7338 Baltimore Ave
Suite 102
College Park, MD 20740

Committee: Appropriations
Testimony on: HB1098 - "Use of Public Funds – Playground and Athletic Field Surfaces – Authorizations, Preferences, and Prohibitions (Safe and Healthy Fields Act)"
Position: Support
Hearing Date: March 5, 2020

The Maryland Sierra Club urges a favorable report on HB1098. This bill would prohibit use of state funds to build synthetic surfaces on playgrounds and athletic fields, and require that the state and local governments seek to build playgrounds and fields using state-of-the-art natural surface materials.

Artificial turf fields and playgrounds pose a threat to both public health and the environment. Contrary to industry claims, artificial fields and playgrounds are not superior to natural grass fields and natural surface playgrounds. Well-maintained natural grass fields are better for the health and safety of athletes, better for the environment, more affordable for taxpayers, and make a bigger contribution to Maryland's economy than artificial turf fields. For these reasons, it is wasteful and harmful for Program Open Space and other state funds to be used for the construction of artificial turf fields and playgrounds. Using public funds to build and maintain natural surface fields and playgrounds is a much more fitting and responsible use of these funds.[1]

Natural Grass Fields are Superior to Artificial Turf Fields

Experts in the natural grass athletic field industry confirm that properly constructed and maintained natural grass fields with appropriate drainage are as playable as artificial turf fields, and are more durable and cost effective over time. Further, it costs much less to build a natural grass field than an artificial turf field.[2] These experts also attest to the size and scope of the local Maryland economy that is supported by the existence of natural grass athletic fields. The artificial turf industry, in contrast, supports far fewer jobs in Maryland, and sends most of its profits out of state, or even overseas.

Synthetic field installations range from $750,000 to over $1 million. Replacements, scheduled every seven to nine years (assuming the field hasn't failed before its warranty), cost $500,000-$750,000. Conservative maintenance costs are $25,000-$50,000 annually. In comparison, state-of-the-art new grass fields can be installed for $250,000-$400,000, with similar maintenance costs as synthetic fields (assuming synthetic turf is being maintained not just for looks but for player safety). Well-maintained natural grass fields need only occasional low-cost renovations.

Artificial Turf Fields and Synthetic Playground Surfaces Pose Significant Environmental and Health Risks

The plastic in artificial turf fields contains toxic chemicals, including plasticizers, UV inhibitors, colorants, flame retardants, and the highly toxic class of "non-stick" PFAS "forever chemicals."[3] Typically, a synthetic turf athletic field includes 30,000 to 50,000 pulverized used tires, which are intended to function as cushioning. This tire waste also contains toxic substances, including heavy metals such as lead, benzothiazoles, polycyclic aromatic hydrocarbons, carbon black, and volatile organic

[1] https://www.turi.org/TURI_Publications/TURI_Chemical_Fact_Sheets/Artificial_Turf_Fact_Sheet.
[2] https://www.turi.org/Our_Work/Community/Artificial_Turf.
[3] https://www.grassrootsinfo.org/syntheticturfscience.php.

SIERRA CLUB

7338 Baltimore Ave
Suite 102
College Park, MD 20740

compounds such as benzene. Many of these are known carcinogens, neurotoxins, or endocrine disruptors.[4]

Playgrounds made of synthetic surfaces use shredded tires bound with glue. These surfaces present many of the same problems found with synthetic, rubberized athletic fields. They become too hot, are too hard, and contain toxic substances. Injuries associated with these surfaces include increased skin abrasions and more frequent joint injury to knees and ankles.[5]

Many studies and reviews discuss the health concerns associated with artificial turf. For example, in May 2017, the Children's Environmental Health Center at the Mt. Sinai School of Medicine urged that a moratorium be placed on the use of artificial turf made from used tires because of the presence of known toxic substances in tire rubber, and the lack of comprehensive studies showing that rubberized artificial turf is safe.[6]

Synthetic surfaces also encourage poor environmental practices. It is not a "green" or "recycled" product. Using old tires in playing fields and playgrounds is not truly recycling. This practice just brings the landfill to the playing field for a time, spreading toxins into the environment and exposing people, before eventually heading back to the landfill.

Other environmental concerns include:

- leaching of toxic chemicals and heavy metals into the ground and water;
- plastic pollution and micro debris from the plastic grass and tire crumb;
- use of huge amounts of "virgin" plastic when a renewable resource (natural grass) is available instead;
- use of harsh chemicals to disinfect the fields (which is also a public health concern);
- the heat-island effect; and
- excess water-use to cool the fields due to their hazardous heat levels.

Use Synthetic Playing Surfaces are a Substantial Waste Problem

Lastly, synthetic surface installation has created a burgeoning waste problem.

When synthetic turf fields first were developed and installed, there was little consideration given to their disposition after they wear out. Little documentation exists for where used fields were taken for disposal in the past, but most were probably landfilled or incinerated.

Today, there are over 12,000 synthetic fields installed in the United States, with up to 1,500 new installations occurring each year. The lifespan of a typical synthetic field is eight to ten years, and a typical football-sized field is about 80,000 square feet in size and weighs about 230 tons, so the issue of where to put them after they are no longer useable has become a major waste problem.[7]

---

[4] https://theintercept.com/2019/10/08/pfas-chemicals-artificial-turf-soccer/.
[5] See fn. 1 *supra*.
[6] http://icahn.mssm.edu/files/ISMMS/Assets/Departments/Environmental%20Medicine%20and%20Public%20Health /CEHC%20Consumer%20Guide%20to%20Artificial%20Turf%20May%202017.pdf.
[7] https://www.fairwarning.org/2019/12/fields-of-waste-artificial-turf-mess/; https://www.syntheticturfcouncil.org/page/About_Synthetic_Turf.

SIERRA CLUB

7338 Baltimore Ave
Suite 102
College Park, MD 20740

In addition to the sheer volume and weight of discarded synthetic turf, its components include toxic chemicals known to be harmful to the environment and human health, as described above.[8]

The main ingredient of the turf infill, crumb tire, is particularly problematic. While used tires are generally not considered a hazardous waste, they do contain toxic ingredients such as hydrocarbons, heavy metals such as zinc, lead, and cadmium,[9] and carbon black.[10] Some tire ingredients are known toxins to aquatic organisms.[11] Other ingredients are known carcinogens, endocrine disruptors, and neurotoxins. As many as 40,000 ground-up tires are used on just one field. The tiny pieces of tire crumb easily escape into the environment through rain runoff, wind, and use of the field. Studies show that the leaching of organic compounds increases with smaller pieces of shredded tire.[12]

Over the course of its lifespan and future replacement, each synthetic field will generate a never-ending and enormous stream of plastic waste. Even worse, as they age in place, the plastic blades fall apart, generating "micro debris," an estimated 30 million square feet of plastic dust and debris, spreading irretrievably into soil, water, and air. A growing concern for the environment, micro-debris is too small for proper clean up, yet contaminates the environment around us.

In summary, synthetic athletic fields and playgrounds are harmful to the environment, and harmful to human health. It makes no sense to spend taxpayer dollars to cover ground with plastic carpets and pulverized tires when natural grass, soil, and other natural surfaces should be used. We urge a favorable report on HB1098.

Kathleen Michels, PhD
Volunteer lead
michelskm2016@gmail.com

Josh Tulkin
Chapter Director
Josh.Tulkin@MDSierra.org

Sydney Jacobs
Conservation Chair
Sydney.Jacobs@MDSierra.org

[8] Lerner, S. https://theintercept.com/2019/10/08/pfas-chemicals-artificial-turf-soccer/.
[9] https://www.ncbi.nlm.nih.gov/pubmed/14643415.
[10] http://www.ehhi.org/chemicals.
[11] https://www.ncbi.nlm.nih.gov/pubmed/15620758.
[12] http://www.ehhi.org/summary-turf.pdf.