

Bill: HB 1098, Use of Public Funds – Playground and Athletic Field Surfaces – Authorizations, Preferences, and Prohibitions

Name: Dr. Casey Reynolds, Executive Director for Turfgrass Producers International

Position: Support

Dear Chair McIntosh,

There are many questions surrounding synthetic fields with regard to cancer risks, environmental impacts, disposal, maintenance costs, etc. and it could be argued that any one of these items is sufficient reason to not use taxpayer dollars for synthetic field installation. However, two items that should be at the top of the list for decision-makers is the safety of children and student athletes. Recent research published in the 2019 in the American Journal of Sports Medicine shows a significant increase in lower body injuries in both the NFL and NCAA Divisions I, II, and III. NFL athletes are between 56% and 103% more likely to suffer knee/ankle/foot injuries and NCAA football players are nearly 3 times as likely to have posterior cruciate ligament (PCL) injuries (Mack et al., 2019; Loughran et al., 2019). The critical fall heights for concussions on synthetic turf is nearly half of what is on natural grass and head to turf injuries account for 20% concussions in football. These can be serious injuries that can affect athletes for many years to come. However, an additional threat to athletes' and children's safety that is more concerning and even life-threatening is exertional heat illness.

The National Athletic Trainers Association (NATA) begins to place time limits on practice at 87°F to reduce exertional heat illness risks and completely prohibits outdoor activities at 92.1°F (Casa et al., 2015). As a reference, on an 87°F day in June of last year, air temperature readings on adjacent asphalt were 144°F and on a new synthetic turf field the readings were 154°F. It is not uncommon for synthetic fields to reach 130°F or more in the mid-Atlantic and southern US and the maximum temperature ever recorded on synthetic turf is 183°F (STMA.org/institute). As a reference, Washington, DC hit 90°F 62 times in 2019, all of which occurred in the summer and early fall months when youth and high school football is in full swing. Some quick math would indicate that from June 1 to September 30th, 2019, play on synthetic turf would expose children and athletes to 120-30°F temperatures or higher 51% of the days during those months. It would also mean that the NATA would recommend cancelling workouts, practice, etc. for at least half of those months so as not to expose athletes to exertional heat illness. Is that what parents want for their children? Furthermore, if an out-of-state vendor wanted to use Maryland tax dollars to buy school buses, cafeteria equipment, or classroom air conditioning systems that would have kids sitting in 120°F+ temperatures for half of a semester would we allow that? The answer is likely no so why would you expose kids to that type of heat risk on athletic fields, and why is the threshold for safety any different?

Natural grass fields offer cooler, safer surfaces for children and athletes to play and can handle more use than many people think with a lower investment. Natural grass fields are cheaper to install than synthetic turf fields with construction estimates ranging from \$6-\$10/ft² for synthetic turf and \$0.60-\$8/ft² for natural grass. One common comparison that is often

missed is that properly constructed synthetic turf fields are being compared in usage hours and performance to improperly constructed natural grass fields often slapped in place by a building contractor. Properly constructed natural grass fields installed by a licensed field builder as seen in collegiate and professional athletics are a fairer comparison and will perform at a much higher level under significant use. Recent developments in new hybrid bermudagrass varieties, advancements in management techniques and drainage make it not uncommon for hybrid bermudagrass athletic fields to withstand 1,000 or more hours of annual use. One municipality reports 1,200 annual hours of field use on natural grass at a public facility.

Yes, natural grass fields require management but so too does a synthetic turf field. Contrary to popular belief, synthetic turf fields are not maintenance-free. They require management practices such as grooming, spraying, sweeping/blowing of debris, vacuuming debris, topdressing crumb rubber, pressure-washing, painting, de-compaction, surface hardness testing, and sometimes even irrigation to keep them cool. Natural grass fields require mowing, irrigation, spraying, topdressing, aeration, and painting. Natural grass fields are also self-cleaning and self-repairing. There is no doubt that with proper construction and even basic inputs, bermudagrass athletic fields like those used in Maryland can tolerate traffic and produce high-quality, beautiful, and most importantly cool, safe fields for kids and athletes. Recent data from the Sports Turf Managers Association indicates that managing a typical synthetic field can cost \$6,800 to \$22,760 with 280-360 labor hours annually. That same research shows that natural grass fields can cost between \$9,450 and \$24,550 annually with 300 to 480 hours in labor (STMA.org/institute). If schools or municipalities don't have the staff to maintain fields themselves then there are companies that will do it on annual contracts. Recent field management quotes in late-2019 from professional companies range from \$15,000 to \$17,000 per field for year-round natural grass field management. As a result, the annual management costs for synthetic turf and natural grass fields are often not that different.

In closing, natural grass fields are the safest and least expensive choice for playing surfaces. Even if they were more expensive, wouldn't they still be worth it? If any other vendor came to a school system or municipality and gave taxpayers a choice between a natural product that was cheaper, grown in-state by local farmers, and managed by local staff or contractors that gave kids a cooler, safer place to play than a plastic product that is under investigation for causing cancer, exposes kids to exertional heat illness, and is more likely to injure them, allows plastic and crumb rubber to migrate into local water systems (which there is evidence of) and then dumps it into local landfills when finished, then what is the logical choice? Would you accept that scenario for any other purchase and if not then why are athletic fields any different?

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