All Receive - Agenda Item # 13
For the Information of the:
CITY COUNCIL
Date 7/22/24 CA ✓ CC ✓
CM ✓ ACM ✓ DCM (3) ✓

Tammy Cloud-McMinn

From: D Woelke <dmwoelke@gmail.com>
Sent: Monday, July 22, 2024 11:36 AM
To: Keith Blackburn; Carolyn Luna; Melanie Burkholder; Priya Bhat-Patel; Teresa Acosta
Cc: City Clerk; Katie Hentrich; Scott Chadwick
Subject: Carlsbad City Council meeting 23 July 2024; Item 13. FOR THE PUBLIC RECORD
Attachments: Carlsbad 15 July 2024.pdf

Dear Mayor Blackburn and Council Members Luna, Burkholder, Bhat-Patel and Acosta:

Attached please find our comments regarding Item #13 on the 23 July 2024 city council agenda.

We would be happy to answer any questions you might have regarding the serious concerns we have raised regarding the multiple plastic items in the proposed Robertson Ranch Park project.

Respectfully submitted,

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

SAFE HEALTHY PLAYING FIELDS

BEYOND PLASTICS
AFFILIATE

Safe Healthy Playing Fields Inc.

www.safehealthyplayingfields.org

Carlsbad City Council, Item #13
Parks & Recreation Commission Report: Robertson Ranch Recommended Master Plan
22 July 2024

Dear Mayor Blackburn and Council Members Luna, Burkholder, Bhat-Patel and Acosta:

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 organization. We are committed to educating communities, policymakers and elected officials about the health, safety and financial realities of plastic fields versus grass fields and other synthetic surfaces and playground equipment fortheir parks and schools. Our constituency ranges from concerned individuals to community and civic organizations, legal, healthcare and science professionals, municipal leaders and state legislators.

SHPFI urges you to not use fossil fuel based petrochemical plastic products in Robertson Ranch Park and to develop a policy that provides open, natural, non-toxic and safe places for all who reside and recreate in Carlsbad.

Carlsbad must do more to protect children, adults and the environment. Please be aware of pertinent legislation, current and upcoming regulation:

- CA DTSC - Microplastics, addition to Priority Chemicals List
- CA DTSC - PFAS and other chemicals of concern in synthetic turf (pg. 14). A webinar will be held on 27 Aug 2024.
- CA DTSC - 6PPD in Motor Vehicle Tires; under regulation
- CA DTSC - Zinc in Motor Vehicle Tires; pending regulation
- CA DTSC - Chemicals of Concern in Motor Vehicle Tires; pending regulation
- CA Statewide Microplastics Strategy - Senate Bill No.1263, Chapter 609, 2018
- AB 285 - Climate Change as part of Core Curriculum, K-12. Chaptered into Law

The following jurisdictions have either banned, have a current interim ordinance, or are in process of establishing moratoriums/ordinances/bans on synthetic turf:

- Millbrae
- San Marino
- Santa Clara County
- Los Angeles
- California Coastal Commission
- States of CA, CO, MD, ME, MN, NY, RI, VT have enacted laws related to synthetic turf. Additional states have active bills in their legislatures while an ever growing number of local jurisdictions across the country have moratoriums or have won battles against installations by referendum.

Banned use of synthetic playground surfacing:

- California Coastal Commission
- State of Maryland

Additional states have pending legislation regarding surfacing materials.

TOXICITY:

Ninety-nine percent of plastics are made from fossil fuel based petrochemicals. This includes products in current use in Carlsbad parks and schools as well potentially proposed for Robertson Ranch Park. With the lack of specificity in the staff report, the park could be plastic from top to bottom: from plastic shade sails, to plastic playground equipment and surfacing to a plastic track and plastic multipurpose playing field.

Over 16,000 chemicals have been found in plastics; 4200 are known to be bioaccumulative, persistent, mobile in the environment and/or toxic; only 982 (6%) have come under regulation by any global body. The remainder of the 16,000 chemicals have not been studied for safety or toxicity. More than 1,300 chemicals of concern are actively marketed for use in plastics and can be found in all plastic types. Less than 1% of plastic chemicals may be classified as non-hazardous. "Recycled plastics" have been found to contain more toxic chemicals than virgin plastics. Less than 6% of plastics are recycled, and claims of recyclability perpetuate the myth that the world can recycle its way out of the catastrophic tsunami of plastic pollution that has enveloped the earth.

PFAS;

Chemicals in plastics, including polybrominated diphenylethers (PBDE), neurotoxic phthalates, bisphenols and PFAS, add disease burden and health care costs in the United States. For 2018, the attributable cost of plastics to disease and health care related costs was $249 billion; for PFAS alone, it was $22.4 billion. The societal cost globally is estimated at $16 trillion USD. annually for PFAS clean ups and health care for impacted individuals.

The need to stop further PFAS exposure cannot be overstated. PFAS can cause multiple reproductive disorders (including a 40% decrease in female fertility; a decrease of 62.3% total sperm count in males); Crohn's disease; breast, testicular, kidney, prostate and liver cancers. They cross the blood-brain barrier and are related to Autism Spectrum Disorder, Attention Deficit Hyperactivity Disorder, increased deaths from Parkinson's and Alzheimer's diseases; immunological effects; increased serum cholesterol; effects on infant birth weights; impaired glucose metabolism, insulin resistance, dyslipidemia and adiposity in children and adolescents; thyroid hormone disruption (including neonatal) and thyroid cancer. Because they are bioaccumulative, PFAS exposure can impact multiple generations. Babies are being born pre-polluted with PFAS.

PHTHALATES:

Phthalates are used extensively in the manufacturing of plastics. They have endocrine disrupting as well as neurotoxic effects. As plasticizers, they are used in synthetic turf as well as in tire manufacturing. Use of phthalate-containing products is choosing to risk impairment of children's I.Q.s, their brains and their overall health.

LEAD (Pb):

Found in playground surfacing, along with polycyclic hydrocarbons (PAHs), volatile organic compounds, arsenic, cadmium and, is the heavy metal lead. The World Health Organization, American Academy of Pediatrics, the CDC and researchers Drs. Stuart L Shalat and Alan Stern and Dr. Bruce Lanphear all state there in ***NO*** safe level of lead, a potent neurotoxin.

Designated as impervious surfaces, synthetic turf fields contribute 27,000 gallons of toxic runoff per acre for every inch of rain. Carlsbad already has well over 1.2 million square feet of plastic turf in schools and parks alone. In 2023, the city received 17.91" of rain fall, contributing well over 13.3 million gallons of PFAS and other persistent, bioaccumlative and toxic (PBT) laden runoff to the city's surface, ground and eventually drinking water, and into the ocean.

IMPERVIOUS SURFACING:

Synthetic turf is classified as ***impervious*** by both the US EPA and the State of California. U.S. EPA has defined impervious surfaces:

> *"...areas such as gravel roads...that will be compacted through design or use to reduce their impermeability."* It has further 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."*

Compaction, in addition to the impervious plastic surface, result in increased runoff. Despite synthetic turf industry claims, laboratory testing is not the same as reality. Synthetic turf is unable to handle the amount of rain that comes with an atmospheric river or bomb cyclone.

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, 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.

Rainfall creates 27,000 gallons of toxic runoff per acre of plastic turf for every one inch of rainfall. **Carlsbad had 17.91 inches of rainfall in the past year and currently has 1,212,178 square feet of synthetic turf**, exclusive of residential and commercial applications. Additionally, the proposed multipurpose field for Robertson Ranch Park sits at a lower elevation that the rest of the park, making it a veritable toxic swimming pool with PFAS and other toxic leachate that will impact surface and ground water and ultimately drinking water.

Synthetic turf projects "provide substantial additional sources of polluted runoff" under CEQA.

POTENTIAL FOR EROSION:

Mitigation for potential erosion during construction does not address the potential for erosion subsequent to placement of synthetic turf.

> *"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 Sheet

MICROPLASTICS:

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

Whether in sports field and playground surfacing and equipment or high density polyethylene (HDPE) shade sails, plastics contribute heavily to climate change, which, in turn,

> *"...causes the acceleration of plastic degradation, induced by a warmer climate, not only increases the rate at which microplastics are generated but also enhances the ecotoxicity of the formed microplastic particles."*
> https://www.nature.com/articles/s41467-024-46127-9

In addition to the base resin, plastics include multiple toxic and cancer causing chemicals. They break down with UV radiation and environmental exposure, and even more quickly in hot and wet conditions, releasing microplastics. Plastics take centuries to fully decompose, leaching toxic chemicals to soil, air and water and off gassing methane and ethylene, impacting generations to come.

Microplastics not only leach chemicals, including endocrine disrupting PFAS and phthalates (also neurotoxic), they adsorb other chemicals and bacteria, posing particular risk to the food chain. Even Best Management Practices (BMPs) will capture only a small percentage of the microplastics and virtually none of the PFAS and other toxic chemicals from synthetic turf and playgrounds. Drainage systems are not expensive granular activated carbon (GAC) filters.

In humans, micro- and nano-plastics have been found in:

- Heart
- Liver and spleen
- Lungs
- Blood
- Placenta (maternal and fetal sides)
- Newborn and adult feces
- Breastmilk
- Brain
- Penis, Testes and semen
- Kidney
- Uterus

Microplastic synthetic turf blades have been found in Lake Tahoe (personal email communications with researchers at Tahoe Environmental Research Center (TERC)) and the ocean. 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. This makes synthetic turf clearly a major point source of PFAS and microplastic pollution that cannot go unaddressed. Lake Tahoe 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.***"

Published on 29 June 2023, research by the University of Barcelona found that synthetic turf blades contribute 15% of macro- and meso plastics in waterways and the ocean, leading to the California Coastal Commission's decision to not allow it for use in the coastal zone and finding synthetic turf is not superior superior to natural grass nor sustainable.

HEAT:

Disinformation was given by Carlsbad Parks and Recreation at the Commission meeting on 15 July 2024, claiming they had learned to not use used tire crumb rubber infill for synthetic turf and selected a "cooling" ***polymer*** infill when the plastic grass carpets were replaced at Stagecoach Park. **POLYMER** coated infill is ***plastic*** coated. It is not cooling, despite industry claims, and the city essentially swapped one toxic microplastic for another toxic microplastic infill. None of the infills on the market, including plant and mineral based infills, have been proven safe. Some are sourced from outside the US where pesticide regulations are abysmal. Some are flammable, require water, float and drift or create a paste when it rains, and still migrate off the field. Some have even tested positive for PFAS.

No infills mitigate the toxic and carcinogenic chemicals in synthetic turf and none mitigate heat to a safe temperature for safe play.

Always hotter than nearby natural grass, concrete and asphalt, plastics pose a risk for thermal burns, sometimes significant enough to require hospitalization. At a surface temperature of 118°F a first-degree thermal 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.
An estimated 9,000 student athletes are treated for exertional heat illness each year. The reduced functional level created by heat from synthetic surfaces, even at reasonable ambient temperatures can contribute to injuries due to compromised functional level.

#NoChildFriedOutside

High temperatures pose a serious risk for heat illness. One of the predisposing factors for heat illness are prescription drugs for treatment of attention deficit hyperactivity disorder, ADHD, which can be caused by PFAS chemicals found in plastics. ADHD, which affects approximately 7% of 6 to 11 year olds, and has been declared a serious public health problem.

Children are not small adults. They are more readily impacted by heat illness due to:

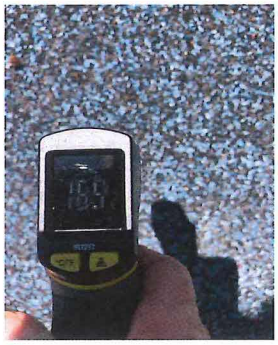
- Heat production – Children have higher metabolic rates than adults which leads to higher production of more heat.
- Body surface area – Younger children absorb more heat because they have a greater body area to body mass ratio. For older children and teens, increased body fat and low fitness levels are contributing factors.
- Blood circulation – Children are less able to cool their body temperature by shunting their blood from their body core to their body surface due to lower cardiac output and smaller blood volume.
- Sweat production – Children produce less sweat per gland and sweat at higher body temperatures than adults.
- Fluid replenishment – Children are less likely to self-regulate hydration if unsupervised.

Children experiencing heat illness are most likely to present with significant neurological symptoms- from delirium, hallucinations, poor muscle control and unsteady gait, difficulty with speaking or unclear speech to seizures or coma. These symptoms may be readily confused with head trauma, epilepsy or drug overdose. Mortality is high and if a child survives heat stroke, their risk for recurrence of heat illness is increased.

As temperatures rise, the more toxic chemicals will be released and available via inhalation and more microplastics be released and available for ingestions and inhalation. As the body heats, it is susceptible to absorbing more chemicals. PFAS has been shown to be absorbable via the skin.

Synthetic turf fields create massive heat islands, extending beyond the foot print of the field itself, impacting all who are nearby and even extending into neighboring residential areas.






GREENHOUSE GAS EMISSIONS:

Title 14. Natural Resources. Division 6. California Natural Resources Agency
Chapter 3. Guidelines for the Implementation of the California Environmental Quality Act
Article 1. General
§ 15004. Time of Preparation
(2)

*"…public agencies **shall not** undertake actions concerning the proposed public project that would have a significant adverse effect or **limit the choice of alternatives** or mitigation measures, before completion of CEQA compliance."*

*"In determining the significance of a project's greenhouse gas emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. **The agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes.**"*

Synthetic turf off gases methane and ethylene in increasing amounts. 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 those found in our waterways and oceans. Synthetic turf fields create massive toxic heat islands:

- Heat islands are significantly larger that the footprint of a synthetic field
- All aspects of each individual blade contribute to the overall size of the heat island
- There are ~60,912 plastic blades per square yard

A 2017 Swedish study of total life cycle emissions on a modeled 7881m² synthetic field concluded GHG emissions would be 527 tons of CO_2E (carbon dioxide equivalents) over a ten year period. This is exclusive of any emissions attributed to manufacturing, tree felling, stump removal and excavation required for construction. It is also exclusive of the polluting effects of transportation to the work site and diesel powered heavy machinery for multiple weeks, ultimate removal and transportation to a final, not interim, disposal site. It is exclusive of the emissions produced in manufacturing and the 450+ years the turf will continue to off gas while it continues to degrade.

The emission of methane, ethylene, ethane and CO_2 from 10's of thousands of yards of plastic grass carpeting must be accounted for. In a life cycle analysis, emissions from manufacturing, transportation to the work site, the number of years of its "useful" life, transportation to site of final, not interim, disposition and the hundreds of years to decompose should be included.

The choice of a plant based infill would add an additional 70% to the GHG emissions. The specified TrueFill blend is coated and is a microplastic. It is mixed with large quantities of silica sand. Silica sand has been on the CA Proposition 65 List since 1988 due to cancer risk via inhalation…which athletes will be exposed to.

Plant based infills add excessive nutrients to the soil and water table. The excessive nutrients, synthetic turf and microplastics are implicated in the increasing frequency of toxic algal blooms and red tides.

With CA no longer in drought status and the availability of hybrid grasses able to thrive in all climatic zones, the failure to consider natural grass makes the alternatives, a CEQA requirement, and save taxpayer monies even more unacceptable.

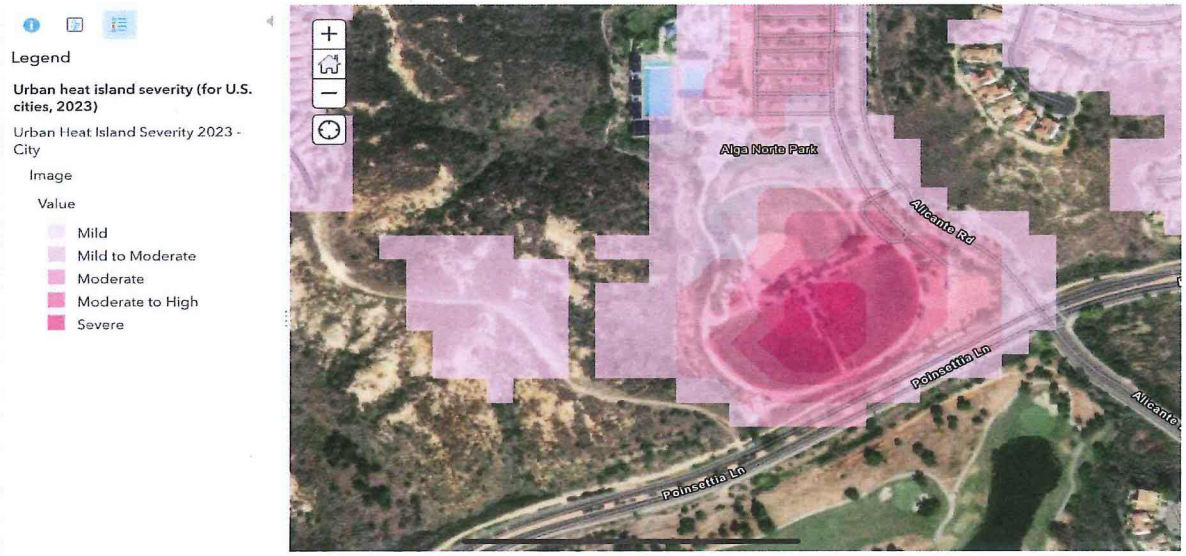
Industry claims regarding pesticides, maintenance and water usage are outdated, disproven, and perpetuates disinformation. Organic field maintenance has been proven to save money over time. There are electric mowers capable of mowing two acres on a single charge. There are even electric chalk markers that can be operated remotely.

The Lawrence Berkeley National Laboratory released a report in April 2024 finding that the greenhouse emissions from plastics is four times those emitted by the aviation industry.

Emissions from synthetic turf *must* be added back into Carlsbad's Climate Action plan.

Stagecoach Park, La Costa Canyon HS ⬆️ ⬇️

Alga Norte Park



https://www.arcgis.com/home/webmap/viewer.html?webmap=339c93a11b7d4cf7b222d60768d32ae5

INJURIES:

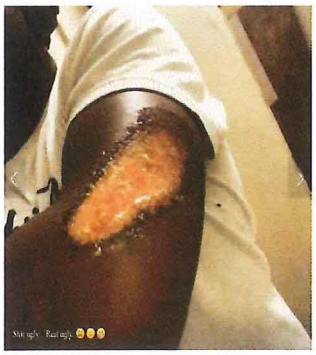
In addition to increased risk from thermal burns and heat related illness, in independent peer reviewed research shows an increased risk for non-contact lower extremity injuries and concussions, particularly for children- playing on synthetic turf is a contributing factor.

> *"The available body of literature suggests a higher rate of foot and ankle injuries on artificial turf, both old-generation and new-generation turf, compared with natural grass. High-quality studies also suggest that the rates of knee injuries and hip injuries are similar between playing surfaces, although elite-level football athletes may be more predisposed to knee injuries on artificial turf compared with natural grass.* ***Only a few articles in the literature reported a higher overall injury rate on natural grass compared with artificial turf, and all of these studies received financial support from the artificial turf industry.****"*

Professional players across multiple sports are calling for a return to natural grass. Elite soccer players will not play on plastic turf and the National Women's Soccer League sued in order to play on natural grass.

Exposure to Methicillin-resistant Staphylococcus aureus (MRSA) and other bacteria are a potentially life threatening consequence of dermal abrasions, known as turf burns, due to friction on synthetic turf.

- 315,000 to 850,000 concussions every year occur among high school athletes.
- Repeated concussions increase risk of Chronic Traumatic Encephalopathy (CTE)/
- The Concussion Legacy Foundation reported that repetitive brain trauma is associated with CTE and has been found in 17 year olds. 41.4% of athletes under age 30 show signs of CTE.
- In high school American football players, concussions occur when head impacts approach 95 g.
- For youth American football players aged 9-14; 62.4 ± 29.7 g was the threshold for concussions.
- Research published Jan 2024 showed significantly greater impact deceleration on synthetic turf compared to natural grass surfaces, showing greater potential for concussions on synthetic fields.
- Newer synthetic turf fields require a greater fall distance to attenuate head to surface impact, which again, puts children at higher risk.



How often is Carlsbad testing for hardness (GMax testing or other) or heat on its synthetic turf and playground surfaces and equipment?

RUBBER AND OTHER SURFACING:

Chemical binders used for used tire crumb (Poured-in-Place; PIP), **ethylene propylene diene monomer rubber** (EPDM) and thermoplastic vulcanisates rubber (TPV), wood mulch and cork PIP surfacing contain toxic and carcinogenic chemicals, including, but not limited Chemistry and Analytical Sciences (CAS) registration numbers :

- Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer; CAS #53862-89-8;
- Diphenylmethane Diisocyanate, isomers and homologues; CAS #9016-87-9;
- 4,4'-Methylenediphenyl diisocynate; CAS #101-68-8.
- "…*polymeric binder is selected from the group comprising polyurethane, polyester, polyether, polyacrylate, polystyrene,* ***polyvinyl chloride****, polyvinyl acetate, acrylic polyesters, polyethylene, polypoxide, silicones, of synthetic origin, natural or combinations thereof. Preferably, the polymeric binder is polyurethane.*"

Polyvinyl Chloride (PVC) is used extensively in the manufacturing of plastics. Made of vinyl chloride monomers, it has been on the CA Prop 65 list since 1987 as a category 1 cancer causing agent.

Nearly 60% of PVC is chlorine and has significant human and environmental effects from dioxins, furans and carbon tetrachloride, It wasn't until March 2024 that the United States banned use of asbestos in chlorine.

PVC also contains **phthalates** and per- and Polyfluoroalkyl substances (PFAS). Like PFAS, phthalates are endocrine disrupting chemicals. They are also potent neurotoxins. Like lead and PFAS, there is no safe level of phthalates.

The US EPA has begun the process of banning PVC.

It should be noted that so-called "natural rubber," whether in mulch, shredded, tile or mat form, is still a petrochemical synthetic plastic and contains many of the chemicals found in tires, minus the debris from road use. Natural rubber, in this context, does not come from the sap of rubber trees. They are equivalent to EPDM) and TPV. Chemicals in such products may contain:

- Antiozonants
- Benzene
- Benzothiazole (BT)
- Cadmium
- Carbon Black
- Short (SCCP) and long chain (LCCP) chlorinated paraffin
- Colorants
- Copper
- Dicyclopentadiene (DCPD)
- 1,3-Diphenylguanidine (DPG)
- Ethylene
- Ethylidene norbornene (ENB)
- Flame retardants
- Formaldehyde
- Hexamethoxymethylmelamine (HMMM)
- Latex
- Lead
- 2- Mercapto- benzothiazole (MBT)
- Mercury
- Phthalates
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Propylene
- Triclosan
- UV stabilizers
- Vinyl norbornene (VNB)
- Vulcanizors
- Zinc

Additionally, these chemical binders do not "bind" for long. They break down even more quickly in hot, humid and wet environments.

In addition to runoff of the toxic and carcinogenic leachate, PIP surfacing quickly degrades into loose microplastics, increasing risk to soil, water, wild and aquatic and plant life. Greater than 1,500 species have been found to consume microplastics.

COSTS:

Ranging upwards of $1.2 million for a 72,000 sq. ft. synthetic turf field, $1,0 million plus for a single top to bottom plastic playground, and probably a like amount for the highly toxic plastic track, these are very poor investments for short lived products. It is also oddly perverse to expect taxpayers to fund items that are toxic to their children, all park goers, and negatively impacts biodiversity and the environment for generations to come.

Hidden costs for synthetic turf alone include:

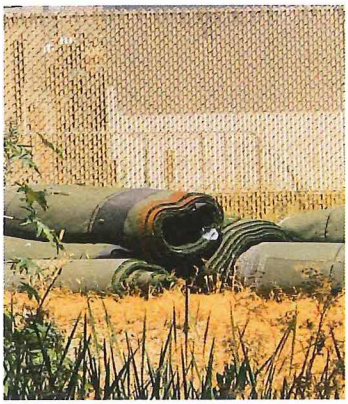
- Infill replenishment- required to maintain GMax score (1.5 to 5 tons/year).
- GMax hardness testing ($1500/field).
- Repairs.
- Cleaning.
- Maintenance.
- Removal and transport.
- Replacement - future higher costs, if not prohibited by law and/or regulation.
- Disposal- landfilling at hazardous-waste facilities may be required in the near future.
- legal expenses related to lawsuits (injuries; violations outlined above).
- Change orders (logos; blade length or density; changes in infill or shock pad thickness; colors.

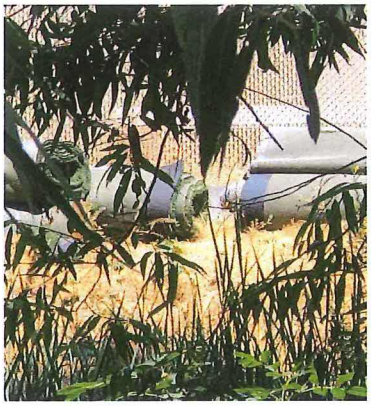
Not recyclable:

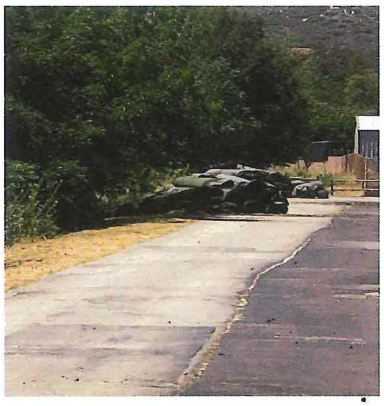
Less than 6% of plastics are recycled. Made of mixed plastics, synthetic turf is not recyclable, not sustainable and is a linear, not a circular, product.

Claims of recyclability are false. Chopping up ol plastics, whether plastic fields, playgrounds equipment or shade sails would only hide toxic chemicals in lower quality products, require more virgen plastic, more PFAS and other highly toxic chemicals. Playground surfaces, sails and playground equipment are landfilled. Most landfills and carpet recyclers do not accept synthetic turf. What isn't landfilled is often improperly disposed of on agricultural land or stored in warehouses.

200 Rolls of old turf at 2,000 lbs. each, from San Pasqual High School stashed behind Escondido High School in April 2024. Still there July 6 2024.







Other locations:

NATURE BASED OPTIONS:

Failure of natural grass playing fields occurs when:

- **Attention is not paid to soil, root zone and understanding (natural) drainage capabilities**
- **No inclusion analysis of soil**
  Texture, nutrients, organic matter, living biome
- **Inappropriate selection of sod/seed for soil needs and climatic zone**
- **Proper maintenance doesn't take place**
- **Inadequate aeration (3 to 5x/yr.)**
- **No/inappropriate fertilization**

Organic/Regenerative management more cost effective over time

Reduces risk of liability for costly violation of US Clean Water Act
NPDES (National Pollution Discharge Elimination System) Permit

TRUE Costs from Natural Grass Experts:

Expectations drive decisions. Commitment drives success!!

Low End :
$3 - $5/sq. ft.
Native soil
irrigation
Crown with min. 1% gradient

Mid Range:
$5/sq.ft.
Native soil; amendments to 8" irrigation

$8 - $10/sq.ft.
Native soil
amendments to 8"
irrigation
drainage system
sand cap

High End:
$12 - $13/sq.ft.
"All the bells and whistles"

Amortized over 24 years, a high end field with all of the "bells and whistles" would cost
$43,333 per year

Safer nature based options:

Playground surfacing

- Engineered Wood Fiber (EWF)
- Wood chips/bark
- Sand
- Pea gravel

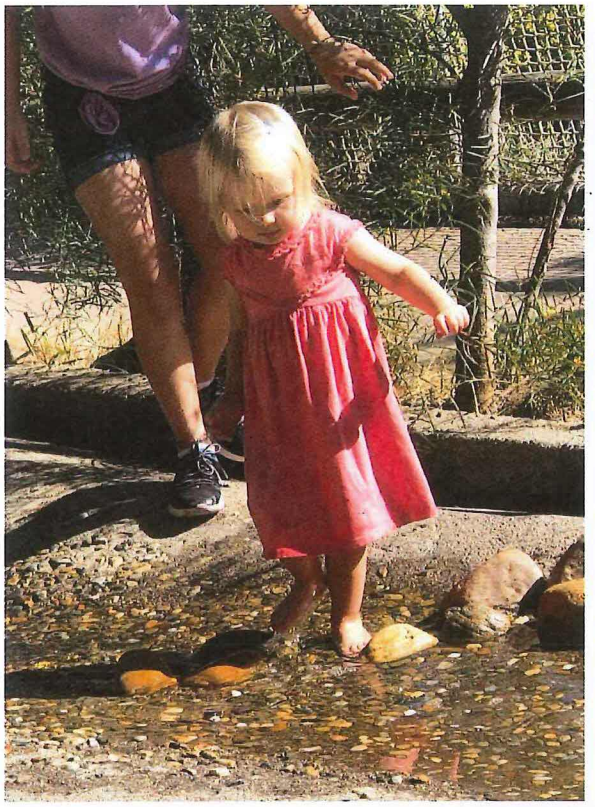
Playground equipment

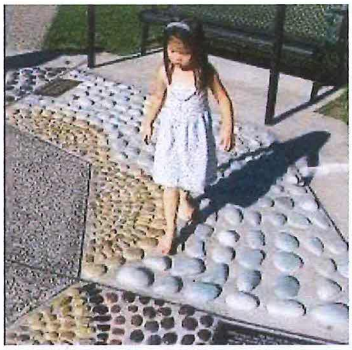
- Natural wood elements
- Endless options
- Customizable
- Challenge balance, coordination
- Stimulate senses
- Foster imagination; creativity

Shade options

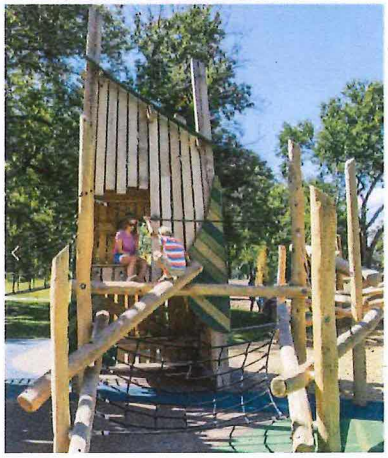
- Canopy trees
- Pavilion structures
- Pergola structures
- Solar structures

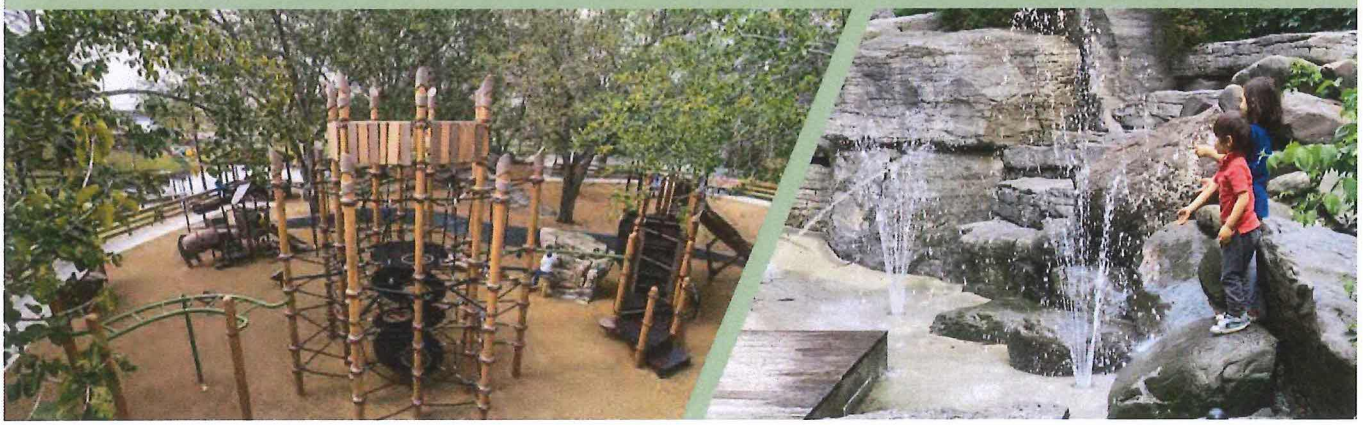
****Young children are particularly vulnerable to chemical exposure due to developmental windows****

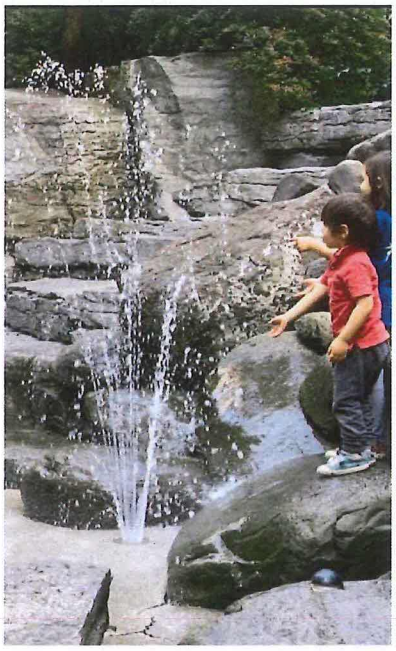


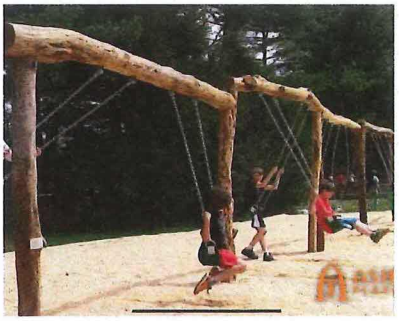


Remember when you had an imagination?





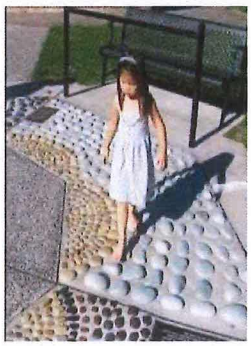




LAST CHILD IN THE WOODS

SAVING OUR CHILDREN FROM NATURE-DEFICIT DISORDER

RICHARD LOUV



Synthetic turf and plastic playgrounds are poor $$$ financial $$$ investments. Natural grass and playgrounds are an investment in people the environment and the future.

SHPFI urges you to provide transparency and clarity on what is potentially hidden behind terms used in the Robertson Ranch Park plan, as well as the toxicity of plastic products and what such materials would mean under CEQA as multiple and cumulative effects:

- Multipurpose field
- "Traditional playground"
- "Nature ***inspired***" playground
- Shade structures

We strongly urge Carlsbad to invest in people, the environment, and the future. Your grandchildren's grandchildren will thank you for not leaving them with toxic plastic waste.

Respectfully submitted:

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

SAFE HEALTHY PLAYING FIELDS

BEYOND PLASTICS
AFFILIATE

Tammy Cloud-McMinn

From: Campbell Family <campbells5@roadrunner.com>
Sent: Monday, July 22, 2024 3:10 PM
To: City Clerk
Subject: Robertson Ranch Park design

I think the Robertson Ranch Park design looks GREAT!!! I'm very pleased with how they brought all the design concepts together!
Kathy Campbell
(27-Year Carlsbad Resident)

Tammy Cloud-McMinn

From: Kathy Parker <casparker@outlook.com>
Sent: Monday, July 22, 2024 3:25 PM
To: City Clerk
Subject: Robertson Ranch Park

Members of the council, I'd like you to reconsider the decision to use artificial turf on the new Robertson Ranch Park. After doing some research, I'm convinced it's unhealthy both for the people who use it in the environment. Synthetic turf contains toxic metals, including zinc, lead, arsenic, cadmium, and chromium. The incident of injuries to athletes using these fields are higher than those sustained on grass. It restricts access to natural materials like leaf litter and grass clippings, essential for soil health.

For the sake of brevity, I'll not further elaborate the many reasons, the use of artificial turf is not in the best interest of Carlsbad citizens. There are many credible articles available on this subject that I urge you to explore.

Thank you,
Kathy Parker
3784 Skyline Rd
(47 year resident of Carlsbad.)