

## Communication from Public

**Name:** Andy Shrader  
**Date Submitted:** 09/16/2024 11:03 AM  
**Council File No:** 24-0602  
**Comments for Public Posting:** Please see attached pdf.

September 16, 2024

Mayor Karen Bass  
City Council President Paul Krekorian  
Los Angeles City Council  
City Attorney Hydee Feldstein Soto  
City Controller Kenneth Mejia  
*Via email*

**Re: SUPPORT FOR CF #24-0602 FOR AN ORDINANCE TO PROHIBIT THE INSTALLATION OF ARTIFICIAL TURF CITYWIDE AND ON CITY PROPERTY, INCLUDING PARKS, AND ATHLETIC FIELDS**

Dear Mayor, Council President Paul Krekorian, City Council, City Attorney, and City Controller:

I write as Councilmember-Emeritus Paul Koretz's former Director of Environmental Affairs and join nearly two dozen neighborhood councils who have submitted Community Impact Statements and a Council file full of public comments to urge you to protect children's and the community's health and safety, our environment, and the climate by moving swiftly to approve Council File #24-0602 and a consequent ordinance to prohibit the installation of new artificial turf citywide and on City-owned property, particularly athletic fields and parks.

It is essential to ensure that you fully understand the dangers to children and frontline, environmental justice communities from artificial turf and the legal need to inform users of existing artificial turf fields about those dangers. A bill signed into law by Governor Newsom last year allows cities to ban the installation of plastic grass over health concerns related to PFAS ("forever chemicals") that have been linked to health concerns, including cancer and groundwater contamination. It is crucial that we prioritize the health and safety of our residents, especially that of our children and frontline environmental justice communities, who are most vulnerable to the direct extreme heat effects of artificial turf and the toxic chemicals within, but who also stand to be most impacted by a degraded environment and disrupted climate in their future.

Installing plastic turf is in direct conflict with a myriad of health climate, and environmental justice legislative actions the City of Los Angeles funds, has already taken, or supports, and several others that it should, including:

- Aggressively protecting children's health and the health of those in frontline, toxic environmental justice neighborhoods
- Creating a Chief Heat Officer and taking aggressive steps to protect Angelenos from the impacts of worsening extreme heat
- Reducing City purchases spent on fossil fuel-related products
- Adapting effectively for maximum climate resilience, groundwater and biodiversity protection and conservation
- Aiming towards a zero waste/circular economy future, including reducing the use of plastics.

- Reducing the City’s cost to comply with the federal Clean Water Act by reducing the use and spread of toxic chemicals and thereby TMDLs (total maximum daily load of allowable pollution) into our waterways.

### **EXTREME HEAT IMPACTS ON CHILDREN**

In addition to the well-documented concerns about toxic chemicals already highlighted by the Newsom administration through the California Department of Toxic Substances Control's chemicals of concern investigations, plastic grass brings with it the following very serious and avoidable issues in regards to heat health impacts to children and athletes, a problem that only grows as climate change worsens and the planet continues to break heat records, including locally. Before any decision is made about the future of city-owned sports fields, the City of LA’s policymakers and City Attorney should be fully aware of these risks, including related liability issues. Likewise, the parents of children who will be playing on these city-owned fields deserve to be thoroughly informed.

The high surface-level temperatures recorded on outdoor plastic grass fields compared to natural turf, regardless of infill materials or carpet fiber type, have been well documented in scientific peer-reviewed studies. Parents of children who play sports even occasionally should be informed by the City of Los Angeles, the owner of the sports fields in question, of the heat hazards posed by plastic grass *before any decision is made as to future use or installation*. High temperatures can burn skin, damage shoes, and, most importantly, increase children’s risk of hospitalization for serious heat-related illnesses, including possible heatstroke.

Plastic grass exacerbates, rather than mitigates, the constantly-worsening heat island impact of climate change, **contrary to the direct legislative goals stated by City Council President Krekorian in creating a Chief Heat Officer**<sup>1</sup>. Always significantly hotter than natural grass, *as well as hotter than concrete and asphalt*, plastic grass can reach temperatures over 200°F on a 98°F day. The health risks for children and adolescents playing on such hot fields are significant and well-documented in the health literature, a sampling of which follows:

- High surface-level temperatures created from normal sunny days on synthetic/plastic fields are dangerous for children who are closer to the ground, and can lead to heat-related illnesses such as heat stroke, dehydration, burns, and blisters if exposed skin comes into contact with the hot surface.<sup>2</sup> If the surface is doused with water to cool it off so the field can be used, a literal steam bath is created, *which exacerbates rather than lessens* dangers of heat exposure to children.

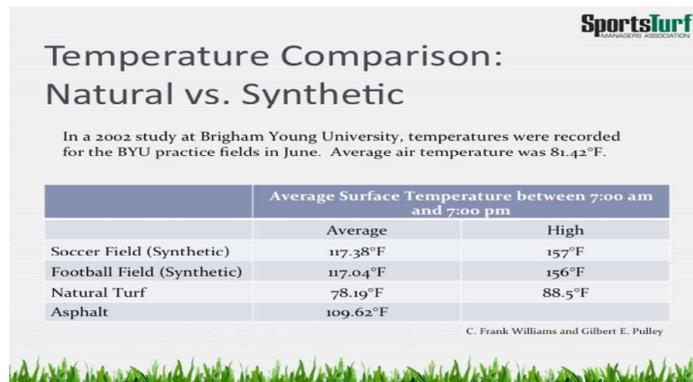
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<sup>1</sup> <https://cd2.lacity.gov/news/la-appoints-californias-first-chief-heat-officer>

<sup>2</sup> Abraham, J. (2019). Heat risks associated with synthetic athletic fields. *International Journal of Hyperthermia*, 36(1), 515–516. <https://doi.org/10.1080/02656736.2019.1605096>

- As health experts Lundberg and Landrigan note in a 2023 article<sup>3</sup>: “Student athletes playing on artificial turf are not only exposed to known carcinogens and neurotoxins, but also are at increased risk of heat illness and infectious complications of turf burns.”
- “Such high temperatures pose a serious health hazard, especially to children running and playing at high intensity. Children are less able to adapt to heat than adults and are therefore more likely to experience heat illness, including dehydration, heat exhaustion and heat stroke, when exposed to extreme heat. The recent spike in student athlete deaths due to heat stroke underscores this risk.”<sup>4</sup>
- From a detailed and well-annotated State of New York Department of Health report<sup>5</sup>:

“Synthetic turf fields absorb heat, resulting in surface temperatures that are much higher than the temperatures of the surrounding air. In June 2002, at Brigham Young University (BYU) in Utah, the average surface temperature on a synthetic turf field was reported to be 117°F while the average surface temperatures on natural turf and asphalt were 78°F and 110°F, respectively (*figure 1*). A maximum surface temperature of 200°F on the BYU synthetic turf field was reported.”



Source: Natural Grass Athletic Fields powerpoint from Sports Turf Managers Association

- A turf specialist at the University of Missouri reported measuring an air temperature of 138°F at “head-level” height on the university’s synthetic turf field on a sunny 98°F day. The surface temperature of the field was reported to be 178°F. A study conducted at Penn State University<sup>6</sup> measured surface temperatures on experimental plots of nine different types of infilled synthetic turf. Temperature measurements were made on three occasions. The average air temperatures reported were 79°, 78°, and 85°F. The corresponding average surface temperatures reported for the synthetic turf plots are 120°, 130° and 146°F. The highest surface temperatures typically occur when synthetic turf is in direct sunlight and the dark fibers, used to simulate grass, absorb solar

<sup>3</sup> <https://commonwealthbeacon.org/opinion/the-term-turf-is-misleading/> - Lundberg and Landrigan: “The Term ‘Turf’ is Misleading”

<sup>4</sup> *ibid*

<sup>5</sup> [https://www.health.ny.gov/environmental/outdoors/synthetic\\_turf/crumb-rubber\\_infilled/fact\\_sheet.htm](https://www.health.ny.gov/environmental/outdoors/synthetic_turf/crumb-rubber_infilled/fact_sheet.htm) - State of New York Department of Health - “Information About Crumb-Rubber Infilled Synthetic Turf Athletic Fields”

<sup>6</sup> <https://plantscience.psu.edu/research/centers/ssrc/documents/temperature.pdf> - Penn State’s Center for Sports Surface Research: “Surface Temperature of Synthetic Turf”

radiation. Surface temperatures have been observed to drop rapidly when cloud cover is present.”  
[Unfortunately, as we know, there is no effective shade available at, for instance, Lucchesi Park.]

### **Using Water to Cool Synthetic Turf is Not Effective**

“A study at BYU found that watering synthetic turf lowered the surface temperature from 174°F to 85°F, but the temperature rose to 120°F in five minutes and to 164°F in twenty minutes. A study conducted by Penn State University on experimental synthetic turf plots examined the effect of watering synthetic turf on surface temperature. Hot weather days increase the temperature of water, which in turn causes chemical breakdown of plastic into micro/nano particles and toxic compounds. Recycled water may not be suitable for use on artificial turf due to high salt content which can break down artificial turf components (California Coastal Commission 2023).<sup>7</sup>

Measurements were made on three occasions. For one monitoring period, surface temperatures ranging from about 130° to 160°F were lowered initially to about 75°F, but increased within 30 minutes to temperatures ranging from about 90° to 120°F, where they remained fairly stable for the three-hour monitoring period.”

### **Extreme Heat Warnings Necessary for Those Playing or Working on Synthetic Turf Fields**

“Because of the potential for high temperatures on infilled synthetic turf fields, it is important that people who play or work on the fields be provided with adequate warnings regarding the potential for heat stress. People should also be advised to remain hydrated and to seek relief from the heat in shaded areas. The potential for high surface temperatures warrants consideration when making decisions about installing and using a synthetic turf field.”

### **Risk of Lawsuits Growing from Dangers due to Extreme Heat**

According to this report referenced by PBS Science Newshour,<sup>8</sup> “Heat Risk And Young Athletes - rising temperatures lead to lawsuits and environmental injustice”:

“Extreme heat due to [climate change is making sport participation progressively challenging. For high school athletes](#), the prevalence of extreme heat is leading to [escalating heat-related](#) illness, injuries, hospitalizations and deaths. In fact, heat stroke is a [leading cause of death in sports](#).”

“Adults’ responsibility to keep children safe in sport settings becomes blurry as the growth in legal challenges related to heat illness demonstrates a disconnect between adults’ duty of care and athletes’ well-being. Negligence is a common claim associated with these lawsuits. Allegations of child endangerment or wrongful death can lead to civil or criminal legal disputes.”

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<sup>7</sup> <https://drive.google.com/file/d/1dpxc0q-VjZ1r4UWEISdOzE3rv4CEkOmc/view?usp=sharing> - Policy Recommendation on the Use of Artificial Turf on Landscapes, Schools and Playing Fields - Santa Clara County  
<sup>8</sup> <https://www.pbs.org/newshour/science/how-extreme-heat-affects-young-athletes#:~:text=Extreme%20heat%20due%20to%20climate.causes%20of%20death%20in%20sports> - PBS News: “Heat Risk And Young Athletes - rising temperatures lead to lawsuits and environmental injustice”

## **IN SUMMARY**

In summary, the plastic in artificial turf significantly overheats on hot days and can cause burns and heat stroke, as well as heat-island effects in nearby neighborhoods. Hot weather also limits the number of play hours, a problem that will only be exacerbated by the heating of the planet. After having declared a climate emergency, and with a plastics crisis of epic proportions including the fossil fuel industry's devastatingly irresponsible tens of billions of dollars plans to drastically increase the building of plastic cracker plants, continuing the use of plastic grass in Los Angeles makes no sense whatsoever. It only adds [fossil] fuel to the fire and endangers our health, especially our children's, due to climate change and toxic air, water, and soil pollution.

I urge the City Council to immediately end the installation or use of artificial turf within the City of Los Angeles and the City Attorney to investigate the liability issues related to the continuing use of artificial turf on City-owned properties. Choose to improve our environment instead and protect the health and well-being of our children now and going into an uncertain and heat-exasperated climate future.

Respectfully yours,

A handwritten signature in black ink, appearing to read "Andy", written in a cursive style.

**Andy Shrader, Soccer Dad**  
[andyshrader@gmail.com](mailto:andyshrader@gmail.com)

## Communication from Public

**Name:** Frances Lee

**Date Submitted:** 09/15/2024 07:20 PM

**Council File No:** 24-0602

**Comments for Public Posting:** Thank-you for taking my comments. I am glad to see this motion for LA to move away from artificial turf and instead go with drought-tolerant native plants. Artificial turf contains toxic materials, PFAS, that will break down in the sun and be released into waterways. They create very hot surfaces that can melt the glue in shoes and emit heat and fumes that are intolerable, as happened when my son played soccer on artificial turf. End of life for artificial turf is at the landfill, so all in all, an awful choice for trying to keep our environment healthy for people and animals alike. Native plants are adapted to low water during the summer, so perfect to conserve water. They also have evolved with beneficial insects that feed birds and animals and provide habitat, so much more sustainable than artificial turf.

## Communication from Public

**Name:** Anne LaForti

**Date Submitted:** 09/15/2024 08:31 PM

**Council File No:** 24-0602

**Comments for Public Posting:** Artificial Turf is not only dangerous to rec users, and is not recycleable, it is also really bad for the health of the soil under the artificial turf. Over time the soil becomes compacted and hard as concrete, taking it out of use as a soil sponge to help mitigate storm water. If the artificial turf is eventually removed, the soil underneath will need to be remediated which can cost millions of dollars, and a lot of time to get back to a healthy soil microbiome. Please take this seriously and consider the fact that roots in the ground help to mitigate heat island effect (which you can't get from fake turf). Think this through for the generations to come -- if it is too hot to play sports when the ambiant temps are in the 80s -- how many days of the year will it actually be safe to play on here in Los Angeles??

## Communication from Public

**Name:** Dr. Diana Zuckerman

**Date Submitted:** 09/16/2024 12:16 PM

**Council File No:** 24-0602

**Comments for Public Posting:** I am writing as President of the nonprofit National Center for Health Research to share scientific information about artificial turf, which I am confident will help you determine what is best for the children and adults in your community. I am writing at the request of many of your constituents to share the information we have provided to Members of Congress, state and federal agencies, state and local legislators, parents, and others who want to ensure that our children are not exposed to dangerous chemicals when they play on artificial turf or playgrounds. Our nonprofit think tank is located in Washington, D.C. Our scientists, physicians, and health experts conduct studies and scrutinize research. Our goal is to explain scientific and medical information that can be used to improve policies, programs, services, and products. We understand that these issues are hotly debated, but some information is more accurate than others. For example, if you look at the maintenance contract for an artificial field, you will see that it needs to be watered regularly to keep its warranty in place. In addition, artificial turf fields use herbicides and pesticides, just as grass fields do. Although grass fields and artificial turf fields both require water and pesticides, well-designed grass fields are safer for players and for the environment, and will last much longer and be more cost-effective. In the last few years, scientists have learned more about lead and PFAS in artificial turf, as well as the risks of some of the newer infill materials that are available to replace tire crumb. Tire crumb has well-known risks, containing chemicals that have the potential to increase obesity; contribute to early puberty; cause attention problems such as ADHD; exacerbate asthma; and eventually cause cancer. However, other infill materials also have similar, serious risks and the plastic grass carpet also has many risks. For example, it is well known that “particulate matter” can cause lung problems and eventually cause lung cancer. For that reason, silica and other infill materials are of great concern. Although companies often claim that their products do not contain PFAS, that claim is not accurate because it is based on inadequate testing. There are thousands of PFAS chemicals, and some worrisome PFAS chemicals have been found in BrockFILL tested by independent researchers, for example. Misleading reassurances are common. For example, the

manufacturer claims that BrockFILL “meets the requirements of the FIFA quality programme for synthetic turf systems as well as those of World Rugby” those requirements do NOT evaluate long-term safety for either children or adults. Unfortunately, there are zero testing criteria for artificial turf materials’ long-term safety, making such claims misleading as well as meaningless. In addition to the infill, the plastic grass itself exposes children and adults to dangerous levels of PFAS, microplastics, and other toxic chemicals as well. PFAS are of particular concern because they enter the body and the environment as “forever chemicals,” which means that they are not metabolized and do not deteriorate, accumulating over the years. Federal agencies such as the EPA and the U.S. Consumer Product Safety Commission have been investigating the safety of these products. Despite claims to the contrary, none have concluded that artificial turf is safe. The 2024 EPA report is not a “risk assessment” evaluating the impact of artificial turf fields on children; it focused only on tire crumb, not on PFAS, microplastics, or other exposures typical of artificial turf fields whether or not they have tire crumb infill.

Unfortunately, the EPA report was focused on issues that were selected many years ago, and not on the exposures the health issues and environmental issues of greatest concern today.

Although some will point to the EPA report as a ‘clean bill of health’ for artificial turf, that is completely untrue. As you probably know, the American Academy of Pediatrics states that no level of lead exposure should be considered safe for children, because lead can cause cognitive damage even at low levels. Some children are more vulnerable than others, and that can be difficult or even impossible to predict. The Centers for Disease Control and Prevention (CDC) warns that the “plastic grass” made with nylon or some other materials also contains lead.

Whether from infill, plastic grass, or rubber playground surfaces (including PIP, which is made with tire crumb on the top layer or underneath the top “poured in place” layer), the lead doesn’t just stay on the surface. With wear, the materials used in rubber playground surfaces turn to dust containing lead and other chemicals that is invisible to the eye and is inhaled by children when they play. In addition, PIP surfaces wear out and crack, and the tire crumb are then on the surface. We would be glad to provide additional information upon request.

## Communication from Public

**Name:**

**Date Submitted:** 09/16/2024 01:00 PM

**Council File No:** 24-0602

**Comments for Public Posting:** I am in support of Council File 24-0602. I support moving away from the use of artificial turf in LA.

## Communication from Public

**Name:**

**Date Submitted:** 09/16/2024 01:07 PM

**Council File No:** 24-0602

**Comments for Public Posting:** I urge you to move away from artificial turf in LA.

## Communication from Public

**Name:**

**Date Submitted:** 09/16/2024 01:09 PM

**Council File No:** 24-0602

**Comments for Public Posting:** Please vote to ban all future use of artificial turf. I can't understand why this was ever approved in the first place. My primary concern is the leaching of microplastics into soil and water, but there are plenty of other reasons to oppose its use. We should all be focused on sustainable landscaping that encourages native habitats - plants, insects, etc. - not adding more sterile artificial turf.

## Communication from Public

**Name:** Andrea Wald

**Date Submitted:** 09/16/2024 03:17 PM

**Council File No:** 24-0602

**Comments for Public Posting:** I'm sure you've received many communications about why Artificial Turf is bad for the environment and our health. Rather than repeat all these well documented research materials I've decided to take a slightly different approach in my email to you prior to your vote tomorrow. I hope you will consider all the consequences of your decision and how you can not only help the future be brighter and more sustainable for generations to come but will also send a message to others who are dealing with this same issue and set a good example to be followed. Imagine being diagnosed with cancer. Prognosis is that its relatively slow growing but will eventually kill you. How long that would take is actually not known but predicted to be 10-15 years. Treatments are available but they come with side effects. Some of the side effects are worse than others but with treatment medical professionals are pretty confident that the cancer can be cured. Delaying treatment of any kind will only allow the cancer to grow and there is a much less of a chance of overcoming its nasty grip on one's body. Death will not be avoided. Now imagine the changes we are experiencing in the world as related to our environment: more severe and unpredictable weather patterns, longer and harsher rains, hotter temperatures for extended periods of time, melting ice caps and rising sea levels, polluted oceans and rivers, loss of some types of wildlife, contaminated drinking water. Also imagine you find out that your beautiful child whom you raised with love and care is now a grown adult and has been diagnosed with cancer or some medical condition that science had warned could happen if we did not heed their warnings about toxic plastic chemicals. Then you wonder if you could have – SHOULD HAVE – done things differently, taken the advice of medical professionals who warned this could happen. WHAT THEN? It is hard to believe we, as an educated and caring society, are not taking these matters more seriously and seem to worry more about the “here and now”, or in many cases “cost and convenience”. Many of those who are doing the research, spending countless hours trying to educate - actually warn – about the dangers of Artificial Turf and plastics, in general, are being bullied and ignored. Many of us who care so deeply and those who are deciding the fate of many others and future generations by allowing these warnings to be ignored will not be around when

all these predictions and avoidable issues come to fruition. I am asking you – those who are responsible for making the hard decisions – to think about future generations and the world we will be leaving to them. PLEASE BAN ARTIFICIAL TURF!  
Sincerely, Andrea Wald, Co-Founder of Community for Natural Play Surfaces

## Communication from Public

**Name:** Richard Kahn

**Date Submitted:** 09/16/2024 03:18 PM

**Council File No:** 24-0602

**Comments for Public Posting:** Hi, I am a long-time home owner in the Valley, and have raised my children here. I work from my home as a doctoral faculty member in Education for Antioch University. As a scholar, my research on matters of sustainability education is internationally influential and I have been asked to speak in countries as wide-ranging as Mexico, Canada, Austria, Norway, and China. As I saw noted in a letter on this matter from the SFV Climate Reality Project, such artificial turf as under consideration here has been promoted in an idealistic fashion as an ecological response to an area undergoing historic drought and, which under the best of conditions, is not really conducive to a classic British grass lawn. While it must be admitted that there are different forms of these turfs and that some are far worse in terms of unintended social and health costs, the scholarly point on the matter would be simple: they should not be widely used and Los Angeles would benefit tremendously if xeriscaping and subsidization of native landscapes were adopted instead. I'll add that as a former resident of the La Brea / Fairfax district in the early 2000s when I was doing my doctoral work at UCLA, I ripped the front lawn out and xeriscaped in 2003. At the time, some long-time residents on the street reacted in horror: "This is going to be an eye sore! Why would you do this? It was such a nice lawn." The landscape grew into itself within 6 months. Suddenly the yard had walkways with abundant native flowers fully in bloom, pollinators a plenty, and birds using the yard as a sanctuary. People began just coming by to look and take flowers. Some even strolled onto the walkway, imagining it a botanical garden or such. It didn't cost that much to do, required near zero irrigation, and by the end of the year the previous angry residents came to my house with a full-throated apology. "We never could have imagined this! What you have done is a real gift to this place." This is the way forward...

## Communication from Public

**Name:** Greg Nelson

**Date Submitted:** 09/16/2024 03:42 PM

**Council File No:** 24-0602

**Comments for Public Posting:** Artificial turf is an obscenity - contributing to microplastic pollution, the propagation of petroleum, and heat island effect. There are far better and far more environmentally-friendly methods to achieve draught-tolerant landscapes. Please end the use of artificial turf now.

## Communication from Public

**Name:** Polly Estabrook  
**Date Submitted:** 09/16/2024 04:15 PM  
**Council File No:** 24-0602

**Comments for Public Posting:** Please support this motion and the move away from the use of astroturf in Los Angeles. In this time of the breakdown of our environmental ecosystems caused by climate change, we need to make sure that the soil in Los Angeles can be as healthy as possible, can capture as much of our precious water as possible, does not contribute to producing heat islands, and does not use materials that cannot be recycled. Artificial turf may have seemed to be a good answer to our need for playing surfaces and parks 20 years ago but today we know that it does not contribute to the health of our soil and water ecosystems. There are other alternatives for playing fields. Often ones that use native plants! Let learn from our improved understanding of soil and earth ecosystems and the impact of plastics on human health and move to more viable solutions for our children's playing areas. Please support this motion so that we can fully understand the costs of using artificial turf and the costs to replace it. Thank you!

## Communication from Public

**Name:**

**Date Submitted:** 09/16/2024 04:44 PM

**Council File No:** 24-0602

**Comments for Public Posting:** As a scientist and parent, I strongly support the use of drought-tolerant native plant landscaping. Why? So many reasons! The big ones. 1) Heat! With so many hot days each year (and this likely going up), it's so important to make choices that cool, rather than heat, the surface. Artificial turf actually has a warming effect. 2) The environment. Plants are actually good.. wisely chosen plants are great! Whatever is in the astroturf? Who knows? But I don't want my kids in contact with more "forever chemicals" nor do I want them running off into local waterways and beyond. Please take this step to make smarter long term choices for the health of our kids and for the planet.

## Communication from Public

**Name:** The Rev. Daniel Tamm

**Date Submitted:** 09/16/2024 05:29 PM

**Council File No:** 24-0602

**Comments for Public Posting:** As chair of the Steering Committee for Los Angeles Faith and Ecology Network, a consortium of 30 diverse faith communities in Los Angeles, I urge Los Angeles City Council to support CF 24-0602, and move away from the use of artificial turf. Voting YES in support of this motion is consistent with the goal of achieving 100% clean renewable energy by 2035 because the harmful effects of artificial turf begin with its very substance - plastic, manufactured with fossil fuel-based petrochemicals, and harmful per- and polyfluoroalkyl substances (PFAS), which have been associated with cancer as well as respiratory and other health issues; Artificial turf reaches temperatures much higher than natural grass (160°-180°F or more) causing heat-related injuries and requiring surface cooling with water before use; Cleaning and cooling artificial turf can require more water than would be needed for drought-tolerant grass fields; Toxic runoff from artificial turf contaminates drinking water, rivers, and oceans with microplastics as well as PFAS. The EPA has recently reported that there is no safe amount of these “forever chemicals” in drinking water; Children and infants are especially susceptible to the bioaccumulation of PFAS, which have been linked to growth, learning and behavioral problems. Athletes who play on synthetic grass are also at increased risk; Sports injuries have increased due to the hard, unyielding surface of artificial turf. leads to increased sports injuries, and must be cleaned of contaminants such as blood and other fluids; I urge you to support a ban on new and replacement installations of artificial turf in both public and private applications, and protect the health of our communities and our environment, by voting YES in support of this motion.

## Communication from Public

**Name:** Helene Jeanne Lin-Langlamet

**Date Submitted:** 09/16/2024 02:21 PM

**Council File No:** 24-0602

**Comments for Public Posting:** If you are not aware that the fossil fuel and petrochemical industry are shoving AstroTurf and excess packaging down our throats so they have somewhere to divert their product to to prepare for the day that public opinion turns decisively against fossil fuels, you are uninformed. You should get informed on this issue or I consider you do not deserve the privilege of representing us. Stop the trail of death and illness that follows this product from the moment oil men knock on the door of unsuspecting landowners to when it gets placed in our playground in place of the wood chips or grass that could be there, worsening the heat island effect we already have and leaving a growing mess for our descendants 500 years down the line. There is absolutely NOTHING good about this product. It is a travesty of nature and a travesty of how we should be living our lives. It props up a corrupt industry that doesn't care if we live or die as long as we protect it's bottom line and it actively destroys the things and people we value. Please make this absurd situation stop.

## Communication from Public

**Name:** Suzanne Hume

**Date Submitted:** 09/16/2024 02:23 PM

**Council File No:** 24-0602

**Comments for Public Posting:** President Krekorian and council members, CleanEarth4Kids.org asks the City of Los Angeles to ban synthetic turf/artificial grass. Doctors, nurses, health professionals, children's health organizations, public health organizations, researchers, and the public are deeply concerned with the toxic and carcinogenic chemicals, heavy metals like lead and cadmium, benzene, Polycyclic Aromatic Hydrocarbons (PAHs), phthalates, styrene, Volatile Organic Compounds (VOCs) and per- and polyfluoroalkyl substances (PFAS) are found in the plastic blades, backing, underlayment pads and in some plant based infills added to keep the blades upright.

September 16, 2024

Council President Paul Krekorian  
Los Angeles City Council

## **RE: Stop Synthetic Turf/Artificial Grass**

President Krekorian and council members,

CleanEarth4Kids.org asks the City of Los Angeles to ban synthetic turf/artificial grass.

Doctors, nurses, health professionals, children's health organizations, public health organizations, researchers, and the public are deeply concerned with the toxic and carcinogenic [chemicals](#),<sup>1</sup> [heavy metals](#) like lead and cadmium, benzene, Polycyclic Aromatic Hydrocarbons (PAHs), phthalates, styrene, Volatile Organic Compounds (VOCs) and per- and polyfluoroalkyl substances (PFAS) are found in the plastic blades, backing, underlayment pads and in some plant based infills added to keep the blades upright.

## **Synthetic Turf/Artificial Grass is PLASTIC**

Synthetic turf/artificial grass is made of mixed plastics, such as [polyethylene](#), [polypropylene](#), [nylon and more](#).<sup>2</sup>

[Over 16,000 chemicals](#) are used in plastics. At least 4,200 (26%) are chemicals that are highly hazardous to human health and the environment, yet only 980 have been regulated anywhere around the world.<sup>3</sup> All major plastic types tested leached hazardous chemicals, including food packaging, which alone can contain over [400 chemicals of concern](#).<sup>4</sup> Additionally, there is [little to no hazard information available](#) for over 10,000 of these chemicals.<sup>5</sup>

Chemicals commonly found in plastics, like PFAS and phthalates, can impair [reproduction, growth, and cognition](#).<sup>6</sup> Children are the most vulnerable due to developmental windows, more rapid metabolism, respiratory rates, cardiac output and greater caloric intake per pound. Chemicals in plastics have been linked to childhood [obesity, hyperactivity, ADHD, low IQ, and asthma](#).<sup>7</sup>

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<sup>1</sup> <https://theintercept.com/2019/10/08/pfas-chemicals-artificial-turf-soccer/>

<sup>2</sup> <https://www.plymouth.ac.uk/discover/why-are-artificial-lawns-bad-for-the-environment>

<sup>3</sup> [https://www.cnn.com/2024/03/14/health/toxic-unregulated-chemicals-report-wellness?cid=ios\\_app](https://www.cnn.com/2024/03/14/health/toxic-unregulated-chemicals-report-wellness?cid=ios_app)

<sup>4</sup> [https://plastchem-project.org/wp-content/uploads/2024/03/PlastChem-Press-Release\\_English-v1.pdf](https://plastchem-project.org/wp-content/uploads/2024/03/PlastChem-Press-Release_English-v1.pdf)

<sup>5</sup> <https://plastchem-project.org/>

<sup>6</sup> <https://www.sciencedaily.com/releases/2020/12/201215131242.htm>

<sup>7</sup> <https://www.naturalsuperkids.com/health-effects-plastic-exposure-children>

[Unborn children](#) are especially vulnerable to toxic exposures from plastics in utero which can “increase risks of prematurity, stillbirth, birth defects in the reproductive organs, neurodevelopmental impairment, impaired lung growth, and childhood cancer.”<sup>8</sup>

## **Dangers of Phthalates**

[Phthalates](#) are typically added to most plastics to make them pliable and are commonly [found in plastic grass](#).<sup>9,10</sup> Phthalates are both [endocrine disrupting](#) as well and [neurotoxic](#). Men with higher phthalate levels have higher risk of [cardiovascular disease and type 2 diabetes](#).<sup>11</sup> In midlife and postmenopause, women, phthalates can lead to [increased body fat](#), a higher BMI, and increased waist circumference.<sup>12</sup> Phthalates can also cause [increased rates of hot flashes](#).<sup>13</sup> Phthalates are linked to [birth defects, infertility, miscarriages, as well as other neurological issues during child development](#) and can harm the endocrine system.<sup>14,15</sup>

Women exposed to phthalates during pregnancy are at greater risk of [preterm delivery](#).<sup>16</sup> Human studies have determined that [in-utero phthalate exposure](#) can cause later development of type II diabetes, and insulin resistance, obesity, asthma, higher systolic blood pressure. Female offspring are more likely to experience reproductive problems, including pregnancy loss, low birth weight infants, preterm birth and earlier menopause.<sup>17</sup> Other human studies have linked phthalates to [impaired motor skills in children](#) and delayed language development.<sup>18</sup> In male adults, a [reduction in sperm quality and quantity](#) has also been observed.<sup>19</sup>

## **PFAS in Synthetic Turf/Artificial Grass**

PFAS are used to aid the [extrusion of plastic](#) yarns for the “grass” blades.<sup>20</sup>

[Every synthetic turf/artificial grass field tested](#) has been found to contain PFAS.<sup>21</sup>

PAHS, lead, and other toxic chemicals have also been found in [synthetic turf/artificial grass](#).<sup>22</sup>

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<sup>8</sup> <https://www.genevaenvironmentnetwork.org/resources/updates/plastics-and-health/>

<sup>9</sup> <https://www.nytimes.com/article/plastics-to-avoid.html>

<sup>10</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10262297/>

<sup>11</sup> <https://www.diabetes.co.uk/news/2017/jul/everyday-plastic-chemicals-linked-to-type-2-diabetes>

<sup>12</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0013935123001482>

<sup>13</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0013935121001857>

<sup>14</sup> <https://birthdefects.org/phthalates/>

<sup>15</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8157593/>

<sup>16</sup> [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(23\)00270-X/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(23)00270-X/fulltext)

<sup>17</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC8157593/#B32-healthcare-09-00603>

<sup>18</sup> <http://health.harvard.edu/blog/something-else-to-avoid-in-pregnancy-phthalates-2019031516224>

<sup>19</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0304389417304570?via%3Dihub>

<sup>20</sup> <https://www.documentcloud.org/documents/6434596-Kulikov2005.html>

<sup>21</sup> <https://peer.org/pfas-in-artificial-turf-coats-players-skin>

<sup>22</sup> <https://theintercept.com/2019/10/08/pfas-chemicals-artificial-turf-soccer/>

PFAS (perfluoroalkyl and poly-fluoroalkyl substances) are a class of over [14,000 synthetic \(man-made\) chemicals](#) found in [many products](#) like artificial grass/synthetic turf, food packaging, waterproofing sprays, household cleaners, stain-resistant carpet, nonstick cookware, fire fighting foam, clothing, makeup, toilet paper, personal care products, textiles, children's products and much more.<sup>23,24</sup> PFAS as a [class](#) share many characteristics and toxicities.<sup>25</sup>

PFAS are toxic, linked to diseases and cancers. According to the [CDC](#),<sup>26</sup> [EPA](#),<sup>27</sup> and the [European Union Environment Agency](#),<sup>28</sup> PFAS are linked to low birth weight, thyroid disease, increased cholesterol, liver damage, kidney cancer, and testicular cancer. They are also linked to [liver cancer](#),<sup>29</sup> [diabetes](#),<sup>30</sup> [endocrine disruption](#), and other [serious health problems](#).<sup>31</sup>

PFAS [bioaccumulate](#) in our bodies, making the risk of cancers and other health problems more likely as we get older.<sup>32</sup>

### **Plastic Pollution! Plastic Harms the Environment and Our Health**

Each stage of the plastic lifestyle [harms](#) human health and the environment.<sup>33</sup>

For example, "Cancer Alley" is an 85 mile piece of land in Louisiana where [nearly 150](#) oil refineries, plastics plants and chemical facilities including the world's largest manufacturer of [polystyrene \(Styrofoam\)](#) spew toxic chemicals into the air, land and water. Cancer Alley has the [highest risk of cancer in the nation, 50x the national average](#) along with [27% low birth and 25% preterm birth rates](#).

The use of plastic continues environmental injustice because low-income communities suffer the [worst environmental consequences](#) of plastic production.<sup>34</sup> Studies clearly show plastic production is disproportionately situated in "[low- and mid-income countries or in poor and minority communities within high-income countries](#)."<sup>35</sup>

Plastics have a major carbon footprint, emitting about [3.4% of our total global greenhouse gas emissions](#).<sup>36</sup> After use, less than 9% of plastics are recycled with the

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<sup>23</sup> <https://comptox.epa.gov/dashboard/chemical-lists/pfasmaster>

<sup>24</sup> [https://www.cdc.gov/biomonitoring/PFAS\\_FactSheet.html](https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html)

<sup>25</sup> <https://experts.unthsc.edu/en/publications/response-to-comment-on-scientific-basis-for-managing-pfas>

<sup>26</sup> <https://www.atsdr.cdc.gov/pfas/health-effects/index.html>

<sup>27</sup> <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas>

<sup>28</sup> <https://www.eea.europa.eu/publications/emerging-chemical-risks-in-europe>

<sup>29</sup> <https://www.insider.com/study-confirms-link-between-forever-chemicals-and-liver-cancer-risk-2022-8>

<sup>30</sup> <https://pubmed.ncbi.nlm.nih.gov/35970987/>

<sup>31</sup> <https://pubmed.ncbi.nlm.nih.gov/32476019>

<sup>32</sup> <https://www.mdpi.com/2305-6304/10/2/44>

<sup>33</sup> <https://www.nature.com/articles/s41578-022-00419-y>

<sup>34</sup> <https://www.montereybayaquarium.org/stories/true-cost-plastic-pollution>

<sup>35</sup> <https://www.washingtonpost.com/health/2022/04/02/plastic-pollution-health-poverty/>

<sup>36</sup> <https://www.oecd.org/plastics/increased-plastic-leakage-and-greenhouse-gas-emissions.htm>

rest [littered, dumped in landfills or burned](#).<sup>37</sup>

Around [70% of the pollution](#) in the ocean is from plastic, with an estimated [12.7 million tons of plastics](#) dumped into our oceans every year.<sup>38</sup>

Burning plastic releases greenhouse gasses and toxic air pollutants like [furans, mercury, polychlorinated biphenyls \(PCBs\) and polycyclic aromatic hydrocarbons \(PAHs\)](#).<sup>39</sup> Even after burning, [30% of plastic](#) remains as ash which is typically buried, poisoning our soil, or blown in the air.<sup>40</sup>

The making and burning of plastic products in 2019 had about the [same emissions as 189 coal power plants](#), releasing 850 million metric tons of greenhouse gasses.<sup>41</sup>

### **Plastics are Fossil Fuels**

Over [99% of plastics](#) are made from fossil fuel based chemicals and plastics are predicted to drive [almost half](#) of the demand for oil and methane in the coming decades.<sup>42,43</sup>

As the world transitions from fossil fuels to renewable energy, the fossil fuel industry is [focused on plastics and petrochemicals](#),<sup>44</sup> as stated by both [ExxonMobile](#)<sup>45</sup> and [British Petroleum](#), who continue to place profits over climate, human and environmental health.<sup>46</sup>

This focus on plastics and petrochemicals is the reason for the [push for fracking](#) in the US as ethane is separated from methane (natural gas) and then “cracked” to make ethylene, the building block for most plastics.<sup>47</sup> This process produces a massive amount of [pollution and greenhouse gases](#).<sup>48</sup>

It is estimated the plastic industry could be [19% of the total global carbon budget](#) by 2040 if we do not take action.<sup>49</sup> We must [remove plastic from our daily lives](#) and stop the fossil fuel industry from destroying our planet for money.<sup>50</sup>

### **Plastic and Methane**

[Methane is 80x more potent](#) at warming than carbon dioxide and is responsible for

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<sup>37</sup> <https://www.consumerreports.org/environment-sustainability/the-big-problem-with-plastic/>

<sup>38</sup> <https://kids.frontiersin.org/articles/10.3389/frym.2021.574637>

<sup>39</sup> <https://breathelife2030.org/news/burning-plastic-waste-adds-global-air-pollution-problem>

<sup>40</sup> <https://environmentaldefence.ca/2022/03/18/burning-plastic-is-a-terrible-idea>

<sup>41</sup> <https://www.ciel.org/plasticandclimate/>

<sup>42</sup> <https://www.earthday.org/from-fossil-fuels-to-plastic-addiction-unveiling-the-hidden-link>

<sup>43</sup> <https://www.cnbc.com/2022/01/29/how-the-fossil-fuel-industry-is-pushing-plastics-on-the-world-.html>

<sup>44</sup> <https://www.sciencedirect.com/science/article/pii/S259033222300252X>

<sup>45</sup> <https://corporate.exxonmobil.com/Energy-and-environment/Outlook-for-Energy-A-perspective-to-2040>

<sup>46</sup> <https://www.scientificamerican.com/article/bp-pledges-to-go-carbon-neutral-how-remains-an-open-question/>

<sup>47</sup> <https://www.climaterealityproject.org/blog/ethane-cracker-plants-what-are-they>

<sup>48</sup> <https://insideclimatenews.org/plastics-hub-appalachian-fracking-ethane-cracker-climate-change-health/>

<sup>49</sup> <https://stories.undp.org/what-do-plastics-have-to-do-with-climate-change>

<sup>50</sup> <https://www.motherjones.com/environment/2020/03/your-plastic-addiction-is-bankrolling-big-oil/>

25% of global warming.<sup>51</sup>

[Polyethylene](#) is the most common plastic used to make synthetic turf/artificial grass and is known to [release more methane](#) than other plastics as it breaks down.<sup>52</sup>

Dr. Sarah-Jeanne Royer of the Scripps Institution of Oceanography who discovered this wrote a [letter](#) in opposition to synthetic turf/artificial grass, citing methane as a major concern.<sup>53</sup>

During the [breakdown of polyethylene, the release of methane gas accelerates](#) as the surface area of the plastic increases, reacting more with the sunlight and releasing more methane.<sup>54</sup> Synthetic turf/artificial grass fields are constantly releasing methane, damaging our climate.

### **Microplastics and Nanoplastics**

Plastic fibers from artificial turf are a widespread water pollutant with over [15% of plastic debris in](#) rivers and sea-water, coming from plastic grass with concentrations during the rainy seasons.<sup>55</sup>

In addition to seasonal effects, these plastic fibers undergo [significant weathering](#) which directly contributes to the increase in chemicals leached from them into rivers and sea-water.<sup>56</sup>

These [plastic fibers](#), like all plastics, do not decompose<sup>57</sup> like plants; they just break into smaller and smaller pieces, leading to micro and nano plastics that can be [eaten, drank or breathed in](#)<sup>58</sup> by animals or humans and are [even absorbed by plants](#).<sup>59</sup>

Plastic first [breaks down](#) into microplastics, smaller than 5mm, and then nanoplastics which are less than 100 nm.<sup>60</sup> By [comparison](#), a sheet of paper is about 100,000 nm thick.

Microplastics have been found in [human blood, the placenta, and the feces of infants and adults](#).<sup>61</sup> Research has [linked ingested microplastics](#) to inflammatory bowel disease<sup>65</sup> and metabolic diseases including obesity, diabetes, and chronic liver disease.<sup>62</sup> The ability to be absorbed from the [digestive tract](#) allows microplastics to be transported to other organs, including the brain, and increases the risk of

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<sup>51</sup> <https://ecology.wa.gov/Blog/Posts/February-2023/The-trash-climate-connection-what-you-need-to-know>

<sup>52</sup> <https://www.bbc.com/news/science-environment-45043989>

<sup>53</sup> <https://drive.google.com/file/d/1O9NHwhVtY0ygHCcZDHhufkfcRdGFA35k/view>

<sup>54</sup> <https://www.surfrider.org/new-study-shows-plastic-as-source-of-greenhouse-gases-potentially-contribut>

<sup>55</sup> <https://www.sciencedirect.com/science/article/pii/S0269749123010965>

<sup>56</sup> <https://www.sciencedirect.com/science/article/pii/S0269749123010965#bib38>

<sup>57</sup> <https://www.scienceabc.com/nature/how-do-we-know-plastic-will-take-so-long-to-decompose.html>

<sup>58</sup> <https://www.theguardian.com/environment/microplastics-found-in-human-blood-for-first-time>

<sup>59</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0165993622003727>

<sup>60</sup> <https://www.iaea.org/research-on-the-possible-effects-of-micro-and-nano-plastics-on-marine-animals>

<sup>61</sup> <https://www.theguardian.com/environment/microplastics-found-in-human-blood-for-first-time>

<sup>62</sup> <https://www.theguardian.com/microplastics-may-be-linked-to-inflammatory-bowel-disease-study-finds>

stroke.<sup>63</sup>

Nanoplastics [have been found deep in human lungs](#).<sup>64</sup> Research shows it is likely [plastics can cross the blood-brain barrier](#), causing inflammation in the brain itself.<sup>65</sup> Microplastics in the human brain could [damage brain cells](#) and [dementia](#)-like symptoms have been seen in mice exposed to microplastics.<sup>66,67</sup>

These microscopic [bits of plastic can increase our chance of stroke and heart attacks](#) as nearly 60% of clogged arteries in a recent study were found to contain plastic.<sup>68</sup>

## **Plastics In Drinking Water And Food**

Each person consumes an estimated [5 grams of plastic](#), the equivalent of a credit card, every week.<sup>69</sup>

Plastics have been found in [83%](#) of tap water and [93%](#) of bottled water sampled.<sup>70,71</sup>

The [food chain has also been affected by microplastics](#) with [microplastic contamination](#) found in fish, shellfish and crustaceans, canned fish, sugar, salt, honey, beer, fruits and vegetables, milk, rice, meat, and other common food products.<sup>72,73</sup>

## **Harms Wildlife and Marine Ecosystems**

Many [wildlife accidentally eat plastic](#) after mistaking it for food which not only can cause them to choke or starve, but can [poison](#) them as plastics contain toxic chemicals.<sup>74,75</sup>

Plastic pollution harms [“all sea turtle species, half of marine mammal species, and one-fifth of seabird species.”](#)<sup>76</sup>

In the past decade the amount of plastic dumped in our oceans has increased and reached up to [350 million tons of plastic](#).<sup>77</sup>

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<sup>63</sup> <https://www.euronews.com/green/how-much-plastic-do-you-eat-it-could-be-as-much-as-a-credit-card-a-week>

<sup>64</sup> <https://www.theguardian.com/environment/microplastics-found-deep-in-lungs-of-living-people-for-first-time>

<sup>65</sup> <https://www.sciencealert.com/microplastics-could-trigger-inflammation-in-human-brain-cells>

<sup>66</sup> <https://www.sciencedirect.com/science/article/pii/S0013935117310770?via%3Dihub>

<sup>67</sup> <https://futurism.com/neoscope/scientists-microplastics-cause-dementia-mice>

<sup>68</sup> <https://www.sciencealert.com/plastic-found-inside-more-than-50-of-plaques-from-clogged-arteries>

<sup>69</sup> <https://wwf.panda.org/Revealed-plastic-ingestion-by-people-could-be-equating-to-a-credit-card-a-week>

<sup>70</sup> <https://beachapedia.org/Plastic Pollution Facts and Figures>

<sup>71</sup> <https://www.bonappetit.com/story/microplastics-food>

<sup>72</sup> <https://www.sciencedirect.com/science/article/pii/S0048969722069340>

<sup>73</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0025326X22008827>

<sup>74</sup> <https://www.plasticsoupfoundation.org/en/plastic-problem/plastic-affect-animals/animals-eat-plastic/>

<sup>75</sup> <https://www.nationalgeographic.com/environment/article/plastic-pollution>

<sup>76</sup> <https://www.nrdc.org/sites/default/files/choked-plastic-pollution-marine-life-fs.pdf>

<sup>77</sup> <https://plasticseurope.org/wp-content/uploads/2021/10/2018-Plastics-the-facts.pdf>

Microplastics and nanoplastics can harm entire marine ecosystems with [15–51 trillion microplastic plastic particles](#) floating in the ocean.<sup>78</sup> Microplastics can enter marine animals as they “breathe,” allowing them to accumulate in organisms. These plastics also hurt corals which are essential for fisheries and are crucial for the health of marine ecosystems, providing [“habitat, feeding, spawning, and nursery grounds for over one million aquatic species, including commercially harvested fish species.”](#)<sup>79</sup>

Additionally, over [800 marine species](#) are directly harmed by plastic, leading to “starvation, malnutrition, intestinal blockage, and intake of toxins.”<sup>80</sup>

### **Synthetic Turf/Artificial Grass is Not Recycled**

Replaced every 7-10 years, the average synthetic turf/artificial grass soccer field produces [40,000 lbs of plastic carpeting and 400,000 lbs of infill](#) of waste.<sup>81</sup>

Despite what the synthetic turf industry claims, there is no proof that actual recycling is occurring. The plastic carpet and infill are often [dumped or sent to landfills](#) as there are no [recycling facilities for synthetic turf in the US](#).<sup>82,83</sup>

[Reuse is not recycling](#)<sup>84</sup> and so called “[chemical recycling](#)” is just greenwashing for incineration.<sup>85</sup> Burning is not recycling!

### **Synthetic Turf/Artificial Grass is HOT**

Synthetic turf/artificial grass is 40°-70° [hotter](#) than surrounding air temperatures and has burned hands and feet.<sup>86</sup> [Natural grass releases water vapor](#) and this evaporation means natural grass fields rarely get above 100° F.<sup>87</sup> But the [surface temperature of synthetic turf/artificial grass](#) has been found to be 37° higher than asphalt and 86.5° hotter than natural grass.<sup>88</sup> A study found that in 90° weather, the surface temperature of a natural grass field was 98° while an artificial grass/synthetic turf field was [over 160°](#).<sup>89</sup> [Shoes have melted](#) from the heat on synthetic turf/artificial grass with players and coaches getting blisters on the bottom of their feet through their shoes.<sup>90</sup> [First-degree burns](#) occur at 118° with blistering and second-degree burns at 131°.<sup>91</sup> Several artificial grass/synthetic turf fields in

<sup>78</sup> <https://kids.frontiersin.org/articles/10.3389/frym.2021.574637>

<sup>79</sup> <https://www.epa.gov/coral-reefs/basic-information-about-coral-reefs>

<sup>80</sup> <https://www.nrdc.org/sites/default/files/choked-plastic-pollution-marine-life-fs.pdf>

<sup>81</sup> <https://www.beyondplastics.org/fact-sheets/synthetic-turf>

<sup>82</sup> <https://www.theatlantic.com/science/artificial-turf-fields-are-piling-no-recycling-fix/603874/>

<sup>83</sup> <https://www.msn.com/how-pennsylvania-became-a-dumping-ground-for-discarded-artificial-turf>

<sup>84</sup> <https://peer.org/artificial-turfs-big-lie-old-fields-not-recycled/>

<sup>85</sup> <https://www.nrdc.org/stories/chemical-recycling-isnt-actually-recycling>

<sup>86</sup> <https://www.safehealthyplayingfields.org/heat-levels-synthetic-turf/>

<sup>87</sup> <https://www.nrpa.org/parks-recreation-magazine/synthetic-sports-fields-and-the-heat-island-effect/>

<sup>88</sup> <https://aces.nmsu.edu/programs/turf/documents/brigham-young-study.pdf>

<sup>89</sup> <https://www.center4research.org/injuries-related-to-artificial-turf/>

<sup>90</sup> <https://ftw.usatoday.com/2015/08/its-so-hot-in-texas-turf-is-melting-cleats>

<sup>91</sup> <https://www.nist.gov/el/fire-research-division-73300/firegov-fire-service/fire-dynamics>

the Los Angeles Unified School District are currently [closed](#) due to high heat and melting surfaces.<sup>92</sup>

Playing on synthetic turf/artificial grass can [increase](#) the chance of [heat stroke, dehydration, and other heat-related illnesses](#).<sup>93,94</sup> Synthetic turf/artificial grass fields also [create heat islands](#) which cause [higher daytime and nighttime temperatures along with higher levels of air pollution](#).<sup>95,96</sup>

### **Synthetic Turf/Artificial Grass is Dangerous to Athletes**

Synthetic turf/artificial grass fields contain [bacteria](#) and must be regularly cleaned with chemicals.<sup>97</sup> [Turf burns](#) from artificial grass/synthetic turf can become infected with bacteria like staph and MRSA which can be life-threatening.<sup>98</sup> An EPA study found [MRSA in 70%](#) of the fields tested.<sup>99</sup>

Playing on synthetic turf/artificial grass can cause more injuries. According to an NFL Players Association (NFLPA) [study](#), playing and practicing on synthetic turf/artificial grass increases the chance of a lower extremity injury with a 69% higher rate of non-contact foot/ankle injuries than on natural grass.<sup>100</sup> The NFLPA has called for [all NFL fields to be natural grass](#).<sup>101</sup>

A [study](#) of National Collegiate Athletic Association (NCAA) athletes found playing on synthetic turf/artificial grass greatly increased the chance of knee ligament injuries while a [study](#) of high school athletes found they were 58% more likely to sustain an injury playing on synthetic turf/artificial grass than natural grass.<sup>102,103</sup>

Studies have also shown that more [serious concussions](#) come from playing on synthetic turf/artificial grass compared to natural grass.<sup>104</sup>

The United States Men's Professional Soccer Team and other national teams [only play on natural grass](#) in the World Cup, and the [United States Women's Soccer Team sued FIFA](#) to not play on synthetic turf/artificial grass due to the increased risk of injury.<sup>105,106</sup> Soccer legend [Lionel Messi](#) will only play on natural grass.<sup>107</sup>

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<sup>92</sup> <https://www.latimes.com/sports/highschool/story/2022-08-17/synthetic-l-a-unified-out-of-commission>

<sup>93</sup> <https://www.npr.org/2008/08/07/93364750/high-temps-on-turf-fields-spark-safety-concerns>

<sup>94</sup> <https://www.tandfonline.com/doi/full/10.1080/02656736.2019.1605096>

<sup>95</sup> <https://aces.nmsu.edu/programs/turf/documents/brigham-young-study.pdf>

<sup>96</sup> <https://www.epa.gov/heatislands/heat-island-impacts>

<sup>97</sup> <https://sportsturfnews.com/wp-content/uploads/2015/11/Bass-paper-in-big-sky-journal.pdf>

<sup>98</sup> <https://www.healthline.com/health/turf-burn#pictures>

<sup>99</sup> [https://www.epa.gov/sites/default/files/2019-08/documents/tc\\_public\\_webinar\\_-\\_august\\_6\\_2019.pdf](https://www.epa.gov/sites/default/files/2019-08/documents/tc_public_webinar_-_august_6_2019.pdf)

<sup>100</sup> <https://nflpa.com/posts/only-natural-grass-can-level-the-nfls-playing-field>

<sup>101</sup> <https://apnews.com/article/9b34d4402f2f82ae60708605f65aa560>

<sup>102</sup> <https://pubmed.ncbi.nlm.nih.gov/30995074/>

<sup>103</sup> <https://www.uhhospitals.org/articles-and-news/articles/2019/08/artificial-turf-vs-natural-grass>

<sup>104</sup> <https://journals.sagepub.com/doi/10.1177/03635465000280050401>

<sup>105</sup> <https://www.sportsbusinessjournal.com/Articles/2023/11/06/america-stadiums-side>

<sup>106</sup> <https://www.npr.org/353312770/soccer-players-sue-over-proposed-turf-field-for-womens-world-cup>

<sup>107</sup> <https://www.sbnation.com/soccer/lionel-messi-inter-miami-mls-turf>

Upon hearing of the death of David West, the sixth player from the Philadelphia Phillies to die of the same rare form of brain cancer ([glioblastoma](#)), [Philadelphia Inquirer investigative journalists David Gambacorta and Barbara Laker](#) investigated pieces of AstroTurf from Veterans Stadium, which was the Philly home stadium until 2004.<sup>108,109</sup> The pieces of turf analyzed from 1977 and 1981 were found to contain at least 16 different PFAS. They determined that in the summer, the synthetic turf/artificial grass would heat up to 165°F, increasing the release of toxins into the air, creating additional modes of transmission to the players.

### **Crumb Rubber Infill is Toxic**

Made from ground-up tires, crumb rubber is a very common infill for synthetic turf/artificial grass fields and is full of [heavy metals and toxic chemicals](#).<sup>110</sup> [Over 300 chemicals](#) have been found in crumb rubber infill with 58 classified as known carcinogens and 197 predicted to be carcinogenic.<sup>111</sup>

6PPD and its derivative 6PPD-quinone are [very highly toxic pollutants](#) to all aquatic organisms and [are responsible for wiping out](#) over 90% of endangered Coho Salmon in CA, OR, and WA every year.<sup>112</sup> While there is limited information on the impacts of 6PPD and 6PPDq to human health, 6PPD is currently listed as a [presumed human reproductive toxicant](#) by the European Chemicals Agency (ECHA).<sup>113</sup>

Humans can be exposed to these toxic chemicals in crumb rubber through inhalation, ingestion, and skin contact, leaving [humans vulnerable to carcinogenic exposure in many different ways](#).<sup>114</sup> [Alternative infills](#) like TPE or cork have inhalation and chemical risks as well.<sup>115</sup>

The Norwegian Institute for Water Research conducted a [risk assessment](#) on runoff from synthetic turf/artificial grass fields, finding a significant risk of environmental effects on surface water.<sup>116</sup> The [Connecticut Department of Environmental Protection \(DEP\)](#) also concluded runoff from synthetic grass/artificial turf fields was a potential risk to surface waters and aquatic organisms.<sup>117</sup>

### **Natural Grass is Best**

[Natural grass is the healthiest choice](#) for playing fields and parks.<sup>118</sup> [Natural grass](#)

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<sup>108</sup> <https://deadspin.com/philadelphia-phillies-brain-cancer-tug-mcgraw-1850202995>

<sup>109</sup> <https://www.mediaite.com/sports/6-phillies-players-died-of-same-brain-cancer/>

<sup>110</sup> <https://www.sciencedirect.com/science/article/pii/S0048969721076208>

<sup>111</sup> <https://www.sciencedirect.com/science/article/pii/S0013935118305528>

<sup>112</sup> <https://www.ezview.wa.gov/Stormwater/Tianetal.2022.Revisedtoxicityassessment06PPD-quinone.pdf>

<sup>113</sup> <https://echa.europa.eu/registration-dossier/-/registered-dossier/15367/5/1>

<sup>114</sup> <https://ncceh.ca/documents/guide/human-health-risk-assessments-addressing-artificial-turf>

<sup>115</sup> <https://www.safehealthyplayingfields.org/the-problem-with-alternative-infills>

<sup>116</sup> [https://www.iss-sportsurfacescience.org/downloads/documents/5VEU2CZB25\\_NIVAEngelsk.pdf](https://www.iss-sportsurfacescience.org/downloads/documents/5VEU2CZB25_NIVAEngelsk.pdf)

<sup>117</sup> <https://portal.ct.gov/-/media/DEEP/artificialturf/DEPArtificialTurfReportpdf.pdf>

<sup>118</sup> <https://www.safehealthyplayingfields.org/health-benefits-of-natural-turf>

[fields are more cost-effective](#) than [synthetic turf/artificial grass fields which have higher maintenance and long-term costs](#).<sup>119,120</sup> [Natural grass fields are also cheaper to install](#) than synthetic turf/artificial grass.<sup>121</sup>

Natural grass fields can be effectively maintained using [organic land management practices](#), especially for playing fields.<sup>122</sup> Please watch this video, [Pesticide Free Parks](#), on organic management.<sup>123</sup>

High-use, organically managed, natural grass fields have been in use [in many areas](#) including [Irvine, CA](#).<sup>124,125</sup>

With proper care and maintenance, a natural grass field can accommodate any amount of play as demonstrated by Marblehead, MA with [20 acres of organically managed fields](#) for over 15 years.<sup>126</sup>

### **Cancer and Toxic Chemicals**

[90–95% of cancers](#) are caused by environmental and lifestyle factors while our children are surrounded by an estimated [350,000](#) synthetic/man-made chemicals and chemical mixtures every day, nearly all of them invented since 1950.<sup>127,128</sup>

There is clear evidence that exposure to these chemicals is an important [contributor to childhood cancer](#).<sup>129</sup>

A [50 year review of pediatric cancer](#) found cancer is now the leading cause of death by disease in US children under 15 with rates of leukemia, the [most common cancer in children and adolescents](#), having increased by 21% in children since 1976 with brain cancer rates increasing by 45%.<sup>130,131</sup>

With about 43 [children diagnosed](#) with cancer every day, we must reduce their exposure to toxic chemicals.<sup>132</sup> We must protect the places where they run and play, the water they drink, the food they eat and the air they breathe.

### **Stop Synthetic Turf/Artificial Grass, Stop Toxic Chemicals**

The use of synthetic turf/artificial grass harms our children and families, athletes,

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<sup>119</sup> [https://www.safehealthyplayingfields.org/s/Natural\\_Grass\\_Athletic\\_Fields\\_Ppoint\\_Final.ppt](https://www.safehealthyplayingfields.org/s/Natural_Grass_Athletic_Fields_Ppoint_Final.ppt)

<sup>120</sup> <https://www.safehealthyplayingfields.org/maintenance-grass-vs-synthetic-turf>

<sup>121</sup> <https://www.safehealthyplayingfields.org/cost-grass-vs-synthetic-turf>

<sup>122</sup> <https://www.turi.org/var/application/982fb1bc7bb561b4ce07072c5d26ab11.pdf>

<sup>123</sup> <https://youtu.be/oJZgy8MOMYU>

<sup>124</sup> <https://www.nontoxiccommunities.com/organic-athletic-fields.html>

<sup>125</sup> <https://online.flippingbook.com/view/535223568/32/>

<sup>126</sup> <https://www.turi.org/content/NaturalGrassPlayingFieldCaseStudyMarbleheadMAJune202019.pdf>

<sup>127</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2515569/>

<sup>128</sup> <https://pubmed.ncbi.nlm.nih.gov/31968937/>

<sup>129</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6546253/>

<sup>130</sup> <https://www.annals-research-oncology.com/pediatric-cancer-and-the-environment-a-fifty-year-perspective/>

<sup>131</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5550103/>

<sup>132</sup> <https://www.stjude.org/get-involved/other-ways/childhood-cancer-awareness-month.html>

pets and wildlife and our water, soil and planet. Please stop the use of synthetic turf/artificial grass.

**Additional Video Resources:**

[Tire Particulate Matter in Synthetic Turf and Children](#)

[Failing Synthetic Turf Fields](#)

[Artificial Turf is Not Recycled](#)

[Environmental Health Impacts of Synthetic Turf and Safer Alternatives](#)

[Insult to Injury: Plastic Fields Hurt Players](#)

[The High Costs of Fake Plastic Fields](#)

[The Hazards of Artificial Turf: Learn the Latest from Leading Experts](#)

[Conversation on Synthetic Playing Surfaces](#)

[Health and Environmental Hazards of Artificial Turf and Safer Alternatives](#)

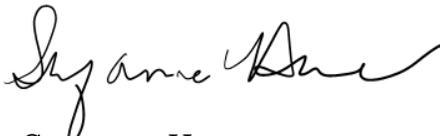
**Stop Synthetic Turf/Artificial Grass**

The use of synthetic turf harms our children and families, athletes, pets and wildlife and our water, soil and planet.

Please stop all uses of synthetic turf.

The decisions we make today affect our children's health and future.

Sincerely,



Suzanne Hume

Educational Director and Founder

S@CleanEarth4Kids.org

CleanEarth4Kids.org

## Communication from Public

**Name:** Wesley Chuang  
**Date Submitted:** 09/16/2024 02:38 PM  
**Council File No:** 24-0602

**Comments for Public Posting:** I'm writing to urge you to support CF 24-0602 and begin transitioning the City of Los Angeles away from artificial turf in order to protect people and the environment. Unfortunately, artificial turf has not delivered the promised water savings and has created many unintended consequences: ? Artificial turf is primarily plastic, manufactured with fossil fuel-based petrochemicals, and harmful per- and polyfluoroalkyl substances (PFAS), which have been associated with cancer as well as respiratory and other health issues; ? Children and infants are especially susceptible to the bioaccumulation of these chemicals, which have been linked to growth, learning and behavioral problems. Athletes who play on synthetic grass are also at increased risk; ? Toxic runoff from artificial turf contaminates drinking water, rivers, and oceans with microplastics as well as PFAS. The EPA has recently reported that there is no safe amount of these "forever chemicals" in drinking water; ? Studies have found that 12 to 15% of microplastics found in rivers, lakes, and oceans are from artificial turf; ? Artificial turf reaches temperatures much higher than natural grass (160°180°F or more) causing heat-related injuries and requiring surface cooling with water before use; ? The increase in temperature caused by artificial turf also contributes to the urban heat island effect, raising ambient temperature at the site and nearby; ? Artificial turf leads to increased sports injuries, and must be cleaned of contaminants such as blood and other fluids; ? Cleaning and cooling artificial turf can require more water than would be needed for drought-tolerant grass fields; ? Artificial turf kills the biome in the soil below and takes away critical food and habitat from insects, birds and wildlife, contributing to species loss and reducing biodiversity; ? Artificial turf is an impervious surface (per the EPA) that contributes to flooding when water is not absorbed for groundwater recharge; ? Artificial turf is made of mixed materials, making it extremely difficult and expensive to recycle. At the end of its 8- to 15-year lifecycle, it is sent to landfills, illegally dumped, or sent out of state to be incinerated. Artificial turf is a danger to the health of our communities and our environment, and fails to produce promised water savings. I urge you to support a ban on new and replacement installations of artificial turf in both public and private applications. Please

continue the leadership that the Los Angeles City Council has shown on sustainability and vote to protect human and environmental health by voting YES in support of this motion.

## Communication from Public

**Name:** Shelley Helen Wiseman

**Date Submitted:** 09/16/2024 02:59 PM

**Council File No:** 24-0602

**Comments for Public Posting:** Hello, Please vote to ban artificial turf. I am a native Californian who loves the look and smell of the plants that belong in our gardens--those that are native to the Mediterranean regions of the world--coastal California, Chile, South Africa, Southwest Australia, and the areas around the Mediterranean Sea. I am a former teacher and former RAND Communications Analyst, landscaper and gardener. I understand the downsides of artificial turf and the enormous benefits we realize by choosing plants native to our Mediterranean climate. Alternatives to artificial turf can easily be integrated into a garden plan and easily maintained. Let's prohibit the use of artificial turf and educate home and business owners, gardeners and landscapers, about those alternatives and the benefits they provide. Thank you for your vote against artificial turf. Shelley Wiseman

## Communication from Public

**Name:** Summer Marsh

**Date Submitted:** 09/16/2024 01:27 PM

**Council File No:** 24-0602

**Comments for Public Posting:** I support the motion to move away from artificial turf in Los Angeles because it is crucial for both environmental and public health. Artificial turf contributes to excessive heat retention, worsening urban heat islands, and increasing water runoff, which can lead to drainage problems and soil erosion. Additionally, synthetic materials in turf often contain harmful chemicals that pose long-term risks to both residents and local wildlife. By transitioning to drought-tolerant native plants or other sustainable alternatives, the city can prioritize the well-being of its citizens, improve air quality, and promote biodiversity while fostering cooler, healthier public spaces.

## Communication from Public

**Name:** Carol Bornstein  
**Date Submitted:** 09/16/2024 08:25 PM  
**Council File No:** 24-0602  
**Comments for Public Posting:** The ecological damage caused by artificial turf is well documented and can be easily avoided. I urge the City Council to move away from its use and to instead encourage greater use of California native plants in public, private, and commercial landscapes.

## Communication from Public

**Name:** W. Lynch

**Date Submitted:** 09/16/2024 06:29 PM

**Council File No:** 24-0602

**Comments for Public Posting:** My family and I support the move away from using artificial turf in Los Angeles. We are against the use of artificial turf because (1) it kills all of the life in the biosphere which destroys the soil that lies beneath it; (2) it is made from “forever” chemicals and often combined with recycled rubber tires that will never decompose; (3) it is known to cause cancer (see documented studies that directly link high incidences of cancers in young athletes—soccer goalies, in particular—to the inhalation of artificial turf particulates during games) and should be banned on athletic fields; and (4) it absorbs heat and, unfortunately, despite best efforts, it always looks fake

## Communication from Public

**Name:** Kayla Zaraka

**Date Submitted:** 09/16/2024 01:35 PM

**Council File No:** 24-0602

**Comments for Public Posting:** I do not support banning the use of artificial turf. I think it is misplaced while we have a ban on ubiquitous gas leaf blowers that is not enforced and which are much more detrimental to the environment.

## Communication from Public

**Name:** Ryan

**Date Submitted:** 09/16/2024 01:36 PM

**Council File No:** 24-0602

**Comments for Public Posting:** Artificial turf is made from dead animal fossils. It's harmful and toxic to Mother Earth. It harms flora, funga, and fauna. It needs to be replaced with natural solutions asap.

## Communication from Public

**Name:** Cher Gilmore

**Date Submitted:** 09/16/2024 11:31 PM

**Council File No:** 24-0602

**Comments for Public Posting:** I totally support Los Angeles moving away from the use of artificial turf. The daughter of a friend plays sports on artificial turf at her high school, and every time she plays on it she gets sick. There are just too many toxic chemicals (PFAS) in the artificial turf. They're a danger to children and youth playing on it (and adults, too, if used on major league sports fields) -- especially in extreme heat, which sends toxic fumes into the air that are then inhaled. Furthermore, rain washes the chemicals into the aquifers, potentially poisoning many more people. Artificial turf is bad news for people and planet.

## Communication from Public

**Name:** Myung-Soo Seok, on behalf of the Painters and Allied Trades District Council 36

**Date Submitted:** 09/16/2024 10:44 PM

**Council File No:** 24-0602

**Comments for Public Posting:** Painters and Allied Trades District Council 36 advocates for establishing regulation standards for artificial turf, not a ban. Please see our official letter that is attached.



# Painters & Allied Trades District Council 36

**Luis F. Robles**

Business Manager

DRYWALL FINISHERS, FLOORLAYERS, GLAZIERS, PAINTERS, TRADESHOW & SIGNCRAFT

September 16, 2024

## Los Angeles City Councilmembers

District 1 - Councilmember Eunisses Hernandez

District 2 - Councilmember Paul Krekorian

District 3 - Councilmember Bob Blumenfield

District 4 - Councilmember Nithya Raman

District 5 - Councilmember Katy Yaroslavsky

District 6 - Councilmember Imelda Padilla

District 7 - Councilmember Monica Rodriguez

District 8 - Marqueece Harris-Dawson

District 9 - Curren D. Price

District 10 - Heather Hutt

District 11 - Tracy Park

District 12 - John Lee

District 13 - Hugo Soto-Martinez

District 14 - Kevin de Leon

District 15 - Tim McOsker

Re: Santa Clara County's Proposed Study on Regulation on Artificial Turf

Dear Los Angeles City Councilmembers:

Thank you for the opportunity to comment on your efforts to impose a study of regulation on artificial turf in the County. We are a labor union that represents construction workers that install artificial turf throughout California. While we appreciate the genuine concerns that the Councilmembers have, an outright ban of artificial turf is both irresponsible and unnecessary in alleviating environmental concerns. While there are many studies available which show no impact to the environment from chemicals leaching from artificial turf, there are NO studies that show that any chemicals leach from artificial turf or from crumb rubber infill.

Having said that, there seems to be an assumption that all artificial turf is made up of same materials and that is not the case. Case in point is the artificial grass manufactured by TenCate.

TenCate is the leading manufacturer of artificial turf in the world. Their artificial turf has proactively eliminated PFAS materials in 2023 before any PFAS legislation has been passed. This eliminates widespread concern of PFAS impact on the environment.

In order to address the concern of micro plastics entering the environment due to migration of rubber infill, TenCate created a new turf system called Pivot that eliminates the need for rubber infill. Historically, an artificial turf field required 200,000 pounds of crumb rubber, which can migrate from the field. Pivot requires NO rubber infill or any infill at all.

Pivot turf is also much cooler than turf with rubber infill, typically up to 30 to 40 degrees cooler than rubber. If you add TenCate's GeoCool material to a Pivot field, you can reduce the temperature another 10 to 20 degrees. GeoCool is made from a renewable inorganic mineral that is 100% renewable and non-toxic. Other organic and natural infills made with cork or walnut shells have been incorporated by other manufacturers and these infills will lower the temperature of a field drastically vs. rubber infill.

It is important to remember that each artificial turf field saves between 500,000 and 1,000,000 gallons of water annually. This leads to over 1 billion gallons of water being conserved each year in the State of California. Water is not necessary in cleaning or cooling Pivot turf.

Finally, TenCate is actively recycling end of life artificial turf. TenCate is the first in United States to recycle old synthetic turf into feedstock that can be used to create new turf and other products. In 2023, TenCate completely recycled the practice soccer field that they replaced at Stanford University through their subsidiary TenCate Turf Recycling Solutions. So, the latest developments in artificial turf are already being established in State of California.

While we commend the Councilmembers for initiating this important discussion about the impact of artificial grass on the environment, an outright ban will lead to losses of small businesses and jobs that were encouraged to be created during our drought crisis. Our union will lose thousands of jobs throughout California if such ban is passed throughout the state.

Rather than banning an entire industry, implementation of thoughtful regulation of eliminating harmful materials and creating an industry standard should be considered. We look forward to participating in such a dialogue with you. Please do not hesitate to reach out to me. My contact information is listed below.

Regulate, don't Ban

Thank you.



Political Director

Office: 626-584-9925

Cell: 818-205-8513

Email: [Robert.smith@dc36.org](mailto:Robert.smith@dc36.org)

## Communication from Public

**Name:** Hannah Yang

**Date Submitted:** 09/16/2024 10:26 PM

**Council File No:** 24-0602

**Comments for Public Posting:** Artificial turf has been around too long, and is very detrimental to our planet. I support moving away from artificial turf and towards more environmentally-friendly landscaping.