



May 1, 2017

Dear members of the JPA,

Albany-Berkeley Soccer Club is the oldest and one of the largest youth soccer organizations in the East Bay. And we've been closely watching the plans to replace the Gilman turf fields this coming winter. We appreciate the work the City of Berkeley and their consultants, Carducci and Associates, have done to objectively evaluate the options available to us.

Representing our kids and their families, we feel compelled to strongly advocate for the installation of modern shock pad technology, as indicated by the independent consultants. As you know, an awareness of the risk of concussion is growing, and this awareness is changing how we play. In soccer, approximately 1/3 of concussions come from a player's head striking the ground. This risk can be substantially mitigated by installing a shock pad, and reducing the extreme g-forces experienced in an impact.

A recent 2016 study, published in the British Journal of Sports Medicine and reported by Scientific American, put the risk of concussion in soccer at about 1 injury in 2,000 "Athletic Experiences" (AEs), defined as one player experiencing a game or a practice. The Gilman turf fields are well used and provide around 200,000 AEs in any given year. This means there are likely as many as 100 concussions experienced on the turf fields in a given year, with 31% of these coming from a head striking the ground.

So, more than thirty concussions each and every year on the Gilman turf fields could be mitigated with a shock-pad. Most concussions require athletes to miss between one and three weeks of play. In about 3.5% of concussion cases, a player is medically disqualified for an entire season or more.

Of course, there are other benefits to installing a fully modern field system: (1) the ability to inexpensively support green cork infill instead of the dreaded black tire-pellet infill and (2) reduced shock and injury to joints and tendons.

But concussion risk is very quantifiable and significant. These can be severe life-changing injuries.

Ten years ago, we weren't aware of the dangers of concussion. Now we are. We have the medical facts and we have the statistics. Given this knowledge, we believe it's both ethically and legally imperative to install a shock-pad to insure our kids are protected to the most modern standards when their heads strike the ground. Anything less is simply unacceptable.

Thank you,

- Toney Wright and the ABSC Board of Directors.

P.S. The Scientific American reporting on concussion rates can be found at:

U.S. High School Soccer Concussions on the Rise

<https://www.scientificamerican.com/article/u-s-high-school-soccer-concussions-on-the-rise/>

The City of Berkeley presentation included the 31% estimate on the number of soccer concussions from head-to-turf, which came from The Consumer Product Safety Commission's (CPSC) National Electronic Injuries Surveillance System (NEISS). This data also shows that 3.5% of high school soccer players experience a concussion injury, or approximately 1% per year. Since these data are all self-report or school-report, the CPSC writeup says that it's likely the data are still underreported. But these numbers support the high rates of injury cited in the BJSM study above.

The City of Berkeley presentation also includes the following background on the developing industry standards:

- A "G-Max" of 200g is the standard the American Society of Testing Materials currently observes for when a field must be closed for repair.
 - Turf industry guidelines are saying that any artificial turf should be less than 165g. There are industry observers saying the standard really should be 130g.
 - The city's consultants have seen many crumb rubber fields that test over 165g. Gilman turf tested at an average of 185g in 2012, and over 200g in several places, just four years after its 2008 installation!
 - Pad companies warranty the performance of the field with a pad to being less than 135g for sixteen years -- two installation cycles.
 - The range for natural turf has been measured at 78 - 115g's.
- (Note: An impact of 200g means a concussive force of 200 times the force of gravity.)



May 14, 2017

Dear Members of the JPA for the Tom Bates Regional Sports Complex:

Mavericks Soccer Club is a Berkeley-based soccer club serving boys and girls, ages 9-19, and includes hundreds of families who live within the five JPA cities. We are writing to raise our concerns regarding the condition of the Gilman fields, aka Tom Bates Regional Sports Complex.

We are aware that the JPA plans to replace the current artificial turf later this year. We support that decision. Later in this letter we will recommend that the JPA install a "shock pad" beneath the new turf to make the new fields safer.

But we believe there is a potentially more urgent matter. We have been recently informed that a 2012 study of the field's surface hardness, known as GMAX testing, concluded that sections of the field may not be within safe limits. A GMAX rating in excess of 200 is considered unsafe. There were two zones at the Gilman fields with GMAX ratings that exceeded 200 in 2012. To our knowledge, no further study has been done since then. We believe this study should be updated promptly to assess whether the fields pose an unacceptable safety risk, and if so, whether they should be closed before construction begins on the new fields.

As for the new fields, we strongly recommend that the JPA install a shock pad beneath the new turf to mitigate risks of concussions and other impact-related injuries. There is growing data and understanding of the dangers of concussions, both to adults who use the fields but especially to our children. We therefore believe an ethical imperative exists to mitigate these risks through currently available materials, technology and best practices, including installation of a shock pad.

In addition to making the fields safer, installation of a shock pad will allow the JPA to select an alternative to crumb-rubber infill. While potential risks associated with crumb-rubber requires further research, the planned turf replacement, along with a shock pad, provides an opportunity to install a comparably priced "green" alternative infill.

Concussions can be permanently debilitating. Although not all risks of injury can be eliminated from rigorous sports, the JPA has both an opportunity, and an obligation, to prioritize safety when considering the current use of the Gilman fields, and planning for the next 10+ years of use of these fields. Therefore, we urge the JPA (1) to promptly commission an update to the 2012 GMAX study to determine whether the current fields can continue to be used safely before they are replaced; and (2) to install a shock pad beneath the new artificial turf.

Thank you.

Board of Directors, Mavericks Soccer Club
<http://accmavericks.com/contact-us/board-of-directors>

SYNTHETIC TURF REPLACEMENT PROJECT
AT TOM BATES REGIONAL SPORTS COMPLEX, BERKELEY, CA
Community Emails Submitted to City of Berkeley

(Last Updated 5/17/17)

#1 - Received 10/13/16 by J.B.

It is great news that Gilman Field is going to put in new turf in January of 2017!

I'm so glad, as it really needs to be re-done.

This is a great opportunity to consider alternatives to recycled tire (rubber crumbs) which might pose health risk for our kids and have a negative environment impact.

Not only is it bad for the environment, but turf gets into our kids' cuts, eyes, socks, shoes, our cars and homes. Players also accidentally inhale it, especially goalies. Since they have known carcinogens, this cannot be good.

We found this safe natural alternative to the commonly used tire pellets for soccer turf fields, called GreenPlay. Here is the website. Some other Bay Area soccer fields are already using it on the peninsula and in SF. We are very excited about it. <http://www.greenplayusa.com/>

Professional female soccer players are now refusing to play on turf, just like the professional men have refused for many years, http://www.nytimes.com/2015/12/09/sports/soccer/on-turf-us-women-dig-in-their-heels-at-last.html?_r=0

Here is another article that raises concern about crumb rubber.

https://www.washingtonpost.com/local/artificial-turf-is-getting-a-closer-look-after-a-report-raises-safety-concerns/2015/09/22/fcf6a0ee-5649-11e5-abe9-27d53f250b11_story.html

Berkeley is well known for being a City that cares about the environment and the welfare of his citizens. This will be the perfect opportunity do demonstrate it by using a safe material to re build the Gilman turf field were millions of kids and adults will play soccer and other sports for many many ours over the useful life of the field surface.

It's better to be safe now than sorrow later and don't gamble with the health of our kids.

Thanks for your consideration in this very important matter.

#2 - Received 10/13/16 by N.F.

Our growing group of parents would like to do our best to represent East Bay voices of concern over the current rubber material and our plea to Berkeley to move towards healthier options. With this in mind, please keep us informed regarding when and how we can be integrated into the process of making this important decision regarding the turf.

Please do not hesitate to let us know things we can do to help support the change to actually being a healthier option for our community. We are prepared to do the leg work and have access to many parents and clubs that use the fields. We look forward to hearing from you.

#3 - Received 10/13/16 by N.F.

I am a Berkeley parent who has two boys who love to play soccer and do so most days out of the week. I, along with a growing group of other parents heard that the city of Berkeley will be replacing the turf at Gilman Fields and am grateful for that plan.

I have read several articles about the growing understanding of the link between rubber turf and it's negative health impact on soccer players and specifically goalies. My oldest son is a goalie. You may be able to imagine how concerning this is to our family.

Below I have attached some articles that I was able to come up with quickly regarding the toxicity of turf and the growing understanding that there is a link between turf and our youth getting diseases like cancer as a result of continued exposure. Turf gets into our kids eyes, socks, shoes, bathtubs, all over our house (affecting babies and animals), and in cuts/scrapes.

Aside from the likely negative impact rubber turf has on our players, it is bad for the environment! I know Berkeley is greatly committed to caring for our environment.

This updating of the turf at Gllman is an important opportunity to consider alternatives to recycled tire (rubber crumbs) that will both be safer for our youth and for our environment.

The research our concerned parent group has done regarding turf and it's adverse affects on infants, adolescents and teens has led us to find this safe natural alternative to the commonly used tire pellets for soccer turf fields, called GreenPlay. Here is the website. Some other Bay Area soccer fields are already using it on the peninsula and in SF. We are very excited about it. <http://www.greenplayusa.com/>

Professional female soccer players are now refusing to play on turf, just like the professional men have refused for many years, <http://www.nytimes.com/2015/12/09/sports/soccer/on-turf-us-women-dig-in-their-heels-at-last.html? r=0>

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Berkeley is well known for being a City that cares about the environment and the welfare of his citizens. This will be the perfect opportunity do demonstrate it by using a safe material to re build the Gilman turf field were millions of kids and adults will play soccer and other sports for many many ours over the useful life of the field surface.

It's better to be safe now than create likely sorrow down the line. I plead with you to not use our children as an experiment gone wrong. We don't need more formal studies to show that rubber is awful for the environment and is affecting our youth's lives.

Thanks for your consideration in this very important matter.

#4 - Received 10/13/16 by R.W.

I have recently heard that the rubber pellet turf currently used at the Gilman Fields will be replaced in about a years time. I am so glad to hear that this turf is going to be replaced and I only wish it was being replaced much, much sooner.

As a parent of an 11 year old boy who uses the fields four or five times a week, I am very concerned at the links being made between this rubber turf and cancer, particularly lymphoma and leukemia. It is also alarming to see that there are significantly higher rates of cancer in

goalkeepers who play on this type of turf. They are much more likely to be on the ground and potentially get these little rubber pellets in their mouths or cuts and scrapes.

I am writing to urge you to not only bring forward this replacement but also to use a safe natural alternative to the commonly used tire pellets. One alternative that many parents in the Berkeley/El Cerrito/Albany/Oakland area have heard about is Green Play. Here is the website. Some other Bay Area soccer fields are already using it on the peninsula and in SF. We are very excited about it. <http://www.greenplayusa.com/>

At a professional level, this type of turf has been almost completely rejected. Did you know that professional female soccer players are now refusing to play on turf, just as professional men have refused for many years http://www.nytimes.com/2015/12/09/sports/soccer/on-turf-us-women-dig-in-their-heels-at-last.html?_r=0

It is not hard to look online and find many, many articles of high quality investigative journalism that raise growing evidence of this link between cancer and the rubber pellet turf.

I urge you to not only bring this project forward in time but to seek a healthy and safe alternative for our children and the environment.

I look forward to hearing from you.

I want to re-iterate my concern to you directly about the current rubber pellet turf - it seems like a law suit waiting to happen and one that no party would want to face. I would urge you to bring forward the scheduled replacement of the turf on the grounds of such significant research and obvious concerns at the number of children developing cancer having played on (and possibly inhaled) this rubber. Please do check out or connect with <http://www.greenplayusa.com/>

Please do keep me posted with the schedule and let me know if it can be updated given the possibility of such grave consequences for our children, the city and the environment. An ever growing number of parents are not relishing the thought of having their children play on this turf for a further year given what we now know.

#5 - Received 11/12/16 by S.B.

I am a concerned Spurs parent who is working closely with L.K. on the issue of putting in a safe alternative to crumb rubber at the Tom Bates Regional Sports Complex. She forwarded your recent email to me. Thank you for the information about what is being considered for the black crumb rubber infill alternatives. I am glad that we are starting to have a productive conversation about this concern that is shared by many parents and adult players.

I began emailing various City of Berkeley contacts in November of 2015, but I was disappointed with the responses. While some say there is no study linking the pellets to specific health issues for people using crumb rubber, the anecdotal evidence is strong and it is bad for the environment. Also, turf gets into our kids' cuts, eyes, socks, shoes, our cars and homes. Players also accidentally inhale it, especially goalies. Since they have known carcinogens, this cannot be good. We do not want to wait until a soccer player gets sick, and we only wonder if it is from the crumb rubber pellets. Please be proactive before it is too late.

We found this safe natural alternative to the commonly used tire pellets for soccer turf fields, called GreenPlay. Here is the website and a brief overview. (see attachment) Some other Bay Area soccer fields are already using it on the peninsula and in SF. Also, Berkeley can still use the same turf installer to put in the GreenPlay, as GreenPlay ships the product to be installed.

We are very excited about it. <http://www.greenplayusa.com/>

I know that this is a huge decision, and that you are only in the preliminary stages. Please consider using an infill that is made of coconut fibers and cork. GreenPlay has ideal Gmax ratings, superior foot stability and pressure distribution, is 100% recyclable (no end of life infill disposal costs), highly durable, low temperatures, organic, odor-free, non toxic and mold resistant, highly permable for drainage, less abrasive and safer for athletes and resistant to compaction.

Professional female soccer players are now refusing to play on turf, just like the professional men have refused for many years, http://www.nytimes.com/2015/12/09/sports/soccer/on-turf-us-women-dig-in-their-heels-at-last.html?_r=0

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Since we now know that the turf will be replaced in Winter of 2017, we want to make our concerns heard. We have a quickly growing list of concerned parents and adult players who we are working with. See list below.

#6 – Received 12/7/16 by S.B.

I've been finding many more articles that make very strong arguments to find a safe alternative to crumb rubber. I wanted to share them with you all before the meeting you're planning for the beginning of 2017. I am also sharing these articles with the concerned parents and adult players at Gilman. I am cc'ing 3 of the concerned parents.

The articles talk about the real concern about cancer, safety concerns with the heat and the environmental impact.

Here are three that focus on cancer.

http://www.ehhi.org/turf.php/cancer_patterns_1114.shtml

Above link leads to an article that describes cancer patterns among soccer goalies who played on synthetic turf fields

<http://www.forbes.com/sites/mikeozanian/2016/03/28/professor-identifies-cancer-causing-chemicals-in-artificial-turf/#6ec9f6ef7fdd>

Above link leads to an article written in Forbes regarding identification of cancer-causing chemicals in SRB

<http://www.ctpost.com/local/article/Parents-warn-of-dangers-from-crumb-rubber-6834771.php>

The above link leads to parents and state representatives warn of dangers from crumb rubber play fields.

Thanks so much for your time on this issue.

#7 – Received 12/8/16 by S.B.

I look forward to hearing back from you about the articles and a meeting. I have many more articles, but I didn't want to send too many at once.

Lucy said that you all are considering Polymer encapsulated green rubber. This is one of the things that we would like to talk to you about in a meeting. Since this is just coated recycled tire pellets, we are asking for a different infill, as this is the same crumb rubber, just encapsulated. Lucy found this link about it:

http://www.cushionfallsport.com/wp-content/uploads/2011/11/CushionFall-Sport-Specification_2011.pdf

What else are you considering? This discusses the various types of infill. Maybe you've already seen this link:

<http://sturf.lib.msu.edu/article/2012jan36.pdf>

I found this on that link:

ORGANIC INFILL There are several organic infills available in the North American market, all utilizing different organic components, such as natural cork and/or ground fibers from the outside shell of the coconut. These products can be utilized in professional sports applications as well as for landscaping. At the end of its life cycle it can be recycled directly into the environment.

*I've heard that the extra cost needed to pay up front to put in this infill, is saved in the end with no cost to dispose of the old crumb rubber.

thanks again for your time! :)

#8 – Received 1/16/17 by J.B.

My name is Jayden. I play soccer for the Spurs. I found out about the infill replacement at Gilman Fields and I ask you to please not use crumb rubber for the new fields. My parents said that it has chemicals that can cause cancer and I don't want me or any of my friends to get cancer or anything bad like that. I have seen little kids throwing it at each other and rolling around in it. Before we new it was toxic me and my friends even used to chase each other around and dump it in our hair. I don't like it personally because it gets in my hair, my socks, my eyes, my cuts, my cleats, my soccer bag, and all over my house. One time I even found my dog coughing it up. Also when I do a slide tackle or fall over or anything like that I can get cuts because sometimes there are sharp pieces of it on the fields. Anyway thank you for considering a safe infill instead of a toxic sharp one.

#9 – Received 1/25/17 by F.M.

Non-Toxic filler for Tom Bates fields

#10 - Received 1/26/17 by S.P.

I am a Berkeley resident and a parent of a soccer goalkeeper. As such, our son, between training and competition, spends more time than most on the ground. I understand that there will be a community meeting Saturday to discuss the resurfacing of the Tom Bates (aka Gilman artificial turf fields). I just wanted to give you a heads up and make a request: the heads up is that you can expect discussion of the Amy Griffin University of Washington informal study. The request is that whoever is leading this discussion come prepared to discuss the alternatives studied and make a compelling case any direction the city is leaning in.

For your information, we (my wife is a physician) have read all the state studies (and some European studies) and tried to find epidemiological studies in the journals. We do not tend to participate in the hysteria, but feel that it is worthwhile to note that while the small sample state studies have failed to document a strong causal effect, it should also be noted that a large sample, long term epidemiological study has not yet been conducted so it cannot yet be said that no effects exist. We are all about judicious appropriation of city funds but it should be noted that Berkeley voters have consistently voted for funding measures to improve city facilities. We would like the city to make an OPTIMAL choice that balances cost against player and environmental safety. FWIW, when the City of Petaluma recently resurfaced three playing fields, they were able to switch to cork (which, by the way, also qualifies for LEED credit) for only a 4.5% increase in overall project cost.

I look forward to hearing what you have to say at the community meeting.

BTW can you share the time frame, selection criteria, and proposed budget for the project? Do you all have a short list for infill materials or are you guys just starting the process? Has anyone spoken to the City of Petaluma about their selection process and how they came to a decision? I know that, in the past couple of years, they did at least three field resurfacing projects.

Thanks! May I suggest adding the West County School District in Sonoma? They had two fields (Analy and El Molino) resurfaced recently.

[http://www.pressdemocrat.com/sports/4362714-181/new-casa-grande-field-to Casa Grande High School in the Petaluma City Schools district did a similar project.](http://www.pressdemocrat.com/sports/4362714-181/new-casa-grande-field-to-Casa-Grande-High-School-in-the-Petaluma-City-Schools-district-did-a-similar-project)

In case it helps, I found the following files (presentations, vendor questionnaires, etc.) from when the Piedmont School District conducted a similar project in 2009.

<http://www.piedmont.k12.ca.us/forms/turf/>

#11 – Received 1/29/17 by A.M.V.A

I am writing to express my support in exploring a safer turf alternative on the Gilman Fields. I was not able to attend the meeting on 1/28, so I am writing to share my concern in finding an alternative to recycled crumb rubber.

Thank you so much for listening to our concerns,

#12 – Received 1/29/17 by H.B.

Thank you for listening to the concerns of parents, coaches, and children who utilize the Gilman sports complex regarding the upcoming artificial turf replacement that is being planned.

I was unable to attend the meeting yesterday but wanted to offer my support your consideration of a non-toxic, non-carcinogenic alternative to the recycled tire rubber crumbs that are currently in use at this field.

My two children utilize this field heavily; they play soccer for ABSC and the Spurs and have regular practices, games, and summer camps at these fields.

Please protect our children's health by replacing the worn turn with a non-toxic alternative.

#13 – Received 1/29/17 by S.B.

Nice to meet you in person on Saturday. Thanks again for taking the time to meet.

Here are the articles I told you that I'd send. Can you pass these onto the researchers as well?

<http://www.usrecallnews.com/concerns-playing-field-safety-may-lead-future-class-action-lawsuits/>

Possible class action lawsuits should EPA results deem crumb rubber unsafe.

<https://www.carlsonattorneys.com/news-and-update/crumb-rubber-turf-war-brewing>

Attorney advertisement: The Carlson Law Firm has a team of attorneys experienced in cases involving toxic chemicals and product liability. If you or someone you know have been diagnosed with cancer and have had exposure to crumb rubber, you might have a case. We protect victims nationwide. Contact our office for a free consultation at any time, we are available to assist you 24/7.

<http://www.bna.com/playing-fields-canceran-n57982081984/>

Another attorney advertisement for future litigation for crumb rubber exposure

<http://www.rxinjuryhelp.com/artificial-turf-lawsuit/>

Attorney advertisement for Hodgkin's lymphoma and leukemia due to crumb rubber exposure
Bernstein Liebhard LLP, free, no-obligation legal reviews

#14 – Received 1/31/17 by R.D.

I'm writing you because I have two daughters and I'm very concerned for their health. For 8 months of the year (including summer soccer camps) they practice at Tom Bates turf fields. When I attended the community meeting last week, I was SHOCKED to hear that the city is aware of the studies that suggest potential dangers to human health caused by crumb rubber (even city official refuses to allow his child on the turf field) and still considers crumb rubber as a viable infill agent for Tom Bates Sports Complex.

Do not gamble with our kids' lives. I have contacted our soccer club to voice my concerns and request to boycott Tom Bates in the event a toxic replacement like crumb rubber is used, forwarded them relevant research findings on the hazards/affects of crumb rubber infill, and editing an op-ed piece that I plan to send to Tom Bates and have published in our local newspapers.

Please do the right thing and use a non-toxic replacement at Tom Bates Turf Fields and avoid the pile of lawsuits destined to land in your lap. I await your response.

#15 – Received 2/6/17 by L.P.

Safe Turf PLEASE!

#16 – Received 2/27/17 by D.F.

I come at this from a very different perspective than simply which infill do we choose. 13 years ago when we, the athletic community, did the political work to get Gilman built, there was land for six fields, not the five that are there now- we ran out of money. Not only no sixth field but no permanent bathrooms, a dirt parking lot, concrete rubble along the western edge and on it goes.

In front of us tonight is yet another proposal for how our limited funds should be spent. Unfortunately I am struggling with why this proposal is even getting serious consideration.

First, while not in vogue these days, I am someone who still believes science. When an overwhelming number of scientists say that global warming is in part caused by man- I think policies should be based on that scientific evidence. The same follows here. The theory espoused by those who want us to spend \$300,000 on an alternative infill goes like this. Crumb rubber comes from tires, tires have a bunch of carcinogenic chemicals, using this material as infill is a health hazard.

But science says that this theory is wrong. There have been over 90 scientific studies of this issue and NONE of them, not even one, have supported the theory that crumb rubber is a health hazard. Just two months ago the Washington State Department of Public Health published a report detailing an investigation into soccer players' exposure to crumb rubber infill that is used to cushion turf fields. "Artificial turf fields are not causing an increased risk of cancer in soccer players. We are recommending that people who enjoy soccer continue to play soccer, regardless of the type of field surface," said Dr. Cathy Wasserman, state epidemiologist for non-infectious conditions for WSDOH.

The scientists at UC Berkeley, in a study funded by the State of California, determined that crumb rubber in artificial fields pose no health hazard. "PM2.5 and associated elements (including lead and other heavy metals) were either below the level of detection or at similar concentrations above artificial turf athletic fields and upwind of the fields. No public health concern was identified.

With regard to skin infection hazard "fewer bacteria were detected on artificial turf compared to natural turf. This was true for MRSA and other Staphylococci capable of infecting humans. This would tend to decrease the risk of skin infection in athletes using artificial turf relative to athletes using natural turf."

These are just excerpts from two of the many studies all echoing the same conclusion. I could almost stop here and ask all of you- "You don't believe in science? Here in Berkeley?" If science says there isn't a health issue on what basis are you even considering spending this extra \$300,000? Because you received emails from people expressing their fears about a theory that has been debunked by science?

Here is a good example of the email thinking from one of the people who is leading the charge encouraging people to inundate city staff and politicians about the infield mix. I quote. "My son is asthmatic and the fields at Gilman would trigger his asthma every time he played. There are a number of health concerns including carcinogens and I have no doubt that one can find research to support either side, but for me it isn't just research but real-life experiences. However, I think it is hard to contest the particulate matter that is associated with crumb rubber."

As a matter of scientific fact you can't find research that supports either side. You can only find research that supports one side. It isn't hard to contest the particulate matter associated with crumb rubber because there are multiple scientific studies that have determined that particulate matter is not an issue with crumb rubber. Finally this person has made the seemingly logical leap that her son experiences asthma attacks at Gilman thus it must be the infill that is causing the attacks. But this flies in the face of all the scientific research that says there is no connection- how can this be?

Fortunately we do have some specific experience dealing with this issue.

When we were pushing for the two Gabe's fields- air quality in the area was a major area of contention. Except that the athletic community was already operating playing fields adjacent to

Gabes and we weren't experiencing the supposed asthma attacks that the opponents said would happen if Gabes was built. But we were experiencing them at King Field just up the road. This got us wondering. So we investigated and found that the asthma attacks were being caused by the cinder track which encircled the field. It turned out that wind would pick up the small particulate matter that was in the clay which would trigger the attacks. This is not at all unlike the situation at Gilman where just west of the playing fields is a 100' strip of asphalt rubble. In the afternoon, when the kids are playing, the winds come off the bay and blow across the field to the point where we had to put up windscreens. Doesn't this seem like a more reasonable explanation for the cause of the asthma attacks than the assertion that the science is wrong? Perhaps the city could conduct an air quality study to verify that this is what is happening at Gilman. Rather than spending \$300,000 on something that likely will have no impact on her son's ability to play at Gilman, perhaps we should be spending \$100,000 to clean up the asphalt rubble and plant native plants so we can eliminate the small particulate matter that is the real cause of the problem (something proposed when the fields were first built but we didn't have the money).

Second, we aren't the first group to have this discussion. Let's look at a couple of recent high profile fields that confronted this same issue. SF Department of Parks and Recreation recently put in four artificial fields at the Beach Chalet. This project was regularly front page news. Probably the most environmentally litigated field project in the past twenty years. SF Parks and Recreation installed crumb rubber. UC Berkeley will be replacing the turf at Memorial this summer. What is the likelihood that UC would knowingly risk the health of their athletes by installing a product that had even a slight chance of turning out to be a health problem? Nobody in the university would support taking on this liability. They are installing crumb rubber. Even the person who represents the largest installer of artificial fields in the state says he has no problem with his three year old playing on fields with crumb rubber.

Third, the athletic community, the people who have put by far the most money in the operating reserve that is paying for this field replacement already met about this. It was done at a noticed, public hearing, city staff in attendance along with representatives of 100% of the groups that use these artificial fields- not just a small subset of people who have environmental concerns. Health issues were discussed, cork was discussed. The group decided not to spend an additional \$300,000 to put in an alternative infill but instead to spend an additional \$100,000 to have the infill coated with a virgin vinyl- thus encapsulating the crumb rubber and removing any chance of direct physical contact and off gassing.

Finally as the operational manager of this facility, the prospect of experimenting with some relatively new material or new supplier is not how this project has ever operated. This isn't some elementary or high school field. This is the busiest athletic complex in Northern California. This field is being replaced because it has simply worn out from all the traffic. To even bid on the initial job the turf supplier had to have 100 installs. The reason why these alternative infills are costing more is because the people who install these fields aren't comfortable with the lack of long term experience with these alternative infills so they require a pad under the field. There are now 21 fields in southern California that are being torn out because the alternative infill has failed. Will we come to find that some of the harvested cork or coconut husk has been sprayed with pesticides? In a discussion about fields in Napa someone who worked in the wine industry stated his concern about the cork molding because that is a constant issue in the wine industry. Will rainy weather combined with the high moisture content of the air by the bay result in a moldy field in a few years?

When science says the fields are safe, when the people who raised most of the money for the replacement say they don't want to spend all their money on this and there are already examples of alternative infill fields failing- why would you choose to ignore all this and spend not only an additional \$300,000 but the substantially increased liability of it failing?

#17 – Received 3/1/17 by R.W.

I am a Berkeley resident and have been informed that the Gilman Turf Field will be repaired this year? I have a son that plays soccer on the field regularly and would appreciate the city of Berkeley considering to replace the turf with a non-toxic replacement, made without recycled tire pellets.

#18 – Received 3/6/17 by S.B.

I hope you're doing well. Thanks for the info on the 3/25 meeting.

I know I've sent you all many articles, but I want to make sure you have read these.

<http://concordma.gov/DocumentCenter/View/1605>

Among other things, this article says the EPA no longer backs the use of crumb rubber. It also cites the carcinogens and the endocrine disruptors in crumb rubber.

<http://edge.rit.edu/edge/P11413/public/Crumb%20Rubber%20MSDS>

This talks about the fire hazards/toxic smoke exposure with crumb rubber along with exposure to the dust. It also cites a study about skin cancer from exposure.

#19 – Received 3/17/17 by T.G.

I am a parent of two youth soccer players. Over the past 13 years my kids have played in hundreds of games and put in even more hours of practice. The concerns expressed about the long term safety and health risks posed by fields like those at Gilman have me concerned enough that I would strongly advocate for the city to invest in a replacement material that does not pose such a health risk. While it hasn't been proved with 100% certainty that these rubber turf fields are definitely harmful, the risks outweigh the benefits and we don't want this to be yet another example of when we as Americans look back and say "Remember when we thought...." as related to our health and the environment. We are promoting health, exercise and recreation with these fields -- let's be more thorough about it.

#20 – Received 3/20/17 by L.K.

I'm a Berkeley voter and BUSD parent. My daughter plays soccer and has played softball at the Gilman Fields -- on both the grass and turf fields.

It's great that the turf fields will be replaced as they are definitely in disrepair.

I'm writing to urge the city to use a non-toxic turf product -- not crumb rubber -- in order to promote public health and protect the health of our young athletes.

#21 – Received 3/18/17 by N.R.

Please use a natural fiber when you redo Gilman soccer fields. My son plays there and I want what is best for the kids and the environment there! I've worked with you in a variety of public park and space issues in Berkeley.

#22 – Received 4/6/17 by D.F.

Word on the street is that you have an interest in promoting a \$300,000 pad. There would be two reasons for doing this. City perceived liability for not having a pad and user comfort. As for liability, I have managed

2 fields for twenty years, 4 fields for fifteen years and 11 fields for

8 years and I have had not one single claim against me or the city for any field condition related injury despite the fact that broken bones are not an infrequent occurrence. The person who sells Fieldturf products in Northern California has four indoor facilities and he hasn't had a concussion or field condition related claim in 20 years. For a city that self insures for most things, paying \$300,000 for an insurance policy in case something happens which has never happened before seems a little extreme. You should note that 99% of the fields that are out there don't have a pad and when these fields are replaced about 90% of them don't put in a pad. In fact, in professional and college settings they don't want pads under their carpets because it slows down the game and increases effort because you are compressing a soft surface to get firm footing. I don't know if you have ever walked on a professional baseball, soccer or football field but they are hard, not soft.

As for user comfort, as an old man, that's where my ears pick up.

Unfortunately, while there is some benefit in this area but it isn't overwhelming- perhaps best described as slightly better. I think we have better places to put \$300,000 than- slightly better.

MUCH BETTER in my opinion would be finishing the sixth field so we had that space. Also better would be real bathrooms. Another concept, probably better would be paved parking lots. At the ASFU meeting I will present all the above and have them take a vote on their priorities for how they would like the \$300,000 spent. It really should be the community who uses the facilities to let us know what they want rather than us telling them what they are going to get.

#23 - Received 4/11/17 by M.M.

I am writing to voice my support for safer infill at the Tom Bates Sports Fields. The existing turf is in a poor, unsafe state, and needs to be replaced.

As a soccer player who plays on those fields, I strongly desire a non-toxic surface replacement for the Gilman turf field - one made without recycled tire pellets.

#24- Received 5/13/17 by S.B.

We now have 316 signatures on our petition asking for non-crumb rubber infill. I will deliver the recent signatures that we have gotten since the 3/25 meeting before the JPA meeting.

Many people are making great comments. Here are a few.

From A.P:

I work in Berkeley and play on the Gilman fields at least 15 times/year. Recently a collision knocked me to the ground and the impact of my head on the turf nearly concussed me. I have previously had a concussion due to a similar fall on a similar, non-shock-padded turf field.

I am also very concerned about the tire pellets and connections with cancer. One benefit of cork pellets is that they are somewhat cooler than the tire pellets as well, so that on warm to hot days, the field doesn't get quite as hot as it does with the tire pellets.

Finally, the state of Gilman North right now is DEPLORABLE, and a liability waiting to happen, with the holes that expose more rubber pellets and plastic mesh that can catch a cleat and contribute to a nasty and expensive injury.

PLEASE upgrade these fields with safer pellets, a shock pad, and a new field top!

From E.S.:

I play soccer on a team in the GGWSL and we often play our Sunday games at Gilman field. The turf is in terrible shape and definitely needs replacement as it is an injury hazard. There are members of our team that have a sensitivity to turf using tire pellets. If you are going to make the field safer why not consider using safe turf as well, all who use the field would benefit. We use the fields to enjoy our sport and stay fit, it defeats the purpose if the surface we are playing on could be harmful. Thank you for your consideration.

I thought that was a powerful comment and wanted you to have a chance to read it before I deliver the latest signatures to you.

From G.N.:

My kids play on this turf and have for many years. Please make the change for their health and safety. The evidence is overwhelming.

From MN:

And I'm willing to pay for my share of it in whatever form is best.