-%20and%20polyfluoroalkyl%20substances%20%28PFAS%29,with%20increased%20risk%20of%20autism%20spectrum%20disorder%20%28ASD%29.>

²²<https://www.sciencedirect.com/science/article/pii/S004896972301700X>

²³<https://doi.org/10.1016/j.scitotenv.2023.163081>

²⁴<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9035516/>

²⁵<https://www.healthandenvironment.org/webinars/96552>

²⁶<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7071576/>

²⁷<https://ehp.niehs.nih.gov/doi/10.1289/EHP9875>

²⁸<https://ehp.niehs.nih.gov/doi/10.1289/EHP9875>

²⁹<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7851056/>

²⁹<https://doi.org/10.1016/j.ebiom.2023.104831>

³⁰<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10002587/>

³¹<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10002587/>

³²<https://vimeo.com/563823549>

³³<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7530144/>

³⁴https://docs.google.com/file/d/1WCSup78KBKjxQX37wtMq5fqwRTryBBAm/edit?usp=docslist_api&filetype=mspresentation

³⁵<https://pubs.acs.org/doi/10.1021/acs.estlett.2c00260>

³⁶<https://ehp.niehs.nih.gov/doi/full/10.1289/EHP7431>

³⁷<https://www.washingtonpost.com/wellness/2024/03/12/artificial-turf-pfas-chemicals/>

³⁸https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=202320240AB1423

³⁹<https://drive.google.com/file/d/1gf869U0P6dFydbYJSZR513mvZ7RHG4a4/view?usp=drivesdk>

⁴⁰<https://www.gov.ca.gov/wp-content/uploads/2023/10/AB-1423-VETO-1.pdf>

⁴¹https://cdn.ymaws.com/cashnet.org/resource/resmgr/weekly/single_update/call_to_action_sb_499_menji.docx

⁴²<https://drive.google.com/file/d/1gnotC4ju6HdbPTnI9fvD4G68Q8a04len/view?usp=drivesdk>

⁴³https://whova.com/xems/whova_backend/get_event_s3_file_api/?eventkey=ad5b9325b33ddf90075c415919b946b4db08203e34443e6dc4f9c9107ff2d5bf&event_id=sopc_202003&file_url=https://d1keuthy5s86c8.cloudfront.net/static/ems/upload/files/dtxml_6April2022_NEWMOA_GP_KLM_PFAS_in_Artificial_Turf.pdf

⁴⁴<https://oehha.ca.gov/water/press-release/press-release-water/california-adopts-health-protective-goals-forever-chemicals>

⁴⁵<https://www.epa.gov/newsreleases/biden-harris-administration-finalizes-first-ever-national-drinking-water-standard>

⁴⁶<https://www3.epa.gov/region1/npdes/stormwater/ma/2016fpd/appendix-a-2016-ma-sms4-gp.pdf>

⁴⁷https://www.waterboards.ca.gov/rwqcb2/water_issues/programs/stormwater/MRP/mrp5-22/MRP3_Attachment_A.pdf (pg 116)

⁴⁸<https://enviroatlas.epa.gov/enviroatlas/DataFactSheets/pdf/ESN/PercentImperviousArea.pdf>

⁴⁹<https://extension.psu.edu/the-role-of-trees-and-forests-in-healthy-watersheds>

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⁵⁹<https://www.sciencedirect.com/science/article/pii/S0160412020322297>

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⁶¹<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9269371/>

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⁶³<https://www.sciencedirect.com/science/article/abs/pii/S0048969723013293#:~:text=Microplastics%20in%20the%20testis%20were%20composed%20of%20polystyrene.fragment%20was%20the%20main%20shap%20the%20in%20testis>

⁶⁴<https://www.sierrasun.com/news/uc-davis-environmental-research-center-fundamental-at-lake-tahoe/>; personal email communications with researchers at Tahoe Environmental Research Center (TERC)

⁶⁵<https://www.latimes.com/california/story/2023-07-14/lake-tahoe-troubling-concentration-microplastics>

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⁷³[@1:31:02](https://youtu.be/JyBumjJzjVY?si=KkmXEe2q5Gpy5G8U)

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⁷⁷<https://www.latimes.com/california/story/2022-09-09/uc-riverside-turfgrass-research-jim-baird>

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⁸¹<https://pubmed.ncbi.nlm.nih.gov/27343886/>

⁸²<https://doi.org/10.1073/pnas.1807504116>

⁸³<https://doi.org/10.3389/fpubh.2022.902480>

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⁸⁵<https://www.apa.org/monitor/2020/04/nurtured-nature>

⁸⁶<https://datamax.org/can-green-space-around-schools-improve-academic-performance/>

From: [Lisa Charpontier](#)
To: [Arenas, Sylvia](#); [Chavez, Cindy](#); [Lee, Otto](#); [Ellenberg, Supervisor](#); [Supervisor Simitian](#); [BoardOperations](#)
Subject: [EXTERNAL] Support for a ban on artificial turf: 4/16/2024, Item #11, LF 24-5361
Date: Monday, April 15, 2024 1:48:50 PM

Dear Supervisors Arenas, Chavez, Lee, Ellenberg, and Simitian:

As a resident of Santa Clara County Supervisorial District 2 and a member of Mothers Out Front Silicon Valley, I urge you to support Supervisor Lee's referral to create options for a ban on the installation of new artificial turf on County property.

Plastic grass poses a significant health risk due to the use of artificial chemicals including PFAS, a known carcinogen. Its use also contributes to water pollution and increases the urban heat island effect, as it can reach much higher surface temperatures than natural grass. In addition, it damages the climate due to the use of fossil fuels in its production and its displacement of natural grass, which naturally draws down carbon pollution.

This issue is important to me because I believe that we all have a right to live in a healthy environment free from the risk of cancer due to plastic pollutants and into a future with a stable and liveable climate. Now that we are aware of the harms of artificial turf, it is incumbent on us to immediately put a stop to its use and production.

Therefore, I ask that you support Supervisor Lee's referral to direct County administration to create options for an ordinance to prohibit new installation of artificial turf on County property.

Kind Regards--

-Lisa Charpontier

Lisa Charpontier
Botany of Design
Landscape Design

April 12, 2024

Honorable Members of the Board of Supervisors
County of Santa Clara
70 West Hedding Street, East Wing
San Jose, CA 95110

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RE: Support for Item 11 (“Prohibiting Artificial Turf Installation on County Property”) on April 16, 2024 Board of Supervisors Meeting Agenda

Dear Members of the Board of Supervisors,

On behalf of the Santa Clara Valley Water District (Valley Water), I am writing to express our support of Supervisor Otto Lee’s referral regarding a proposed ordinance prohibiting installation of artificial turf and synthetic grass on County of Santa Clara property.

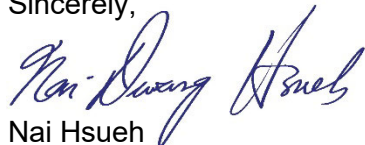
Artificial turf and synthetic grass contribute to contaminated runoff, microplastic pollution, and the heat island effect, all of which are harmful to human health. Runoff from artificial turf may contain heavy metals, harmful chemicals, such as perfluoroalkyl and polyfluoroalkyl substances (PFAS) or “forever chemicals,” and other pollutants that can reach surface water or groundwater. PFAS can move through ground infiltration, getting into groundwater that may be used for public water supplies or for private drinking water wells. Artificial turf sheds microplastics that pollute our waterways, threatening wildlife, ecosystems, and our health. Reduction in the release of PFAS and synthetic materials into the environment is in the public interest due to the harmful human and environmental impacts.

In addition to mitigating harmful environmental impacts, this ordinance would reduce potential greenhouse gas emissions by preventing further demand for plastic and preventing the replacement of natural plants with a synthetic surface that cannot sequester carbon as well as help foster healthy soil, which would increase moisture-holding capacity, support healthy microbes, and improve water quality. Prohibiting the new installation of artificial turf is also in alignment with Valley Water’s Landscape Rebate Program, which helps properties convert their turf to drought-tolerant, climate appropriate landscaping and aims to support a healthy watershed with natural landscaping.

An ordinance prohibiting artificial turf will protect community and environmental health, as well as advance County sustainability and climate goals. Santa Clara County should lead the way for counties and set an example for our cities by prohibiting artificial turf. We also encourage the County to consider prohibiting irrigation of non-functional turf on commercial, industrial, and institutional (CII) properties, in alignment with the recently adopted State Law (AB 1572, Chapter 849) that prohibits the use of potable water for the irrigation of nonfunctional turf on CII properties. Together, these collective efforts will advance water conservation, promote sustainable practices, and protect our environment.

As Chair of the Valley Water Board of Directors, I urge you to support this referral.

Sincerely,



Nai Hsueh
Chair, Board of Directors

cc: Board of Directors (7), R. Callender, R. Gibson
gy:sd
0415a-l



April 15, 2024

Re: Board meeting on 4/16/24, Item 10, Closing down Reid-Hillview Airport

Dear Supervisor Chavez,

ICAN has been following issues with Reid-Hillview for the past few years and we very much appreciate your leadership and efforts to ensure the safety and wellbeing of county residents living around the airport.

We are supportive of efforts to transition a 180-acre airport property into a sustainable community asset. The areas surrounding the airport are overpopulated with families, schools, shops, children playgrounds, seniors strolling the parks etc. We have been serving the Vietnamese community for the past 24 years. Many Vietnamese families live around that area and they are scared of the planes flying too low and falling on their heads, the noise and the air pollution caused by leaded gasoline.

The airport has served the County well for decades, but it's now an incompatible land use. The detrimental impacts that leaded fuel emissions and noise have had on the east side of San Jose, particularly children, have been well documented.

I hope the report you hear on April 16 is a reminder that we must do everything we can as soon as possible to plan for the future of this airport site. Staff's report is thorough and includes a lot of information about topics that are all tied to the airport's current and future operations.

Many of these topics are complicated, interconnected, and involve precise timing. This will require thorough planning from County staff, and require vast amounts of community engagement. We must address the closure of Reid-Hillview Airport now to minimize safety hazards to people living around the airport. We must be diligent every step of the way, so we have the best possible outcome for all involved.

Please continue to keep the pressure on to close this airport, give Eastridge Little League the facilities they deserve, begin planning for a better use of the airport site, and bring quality transit solutions to the east side of San Jose, and most of all, to ensure the safety and wellbeing of county residents.

Thank you,



Quyen Vuong

From: [Cortney Jansen](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Support for ban on installing synthetic turf on county property (4/16 board meeting, Item #11, LF 24-5361)
Date: Monday, April 15, 2024 3:17:59 PM
Attachments: [Letter from Melanie Taylor to Senator Allen June 2023.pdf](#)

Dear Santa Clara County Board of Supervisors,

My name is Cortney Jansen. I am a Sunnyvale resident, and I am writing regarding Agenda Item #11 "Approve referral to Administration to report to the Board with options for consideration relating to a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property. (Lee)", ID #24-3561 that will be in the Tuesday, April 16 board meeting.

Specifically, I fully support a ban on the installation of artificial turf on all County property.

There are many, many reasons to ban the installation of artificial turf. It is bad for our health and it is bad for our environment.

Artificial turf contributes to water pollution

The contribution of artificial turf materials to water pollution has been documented in scientific, peer-reviewed studies. As one example, "The dark side of artificial greening: Plastic turfs as widespread pollutants of aquatic environments" from the University of Barcelona states, "Artificial turf fibers accounted for up to 15% of meso- and macroplastic abundance" (see <https://www.sciencedirect.com/science/article/pii/S0269749123010965> for the article).

Artificial turf contains PFAS chemicals, despite industry claims of "PFAS-free" artificial turf

You will likely have heard the industry claim that artificial turf can be manufactured without PFAS. However, last year the California State Legislature was proposing AB 1423 to ban the sale of AT containing PFAS. The bill did not get approved. As part of this, in June 2023 Melanie Taylor (CEO of Synthetic Turf Council, which is a lobby group for the artificial turf industry) wrote a letter to Senator Ben Allen (on the Environmental Quality Committee). The letter is attached, short, and worth reading, but here is the key part (bold added by me): "*The bill a (sic) ban on the sale of artificial turf containing intentionally added PFAS on January 1, 2024 to certain public entities and by January 1, 2025 for all sales in California. **These dates do not provide enough time for manufacturers and suppliers to develop viable alternatives for the market place.***" In other words, if the bill had passed, artificial turf would not be able to be sold in California because all artificial turf manufactured today contains PFAS chemicals. Even if there were PFAS-free artificial turf, artificial turf is still plastic and we do not need to cover our planet in plastic.

Artificial turf alternative infills are not tested

You may also have heard of alternative, organic infills, which replace the old crumb rubber infill and are "safe" for our students. However, these infills are neither organic nor safe. When you and I hear the word "organic", we think about grocery shopping, where "organic" means no pesticides. But that's not what the artificial turf industry means. They use "organic" to mean "naturally-derived" They do NOT mean free of pesticides. In fact, because "organic" is not a regulated term in the AT industry, the industry can call anything "organic." There is no body - USDA or otherwise - who actually regulates infill as "organic". Additionally, these

infills have not been tested enough for anyone to know if they are actually safe. Of those limited studies, one showed that naturally-derived infills still contain chemicals of concern, although at lower quantities than crumb rubber. Another study detected polycyclic aromatic hydrocarbons (or PAHs) in cork at low levels. To be clear, PAHs are bad. We made a mistake 10-15 years ago when we believed the artificial turf industry's claims that crumb rubber infills were "safe", when there was not enough testing to know. And yet here we are again. The artificial turf industry claims that these naturally-derived infills are "safe", when they have barely been studied. Let's learn from our mistakes. The artificial turf industry cannot be trusted.

Summary

A ban of installation of artificial turf on County property would have a long-lasting positive impact on our environment and our health. Additionally, it would provide a path forward for other nearby municipalities and districts as they evaluate the installation of artificial turf on their properties. Sunnyvale is considering a study issue on banning artificial turf on city property. If the County passes such a ban, it will encourage Sunnyvale to pass a ban. Sunnyvale School District (SSD) recently approved a contract to install artificial turf as playground surface materials, despite parent opposition. A ban by the County will encourage SSD to identify more sustainable options in the future. The Fremont Union High School District (FUHSD) also recently approved replacing 6 artificial turf fields with more artificial turf - despite community objections and a presentation full of misinformation about the "benefits" of artificial turf. A County ban on artificial turf on County property will be the start of a waterfall that will encourage other municipalities and districts to reject artificial turf in favor of more environmental, healthier alternatives.

Finally, banning artificial turf is an important step towards the County achieving the goals outlined in its Master Sustainability Plan.

Thank you,
Cortney Jansen
Sunnyvale resident

June 21, 2023

Ben Allen, Chair
Environmental Quality Committee

Dear Senator Allen:

On behalf of the Synthetic Turf Council (STC) and its members, we must respectfully “Opposed Unless Amended” AB 1423 (Schiavo), which restricts the use of perfluoroalkyl and polyfluoroalkyl substances (PFAS) in artificial turf. STC members include builders, landscape architects, testing labs, maintenance providers, manufacturers, suppliers, installation contractors, infill material suppliers and other specialty service companies.

As currently drafted, AB 1423 creates significant compliance challenges for artificial turf manufacturers and suppliers for the following reasons:

- 1) The bill a ban on the sale of artificial turf containing intentionally added PFAS on January 1, 2024 to certain public entities and by January 1, 2025 for all sales in California. These dates do not provide enough time for manufacturers and suppliers to develop viable alternatives for the market place. We request that both dates be changed to January 1, 2026, which is in-line with other PFAS legislation currently pending.
- 2) The bill also intends to regulate levels of unintentionally added PFAS to 1 part per million (PPM) in total organic fluorine. While our manufacturers and suppliers fully intend to comply with the provisions of the bill related to intentionally added PFAS, we are concerned that trace quantities of a chemical may be present in natural or synthetic ingredients, recycled content, manufacturing processes or equipment. Therefore, we believe it would be more prudent (in addition to allowing for testing protocols to be developed) to establish the compliance threshold for unintentionally added PFAS at 100 PPM beginning in 2026 and 50 PPM in 2028. These thresholds have been previously recognized by the legislature in AB 1817 (Ting) (2021) and AB 652 (Friedman) (2021).

We urge the committee to consider these amendments to ensure that businesses can remain in compliance while serving its California customers.

Sincerely,

A handwritten signature in black ink, appearing to read "Melanie Taylor". The signature is fluid and cursive, with the first name "Melanie" written in a larger, more prominent script than the last name "Taylor".

Melanie Taylor, President & CEO, Synthetic Turf Council

From: [Brian Kim](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] In support of Agenda Item #11 of April 16 board meeting (ID #24-3561)
Date: Monday, April 15, 2024 4:11:59 PM

To whom it may concern,

My name is Brian Kim. I am a resident of North Sunnyvale, and I am writing to support a ban on the installation of artificial turf on County property. This is part of the Tuesday, April 16 board meeting as Agenda Item #11 "Approve referral to Administration to report to the Board with options for consideration relating to a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property. (Lee)", ID #24-3561.

The installation of artificial turf is directly counter to the County's Sustainability Master Plan, which covers four main areas, as you know:

- Climate Protection and Defense: "Reduces greenhouse gasses and builds resilience to the threats of climate change and natural disasters"
- Natural Resources and the Environment: "Protects, enhances, and restores natural resources and habitats and reduces the cumulative impacts of environmental hazards."
- Community Health and Well-Being: "Protects and improves the health of the community and the conditions in places where people live, learn, work, and play."
- Prosperous and Just Economy: "Builds financial security and prosperity for all and promotes leadership and collaboration."

The fact is that installing artificial turf in our community make all of these harder:

- Climate Protection and Defense: Artificial turf cannot be recycled, despite manufacturer claims. There are claims that it can be recycled via pyrolysis, but this method uses more energy to "recycle" artificial turf than is needed to make virgin material (see [this Guardian article](#) for additional details. This March 2023 [article](#) from Philadelphia notes, "To this point, no companies in the U.S. can fully recycle [artificial turf rolls], according to a turf trade association president." Furthermore, installing artificial turf means replacing carbon-sequestering grass with carbon-producing plastic. So using artificial turf reduces our resilience to climate change.
- Natural Resources and the Environment: Installing artificial turf is not environmentally friendly. Artificial turf contains PFAS chemicals, which contaminate our water supply. So does the infill that leaches off the field and the plastic "blades" that break off the field. Additionally, as per SB676, artificial turf is not drought friendly. Valley Water also notes that [does not meet their requirements](#) for sustainability, and artificial turf is not a qualified material in their Landscape Rebate Program
- Community Health and Well-Being: Those PFAS chemicals in artificial turf have been linked to numerous negative health impacts. As just one example, per the European Environment Agency [here](#), PFAS chemicals have multiple negative effects on the development of a fetus, including low birth weight, increased cholesterol levels, increased risk of kidney cancer, and reduced immune response to

vaccines.

- Prosperous and Just Economy: Artificial turf is not financially sustainable, since it has to be replaced every 8-10 years

Installing artificial turf makes all of our sustainability and environmental goals more difficult to achieve. Please ban the installation of artificial turf on County property.

Thank you,
Brian Kim
Resident of Sunnyvale

Re: Support for Item 11 on the April 16th, 2024 BOS Agenda

Dear Santa Clara County Board of Supervisors:

I am writing to express my support for Item 11, the referral on an ordinance prohibiting installation of artificial turf. This referral directs the Administration to report to the Board with options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

I have been advocating for natural, drought tolerant grass or other natural surfaces for schools and cities since 2022 when I found out that my school district in Los Gatos (LGUSD) was considering artificial turf fields. Even just a few years ago, the amount of supporting documentation relating to environmental and health concerns about artificial grass was overwhelming, but now with the advance of plastics research and the discovery of the prevalence of PFAS use across almost all plastic products, it has become very clearly evident that we as a society need to proceed with extreme caution with regards to plastic products. PFAS are just one of the chemicals of concern in plastic.

Given that the DTSC is currently reviewing artificial turf as a product of concern and given what we know about plastic today, I believe that a full prohibition of artificial turf is warranted for County property.

There is also within the referral a request for the ordinance to include guidelines for safe disposal of used artificial turf when it reaches its end of life in order to prevent infill and plastic blades from polluting our local environment. I applaud this addition and I hope that this moves forward as an example to municipalities within Santa Clara County and beyond that similar wording must be included in municipal codes. I was involved in the tracking of Saratoga High School's used artificial turf field last summer and I was appalled to see that it had been dumped in Santa Clara County in an area zoned for agriculture where someone could easily purchase that property in the future to grow vegetables on contaminated land. The amount of tire crumb rubber and loose plastic blades spilling out of the rolled up artificial turf was unnerving. Infill was spilling out into storm drains at the school, piled up in the parking lot (where I believe it rained last summer one day) and being trucked on the highway spilling bits of infill as it was taken in open flatbed trucks to at least one destination. We do not know how much of it ended up in San Martin vs. where it was reported by TurfCycle to have been taken (Pescadero, CA). Clearly "chain of custody" letters are a mere suggestion.

Artificial turf pollutes the environment and endangers humans from production to end of life. We should be considering the product's entire life cycle, which is a massive amount of plastic, rubber, and other materials, in order to fully assess its impacts. There are viable alternatives to artificial turf (natural ground cover, drought tolerant grass, wood chips or engineered wood fiber, etc) that make it unnecessary and for any sports fields, a trained sports field manager would know how to properly maintain a field in our region.

Unfortunately I have seen an explosive growth in not only field conversions from grass to artificial turf but also playground facilities transformed from more natural spaces to synthetic. At the same time that movements like Green Schoolyards America and efforts to reduce impacts of extreme heat events and increase access to nature are gaining momentum, so too are many landscape architects promoting synthetic surfaces. The problem is the rationale is flawed. Water saving measures touted with artificial turf come at a cost of stormwater and runoff pollution from the microplastics, infill and chemical leaching from plastic. Plastic left in the sunlight photodegrades. Heat radiating off the artificial turf contributes to environmental and health impacts and it has been proven to offgas. And in order to properly care for artificial turf it needs to be cleaned periodically with water. One sports field manager said that he likes to think about it as an outdoor carpet. Consider leaving an outdoor carpet outside for your kids to play on for years without ever being able to deep clean it (or clean it at all as is fairly common here).

I would like to mention specifically the fairgrounds sports complex plans. I find it inequitable that the design idea that I last saw involved natural grass fields for the Earthquakes but artificial turf fields for the community. I can recommend several sports fields consultants who could explain how grass can take the hours of play that might be desired. I can almost guarantee the decision to use artificial turf for community fields is to reduce maintenance and maximize hours of usage. And I can also guarantee that player health was not considered in the decision. During the summer and whenever the temperature rises (which here happens even in winter months) those fields are going to be really hot, creating a massive heat island. Artificial turf industry claims of cooling technology or cooler infill might reduce the temperature by a few degrees compared to a tire crumb infill field but it isn't going to matter when the turf is 140-170 degrees. I checked Saratoga High School's field which was just installed this past summer. There was a cool breeze blowing on a 77 degree day and the artificial turf and running track surrounding it were about 135-140 degrees. It would be higher without the cool breeze.

As a parent and natural play surfaces advocate, I urge you to support this referral. An ordinance prohibiting artificial turf will protect community and environmental health, as well as advance County sustainability and climate goals.

Sincerely,

Pamela Bond

Los Gatos Resident, parent and natural play surface advocate



Andrea Mackenzie, General Manager
Alex Kennett, District 1
Mike Flaughner, District 2
Helen Chapman, District 3
Garnetta Annable, District 4
Vicki Alexander, District 5
Mike Potter, District 6
Kalvin Gill, District 7

April 15, 2024

Santa Clara County Board of Supervisors
70 W. Hedding St.
East Wing, 10th Floor
San Jose, CA 95110

Subject: SUPPORT Item 11 on April 16, 2024 Prohibition on New Installation of Artificial Turf (LF 24-5361)

Dear President Ellenberg and Supervisors,

On behalf of the Santa Clara Valley Open Space Authority (Open Space Authority), I am writing to express my support for Item 11, the referral on an ordinance prohibiting installation of artificial turf. This referral directs the Administration to report to the Board with options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

As you know, the Open Space Authority is a public, independent special district created by the California State Legislature in 1993 to conserve the natural environment, support agriculture, and connect people to nature by protecting open spaces, natural areas, and working farms and ranches for future generations.

Artificial turf and synthetic grass contribute to chemical runoff, microplastic pollution, and the heat island effect, all of which are harmful to human health. Some of the chemical runoff from artificial turf includes PFAS, or “forever chemicals.” Many health impacts from PFAS and microplastics have been consistently identified in humans, although research on these impacts is ongoing. Some of these reported impacts for microplastics include decreased immune response, oxidative stress, and organ disfunction. For PFAS, a few reported impacts include lower antibody response to some vaccines, lower birth weights, and liver damage. Additionally, the elevated surface temperatures of artificial turf that cause the heat island effect have the potential to damage equipment, burn skin, and increase the risk of heat-related illness.

The chemical runoff and microplastic pollution also harm organisms in our environment. PFAS and microplastics have been found to harm the health of animals, with microplastics blocking the gastrointestinal tract of small birds and fish and sometimes causing physical damage internally. Plastic turf also restricts access to the soil and out of the soil for insects and worms, respectively. On top of preventing these harmful environmental impacts, this ordinance would reduce potential greenhouse gas emissions by preventing further demand for plastic and preventing the replacement of natural plants with a synthetic surface that cannot sequester carbon.

These health concerns and the environmental impacts have already led the city of Millbrae to prohibit the installation of artificial turf. Santa Clara County should lead the way for counties and set an example for our cities by taking this step as well.

I urge you to support this referral. An ordinance prohibiting artificial turf will protect community and environmental health, as well as advance County sustainability and climate goals.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink, reading "Andrea Mackenzie". The signature is fluid and cursive, with the first name "Andrea" and last name "Mackenzie" clearly legible.

Andrea Mackenzie
General Manager

Cc: Santa Clara Valley Open Space Authority Board of Directors

Helen Chapman

1556 Hester Ave
San Jose CA
hkmchapman@gmail.com

April 15, 2024

Santa Clara County Board of Supervisors
70 West Hedding, East Wing, 10th Floor
San Jose, CA 95110

Via email: BoardOperations@cob.sccgov.org

Dear President Ellenberg, Vice President Lee and Honored Supervisors,

I would like to share my support for the referral from Vice President Lee to direct the Administration to report to the Board on options for consideration relating to a County Ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property (Agenda Item #11).

Many years ago as a former San Jose Parks Commissioner and Board member with the Shasta Hanchett Park Neighborhood Association took action to successfully ensure the rejection of the proposal from San Jose Unified School District to replace the turf at Trace Elementary School with artificial turf. We knew back then the health benefits for children and adults using the field outweighed the short term cost savings to the district as the turf would need to be maintained every 5 years and fully replaced after 20 years. The material used radiates heat more than natural grass and does nothing to address carbon sequestration to help reduce greenhouse gas emissions.

I applaud the Board of Supervisors for addressing this issue and taking forward thinking steps to safeguard our community's health and addressing climate change.

Sincerely yours,



Helen Chapman



Santa Clara County Board of Supervisors
70 West Hedding Street
San Jose, CA 95110

April 16, 2024

Subject: County Administration Report on Artificial Turf Installation
Re: **Agenda Item 11**, LF 24-5361

Dear Supervisors Ellenberg, Lee, Arenas, Chavez & Simitian,

Sustainable Silicon Valley strongly supports Vice President Lee's Agenda Item 11, the referral directing the Administration to report to the Board options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

Synthetic turf is a clear health hazard with a high social cost, as the Santa Clara County Medical Association's Environmental Health has exhaustively detailed. Plastic athletic fields are dangerous heat islands, breeding grounds of Staph (MRSA) infections and the cause of a significantly higher rate of student knee and head injuries. Artificial turf and synthetic grass contribute to chemical runoff including PFAS, microplastic pollution and contamination of groundwater.

Industry marketing still maintains against any evidence that their petroleum-based plastic turf product is recyclable, requires "no" maintenance and uses "no" water. But the top carpet layer, infill, backing, drainage and padding on an average synthetic field comprises some *220 tons of single-use plastic* destined for landfill or incineration. Producer service advisories directing a fair amount of surface and sub-surface chemical treatment and water use for cleaning and cooling makes savings illusory.

If the biggest decision factor is cost, synthetic turf fails here as well. Over the eight-ten-year life cycle of a plastic field, one could install two-to-three natural turf fields at a fraction of the cost. Xeriscaping throughout the Bay Area makes sense in most all cases, but an athletic field should be our special oasis.

There are serious clouds on the state horizon. Last legislative session Governor Newsom corrected an unfortunate 2014 drought restriction by signing SB 676, which excludes artificial turf definitionally as drought tolerant. He did veto AB 1423, which would have banned turf installation on PFAS grounds, but expressed a keen interest in uniformly implementing oversight. Lastly, SB 499, addressing school heat islands and mandating "cool" surface solutions, stalled in Assembly Appropriations but most likely will be taken up again this year.

Properly prepared and maintained turf is by far the best path. Please address this downward artificial turf spiral. Feel free to contact me should you have any questions or comments. Sustainable Silicon Valley is committed to help.

Sincerely,

A handwritten signature in black ink, appearing to read "Dm", is written over the word "Sincerely,".

Dennis Murphy
Director, Water & Sustainable Life
Sustainable Silicon Valley
dmurphy@sustainableSV.org

From: Cynthia Fan
To: Cynthia Fan, Chavez, Chiles, Lee, May, Shalton, Sandoval, Sandoval, Sandoval, Sandoval
Subject: [EXTERNAL] Support for a ban on artificial turf, 4/16/2024, Item #11, LF 24-5361
Date: Tuesday, April 16, 2024 3:20:57 PM

Public comment on item #11, LF 24-5361, of the 4/16/2024 Santa Clara County Board of Supervisors meeting:

Dear Supervisors Chavez, Similitan, Arenas, Lee, and Ellenberg,

I STRONGLY support a ban on artificial turf installation and a ban on outdoor storage of used artificial turf.

I'm Los Gatos resident Cynthia Fan. I researched artificial turf when it was proposed for installation at my son's elementary school and learned it sheds microplastics and PFAS, both of which are pollutants that circulate in our environment essentially FOREVER, contaminating our drinking water, food supply, and bodies. We need to REDUCE environmental concentrations of microplastics and PFAS, NOT permit their concentrations to increase. Fortunately, OVERWHELMING COMMUNITY OBJECTION persuaded our school district to NOT install artificial turf.

Opposition to a county ban may come from sports leagues that remain UNAWARE that for the cost of plastic fields and their periodic replacements (necessary approximately every 8-10 years), field owners can afford professionally managed natural turf that CAN be kept in safe condition with a consistent and level surface through high use and rain. This is accomplished by the field owner getting trained and coached in modern field management techniques by a professional sports field manager that has a track record of natural grass field management success.

Banning artificial turf does not have to mean sentencing the community to poor-condition, often-closed grass fields. If you're skeptical, have a detailed and unbiased feasibility study written up comparing natural and artificial turf fields in terms of cost, hours of play, and hours of maintenance. Field management companies exist (like [Field Source Ohio](#)) that have plenty of experience managing both types of fields for Parks & Rec departments and school districts around the country. For under \$10k, they can prepare a detailed report factoring in the county's weather, soil, and field usage needs to reassure you and local sports leagues that natural turf CAN be kept in safe condition while affordably satisfying community usage needs.

fieldsourceohio.com



Services ▾

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Get a Free Consultation

Athletic Field Organizational Management Services

Feasibility Studies

- Expansion of Facilities – Calculating management, labor, supplies and service needs
- Full Life Cycle Cost/Revenue for Synthetic Turf and Natural Grass Fields

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- Capital Improvements
- Equipment and Infrastructure
- Hiring, Retention, and Succession Planning

Best Practices and Management

- Provide Staff Training on technical or leadership topics specific to sports and parks management
- Develop and implement Integrated Pest Management policies and procedures
- Operational Improvement and Efficiencies

Performance Management

- Field Performance Metrics and Data Tracking for Sports Fields
- Productivity and Accountability of Internal Stakeholders

To learn more about our athletic field organizational management process or to get and estimate on your project, [CLICK HERE!](#)

Please take the next step towards banning artificial turf ASAP.

Thank you,
Cynthia Fan
resident of Los Gatos (Santa Clara County Supervisorial District #5)

From: [Leanne McAuliffe](#)
To: [Arenas, Sylvia](#); [Chavez, Cindy](#); [Lee, Otto](#); [Ellenberg, Supervisor](#); [Supervisor Simitian](#); [BoardOperations](#)
Subject: [EXTERNAL] Item #11, LF 24-5361 - 4/16/2024 Support for a ban on artificial turf: (Ordinance to Ban Artificial Turf on County Property and on the Santa Clara County Fairgrounds)
Date: Tuesday, April 16, 2024 8:19:34 AM

Dear Santa Clara County Board of Supervisors:

I am writing to express strong support for Item 11, which proposes an ordinance prohibiting any new installations of artificial turf on Santa Clara County property as well as the Santa Clara County Fairgrounds where a new sports complex is under consideration. (I trust that when the Earthquakes understand that full implications of artificial turf on our youth and the environment that they will also be in full support natural grass alternatives over plastic.)

I believe that you will have received a plethora of referenced information and data so I am writing purely as a resident of Santa Clara County, and as a parent of four children who are working their way through the school system here. As such, I am extremely concerned about the amount of artificial turf installations throughout the county both on residential, commercial, town, city, school and county properties which are potentially compromising the quality of our soil, air and water both now and for future generations.

Oftentimes these artificial turf systems are purchased by people who are totally unaware of the myriad of issues with artificial turf, or they have trusted in the greenwashing of the artificial turf industry or they have been informed of the issues but chose to ignore them for simply unjustifiable reasons.

It is imperative that electeds take the lead and begin to understand the detrimental short and long term implications of these artificial turf installations and, in doing so, they will clearly see that the only option for the environment, our children and future generations is to ban artificial turf in favor of the myriad of other natural alternatives, whether that be for functional or non-functional spaces.

Those in the artificial turf industry will tell you there is proof artificial turf is safe. (Analyze those studies, look at who sponsors them.) And those advocating against artificial turf will tell you there is a plethora of information to counter the artificial turf industry's narrative and that indeed artificial turf is holistically bad for the environment and human health. I am not a scientist but when you have "experts" sponsored by an industry driven by profit and growth saying plastic grass is fine, and then we have independent child and environmental health experts saying it's a health risk to children, students and their environment, what side errs on the side of caution when it comes to our children's health and the healthy of future generations? What else matters more than our children's health?

There are ever increasing studies and reports about micro/nanoplastics and PFAS'

negative health and environment effects, not to mention greenhouse gases. Artificial turf is entirely made of forever degrading plastics, chemicals, and PFAS and offgases. PFAS are called “forever chemicals” because they are, for the most part, Persistent, Bioaccumulative and Toxic. Likewise, artificial turf is a “forever polluting” plastic ground cover for its entire existence. You only need to visit a plastic artificial turf field or plastic lawn on an average sunny day in Santa Clara County to feel the heat (even see the heat) and see the degrading plastics shedding into the greater environment. (And that’s just what you can see, much is invisible to the eye.) The natural environment, schools, playgrounds and sports fields are no place for a degrading, polluting, plastic ground cover. There is no place or circumstance where plastic turf, plastic lawn or plastic ground cover should be.

To go some way to undoing the damage of the past, each generation’s goal should be to leave this Earth (We aren’t calling it Plastic, yet!) in a slightly better state than when we came into it, for our kids. Plastic fields do NOT do this. We have to care enough to look at natural, safer alternatives to artificial turf to set the right example that will filter up the generations.

It seems apparent that unless there are laws and bans on artificial turf, potential artificial turf purchasers will either unwittingly continue to believe the artificial turf industry’s false narrative, or ignore the potentially negative human health and environmental effects because, well, they can.

It’s up to you as our electeds to take control and lead the way and set the best example for our kids and future generations to follow by protecting their health and the health of the environment. The health of the two are intrinsically and inexplicably linked.

In trust,

Leanne McAuliffe
Concerned Resident of Santa Clara County.

From: [John Kehoe](#)
To: [BoardOperations](#)
Cc: [Supervisor.Lee](#); [Pachoud, Emily](#)
Subject: [EXTERNAL] Synthetic Turf item, (4/16/2024, Item #11, LF 24-5361)
Date: Tuesday, April 16, 2024 9:02:14 AM
Attachments: [Address to the Board of Supervisors 2024.04.16.docx](#)

Thank you, County Board members, for this opportunity. My name is John Kehoe, a Sunnyvale resident for over 25 years. I hope to inspire our county to ban installing artificial turf on County properties.

Often overlooked until it's too late, heat is harmful, causes illness and can kill (C.Y. Jim, 2017). Installing synthetic turf athletic fields creates a heat island effect. This is tangible. We have to do better. Climate Action planning acknowledges the challenges faced with urban heat island effects. Adding synthetic turf products adds heat and contradicts our efforts to reduce these effects. This does not lead us to a climate-resilient landscape.

Please avoid adding more heat sinks. We need to maintain what vegetative cover we have and even add more. Repurposing public properties to synthetic athletic turf fields exposes players, athletes, and all participants to higher heat and chemicals. Playing sports under exposures like this is unwise, at the least, and not recommended at best. Please avoid having taxpayers to continue to fund plastic carpeted fields that will likely become unusable in our hotter seasons. And let's be honest: these products are not recycled.

Please explore options for the County Board to ban the installation of synthetic turf on our properties.

Thank you for your consideration,

John Kehoe

Sunnyvale (District 3)

From: [Maristella Huerta](#)
To: [Arenas, Sylvia](#); [Chavez, Cindy](#); [Lee, Otto](#); [Ellenberg, Supervisor](#); [Supervisor Simitian](#); [BoardOperations](#)
Subject: [EXTERNAL] Support for a ban on artificial turf: 4/16/2024, Item #11, LF 24-5361
Date: Tuesday, April 16, 2024 9:43:44 AM

Dear Supervisors Arenas, Chavez, Lee, Ellenberg, and Simitian:

As a resident of Santa Clara County Supervisorial District 4 and a member of Mothers Out Front Silicon Valley, I urge you to support Supervisor Lee's referral to create options for a ban on the installation of new artificial turf on County property.

Plastic grass poses a significant health risk due to the use of artificial chemicals including PFAS, a known carcinogen. Its use also contributes to water pollution and increases the urban heat island effect, as it can reach much higher surface temperatures than natural grass. In addition, it damages the climate due to the use of fossil fuels in its production and its displacement of natural grass, which naturally draws down carbon pollution.

This is important to me because as my neighbors substitute organic substrate and grass for artificial turf, our neighborhoods are getting hotter and more polluted. Artificial turf leaches PFAS into the ground and groundwater. A recent study revealed dangerously high levels of PFAS in our drinking water in San Jose. This creates a domino effect where residents purchase bottled water to avoid the PFAS in the city's drinking water, contributing even more to the carbon cost of water and plastic pollution. The county needs to support sustainable and healthy options for landscaping on its own properties.

Therefore, I ask that you support Supervisor Lee's referral to direct County administration to create options for an ordinance to prohibit new installation of artificial turf on County property.

Thank you,

REQUEST TO SPEAK FORM

This document is a public record, subject to disclosure under the California Public Records Act.
This document may also be added to the meeting materials posted on the County website.

If you wish to address the Board, Committee, or Commission, please fill out this form and place it in the container provided.

DATE: 4/16/2024

AGENDA ITEM NO. 11

For Issue

☒

Against Issue

☐

Neutral

☐

* Written comments for the record only

☐

NAME (OPTIONAL):

Susan Hinton

Decline to State

☐

PLEASE PRINT CLEARLY

ORGANIZATION (OPTIONAL):

Sierra Club Loma Prieta Chapter
Plastic Pollution Prevention Team

PLEASE PRINT CLEARLY

ADDRESS (OPTIONAL):

PLEASE PRINT

*If you want to provide written comments for the record only, and you do NOT wish to address the Board, Committee, or Commission orally, please write comments below:

County of Santa Clara
Supervisory District Three



24-5361

DATE: April 16, 2024

TO: Board of Supervisors

FROM: Otto Lee, Supervisor

SUBJECT: Prohibiting Artificial Turf Installation on County Property

RECOMMENDED ACTION

Approve referral to Administration to report to the Board with options for consideration relating to a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property. (Lee)

FISCAL IMPLICATIONS

The financial costs associated with this referral are currently unknown.

REASONS FOR RECOMMENDATION

A growing amount of research is revealing the harmful impacts and environmental and health risks associated with artificial turf. For years, fields of plastic were thought to be a sustainable alternative to natural grass, particularly in drought-stricken California. However, an extensive body of recent research contradicts what was previously thought about the environmental impacts, cost effectiveness, safety, and practicability of artificial turf.

This referral is requesting that Administration provide a report with options for a County ordinance that bans installation of all synthetic grass and artificial turf on Santa Clara County property. One option may include a temporary ordinance prohibiting new installation of artificial turf while the County studies the topic further or develops a more comprehensive ordinance. The potential ordinance should also include guidelines for safe disposal of used artificial turf when it reaches its end of life in order to prevent infill and plastic blades from polluting our local environment.

An ordinance prohibiting installation of plastic artificial turf on County property would support the priority areas of the County Sustainability Master Plan, including Climate Protection & Defense, Natural Resources & the Environment, and Community Health & Well-Being. Specific goals that this ordinance would address include reduction in greenhouse gases, protection of water resources, and protection of the community's health.

BACKGROUND

In October 2023, Governor Newsom signed a bill into law that allows cities and counties to ban artificial turf, undoing a law signed by Gov. Jerry Brown that prohibited cities and

Approved: 04/16/24

counties from banning artificial turf. The city of Millbrae in San Mateo County adopted an ordinance on October 24th, 2023, to prohibit the installation and use of synthetic grass and artificial turf landscaping. The city of San Marino enacted a temporary moratorium on the installation of artificial turf and synthetic grass until September 24, 2024, in order to “allow time for the City to consider, study, and enact appropriate regulations related to the installation of artificial turf... [and] to avoid conflict with any anticipated ordinance that shall be developed.”

The Santa Clara County Medical Association has taken the position that artificial turf should not be placed on playing fields and present artificial turf should be replaced with natural grass, as growing evidence shows that “the health and safety risks outweigh the benefits of artificial fields.” This position is reflected in SCCMA letters to the Saratoga High School Board of Trustees, Sunnyvale City Council, and Fremont Union High School District Board.

The Santa Clara Valley Water District does not recognize artificial turf as a suitable sustainable alternative, and thereby does not offer any rebate for this in their rebate plan for homeowners who are relandscaping. Furthermore, the NFL Player’s Association (NFLPA) opposes the usage of artificial turf, citing higher injury rates. In February 2024, NFLPA executive director Lloyd Howell stated that 92% of their union wanted natural grass fields. Levi’s Stadium, home of the San Francisco 49ers, has a natural grass field, made of a Bermuda grass and Perennial Ryegrass mixture.

A regulation 80,000 square foot playing field uses 500,000 pounds of plastic that will, as the field wears out over 8-10 years, become plastic waste: including 40,000 pounds of plastic carpet and over 400,000 pounds of infill. Both the infill and microplastic blades from artificial turf fields are making their way into the water and contributing to the serious, growing issue of microplastic pollution. In aquatic invertebrates, microplastics cause a decline in feeding behavior and fertility, slow down larval growth and development, and increase oxygen consumption. In fish, the microplastics may cause structural damage to the intestine, liver, gills, and brain, as well as affect metabolic balance, behavior, and fertility.

Artificial turf is created using plastics, which are derived from fossil fuels, and the production of plastic emits large quantities of greenhouse gases. Greenhouse gas emissions, specifically methane and ethylene, do not halt from the artificial turf after production. Polyethylene, which the plastic turf blades are often made of, produces these two greenhouse gases when exposed to ambient solar radiation. Additionally, while natural grass is not stellar at sequestering carbon, plastic turf cuts off air and light from the soil and sequesters no carbon at all. The process to recycle artificial turf is also very intensive, and artificial turf recycling is not widely available. As a result of limited recycling plant availability for turf, the need to ship all or parts of artificial turf to be recycled results in greenhouse gas emissions and pollution from transportation emissions.

Artificial turf contributes to the heat island effect as well, as it can reach very high surface temperatures. Not only is this unsafe for humans, but it bakes and compacts soil and can kill living organisms. Lower limb injuries also tend to occur more frequently on artificial turf than on natural grass.

Additionally, artificial turf typically contains PFAS, which are considered “forever

chemicals.” PFAS chemicals leach into soil, waterways, and loft into air from surface dust and microplastics. They bioaccumulate in humans, wild and aquatic life. The effects of these chemicals are not fully understood yet, but they have been linked to many negative health outcomes in humans.

BoardOperations

From: Andrea Wald
Sent: Thursday, April 11, 2024 8:31 PM
To: BoardOperations
Subject: [EXTERNAL] re: Item 11 on the agenda for Tuesday's meeting (4-16-24)

Dear County Board Members,

I am writing on my own behalf but also as part of a small group of environmentally concerned individuals who belong to a group called: Community for Natural Play Surfaces. Our mission:

We advocate for safe natural play surfaces. We educate public and private stakeholders on the harms of artificial turf and other artificial materials. We strive to increase the amount of grass and natural materials in our playing fields, playgrounds, parks, and towns.

We have been going city by city, school district by school district, and board meeting by board meeting to make our voices heard. It has been extremely frustrating and time consuming. The vendors and all their supporting entities are pushing Artificial Turf as a viable solution for increased playing time, less maintenance and less water. They are actually pushing false narratives to many who are not as educated as needed (they are volunteers doing their best to make decisions and policies to help the people they are representing - but are not landscape experts, research scientists, environmental specialists, chemists, doctors, etc.) to fight these falsehoods and simply believe what they are being told - even though many who have studied and researched AT are doing our best to counter these falsehoods and provide valid, researched reasons why AT is bad - for the environment and for the health and safety of all.

I understand that at Tuesday's meeting (4-16-24) Supervisor Lee will be asking the administration to explore options for an ordinance, should the Board vote to approve this request, relating to Artificial Turf and a possible ban throughout Santa Clara County. This is item #11, LF 24-5361.

I urge you to keep artificial turf (toxic plastic grass) out of our playgrounds, sports fields and outdoor areas. I urge a total ban throughout Santa Clara County including county and city properties and residences. Multiple studies have shown that, contrary to the green-washed claims of industry salespeople, plastic grass is unhealthy and unsafe, especially for children whose systems are still developing, and is harmful to the environment and climate as well.

Plastic grass is hazardous to health:

- Artificial turf plastics are mixed with specialized, proprietary chemicals, like PFAS (forever chemicals), that are harmful to public health. The [EPA has taken notice](#), and water intended for drinking will now need new methods for removing PFAS and other chemicals.

Approved: 04/16/24

- CALMatters published an [eye-opening article](#) on the environmental health hazard posed by plastic grass.

Plastic grass is unsafe for kids:

- Plastic in sunlight heats up - causing heat islands that can be seen from satellites in space. For example, [satellite images](#) from San Francisco Estuary Institute reveal that synthetic turf fields at Twin Creeks Sports Complex had the highest surface temperatures ever seen in the area.
- The heat island effect causes our kids to overheat on hot days while playing on the artificial turf and can cause burns when kids fall on it.

Plastic grass is bad for the environment and climate:

- Artificial turf is a plastic petroleum product, and [its manufacture and entire lifecycle pollutes our air and water](#).
- Unlike [plants](#) it cuts off air and light from the soil and thus cannot sequester carbon, worsening global heating.
- As plastics degrade, [microplastics](#) permeate the air and soil and wash into our watersheds. Microplastics are now found in the [food we eat and even in newborns](#).
- The turf industry claims they are recycling old fields but have yet to provide the name or exact location of facilities that are doing this. After its 8-10-year lifespan it's buried in a [landfill or incinerated](#), releasing CO2 into the atmosphere. Even the most "advanced" "chemical" recycling causes more pollution than was caused during the plastic's original production. What's as alarming are the rolls of old AT that are being stockpiled because the facilities that are supposed to be recycling them are not opened. These rolls have been sitting around for years and are leaching toxic chemicals into the ground upon which they sit and eventually the watershed. The following link summarizing an undercover operation says it all:

<https://drive.google.com/file/d/1rvGngHf-JGzim6ipwxUbFyV0NStJuZly/view?usp=sharing>

In short, artificial turf has no place in our landscapes, in our parks, on our playgrounds or on our athletic playing fields. For residences there are drought tolerant plants and for other areas - those most likely with more foot traffic or needed for sports play, there are natural sports-grasses available.

For all the reasons stated above, I ask that you support Supervisor Lee's referral to direct administration to create options for an ordinance to prohibit new installation of artificial turf on County property. Leading in this effort would be amazing as then those of use who oppose this toxic, environmentally bad product, will be able to use this momentum with other cities/counties. Covering our precious earth in toxic plastic is simply a terrible idea.

Sincerely,
Andrea Wald

From: [Dashiell Leeds](#)
To: [Arenas, Sylvia](#); [Chavez, Cindy](#); [Lee, Otto](#); [Ellenberg, Supervisor](#); [Supervisor Simitian](#); [BoardOperations](#)
Cc: [James Eggers](#); [Gita Dev](#); [Mike Ferreira](#); [Alice Kaufman](#)
Subject: [EXTERNAL] Sierra Club + Green Foothills Joint-Letter to SCC BOS re: Artificial Turf Referral
Date: Friday, April 12, 2024 2:14:03 PM
Attachments: [Joint letter to SCC BOS re artificial turf ordinance.pdf](#)

Dear President Ellenberg, Vice President Lee, and Supervisors,

The Sierra Club Loma Prieta Chapter and Green Foothills heartily endorse the April 16, 2024 Agenda Item #11 (LF 24-5361) to direct the Administration to report to the Board on options for consideration relating to a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

Please read the attached letter for our full comments.

Sincerely,
Susan Hinton
Chair, Plastic Pollution Prevention Team
Sierra Club Loma Prieta Chapter

Alice Kaufman
Policy and Advocacy Director
Green Foothills

Email sent from account of
Dashiell Leeds
Conservation Coordinator
Sierra Club Loma Prieta Chapter



SIERRA CLUB
LOMA PRIETA CHAPTER



**green
foothills**

SAN MATEO, SANTA CLARA & SAN BENITO COUNTIES

April 12, 2024

Santa Clara County Board of Supervisors
70 West Hedding, East Wing, 10th Floor
San Jose, CA 95110

Via email: BoardOperations@cob.sccgov.org

Dear President Ellenberg, Vice President Lee, and Supervisors,

The Sierra Club Loma Prieta Chapter and Green Foothills heartily endorse the April 16, 2024 Agenda Item #11 (LF 24-5361) to direct the Administration to report to the Board on options for consideration relating to a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

We support this referral for the following reasons:

- The Santa Clara County Medical Association's opposition to artificial turf on playing fields for reasons relating to public health
(<https://www.sccma.org/Portals/19/Artificial%20Turf%20Article.pdf>)
- The Santa Clara Valley Water District's rejection of artificial turf as a sustainable alternative to non functional turf
(https://www.valleywater.org/sites/default/files/01_Artificial%20Turf%20Fact%20Sheet_030614%20BA.pdf)
- The NFL Players Union members overwhelmingly prefer natural grass
(<https://abcnews.go.com/Sports/nflpas-howell-92-players-grass-fields-turf/story?id=107045615>)
- A sports field wears out every 8-10 years necessitating disposal of 40,000 pounds of plastic and more than 10 times as many pounds of infill, and that there is no method for sustainable recycling of these materials, which then winds up in landfill and, in turn, breaks into microplastics that wash into our waterways
(<https://www.smithsonianmag.com/smart-news/the-us-recycled-just-5-percent-of-its-plastic-in-2021-180980052/>,
<https://www.theguardian.com/environment/2023/may/23/recycling-can-release-huge-quantities-of-microplastics-study-finds>,
https://www.turi.org/var/plain_site/storage/original/application/64eb18d6cea7b44882fae71855c79.pdf)

- That microplastic from artificial turf have been found in oceans, in clouds, and in carotid artery plaque during open heart surgery (<https://www.sciencedirect.com/science/article/pii/S0269749123010965>, <https://futurism.com/the-byte/scientists-find-microplastics-inside-clouds>, <https://www.nejm.org/doi/full/10.1056/NEJMoa2309822>)
- That artificial turf contributes to greenhouse gas emissions (<https://doi.org/10.1371/journal.pone.0200574>, <https://www.mvtimes.com/2019/02/20/synthetic-turf-will-contribute-greenhouse-gas-problems/>)
- That artificial turf comes with chemical additives, such as PFAS chemicals, to reduce flammability, to provide color, to provide structure etc., and these additives are not tested in advance by the artificial turf industry for their public health effects as, for example, the plastic heats in sunlight (<https://cen.acs.org/environment/New-method-spots-unreported-forever/101/i36>, <https://ceh.org/latest/press-releases/new-testing-reveals-high-levels-of-toxic-pfas-in-artificial-turf/>)

There are reasonable alternatives to artificial turf. Artificial turf is not a necessary product. In the past decade natural grass growers and researchers have categorized and bred cultivars that are meant for a drier warmer climate, such as exists in the Western U.S.

(<https://ipm.ucanr.edu/TOOLS/TURF/TURFSPECIES/charhighht.html>, <https://www.nimss.org/projects/view/mrp/outline/18821>)

- Successful cultivars have been grown and placed in California athletic fields, including San Diego State University's Snapdragon Stadium and Manteca's East Union High School's Dino Cunial Stadium (<https://www.sandiegouniontribune.com/sports/aztecs/story/2022-06-02/snapdragon-stadium-update-grass-latitude-36-bermudagrass-american-sod-farms-san-diego-state-aztecs-sdsu-arizona>), <https://www.mantecausd.net/post-details/~board/district-news/post/east-union-high-school-unveils-renovated-dino-cunial-stadium>)
- There are sustainable, low pesticide and fertilizer growing methods, even athletic field grass grown using the same organic management techniques used in agriculture (<https://www.beyondpesticides.org/resources/power-organic-parks-program>)

For all of the foregoing reasons, the Sierra Club looks forward to having the Santa Clara County Board of Supervisors agree to look at options relating to a County ordinance prohibiting new installation of artificial turf and synthetic grass on Santa Clara County property.

Sincerely,

Susan Hinton
Chair, Plastic Pollution Prevention Team
Sierra Club Loma Prieta Chapter

Alice Kaufman
Policy and Advocacy Director
Green Foothills

CC:

James Eggers, Chapter Director, Sierra Club Loma Prieta Chapter

Gita Dev, Chair, Conservation Committee, Sierra Club Loma Prieta Chapter

From: [Susan Casner-Kay](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Artificial turf: re meeting 4/16/2024, Item #11, LF 24-5361
Date: Friday, April 12, 2024 2:30:13 PM

I am a Sunnyvale resident, and a Santa Clara County Master gardener. I am very concerned about our environment and our changing climate.

October 2023 legislation allows California cities and counties to ban synthetic grass due to environmental and health concerns. Some cities have banned new installations, including Millbrae in the county of San Mateo.

Marketing has promoted artificial turf as an environmentally conscious alternative to lawn, primarily due to lower water consumption. Less maintenance may be seen as a reason to consider artificial turf, with a decrease in need for weekly lawn service or mowing and trimming. But the plastic lawn is not without maintenance, and requires cleaning, weeding, and brushing to maintain appearance. It also can require irrigation to cool the surface before use.

The potential environmental and health problems associated with artificial turf have been revealed with more recent research. The Bay Area Water Supply and Conservation Agency does not include artificial turf in the 'Lawn be Gone' rebate program, indicating that drought tolerant plantings specifically do not include synthetic grass. Santa Clara Valley Water District discourages use of artificial turf, and instead offers rebates to promote the use of living plants in a sustainable drought tolerant landscape.

As our climate continues to change, so does awareness of the need for carbon sequestration in the soil, with the goal of limiting CO2 in the atmosphere. Living plants use carbon dioxide to grow, and transfer the carbon into the soil via the microbes living around the roots of the plants. These growing plants are therefore excellent carbon sequestrators. Living plants support biodiversity with benefits for birds, insects, and earthworms, as well as the soil microbes. Laying a plastic carpet over the soil inhibits or prevents any carbon being removed from the environment.

Plastic lawn in sunny areas can cause heating of the surface temperature and of the underlying soil. The high soil and air temperatures can have a negative impact on nearby plants and trees, damaging previously existing root systems. Temperature studies reveal that artificial turf in the sun can reach temperatures of 180 degrees.

Pollution of the air, water, and ocean from the chemicals found in plastics, including plastic grass, is a concern for many, and there is a growing body of information about the potential negative impacts for human health. Pollutants from these materials can move into the air and leach into the water. Though it may look similar to a healthy lawn, artificial turf is made from polyethelyne, polyester, polypropylene, and nylon, or some combination of these

materials. Many of these materials have the ability to leach per/polyfluorinated alkyl (PFAS) and other long lasting chemicals into our environment.

The lifespan of artificial turf varies according to how it was installed, and potential wear and tear. Estimates range from 8 to 15 years before the quality has degraded such that the owner may prefer to have the turf removed. Disposal of plastics remains a big problem, with the only alternative for synthetic lawn being removal to the landfill. This can be a large unforeseen expense, as well as a contribution to ground, air and water pollution. After removal, it takes time, money and effort to restore life to the damaged soil where the turf had been installed.

Thank you for considering my concerns.

Susan Casner-Kay
Sunnyvale resident

From: [Kathleen Meagher](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Please support Item#11 on 4-16-24
Date: Saturday, April 13, 2024 12:53:05 PM

Dear Santa Clara County Board of Supervisors:

We are longtime residents of Santa Clara County and are writing to express our support for Item #11 (4-16-24; LF24-5361), the referral on an ordinance prohibiting installation of artificial turf. This referral directs the Administration to report to the Board with options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

From a public health perspective - synthetic grass contains PFAS ("forever chemicals"). These chemicals are known carcinogens which can cause developmental delays in children, interfere with hormones, reproduction, and immunity.

According to experts, these chemicals can enter the human body through contact with skin and by breathing in the particles. Anyone in contact with this material can experience deleterious effects but any health problems will be most pronounced in children and young adults who are still growing.

In addition to direct contact, these chemicals can also leach in or through water sources, especially groundwater sources, making their way away from their source and potentially contaminating others not exposed to direct contact.

The dangers of artificial turf are well-documented in a letter from the Santa Clara County Medical Association to the Sunnyvale City Council when it was considering approval of the installation of artificial turf at Lakewood Park. [SCCMA Letter to Sunnyvale](#).

From an environmental perspective – this turf cannot be recycled. Also, it becomes much hotter than natural grass, absorbing heat and radiating it back slowly over time contributing to the urban heat island effect. Nor will this turf absorb carbon. All of these negative characteristics of synthetic turf are in direct conflict with the sustainability and climate action goals of many county communities and the county itself.

There are alternatives that you should consider. There are newly-developed natural grasses designed for athletic and other fields that can withstand year-long play and engineered wood fiber for use in playgrounds.

Putting in artificial grass is not a decision that can easily be undone. Please, carefully consider the harmful health and environmental effects of synthetic turf, all which are long term, and vote for the prohibition of any future installation of artificial turf on Santa Clara County property.

Thank you for the time and consideration of our views.

Respectfully,

Kathleen and Paul Meagher

From:
To: [BoardOperations](#)
Subject: [EXTERNAL] April 16 meeting: (ID# 24-5361) Item 11, artificial turf
Date: Saturday, April 13, 2024 10:05:46 PM

Hello:

This message pertains to artificial turf.

Please consider the following negative attributes of artificial turf during your deliberations and decision making.

Background

Artificial Turf has been used as a landscaping method to reduce water consumption.

Scientists discovered the plastic blades contain unsafe levels of carcinogenic forever chemicals.

There is now a movement to prohibit new installations of Artificial Turf:

- a) Governor Newsom signed Senate Bill SB676 in October 2023 giving local jurisdictions authority to ban Artificial Turf installations.
- b) Valley Water advocates against Artificial Turf and their rebate program does not provide any rebate if one chooses this material.

Problems with Artificial Turf

1. Contains a class of chemicals called PFAS.

The F stands for fluorine. Fluorine atoms combine with carbon atoms in the polyethylene grass blades to create chemicals known to be harmful to humans. CDC found PFAS chemicals in the blood 97% of Americans and in mother's milk.

2. Negative health effects from PFAS chemicals (N.I.H).

Epidemiological studies have revealed associations between exposure to specific PFAS and a variety of health effects, including:

- Liver disease
- Kidney disease
- Cancer
- Lipid and insulin dysregulation
- Adverse reproductive and developmental outcomes
- Altered immune and thyroid function.

3. Artificial Turf is considered a hardscape.

- Rainwater runs off and the biome in the soil beneath it dies.

- Does not sequester carbon like natural grass – rather emits CO₂ and methane.
 - Plastic ‘blades’ degrade into microplastics and nanoplastics that infiltrate sources of drinking water and leach toxic chemicals used to make the Artificial Turf. Also, they are washed into the Bay where they can be consumed by aquatic life thinking its food.
4. Emits climate warming gases methane and ethylene and is much hotter than the ambient air around it causing a “heat island” effect.
 5. Cannot be recycled and ends up in landfill, burned or simply dumped.

Regards,
Steve Hill

From: [Kristina Pistone](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Comment on 4/16/2024, Item #11, LF 24-5361
Date: Sunday, April 14, 2024 2:01:52 PM

Dear Santa Clara County Board of Supervisors,

My name is Kristina Pistone, and I'm a resident of Santa Clara County (Sunnyvale). I also have a PhD in climate and atmospheric science, and I serve on Sunnyvale's Sustainability Commission although I'm currently emailing in my own capacity. I see that at your meeting on Tuesday you will be discussing a proposal by Supervisor Lee to potentially ban artificial turf on county property, and I would like to **strongly advocate for this measure**.

Last year, Sunnyvale's Sustainability Commission proposed a Study Issue which would assess the overall impacts of artificial turf compared with other ground cover. In researching for that issue, I began as fairly agnostic but the more I read, the more I found (as it seems Sup. Lee has) that the answer is likely that **AT is never the better option compared to living grass, even with water conditions in the state**. If the city council decides to fund that Study Issue, there may be some relevant synergies that apply to the County case as well.

The proposal in the agenda packet summarizes the various issues with AT well, so I won't reiterate them here. One thing I would like to point out beyond what's written in the agenda item is the passage "The process to recycle artificial turf is also very intensive, and artificial turf recycling is not widely available. As a result of limited recycling plant availability for turf, the need to ship all or parts of artificial turf to be recycled results in greenhouse gas emissions and pollution from transportation emissions." I would go farther to say that plastic recycling overall is extremely limited (even for "easy" plastics like water bottles and yogurt tubs) and when it comes to recycling mixed-type plastics which have been exposed to sunlight and weather for an 8-10 year lifetime, I don't think any such procedures currently exist anywhere, beyond landfilling. Hopefully this will change in the future, but it will be a long road. One of the Sunnyvale Speaker Series events also touched on the issue that even if supposedly "PFAS-free" products exist (which they may not even for this case), that may not actually not be dangerous because it's replacing one chemical formulation with another, only slightly different one which may also be unknown as to its impacts (see: https://www.youtube.com/watch?v=-3hXxi1kf_g&list=PLGJ-ThSMJyqMcsJTcTNQuzHy3cYyMpCHb&index=1). **The safest option is to minimize plastics usage altogether.**

While at one point it seemed like the water usage question would outweigh the issues of plastic manufacturing and installation, I think current best practices have come to the conclusion that for all these reasons, AT is worse than natural grass, even in sports field contexts which are necessarily a one-type grass monoculture (as opposed to yards, gardens, and other landscaping which can be populated with native plants, the best of the options). Since I've become aware of this issue, I've seen the FUHSD discussion on replacing their existing AT fields at the end of their lifetime, and the discussion was frankly shockingly framed, and essentially came down to the sunk cost fallacy: **once AT is installed, it will be exponentially more difficult and expensive to convert those fields back to natural grass even in light of new evidence on the various harms of plastic grass since the initial installation**. This to my mind makes it all the more imperative that this issue be considered, before more infrastructure is committed to producing tons of plastic waste every ~8ish years.

As a scientist, I am a strong believer that everyone should make decisions using the best available information and research, and I've seen how much Silicon Valley likes to pride itself on always being ahead of the curve on many issues, especially sustainability. While I'm not always convinced that a ban is the correct way to bring about desired changes, in this case I do support banning installation of AT, or at the very least exploring the options further.

Thanks for your time,

Kristina Pistone

Some brief further reading/listening:

—<https://gimletmedia.com/shows/howtosaveaplanet/2ohrl58/is-my-lawn-bad-for-the-climate>: interview with an ecologist regarding grass and land cover options in drought-prone climates

—<https://calmatters.org/environment/2023/10/california-synthetic-turf-pfas/>: you may have already seen this article on state movements towards a ban, due to the concerns about PFAS among other environmental issues described in the piece. Also, when Famed Scientist/Absolute Legend Sylvia Earle says something is bad, you listen to her!

From: [Bill DeVincenzi](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Prohibit new installation of artificial turf in Santa Clara County
Date: Sunday, April 14, 2024 8:54:49 PM

I wish to express my concern over the installation of new artificial turf in Santa Clara County. I would like to support Supervisor Otto Lee referral. Artificial turf is bad for the climate, bad for the environment and bad for human health. It contains “forever chemicals” which are very harmful to all who come in contact, but especially our youth who frequent the playing fields that this turf is used on. Microplastics are infesting our lives and need to be regulated to mitigate the harm they are causing. Thank you for your attention to this matter.

William Devincenzi
Founder and President, Sustainable Villages Community club

From: [Cheryl Weiden](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Support for Item 11 on the April 16th, 2024 BOS Agenda
Date: Sunday, April 14, 2024 9:05:06 PM



Dear Santa Clara County Board of Supervisors:

I am writing to express our strong support for Item 11, the referral regarding an ordinance to prohibit the installation of artificial turf. This referral specifically directs the Administration to present options for a County ordinance aimed at preventing the installation of artificial turf and synthetic grass on Santa Clara County property.

Artificial turf and synthetic grass pose significant risks to both human health and the environment. They contribute to chemical runoff, microplastic pollution, and exacerbate the heat island effect, all of which have detrimental effects on our well-being.

Chemical runoff from artificial turf contains substances such as PFAS, commonly known as "forever chemicals," which have been linked to various health issues including lower antibody response to vaccines and liver damage. Microplastics, another byproduct of artificial turf, have been found to cause decreased immune response and organ dysfunction in humans.

Moreover, these pollutants harm our environment by affecting organisms such as small birds and fish, as well as restricting access to soil for insects and worms. Additionally, the elevated surface temperatures of artificial turf contribute to equipment damage, skin burns, and an increased risk of heat-related illnesses.

Given these concerns, it is imperative that Santa Clara County follows the lead of cities like Millbrae and takes decisive action to prohibit the installation of artificial turf. By doing so, we not only protect public health and the environment but also align ourselves with sustainability and climate goals.

350 Silicon Valley urges you to support this referral. Implementing an ordinance to prohibit artificial turf installation will safeguard our community's health, preserve our environment, and demonstrate our commitment to a sustainable future.

Sincerely,

Cheryl Weiden
350 Silicon Valley
Steering Committee

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From: [Emily Becker](#)
To: [Arenas, Sylvia](#); [Chavez, Cindy](#); [Lee, Otto](#); [Ellenberg, Supervisor](#); [Supervisor Simitian](#); [BoardOperations](#)
Subject: [EXTERNAL] Support for a ban on artificial turf: 4/16/2024, Item #11, LF 24-5361
Date: Sunday, April 14, 2024 10:20:44 PM

Dear Supervisors Arenas, Chavez, Lee, Ellenberg, and Simitian:

As a resident of Santa Clara County Supervisorial District 1 and a member of Mothers Out Front Silicon Valley, I urge you to support Supervisor Lee's referral to create options for a ban on the installation of new artificial turf on County property.

Plastic grass poses a significant health risk due to the use of artificial chemicals including PFAS, a known carcinogen. Its use also contributes to water pollution and increases the urban heat island effect, as it can reach much higher surface temperatures than natural grass. In addition, it damages the climate due to the use of fossil fuels in its production and its displacement of natural grass, which naturally draws down carbon pollution.

This is important to me because all children deserve a safe space to play. Today's children are poised to bear the brunt of so many poor environmental decisions made by their elders. The ability of the County to avoid the further production and use of plastic, and instead prioritize natural grass and its many environmental advantages - from the lack of fossil fuels and toxic chemicals, to the increased carbon and rainfall absorption - is a unique opportunity to protect children's health today, while simultaneously lessening their future burden.

Therefore, I ask that you support Supervisor Lee's referral to direct County administration to create options for an ordinance to prohibit new installation of artificial turf on County property.

Thank you,

Emily Becker

From: [Kanika Rawat](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Public Comment on Prohibiting Artificial Turf for 4/16 Meeting
Date: Monday, April 15, 2024 8:01:08 AM

Hello,

My name is Kanika Rawat and I am a sophomore at Notre Dame High School San Jose. I live in San Jose District 4 and am a member of the Silicon Valley Youth Climate Action San Jose team.

I have full support for Otto Lee's referral (Item 11) proposing a "*County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.*" Artificial turf should not be installed because of its negative effects on human health and the environment. It is made of and produced with harmful chemicals that affect both the workers who manufacture and the people, especially children in schools, exposed to it in its daily use. People can also be harmed by its dangerously high surface temperatures. I recall that my middle school's turf would become very hot during the hotter months, smelled like rubber, and would leave residues from the crumb rubber on my hands after we played outside: I now realize that this was exposing me and my schoolmates to harmful chemicals. Artificial turf harms our environment because it releases greenhouse gasses and other polluting chemicals and becomes plastic waste after about 10-years. Artificial turf should be prohibited because it's not environmentally friendly and not safe. Natural grass is a much more sustainable and safe solution.

Thank you,
Kanika

From: [chantalvs \(null\)](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] 4/16/2024, Item #11, LF 24-5361
Date: Monday, April 15, 2024 10:17:09 AM

Dear Board members,

I am writing as a resident of Sunnyvale whose kids attended Fremont High School. I understand the board will be voting on the issue of artificial fields. Even though artificial turf seemed like the ideal solution to saving water, it all turned out to be not such a healthy alternative to grass after all. Since the first artificial turf fields got put in a lot more has become known to us about this product.

I am keenly aware, as I'm sure you are too, of all the negative environmental, health and safety aspects of artificial turf. I am urging you to thoroughly investigate more sustainable, healthy options - e.g. natural grass. There are newer types that require less water, less maintenance, can be played on for longer periods of time (contrary to what is the current complaint of coaches, district staff, etc), don't need to be replaced every 7-10 years and will not pollute the environment nor attribute to possible health related issues years from now. Our kids deserve to be kept safe from the highly possible negative health issues currently being linked to artificial turf and chemicals it is made with - not to mention the small blades of plastic (microplastics) that are breaking off and ending up in our water supply and aquatic life - and eventually in our own bodies!

This is your time to make an impact on the environment and childrens' health for the better. As a voter in the district, I am counting on you to do the right thing and hopefully will not be misled by artificial turf companies. Thank you for the time and energy you put into investigating all the data on artificial turf and making the right decision for Santa Clara County.

Best regards,
Chantal van Schooten



Re: Support for Item 11 (re. artificial turf) on April 16th, 2024 BOS Agenda, LF 24-5361

Dear Santa Clara County Supervisors Arenas, Chavez, Lee, Ellenberg, and Simitian:

Mothers Out Front Silicon Valley wishes to express our strong support for Item 11, the referral on an ordinance prohibiting installation of artificial turf. This referral directs the Administration to report to the Board with options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

This year, Mothers Out Front Silicon Valley has chosen the promotion of healthy, natural play surfaces as one of our top priorities. That's because the use of artificial turf (plastic grass) is harmful to people (especially children), to the environment, and to the climate.

Artificial turf and synthetic grass contribute to chemical runoff, microplastic pollution, and the heat island effect, all of which are harmful to human health. Some of the chemical runoff from artificial turf includes PFAS, or "forever chemicals." Many health impacts from PFAS and microplastics have been consistently identified in humans, although research on these impacts is ongoing. Some of these reported impacts for microplastics include decreased immune response, oxidative stress, and organ dysfunction. For PFAS, a few reported impacts include lower antibody response to some vaccines, lower birth weights, and liver damage. Additionally, the elevated surface temperatures of artificial turf that cause the heat island effect have the potential to damage equipment, burn skin, and increase the risk of heat-related illness.

The chemical runoff and microplastic pollution also harm organisms in our environment. PFAS and microplastics have been found to harm the health of animals, with microplastics blocking the gastrointestinal tract of small birds and fish and sometimes causing physical damage internally. Plastic turf also restricts access to the soil and out of the soil for insects and worms, respectively. On top of preventing these harmful environmental impacts, this ordinance would reduce potential greenhouse gas

emissions by preventing further demand for plastic and preventing the replacement of natural plants with a synthetic surface that cannot sequester carbon.

These health concerns and the environmental impacts have already led the city of Millbrae to prohibit the installation of artificial turf. Santa Clara County should lead the way for counties and set an example for our cities by taking this step as well.

Therefore, on behalf of our 2000+ local supporters, we urge you to support this referral. An ordinance prohibiting artificial turf is essential to protect children, community and environmental health, as well as advance County sustainability and climate goals.

Sincerely,

Linda Hutchins-Knowles
Co-Founder and Team Coordinator
Mothers Out Front Silicon Valley



April 15, 2024

Santa Clara County Board of Supervisors
70 West Hedding, East Wing, 10th Floor
San Jose, CA 95110
Via email: BoardOperations@cob.sccgov.org

Re: Support for Item 11 on the April 16 th , 2024 BOS Agenda: Plastic Turf

Dear President of the Board Ellenberg, Vice President Lee, and Supervisors,

On behalf of the Santa Clara Valley Audubon Society, I write to express our support for Item 11, Referral on an ordinance prohibiting installation of artificial turf. This referral directs the Administration to report to the Board with options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

Artificial turf and synthetic grass contribute to chemical runoff, microplastic pollution, and the heat island effect, all of which are harmful to human and environmental health. Some of the chemical runoff from artificial turf includes PFAS, or “forever chemicals.” Many health impacts from PFAS and microplastics have been consistently identified in humans, although research on these impacts is ongoing. Some of these reported impacts for microplastics include decreased immune response, oxidative stress, and organ dysfunction. For PFAS, a few reported impacts include lower antibody response to some vaccines, lower birth weights, and liver damage. Additionally, the elevated surface temperatures of artificial turf that cause the heat island effect have the potential to damage equipment, burn skin, and increase the risk of heat-related illness.

The chemical runoff and microplastic pollution also harm organisms in our environment. PFAS and microplastics have been found to harm the health of animals, with microplastics blocking the gastrointestinal tract of small birds and fish and sometimes causing physical damage internally. Plastic turf also restricts access to the soil and out of the soil for insects and worms, respectively. On top of preventing these harmful environmental impacts, this ordinance would reduce potential greenhouse gas emissions by preventing further demand for plastic and preventing the replacement of natural plants with a synthetic surface that cannot sequester carbon.

Concerns for human health motivated the Santa Clara County Medical Association to oppose installation of artificial turf on playing fields¹. Environmental concerns for watershed-wide impacts to water quality and environmental health caused Valley Water to reject artificial turf as a sustainable alternative to non functional turf².

The Santa Clara Valley Audubon Society urges you to support this referral. An ordinance prohibiting artificial turf will protect community and environmental health, as well as advance County sustainability and climate goals. Your leadership can help change a harmful trend, and serve as a model to other jurisdictions in our county.

Sincerely,

Shani Kleinhaus
Environmental Advocate
Santa Clara Valley Audubon Society

¹ <https://www.sccma.org/Portals/19/Artificial%20Turf%20Article.pdf>

²

https://www.valleywater.org/sites/default/files/01_Artificial%20Turf%20Fact%20Sheet_030614%20BA.pdf

Safe Healthy Playing Fields Inc.



www.safehealthyplayingfields.org

16 April 2024

Proposed Ordinance Prohibiting Artificial Turf Installation on County Property

Support

President Ellenburg, Vice President Lee, and Supervisors Arenas, Chavez and Simitian:

Thank you for the opportunity to submit these comments on behalf of Safe Healthy Playing Fields, Inc (SHPFI).

SHFPI is an all-volunteer 501-c-3 non-profit. We are committed to educating communities, policy-makers and elected officials about the health, safety and financial realities of plastic fields versus grass fields and other synthetic surfaces for their parks and schools. Our constituency ranges from concerned individuals to community and civic organizations, legal, healthcare and science professionals, municipal leaders and state legislators.

We applaud the proactive initiative to ban synthetic turf on all Santa Clara County owned properties and hope it will serve as a model for counties throughout the state. We ask that you consider inclusion of Santa Clara County leased properties as well as other super heated, toxic and carcinogenic rubberized playground surfacing, including used tire crumb poured-in-place (PIP) surfaces.

The proposed ordinance is in alignment with:

[Santa Clara County Board of Health](#)¹ position statement on synthetic turf

[Valley Water's](#)² fact sheet on synthetic turf

[CA Statewide Microplastics Strategy](#)³- Senate Bill No. 1263, Chapter 609, 2018

[CA DTSC](#)⁴ - Microplastics planned addition to Priority Chemicals List

[CA DTSC](#)⁵ - PFAS and other chemicals in synthetic turf (pg. 14).

[CA 30x30 Plan](#)⁶

[Santa Clara County Sustainability Master Plan](#)⁷

[Santa Clara County Zero Waste Policy](#)⁸

[Intergovernmental Negotiating Committee on Plastic Pollution](#)⁹

[Pending](#)¹⁰ and future litigation; decreased liability

Synthetic turf is made of mixed plastics. There are over 16,000 known chemicals found in plastics. Of the known chemicals, 4,200 are considered "highly hazardous" to human and environmental health. Of these 4,200 chemicals, only 980 have been regulated by any global agency. Per- and polyfluoroalkyl substances (PFAS) are amongst the 15 categories of chemicals of concern in plastics.¹¹

Chemicals in plastics add disease burden and health care costs. In the United States (US), for 2018, the attributable cost of plastics to disease and health care related costs was \$249 billion (sensitivity analysis: \$226 billion-\$289 billion); for PFAS alone, it was \$22.4 billion.¹² The societal cost globally is estimated at \$16 trillion USD annually for PFAS clean ups and health care for impacted individuals.¹³

PFAS:

The need to stop further PFAS exposure cannot be overstated. PFAS can cause multiple reproductive disorders¹⁴ (including a 40% decrease in female fertility¹⁵; a decrease of 62.3% total sperm count in males¹⁶); Crohn's disease¹⁷; breast¹⁸, testicular, kidney¹⁹, prostate²⁰ and liver²¹ cancers. PFAS cross the blood-brain barrier and are related to Autism Spectrum Disorder²², Attention Deficit Hyperactivity Disorder²³, increased deaths from Parkinson's and Alzheimer's diseases²⁴; immunological effects²⁵; increased serum cholesterol²⁶; effects on infant birth weights²⁷; impaired glucose metabolism, insulin resistance, dyslipidemia and adiposity in children and adolescents²⁸; thyroid hormone disruption (including neonatal)²⁹; thyroid cancer³⁰ and brain tumors (glioblastoma).³¹ Because they are bioaccumulative, PFAS exposure can impact multiple generations³². Babies are being born pre-polluted with PFAS.³³

Multiple studies have confirmed PFAS,³⁴ heavy metals, PAHs, phthalates and Volatile Organic Compounds leach into water and soil and aerosolize from plastics. Recent research from the University of Stockholm indicates that synthetic turf fields contain from **1 to 38 pounds** of PFAS, per regulation sized playing field.³⁵ Whether short or long chain, polymeric or non-polymeric, PFAS chemicals are so toxic they are not measured in pounds, but in parts per trillion (ppt). One ppt is the equivalent of a single drop of water in 20 olympic sized swimming pools. CA DTSC is working to regulate PFAS as a class at the Parts Per Quadrillion (ppq)³⁶ level due to their extreme toxicity and bioaccumulative effects.

Children are exposed to toxic and carcinogenic chemicals from synthetic products in utero, at home, daycare and preschools, from elementary through high school, in parks- often for hours per day, week on week, year on year. Their exposures can continue through college and beyond. Because of younger children's hand-to-mouth developmental tendencies (ingestion), smaller stature and developmental windows, they are more likely to be exposed to PFAS and other toxic chemicals that leach into air, water and soil from synthetic turf and other plastic products.

In a small study undertaken in San Diego in 2023, soccer players were found to have dermal exposure to PFOS from playing on synthetic turf, whereas playing on natural grass resulted in significantly less PFOS exposure.³⁷ It was also noted that the soccer balls had PFOS. The study is being replicated by researchers at Wayne State University, Detroit, MI and hopefully by additional research institutions.

During the last legislative session, forty-two organizations were in support of AB1423-Schiavo,³⁸ PFAS in synthetic turf, while more than 60 environmental and advocacy organizations signed on in support of SB499-Menjivar³⁹ to protect students, staff and faculty against overheated schools and play areas. While the former was vetoed⁴⁰ by the governor and the latter died in the final committee due to efforts by the California Coalition for Adequate School Housing (CASH) in a campaign of disinformation,⁴¹ both bills are back in new form under other authors in the current legislative session.

The President and CEO of the Synthetic Turf Council has admitted to PFAS in synthetic turf in a letter sent to Senator Ben Allen in June of 2023.⁴²

100% of synthetic turf tested contains PFAS.⁴³ A partial list of PFAS found in synthetic turf and components to date (from public records):

- | | | |
|-------------|------------|------------|
| • PFOS | • PFHpA | • 13C2-4:2 |
| • PFOA | • PFBS | FTS |
| • 6:2 FTSA | • PFBA | • 12C2-6:2 |
| • GenX | • PFNA | FTS |
| • D3-N-MeFO | • PFDA | • 13C2-8:2 |
| SAA | • PFHxS | FTS |
| • D2-N-EtFO | • PPF Acid | • 8:2 FTOH |
| SAA | • R-EVE | • PMPA |
| • PFPeA | • PTFE | |
| • PFHxA | • PVDF | |

Additional Chemicals of Concern: (not comprehensive)

In synthetic turf:

- | | | |
|----------------------|--------------------|---------------------|
| • Phthalates | • Di/Isocyanates | • e 1,2-cyclohexane |
| • Latex | • Formaldehyde | dicarboxylic acid |
| • Polyvinyl chloride | • Fungicides | • Dibutyltin |
| • Naptha | • Flame retardants | • Ethylene glycol |
| • Siloxanes | • Coal fly ash | • Triclosan |
| • Talc | | |

In used tire crumb playground surfacing:

- | | | |
|----------------|----------------------|----------------------|
| • Lead | • Copper | • Hexamethoxymeth |
| • Benzene | • Benzothiazole (BT) | ylmelamine |
| • Formaldehyde | • 2-Mercapto-benzot | (HMMM) |
| • Chromium | hiazole (MBT) | • Short chain (SCCP) |
| • Arsenic | • 1,3-Diphenylguanid | and long chain |
| • Mercury | ine (DPG) | (LCCP) chlorinated |
| • Cadmium | | paraffin |

Drinking water standards:

On 5 April 2024, the California Office of Environmental Health Hazard Assessment (OEHHA) issued Protective Health Goals (PHGs) for two PFAS chemicals: PFOA and PFOS.⁴⁴ The PHGs are for use by the State Water Resources Control Board (SWRCB) in establishing primary drinking water standards. PHGs are based solely on scientific and public health considerations without regard to economic considerations. Maximum Contaminant Levels (MCLs) adopted by SWRCB consider economic factors and technological feasibility. However, CA SWRCB is required, by law, to set MCLs at a level as close as feasible to corresponding PHGs and with an emphasis on the protection of public health. CA MCLs established by SWRCB must be at least as stringent as the federal MCLs.

The PHGs put forth by OEHHA call for 0.0078 ppt for PFOA and 1.0 ppt for PFOS.

On 10 April 2024, the US EPA issued Maximum Contaminant Level Goals (MCLG) and Maximum Contaminant Levels (MCLs) for both PFOA and PFOS.⁴⁵

The MCLGs are non-enforceable health based goals. The US EPA set MCLGs for both PFOA and PFOS at zero, reflective of the latest science, which shows that there is no safe level of exposure to either chemical without risk of health impacts.

Additionally, the US EPA is setting enforceable Maximum Contaminant Levels (MCLs) at 4.0 ppt for PFOA and PFOS, individually.

Four additional PFAS chemicals, PFNA, PFHxS, PFBS and “GenX” Chemicals, MCLGs and MCLs were established at 10 ppt. The MCLGs and MCLs have been added as PFAS are often found together in mixtures and may have combined health impacts. The federal MCLs set a limit of 10 ppt for any mixture of two or more of PFNA, PFHxS, PFBS, and “GenX” Chemicals.

All six of the named PFAS chemicals, a mere sliver of the over 16,000 in this chemical family, have been found in synthetic turf.

Impervious Surfacing:

Synthetic turf is classified as impervious by the US EPA⁴⁶ and state of California⁴⁷:

*“...areas such as gravel roads...that will be compacted through design or use to reduce their impermeability.” It further has defined impervious surfaces as...[a]ny surface that prevents or significantly impedes the infiltration of water into the underlying soil. This can include but is not limited to: roads, driveways, parking areas and other areas created using non porous material; buildings, rooftops, structures, **artificial turf** and compacted gravel or soil.”*

Potential for Erosion:

“As impervious surfaces increase, stormwater runoff increases in quantity, speed, temperature, and pollutant load. When impervious surfaces reach 10–20% of local watershed area, surface runoff doubles and continues to increase until, at 100% impervious surface coverage, runoff is five times that of a forested watershed. Excessive stormwater runoff also increases the potential for flooding.” US EPA Impervious Surface Fact Sheet⁴⁸

Synthetic turf does not save water and will generate 27,000 gallons of toxic runoff per 1 acre of plastic for every one inch of rainfall.⁴⁹ The toxic mix of chemicals that leach from and runoff of synthetic surfacing is augmented by pollutants that accumulate on these surfaces, including vehicle exhaust and aviation fuels. A regulation sized soccer field is 80k square feet (1.84 acres). Most synthetic fields being installed exceed this size. For areas where snow accumulates on synthetic surfaces, the situation is even more dire as one inch of snow can equal up to 13 inches of rain,⁵⁰ significantly increasing the toxic runoff.

Microplastics:

Research by the Department of Civil and Environmental Engineering, University of California at Los Angeles, CA, and the Moore Institute for Plastic Pollution Research, Long Beach, CA, found “*Children’s playgrounds contain more microplastics than other areas in urban parks.*”⁵¹

In addition to the CA Statewide Microplastics Strategy - Senate Bill No.1263, Chapter 609, 2018,⁵² CA DTSC recently announced its intent to regulate Microplastics as a Chemical of Concern.⁵³

Microplastic blade loss from synthetic turf is estimated at 551-661 pounds per playing field per year.⁵⁴ Microplastics not only leach PFAS and other chemicals, they adsorb other chemicals and bacteria, posing particular risk to the food chain.

Micro- and nano-plastics have been found in:

- Heart⁵⁵
- Liver and spleen⁵⁶
- Lungs⁵⁷
- Blood⁵⁸
- Placenta (maternal and fetal sides)⁵⁹
- Newborn and adult feces⁶⁰
- Breastmilk⁶¹
- Brain⁶²
- Testes and semen⁶³

Microplastic synthetic turf blades have been found in Lake Tahoe,⁶⁴ where researchers found high levels of polyethylene and polypropylene in the lake and “***...recorded plastics concentrations more than three times higher than those sampled using a similar method in the North Atlantic subtropical gyre.***”⁶⁵ In 2021, researchers found that synthetic turf fields in Toronto contribute the 2nd highest amount of microplastics to the environment with only litter contributing a higher amount.⁶⁶

Published in June 2023, research by the University of Barcelona found:

*“AT [artificial turf] fibers - composed mainly of polyethylene and polypropylene - can constitute over 15% of the mesoplastics and macroplastics content, suggesting that AT fibers may contribute significantly to plastic pollution. Up to 20,000 fibers a day flowed down through the river, and up to 213,200 fibers per km2 were found floating on the sea surface of nearshore areas. AT, apart from impacting on urban biodiversity, urban runoff, heat island formation, and hazardous chemical leaching, is a major source of plastic pollution to natural aquatic environments.”*⁶⁷

The CA Coastal Commission conditioned a permit for UC Santa Barbara’s baseball stadium in December 2023 for natural grass only and no tree removal, citing microplastic pollution as the primary concern in the staff report.

Synthetic turf is clearly a major point source of PFAS and microplastic pollution that cannot go unaddressed.

Heat/Heat Islands:

Synthetic turf off-gasses both methane and ethylene and continues throughout the night, in ever increasing amounts for the 1,000 years it takes for it to decompose.⁶⁸ Methane traps 90% more heat than carbon dioxide and is 21 times more potent. Land based plastics produce 2 times more methane and 76 times more ethylene than plastics found in waterways and oceans.⁶⁹

A 2017 Swedish study of total life cycle emissions on a modeled 7881m² synthetic field concluded GHG emissions would be 527 tons of CO₂e for a ten year use period,⁷⁰ exclusive of manufacturing, transport, construction, removal and disposal. The heat islands created by synthetic playing fields extend beyond the footprint of the field, impacting surrounding communities. The heat islands they create are visible from satellites.

Synthetic turf can readily become much hotter than asphalt, reaching temperatures of 160°F to 180°F (regardless of infill type) and have even reached 222.8°F.⁷¹ Thermal burns on synthetic surfaces have required hospitalization and admission to burn and intensive care units. At a surface temperature of 118°F a first-degree burn occurs in 15 minutes, becoming a 3rd degree burn (full skin-thickness) in 20 minutes; at a temperature of 140°F, 1st degree burns occur in 3 seconds, and 3rd degree burns in 5 seconds.⁷²

Pets and wildlife can also sustain burns and are exposed to the toxic and carcinogenic chemicals from these petrochemical surfaces. Use in dog parks is particularly concerning. Dogs have rapid metabolisms and live shorter lives. In addition to dermal exposure and inhalation, they lick their paws, ensuring ingestion of carcinogenic chemicals.

Not Recyclable:

CA Commission on Recycling Markets Curbside Recycling designated synthetic turf a single-use plastic.⁷³ They are made of mixed petrochemical based plastics, rendering them unrecyclable.

Landfilling, donating, selling, improperly or illegally disposing of synthetic turf continues to contribute to greenhouse gas emissions, as well as PFAS and other toxic and carcinogenic chemical leachate and continuous microplastic pollution. Tracking, reporting and following up on improper and illegal dump sites, often comprising hundreds of rolls of used plastic turf carpet, has proven difficult and time consuming.

When “mechanically” recycled (chopped up, essentially) for use in other products, the toxic and carcinogenic effects are added to the new product. When shipped out of state for “advanced chemical recycling” (banned in CA under SB54-Allen, signed into law in 2022), they contribute to the negative human and environmental health effects of Environmental and Social Justice (EJ/SJ) communities. Landfilling and dumping used rolls also often occurs in EJ/SJ communities.

A used synthetic turf field removed in 2023 from Saratoga High School and dumped on agricultural land in at least two different locations in Senators Cortese and Laird’s districts are currently under investigation. With likely thousands of plastic playing fields scheduled for removal this summer, and at least three in Santa Clara County, it is incumbent on decision makers to turn off the tap on these dangerous, highly polluting, unnecessary plastic grass carpets.

Of the four self proclaimed synthetic turf recyclers in CA, Re-Match, a Danish company that received a \$2 million tax incentive from CA as well as in PA, France and the Netherlands. They have been delisted from the Copenhagen Stock Exchange and recently settled litigation in PA,

where they moved thousands of rolls of used turf from location to location. There is no address listed with the CA Secretary of State for this business and no evidence that they ever broke ground for a business in CA.

TenCate, FieldTurf and Target Technologies Intl., Inc. (TTII) all claim to be doing mechanical recycling in CA and shipping chopped up fields to Houston, TX to Cyclyx and then to the ExxonMobil Olefins plant in Baytown, TX for “advanced chemical recycling.” There is no proof that the process, which would require addition of virgin plastics and yet more PFAS chemicals, is being done at scale. What is known is that the Baytown facility has been cited numerous times for violation of air standards and fined in the millions for contaminating the surrounding community, where there is a high level of cancer.

There is no known location for TenCate or TTII recycling plants in CA.

FieldTurf, a Tarkett company, claims to be recycling at Circular Polymers by Ascend in Lincoln, CA. There is video footage of old synthetic turf rolls being chopped up and clear OSHA violations. FieldTurf has also made claims of transporting old fields to Cyclyx in Houston, TX and then ExxonMobil in Baytown, TX for “advanced chemical recycling.”

Industry claims of a TRP (Turf Recycling Products) location in Banning, CA have been proven false. TRP is not licensed to do business in CA. Phone calls to Banning and surrounding towns confirmed no licenses or so-called recycling businesses exist in the area. They are in Dalton, GA and a subsidiary of Consan USA. There is no evidence that any type of recycling is occurring there, either.

A Chain of Custody document for a portion of the old field removed from Saratoga High School lists TurfCycle and is signed by an individual in Temecula, CA.⁷⁴ The letter is addressed to FieldTurf in Calhoun, GA and was forwarded to Saratoga High School. TurfCycle is licensed in CA and reports “turf recycling” on documents filed with the SOS.⁷⁵ TurfCycle clearly states on the “chain of custody”

“...materials are being stored at this facility and will be re-purposed into the local community for general landscaping, batting cages, gym flooring, cross-fit, sport related ground coverings and erosion control. None of these materials were or will be sent to a landfill.”

The used plastic turf rolls delivered to Pescadero, CA are on land zoned for residential/agricultural use, and like the final three semi-trucks that delivered 54 rolls to San Martin, also zoned for residential/agricultural use, is under investigation by the County. In both instances, the used rolls have been noted to be listed for sale on Facebook Marketplace. As in multiple other locations up and down the state and across the country, a physical address or true property owner is never listed in such ads (also found on Craigslist).

Alternative options:

Grass fields actively sequester carbon dioxide and provide a cooling function that is especially dramatic when compared to the heat generated by synthetic turf. Grass naturally filters toxins,

performs important eco-services for the soil beneath, and provides widely dispersed rainwater infiltration allowing absorption and recharging of the water table. Additionally⁷⁶:

- Research suggests that grasses can accumulate and deposit carbon into the soil by approximately one-half ton of carbon per acre for 30 to 40 years.
- Grasses are estimated to accumulate and deposit carbon into the soil by approximately one-half ton of carbon per acre year for 30 to 40 years.
- Organic management and zero emission maintenance equipment mitigate emissions and reduce costs over time, and increase carbon sequestration.
- Electric mowers for playing fields and chalk markers are also available.
- Drought⁷⁷ and desert tolerant⁷⁸ varieties of natural grass appropriate for lawns, parks and high use playing fields are available.
- An 82,622 ft² natural grass field would produce enough daily oxygen for nearly 463 people.

A turfgrass manager (not gardeners and landscapers) can generally manage 5 natural grass playing fields. Hiring or training a turf grass manager would be a cost effective investment with the savings realized from drought tolerant natural grass rather than the exorbitant expense for plastic fields that last from 8-12 years on average (some have failed as early as 1 to 4 years).

Programs in natural turf management include UC Riverside, Washington State University, Oregon State University (online certificate program), University of Arizona, Colorado State University and Texas A&M, to name a few.

Organically managed, high use fields utilized by park goers and organized sports teams have been in use for years in many areas across the country,⁷⁹ Once established, organically managed fields become increasingly more cost effective. There are opportunities for two year pilot projects with expert guidance. Two to three parks are generally preferred. One example is Beyond Pesticides, a non-profit that provides expertise and training in organic management for parks and schools.⁸⁰

Open Green Space Has Mental Health Benefits:

Natural green spaces have been shown to mitigate aggressive behavior in adolescents⁸¹ and significantly reduce the growing risk of psychiatric disorders⁸² and suicide mortality.⁸³ Natural green spaces also reduce health risks such as asthma.⁸⁴

The American Psychological Association finds:

“...exposure to nature has been linked to a host of benefits, including improved attention, lower stress, better mood, reduced risk of psychiatric disorders and even upticks in empathy and cooperation.” American Psychological Association⁸⁵

Initially published in Center for Climate, Health, and the Global Environment, Harvard⁸⁶:

“Studies have found that students who attend schools with green spaces tend to have better grades, higher test scores, and better attendance rates than those who do not.”

In addition to Millbrae’s ordinance and San Marino’s interim ordinance, ordinances are being considered in Sunnyvale and Pasadena. There is an ever growing number of moratoriums and ordinances against synthetic turf and legislation passed and in progress affecting sale and use in multiple states.

Scripps Institute of Oceanography, University of California San Diego, reported 46 total atmospheric rivers along the U.S. West Coast, causing disastrous flooding and loss of property and life during the 2022 to 2023 rainy season. With what has now been categorized as a Super El Niño year currently, and increasing frequency and severity of atmospheric events overall, consideration of synthetic turf is antithetical to environmental responsibility and an even poorer choice for a product that must be replaced every 8 to 10 years on average. Rubberized playground surfacing has an even shorter life span.

SHPFI urges you to adopt the proposal before you on 16 April 2024.

Respectfully submitted,

Diana Conway, President
Dianne Woelke MSN, Board Member
Safe Healthy Playing Fields, Inc.
<https://www.safehealthyplayingfields.org>
SHPFI is an all-volunteer nonprofit 501-c-3



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[AS%29%20can%20act.Disease%20%28CD%29%20and%20other%20inflammatory%20bowel%20disease%20%28IBD%29](#)

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From: [Lisa Charpontier](#)
To: [Arenas, Sylvia](#); [Chavez, Cindy](#); [Lee, Otto](#); [Ellenberg, Supervisor](#); [Supervisor Simitian](#); [BoardOperations](#)
Subject: [EXTERNAL] Support for a ban on artificial turf: 4/16/2024, Item #11, LF 24-5361
Date: Monday, April 15, 2024 1:48:50 PM

Dear Supervisors Arenas, Chavez, Lee, Ellenberg, and Simitian:

As a resident of Santa Clara County Supervisorial District 2 and a member of Mothers Out Front Silicon Valley, I urge you to support Supervisor Lee's referral to create options for a ban on the installation of new artificial turf on County property.

Plastic grass poses a significant health risk due to the use of artificial chemicals including PFAS, a known carcinogen. Its use also contributes to water pollution and increases the urban heat island effect, as it can reach much higher surface temperatures than natural grass. In addition, it damages the climate due to the use of fossil fuels in its production and its displacement of natural grass, which naturally draws down carbon pollution.

This issue is important to me because I believe that we all have a right to live in a healthy environment free from the risk of cancer due to plastic pollutants and into a future with a stable and liveable climate. Now that we are aware of the harms of artificial turf, it is incumbent on us to immediately put a stop to its use and production.

Therefore, I ask that you support Supervisor Lee's referral to direct County administration to create options for an ordinance to prohibit new installation of artificial turf on County property.

Kind Regards--

-Lisa Charpontier

Lisa Charpontier
Botany of Design
Landscape Design

April 12, 2024

Honorable Members of the Board of Supervisors
County of Santa Clara
70 West Hedding Street, East Wing
San Jose, CA 95110

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Michele L. King, CMC

RE: Support for Item 11 (“Prohibiting Artificial Turf Installation on County Property”) on April 16, 2024 Board of Supervisors Meeting Agenda

Dear Members of the Board of Supervisors,

On behalf of the Santa Clara Valley Water District (Valley Water), I am writing to express our support of Supervisor Otto Lee’s referral regarding a proposed ordinance prohibiting installation of artificial turf and synthetic grass on County of Santa Clara property.

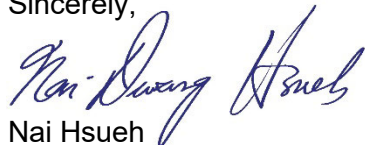
Artificial turf and synthetic grass contribute to contaminated runoff, microplastic pollution, and the heat island effect, all of which are harmful to human health. Runoff from artificial turf may contain heavy metals, harmful chemicals, such as perfluoroalkyl and polyfluoroalkyl substances (PFAS) or “forever chemicals,” and other pollutants that can reach surface water or groundwater. PFAS can move through ground infiltration, getting into groundwater that may be used for public water supplies or for private drinking water wells. Artificial turf sheds microplastics that pollute our waterways, threatening wildlife, ecosystems, and our health. Reduction in the release of PFAS and synthetic materials into the environment is in the public interest due to the harmful human and environmental impacts.

In addition to mitigating harmful environmental impacts, this ordinance would reduce potential greenhouse gas emissions by preventing further demand for plastic and preventing the replacement of natural plants with a synthetic surface that cannot sequester carbon as well as help foster healthy soil, which would increase moisture-holding capacity, support healthy microbes, and improve water quality. Prohibiting the new installation of artificial turf is also in alignment with Valley Water’s Landscape Rebate Program, which helps properties convert their turf to drought-tolerant, climate appropriate landscaping and aims to support a healthy watershed with natural landscaping.

An ordinance prohibiting artificial turf will protect community and environmental health, as well as advance County sustainability and climate goals. Santa Clara County should lead the way for counties and set an example for our cities by prohibiting artificial turf. We also encourage the County to consider prohibiting irrigation of non-functional turf on commercial, industrial, and institutional (CII) properties, in alignment with the recently adopted State Law (AB 1572, Chapter 849) that prohibits the use of potable water for the irrigation of nonfunctional turf on CII properties. Together, these collective efforts will advance water conservation, promote sustainable practices, and protect our environment.

As Chair of the Valley Water Board of Directors, I urge you to support this referral.

Sincerely,



Nai Hsueh
Chair, Board of Directors

cc: Board of Directors (7), R. Callender, R. Gibson
gy:sd
0415a-l



April 15, 2024

Re: Board meeting on 4/16/24, Item 10, Closing down Reid-Hillview Airport

Dear Supervisor Chavez,

ICAN has been following issues with Reid-Hillview for the past few years and we very much appreciate your leadership and efforts to ensure the safety and wellbeing of county residents living around the airport.

We are supportive of efforts to transition a 180-acre airport property into a sustainable community asset. The areas surrounding the airport are overpopulated with families, schools, shops, children playgrounds, seniors strolling the parks etc. We have been serving the Vietnamese community for the past 24 years. Many Vietnamese families live around that area and they are scared of the planes flying too low and falling on their heads, the noise and the air pollution caused by leaded gasoline.

The airport has served the County well for decades, but it's now an incompatible land use. The detrimental impacts that leaded fuel emissions and noise have had on the east side of San Jose, particularly children, have been well documented.

I hope the report you hear on April 16 is a reminder that we must do everything we can as soon as possible to plan for the future of this airport site. Staff's report is thorough and includes a lot of information about topics that are all tied to the airport's current and future operations.

Many of these topics are complicated, interconnected, and involve precise timing. This will require thorough planning from County staff, and require vast amounts of community engagement. We must address the closure of Reid-Hillview Airport now to minimize safety hazards to people living around the airport. We must be diligent every step of the way, so we have the best possible outcome for all involved.

Please continue to keep the pressure on to close this airport, give Eastridge Little League the facilities they deserve, begin planning for a better use of the airport site, and bring quality transit solutions to the east side of San Jose, and most of all, to ensure the safety and wellbeing of county residents.

Thank you,



Quyen Vuong

From: [Cortney Jansen](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] Support for ban on installing synthetic turf on county property (4/16 board meeting, Item #11, LF 24-5361)
Date: Monday, April 15, 2024 3:17:59 PM
Attachments: [Letter from Melanie Taylor to Senator Allen June 2023.pdf](#)

Dear Santa Clara County Board of Supervisors,

My name is Cortney Jansen. I am a Sunnyvale resident, and I am writing regarding Agenda Item #11 "Approve referral to Administration to report to the Board with options for consideration relating to a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property. (Lee)", ID #24-3561 that will be in the Tuesday, April 16 board meeting.

Specifically, I fully support a ban on the installation of artificial turf on all County property.

There are many, many reasons to ban the installation of artificial turf. It is bad for our health and it is bad for our environment.

Artificial turf contributes to water pollution

The contribution of artificial turf materials to water pollution has been documented in scientific, peer-reviewed studies. As one example, "The dark side of artificial greening: Plastic turfs as widespread pollutants of aquatic environments" from the University of Barcelona states, "Artificial turf fibers accounted for up to 15% of meso- and macroplastic abundance" (see <https://www.sciencedirect.com/science/article/pii/S0269749123010965> for the article).

Artificial turf contains PFAS chemicals, despite industry claims of "PFAS-free" artificial turf

You will likely have heard the industry claim that artificial turf can be manufactured without PFAS. However, last year the California State Legislature was proposing AB 1423 to ban the sale of AT containing PFAS. The bill did not get approved. As part of this, in June 2023 Melanie Taylor (CEO of Synthetic Turf Council, which is a lobby group for the artificial turf industry) wrote a letter to Senator Ben Allen (on the Environmental Quality Committee). The letter is attached, short, and worth reading, but here is the key part (bold added by me): "*The bill a (sic) ban on the sale of artificial turf containing intentionally added PFAS on January 1, 2024 to certain public entities and by January 1, 2025 for all sales in California. **These dates do not provide enough time for manufacturers and suppliers to develop viable alternatives for the market place.***" In other words, if the bill had passed, artificial turf would not be able to be sold in California because all artificial turf manufactured today contains PFAS chemicals. Even if there were PFAS-free artificial turf, artificial turf is still plastic and we do not need to cover our planet in plastic.

Artificial turf alternative infills are not tested

You may also have heard of alternative, organic infills, which replace the old crumb rubber infill and are "safe" for our students. However, these infills are neither organic nor safe. When you and I hear the word "organic", we think about grocery shopping, where "organic" means no pesticides. But that's not what the artificial turf industry means. They use "organic" to mean "naturally-derived" They do NOT mean free of pesticides. In fact, because "organic" is not a regulated term in the AT industry, the industry can call anything "organic." There is no body - USDA or otherwise - who actually regulates infill as "organic". Additionally, these

infills have not been tested enough for anyone to know if they are actually safe. Of those limited studies, one showed that naturally-derived infills still contain chemicals of concern, although at lower quantities than crumb rubber. Another study detected polycyclic aromatic hydrocarbons (or PAHs) in cork at low levels. To be clear, PAHs are bad. We made a mistake 10-15 years ago when we believed the artificial turf industry's claims that crumb rubber infills were "safe", when there was not enough testing to know. And yet here we are again. The artificial turf industry claims that these naturally-derived infills are "safe", when they have barely been studied. Let's learn from our mistakes. The artificial turf industry cannot be trusted.

Summary

A ban of installation of artificial turf on County property would have a long-lasting positive impact on our environment and our health. Additionally, it would provide a path forward for other nearby municipalities and districts as they evaluate the installation of artificial turf on their properties. Sunnyvale is considering a study issue on banning artificial turf on city property. If the County passes such a ban, it will encourage Sunnyvale to pass a ban. Sunnyvale School District (SSD) recently approved a contract to install artificial turf as playground surface materials, despite parent opposition. A ban by the County will encourage SSD to identify more sustainable options in the future. The Fremont Union High School District (FUHSD) also recently approved replacing 6 artificial turf fields with more artificial turf - despite community objections and a presentation full of misinformation about the "benefits" of artificial turf. A County ban on artificial turf on County property will be the start of a waterfall that will encourage other municipalities and districts to reject artificial turf in favor of more environmental, healthier alternatives.

Finally, banning artificial turf is an important step towards the County achieving the goals outlined in its Master Sustainability Plan.

Thank you,
Cortney Jansen
Sunnyvale resident

June 21, 2023

Ben Allen, Chair
Environmental Quality Committee

Dear Senator Allen:

On behalf of the Synthetic Turf Council (STC) and its members, we must respectfully “Opposed Unless Amended” AB 1423 (Schiavo), which restricts the use of perfluoroalkyl and polyfluoroalkyl substances (PFAS) in artificial turf. STC members include builders, landscape architects, testing labs, maintenance providers, manufacturers, suppliers, installation contractors, infill material suppliers and other specialty service companies.

As currently drafted, AB 1423 creates significant compliance challenges for artificial turf manufacturers and suppliers for the following reasons:

- 1) The bill a ban on the sale of artificial turf containing intentionally added PFAS on January 1, 2024 to certain public entities and by January 1, 2025 for all sales in California. These dates do not provide enough time for manufacturers and suppliers to develop viable alternatives for the market place. We request that both dates be changed to January 1, 2026, which is in-line with other PFAS legislation currently pending.
- 2) The bill also intends to regulate levels of unintentionally added PFAS to 1 part per million (PPM) in total organic fluorine. While our manufacturers and suppliers fully intend to comply with the provisions of the bill related to intentionally added PFAS, we are concerned that trace quantities of a chemical may be present in natural or synthetic ingredients, recycled content, manufacturing processes or equipment. Therefore, we believe it would be more prudent (in addition to allowing for testing protocols to be developed) to establish the compliance threshold for unintentionally added PFAS at 100 PPM beginning in 2026 and 50 PPM in 2028. These thresholds have been previously recognized by the legislature in AB 1817 (Ting) (2021) and AB 652 (Friedman) (2021).

We urge the committee to consider these amendments to ensure that businesses can remain in compliance while serving its California customers.

Sincerely,

A handwritten signature in black ink, appearing to read "Melanie Taylor". The signature is fluid and cursive, with the first name "Melanie" written in a larger, more prominent script than the last name "Taylor".

Melanie Taylor, President & CEO, Synthetic Turf Council

From: [Brian Kim](#)
To: [BoardOperations](#)
Subject: [EXTERNAL] In support of Agenda Item #11 of April 16 board meeting (ID #24-3561)
Date: Monday, April 15, 2024 4:11:59 PM

To whom it may concern,

My name is Brian Kim. I am a resident of North Sunnyvale, and I am writing to support a ban on the installation of artificial turf on County property. This is part of the Tuesday, April 16 board meeting as Agenda Item #11 "Approve referral to Administration to report to the Board with options for consideration relating to a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property. (Lee)", ID #24-3561.

The installation of artificial turf is directly counter to the County's Sustainability Master Plan, which covers four main areas, as you know:

- Climate Protection and Defense: "Reduces greenhouse gasses and builds resilience to the threats of climate change and natural disasters"
- Natural Resources and the Environment: "Protects, enhances, and restores natural resources and habitats and reduces the cumulative impacts of environmental hazards."
- Community Health and Well-Being: "Protects and improves the health of the community and the conditions in places where people live, learn, work, and play."
- Prosperous and Just Economy: "Builds financial security and prosperity for all and promotes leadership and collaboration."

The fact is that installing artificial turf in our community make all of these harder:

- Climate Protection and Defense: Artificial turf cannot be recycled, despite manufacturer claims. There are claims that it can be recycled via pyrolysis, but this method uses more energy to "recycle" artificial turf than is needed to make virgin material (see [this Guardian article](#) for additional details. This March 2023 [article](#) from Philadelphia notes, "To this point, no companies in the U.S. can fully recycle [artificial turf rolls], according to a turf trade association president." Furthermore, installing artificial turf means replacing carbon-sequestering grass with carbon-producing plastic. So using artificial turf reduces our resilience to climate change.
- Natural Resources and the Environment: Installing artificial turf is not environmentally friendly. Artificial turf contains PFAS chemicals, which contaminate our water supply. So does the infill that leaches off the field and the plastic "blades" that break off the field. Additionally, as per SB676, artificial turf is not drought friendly. Valley Water also notes that [does not meet their requirements](#) for sustainability, and artificial turf is not a qualified material in their Landscape Rebate Program
- Community Health and Well-Being: Those PFAS chemicals in artificial turf have been linked to numerous negative health impacts. As just one example, per the European Environment Agency [here](#), PFAS chemicals have multiple negative effects on the development of a fetus, including low birth weight, increased cholesterol levels, increased risk of kidney cancer, and reduced immune response to

vaccines.

- Prosperous and Just Economy: Artificial turf is not financially sustainable, since it has to be replaced every 8-10 years

Installing artificial turf makes all of our sustainability and environmental goals more difficult to achieve. Please ban the installation of artificial turf on County property.

Thank you,
Brian Kim
Resident of Sunnyvale

Re: Support for Item 11 on the April 16th, 2024 BOS Agenda

Dear Santa Clara County Board of Supervisors:

I am writing to express my support for Item 11, the referral on an ordinance prohibiting installation of artificial turf. This referral directs the Administration to report to the Board with options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

I have been advocating for natural, drought tolerant grass or other natural surfaces for schools and cities since 2022 when I found out that my school district in Los Gatos (LGUSD) was considering artificial turf fields. Even just a few years ago, the amount of supporting documentation relating to environmental and health concerns about artificial grass was overwhelming, but now with the advance of plastics research and the discovery of the prevalence of PFAS use across almost all plastic products, it has become very clearly evident that we as a society need to proceed with extreme caution with regards to plastic products. PFAS are just one of the chemicals of concern in plastic.

Given that the DTSC is currently reviewing artificial turf as a product of concern and given what we know about plastic today, I believe that a full prohibition of artificial turf is warranted for County property.

There is also within the referral a request for the ordinance to include guidelines for safe disposal of used artificial turf when it reaches its end of life in order to prevent infill and plastic blades from polluting our local environment. I applaud this addition and I hope that this moves forward as an example to municipalities within Santa Clara County and beyond that similar wording must be included in municipal codes. I was involved in the tracking of Saratoga High School's used artificial turf field last summer and I was appalled to see that it had been dumped in Santa Clara County in an area zoned for agriculture where someone could easily purchase that property in the future to grow vegetables on contaminated land. The amount of tire crumb rubber and loose plastic blades spilling out of the rolled up artificial turf was unnerving. Infill was spilling out into storm drains at the school, piled up in the parking lot (where I believe it rained last summer one day) and being trucked on the highway spilling bits of infill as it was taken in open flatbed trucks to at least one destination. We do not know how much of it ended up in San Martin vs. where it was reported by TurfCycle to have been taken (Pescadero, CA). Clearly "chain of custody" letters are a mere suggestion.

Artificial turf pollutes the environment and endangers humans from production to end of life. We should be considering the product's entire life cycle, which is a massive amount of plastic, rubber, and other materials, in order to fully assess its impacts. There are viable alternatives to artificial turf (natural ground cover, drought tolerant grass, wood chips or engineered wood fiber, etc) that make it unnecessary and for any sports fields, a trained sports field manager would know how to properly maintain a field in our region.

Unfortunately I have seen an explosive growth in not only field conversions from grass to artificial turf but also playground facilities transformed from more natural spaces to synthetic. At the same time that movements like Green Schoolyards America and efforts to reduce impacts of extreme heat events and increase access to nature are gaining momentum, so too are many landscape architects promoting synthetic surfaces. The problem is the rationale is flawed. Water saving measures touted with artificial turf come at a cost of stormwater and runoff pollution from the microplastics, infill and chemical leaching from plastic. Plastic left in the sunlight photodegrades. Heat radiating off the artificial turf contributes to environmental and health impacts and it has been proven to offgas. And in order to properly care for artificial turf it needs to be cleaned periodically with water. One sports field manager said that he likes to think about it as an outdoor carpet. Consider leaving an outdoor carpet outside for your kids to play on for years without ever being able to deep clean it (or clean it at all as is fairly common here).

I would like to mention specifically the fairgrounds sports complex plans. I find it inequitable that the design idea that I last saw involved natural grass fields for the Earthquakes but artificial turf fields for the community. I can recommend several sports fields consultants who could explain how grass can take the hours of play that might be desired. I can almost guarantee the decision to use artificial turf for community fields is to reduce maintenance and maximize hours of usage. And I can also guarantee that player health was not considered in the decision. During the summer and whenever the temperature rises (which here happens even in winter months) those fields are going to be really hot, creating a massive heat island. Artificial turf industry claims of cooling technology or cooler infill might reduce the temperature by a few degrees compared to a tire crumb infill field but it isn't going to matter when the turf is 140-170 degrees. I checked Saratoga High School's field which was just installed this past summer. There was a cool breeze blowing on a 77 degree day and the artificial turf and running track surrounding it were about 135-140 degrees. It would be higher without the cool breeze.

As a parent and natural play surfaces advocate, I urge you to support this referral. An ordinance prohibiting artificial turf will protect community and environmental health, as well as advance County sustainability and climate goals.

Sincerely,

Pamela Bond

Los Gatos Resident, parent and natural play surface advocate



Andrea Mackenzie, General Manager
Alex Kennett, District 1
Mike Flaughner, District 2
Helen Chapman, District 3
Garnetta Annable, District 4
Vicki Alexander, District 5
Mike Potter, District 6
Kalvin Gill, District 7

April 15, 2024

Santa Clara County Board of Supervisors
70 W. Hedding St.
East Wing, 10th Floor
San Jose, CA 95110

Subject: SUPPORT Item 11 on April 16, 2024 Prohibition on New Installation of Artificial Turf (LF 24-5361)

Dear President Ellenberg and Supervisors,

On behalf of the Santa Clara Valley Open Space Authority (Open Space Authority), I am writing to express my support for Item 11, the referral on an ordinance prohibiting installation of artificial turf. This referral directs the Administration to report to the Board with options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

As you know, the Open Space Authority is a public, independent special district created by the California State Legislature in 1993 to conserve the natural environment, support agriculture, and connect people to nature by protecting open spaces, natural areas, and working farms and ranches for future generations.

Artificial turf and synthetic grass contribute to chemical runoff, microplastic pollution, and the heat island effect, all of which are harmful to human health. Some of the chemical runoff from artificial turf includes PFAS, or “forever chemicals.” Many health impacts from PFAS and microplastics have been consistently identified in humans, although research on these impacts is ongoing. Some of these reported impacts for microplastics include decreased immune response, oxidative stress, and organ disfunction. For PFAS, a few reported impacts include lower antibody response to some vaccines, lower birth weights, and liver damage. Additionally, the elevated surface temperatures of artificial turf that cause the heat island effect have the potential to damage equipment, burn skin, and increase the risk of heat-related illness.

The chemical runoff and microplastic pollution also harm organisms in our environment. PFAS and microplastics have been found to harm the health of animals, with microplastics blocking the gastrointestinal tract of small birds and fish and sometimes causing physical damage internally. Plastic turf also restricts access to the soil and out of the soil for insects and worms, respectively. On top of preventing these harmful environmental impacts, this ordinance would reduce potential greenhouse gas emissions by preventing further demand for plastic and preventing the replacement of natural plants with a synthetic surface that cannot sequester carbon.

These health concerns and the environmental impacts have already led the city of Millbrae to prohibit the installation of artificial turf. Santa Clara County should lead the way for counties and set an example for our cities by taking this step as well.

I urge you to support this referral. An ordinance prohibiting artificial turf will protect community and environmental health, as well as advance County sustainability and climate goals.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink, reading "Andrea Mackenzie". The signature is fluid and cursive, with the first name "Andrea" and last name "Mackenzie" clearly legible.

Andrea Mackenzie
General Manager

Cc: Santa Clara Valley Open Space Authority Board of Directors

Helen Chapman

1556 Hester Ave
San Jose CA
hkmchapman@gmail.com

April 15, 2024

Santa Clara County Board of Supervisors
70 West Hedding, East Wing, 10th Floor
San Jose, CA 95110

Via email: BoardOperations@cob.sccgov.org

Dear President Ellenberg, Vice President Lee and Honored Supervisors,

I would like to share my support for the referral from Vice President Lee to direct the Administration to report to the Board on options for consideration relating to a County Ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property (Agenda Item #11).

Many years ago as a former San Jose Parks Commissioner and Board member with the Shasta Hanchett Park Neighborhood Association took action to successfully ensure the rejection of the proposal from San Jose Unified School District to replace the turf at Trace Elementary School with artificial turf. We knew back then the health benefits for children and adults using the field outweighed the short term cost savings to the district as the turf would need to be maintained every 5 years and fully replaced after 20 years. The material used radiates heat more than natural grass and does nothing to address carbon sequestration to help reduce greenhouse gas emissions.

I applaud the Board of Supervisors for addressing this issue and taking forward thinking steps to safeguard our community's health and addressing climate change.

Sincerely yours,



Helen Chapman



Santa Clara County Board of Supervisors
70 West Hedding Street
San Jose, CA 95110

April 16, 2024

Subject: County Administration Report on Artificial Turf Installation
Re: **Agenda Item 11**, LF 24-5361

Dear Supervisors Ellenberg, Lee, Arenas, Chavez & Simitian,

Sustainable Silicon Valley strongly supports Vice President Lee's Agenda Item 11, the referral directing the Administration to report to the Board options for a County ordinance to prohibit new installation of artificial turf and synthetic grass on Santa Clara County property.

Synthetic turf is a clear health hazard with a high social cost, as the Santa Clara County Medical Association's Environmental Health has exhaustively detailed. Plastic athletic fields are dangerous heat islands, breeding grounds of Staph (MRSA) infections and the cause of a significantly higher rate of student knee and head injuries. Artificial turf and synthetic grass contribute to chemical runoff including PFAS, microplastic pollution and contamination of groundwater.

Industry marketing still maintains against any evidence that their petroleum-based plastic turf product is recyclable, requires "no" maintenance and uses "no" water. But the top carpet layer, infill, backing, drainage and padding on an average synthetic field comprises some *220 tons of single-use plastic* destined for landfill or incineration. Producer service advisories directing a fair amount of surface and sub-surface chemical treatment and water use for cleaning and cooling makes savings illusory.

If the biggest decision factor is cost, synthetic turf fails here as well. Over the eight-ten-year life cycle of a plastic field, one could install two-to-three natural turf fields at a fraction of the cost. Xeriscaping throughout the Bay Area makes sense in most all cases, but an athletic field should be our special oasis.

There are serious clouds on the state horizon. Last legislative session Governor Newsom corrected an unfortunate 2014 drought restriction by signing SB 676, which excludes artificial turf definitionally as drought tolerant. He did veto AB 1423, which would have banned turf installation on PFAS grounds, but expressed a keen interest in uniformly implementing oversight. Lastly, SB 499, addressing school heat islands and mandating "cool" surface solutions, stalled in Assembly Appropriations but most likely will be taken up again this year.

Properly prepared and maintained turf is by far the best path. Please address this downward artificial turf spiral. Feel free to contact me should you have any questions or comments. Sustainable Silicon Valley is committed to help.

Sincerely,

A handwritten signature in black ink, appearing to read "Dm", is written over the word "Sincerely,".

Dennis Murphy
Director, Water & Sustainable Life
Sustainable Silicon Valley
dmurphy@sustainableSV.org

From: Cynthia Fan
To: Cynthia Fan, Chavez, Chiles, Lee, May, Shalton, Sandoval, Sandoval, Sandoval, Sandoval
Subject: [EXTERNAL] Support for a ban on artificial turf, 4/16/2024, Item #11, LF 24-5361
Date: Tuesday, April 16, 2024 3:28:57 PM

Public comment on item #11, LF 24-5361, of the 4/16/2024 Santa Clara County Board of Supervisors meeting:

Dear Supervisors Chavez, Similian, Arenas, Lee, and Ellenberg,

I STRONGLY support a ban on artificial turf installation and a ban on outdoor storage of used artificial turf.

I'm Los Gatos resident Cynthia Fan. I researched artificial turf when it was proposed for installation at my son's elementary school and learned it sheds microplastics and PFAS, both of which are pollutants that circulate in our environment essentially FOREVER, contaminating our drinking water, food supply, and bodies. We need to REDUCE environmental concentrations of microplastics and PFAS, NOT permit their concentrations to increase. Fortunately, OVERWHELMING COMMUNITY OBJECTION persuaded our school district to NOT install artificial turf.

Opposition to a county ban may come from sports leagues that remain UNAWARE that for the cost of plastic fields and their periodic replacements (necessary approximately every 8-10 years), field owners can afford professionally managed natural turf that CAN be kept in safe condition with a consistent and level surface through high use and rain. This is accomplished by the field owner getting trained and coached in modern field management techniques by a professional sports field manager that has a track record of natural grass field management success.

Banning artificial turf does not have to mean sentencing the community to poor-condition, often-closed grass fields. If you're skeptical, have a detailed and unbiased feasibility study written up comparing natural and artificial turf fields in terms of cost, hours of play, and hours of maintenance. Field management companies exist (like [Field Source Ohio](#)) that have plenty of experience managing both types of fields for Parks & Rec departments and school districts around the country. For under \$10k, they can prepare a detailed report factoring in the county's weather, soil, and field usage needs to reassure you and local sports leagues that natural turf CAN be kept in safe condition while affordably satisfying community usage needs.

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- Develop and implement Integrated Pest Management policies and procedures
- Operational Improvement and Efficiencies

Performance Management

- Field Performance Metrics and Data Tracking for Sports Fields
- Productivity and Accountability of Internal Stakeholders

To learn more about our athletic field organizational management process or to get and estimate on your project, [CLICK HERE!](#)

Please take the next step towards banning artificial turf ASAP.

Thank you,
Cynthia Fan
resident of Los Gatos (Santa Clara County Supervisorial District #5)

From: [Leanne McAuliffe](#)
To: [Arenas, Sylvia](#); [Chavez, Cindy](#); [Lee, Otto](#); [Ellenberg, Supervisor](#); [Supervisor Simitian](#); [BoardOperations](#)
Subject: [EXTERNAL] Item #11, LF 24-5361 - 4/16/2024 Support for a ban on artificial turf: (Ordinance to Ban Artificial Turf on County Property and on the Santa Clara County Fairgrounds)
Date: Tuesday, April 16, 2024 8:19:34 AM

Dear Santa Clara County Board of Supervisors:

I am writing to express strong support for Item 11, which proposes an ordinance prohibiting any new installations of artificial turf on Santa Clara County property as well as the Santa Clara County Fairgrounds where a new sports complex is under consideration. (I trust that when the Earthquakes understand that full implications of artificial turf on our youth and the environment that they will also be in full support natural grass alternatives over plastic.)

I believe that you will have received a plethora of referenced information and data so I am writing purely as a resident of Santa Clara County, and as a parent of four children who are working their way through the school system here. As such, I am extremely concerned about the amount of artificial turf installations throughout the county both on residential, commercial, town, city, school and county properties which are potentially compromising the quality of our soil, air and water both now and for future generations.

Oftentimes these artificial turf systems are purchased by people who are totally unaware of the myriad of issues with artificial turf, or they have trusted in the greenwashing of the artificial turf industry or they have been informed of the issues but chose to ignore them for simply unjustifiable reasons.

It is imperative that electeds take the lead and begin to understand the detrimental short and long term implications of these artificial turf installations and, in doing so, they will clearly see that the only option for the environment, our children and future generations is to ban artificial turf in favor of the myriad of other natural alternatives, whether that be for functional or non-functional spaces.

Those in the artificial turf industry will tell you there is proof artificial turf is safe. (Analyze those studies, look at who sponsors them.) And those advocating against artificial turf will tell you there is a plethora of information to counter the artificial turf industry's narrative and that indeed artificial turf is holistically bad for the environment and human health. I am not a scientist but when you have "experts" sponsored by an industry driven by profit and growth saying plastic grass is fine, and then we have independent child and environmental health experts saying it's a health risk to children, students and their environment, what side errs on the side of caution when it comes to our children's health and the healthy of future generations? What else matters more than our children's health?

There are ever increasing studies and reports about micro/nanoplastics and PFAS'

negative health and environment effects, not to mention greenhouse gases. Artificial turf is entirely made of forever degrading plastics, chemicals, and PFAS and offgases. PFAS are called “forever chemicals” because they are, for the most part, Persistent, Bioaccumulative and Toxic. Likewise, artificial turf is a “forever polluting” plastic ground cover for its entire existence. You only need to visit a plastic artificial turf field or plastic lawn on an average sunny day in Santa Clara County to feel the heat (even see the heat) and see the degrading plastics shedding into the greater environment. (And that’s just what you can see, much is invisible to the eye.) The natural environment, schools, playgrounds and sports fields are no place for a degrading, polluting, plastic ground cover. There is no place or circumstance where plastic turf, plastic lawn or plastic ground cover should be.

To go some way to undoing the damage of the past, each generation’s goal should be to leave this Earth (We aren’t calling it Plastic, yet!) in a slightly better state than when we came into it, for our kids. Plastic fields do NOT do this. We have to care enough to look at natural, safer alternatives to artificial turf to set the right example that will filter up the generations.

It seems apparent that unless there are laws and bans on artificial turf, potential artificial turf purchasers will either unwittingly continue to believe the artificial turf industry’s false narrative, or ignore the potentially negative human health and environmental effects because, well, they can.

It’s up to you as our electeds to take control and lead the way and set the best example for our kids and future generations to follow by protecting their health and the health of the environment. The health of the two are intrinsically and inexplicably linked.

In trust,

Leanne McAuliffe

Concerned Resident of Santa Clara County.

From: [John Kehoe](#)
To: [BoardOperations](#)
Cc: [Supervisor.Lee](#); [Pachoud, Emily](#)
Subject: [EXTERNAL] Synthetic Turf item, (4/16/2024, Item #11, LF 24-5361)
Date: Tuesday, April 16, 2024 9:02:14 AM
Attachments: [Address to the Board of Supervisors 2024.04.16.docx](#)

Thank you, County Board members, for this opportunity. My name is John Kehoe, a Sunnyvale resident for over 25 years. I hope to inspire our county to ban installing artificial turf on County properties.

Often overlooked until it's too late, heat is harmful, causes illness and can kill (C.Y. Jim, 2017). Installing synthetic turf athletic fields creates a heat island effect. This is tangible. We have to do better. Climate Action planning acknowledges the challenges faced with urban heat island effects. Adding synthetic turf products adds heat and contradicts our efforts to reduce these effects. This does not lead us to a climate-resilient landscape.

Please avoid adding more heat sinks. We need to maintain what vegetative cover we have and even add more. Repurposing public properties to synthetic athletic turf fields exposes players, athletes, and all participants to higher heat and chemicals. Playing sports under exposures like this is unwise, at the least, and not recommended at best. Please avoid having taxpayers to continue to fund plastic carpeted fields that will likely become unusable in our hotter seasons. And let's be honest: these products are not recycled.

Please explore options for the County Board to ban the installation of synthetic turf on our properties.

Thank you for your consideration,

John Kehoe

Sunnyvale (District 3)

From: [Maristella Huerta](#)
To: [Arenas, Sylvia](#); [Chavez, Cindy](#); [Lee, Otto](#); [Ellenberg, Supervisor](#); [Supervisor Simitian](#); [BoardOperations](#)
Subject: [EXTERNAL] Support for a ban on artificial turf: 4/16/2024, Item #11, LF 24-5361
Date: Tuesday, April 16, 2024 9:43:44 AM

Dear Supervisors Arenas, Chavez, Lee, Ellenberg, and Simitian:

As a resident of Santa Clara County Supervisorial District 4 and a member of Mothers Out Front Silicon Valley, I urge you to support Supervisor Lee's referral to create options for a ban on the installation of new artificial turf on County property.

Plastic grass poses a significant health risk due to the use of artificial chemicals including PFAS, a known carcinogen. Its use also contributes to water pollution and increases the urban heat island effect, as it can reach much higher surface temperatures than natural grass. In addition, it damages the climate due to the use of fossil fuels in its production and its displacement of natural grass, which naturally draws down carbon pollution.

This is important to me because as my neighbors substitute organic substrate and grass for artificial turf, our neighborhoods are getting hotter and more polluted. Artificial turf leaches PFAS into the ground and groundwater. A recent study revealed dangerously high levels of PFAS in our drinking water in San Jose. This creates a domino effect where residents purchase bottled water to avoid the PFAS in the city's drinking water, contributing even more to the carbon cost of water and plastic pollution. The county needs to support sustainable and healthy options for landscaping on its own properties.

Therefore, I ask that you support Supervisor Lee's referral to direct County administration to create options for an ordinance to prohibit new installation of artificial turf on County property.

Thank you,

REQUEST TO SPEAK FORM

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If you wish to address the Board, Committee, or Commission, please fill out this form and place it in the container provided.

DATE: 4/16/2024

AGENDA ITEM NO. 11

For Issue ☒

Against Issue ☐

Neutral ☐

* Written comments for the record only ☐

NAME (OPTIONAL): Susan Hinton Decline to State ☐

PLEASE PRINT CLEARLY

ORGANIZATION (OPTIONAL): Sierra Club Loma Prieta Chapter

Plastic Pollution Prevention Team

PLEASE PRINT CLEARLY

ADDRESS (OPTIONAL): _____

PLEASE PRINT

*If you want to provide written comments for the record only, and you do NOT wish to address the Board, Committee, or Commission orally, please write comments below:
