



Artificial Turf at the Middle School -- Commissioners Letter

September 9, 2007

Radnor Township Board of Commissioners

301 Iven Avenue
Wayne, PA 19087

Dear Commissioners,

At a recent meeting you were asked to contribute towards installation of an artificial turf field at the Radnor Middle School. To your credit you refused to commit, wanting more time to obtain information and to consider options. I would like to urge you to refuse to contribute towards an artificial turf field at the Middle School.

First and foremost, if you have any funds remaining, for any reason, at the completion of the stormwater project, you should invest those funds in additional best management practices in the watershed that reduce the volume and improve the quality of runoff that makes it to the Middle School site in the first place. The vote committing to construction of an infiltration project at the Middle School site included installation of the offsite best management practices. The Commissioners very clearly rejected options A and B and voted instead for option C which included a lesser cost for the infiltration system in order to allow for best management practices in the watershed so as to reduce the volume of runoff that needed to be addressed at the Middle School site. It was a clear choice and commitment to the need for, and value of, best management practices for reducing volume of runoff from the watershed in order to provide, ultimately, the greatest amount and quality of benefit to downstream communities. If the Township is able to save on the installation of the infiltration system because the school board decides to invest in artificial turf in lieu of a natural grass surface then the Township has a responsibility to still invest these funds for the benefit of stormwater and downstream neighbors and should commit to invest those funds in the additional best management practices up in the watershed.

That being said, as the Delaware Riverkeeper as well as a parent of 6 children who attend Radnor Township schools, two currently attending the Middle School and two that will attend it in the future, I am strongly opposed to the use of artificial turf at the Middle School site. My opposition includes environmental concerns, health concerns, quality of life concerns as well as the importance of teaching by example.

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Environmental Concerns

The Radnor Middle School field is being constructed as an infiltration system in order to provide stormwater and water quality benefits to communities downstream. The use of artificial turf at this location contradicts and impedes that goal.

Contrary to claims by one commissioner and the sports community, there is nothing that would demonstrate that artificial turf infiltrates better than a natural grass system. And because the Middle School infiltration system has been designed specifically with a natural grass surface in mind, there is not reason to believe that artificial turf would provide any greater infiltration benefits for the system as a whole. And in fact, it is very possible that artificial turf might actually hinder the infiltration capabilities of the site. Sprinturf, the artificial turf provider many believe is the entity most likely to receive any Middle School contract, specifically boasts that its artificial turf is "non porous" and that it "can't absorb moisture". Placing a nonporous system over top the Middle School infiltration system would most certainly impede the success of the system.

Additionally, natural grass aids in the goal of volume reduction at the Middle School site in a way that artificial turf cannot. Natural grass provides a level of evapotranspiration, pulling water out of the soil and subsurface and releasing it to the air, providing benefits in reducing the volume of runoff that results from a site and/or needs to be addressed by other stormwater management strategies. Artificial turf has no evapotranspiration capabilities.

Grass does provide a level of pollution filtering and therefore water quality protection for nearby waterways. While this filtering may be limited in the case of turf grass; such filtering is non existent with artificial turf.

As the attached fact sheet demonstrates, little study has been invested in the environmental impacts of artificial turf, but much of the study that has been done has identified that the use of artificial turf is a threat to local streams and aquatic communities. Study has concluded that the use of tires in artificial turf has the potential to pollute our environment with PAHs, phenols and zinc^[1] and that runoff from an artificial turf field draining to a local creek can pose "a positive risk of toxic effects on biota in the water phase and in the sediment."^[2] Zinc has also been shown to leach from the artificial turf fibers.^[3] It is believed that chemicals leaching from synthetic turf materials occurs slowly, and as a result the environmental harms may take place over many years.^[4]

Health Concerns

There is tremendous discussion about the potential health ramifications of artificial turf including testing on potential impacts of inhalation, excessive skin contact, creating or exacerbating allergies or asthma, and increased risk and ramifications of infection from injuries sustained on an artificial turf field. The study and discussion is still ongoing. As long as it continues there is reason for caution and concern.

While there is significant back and forth on the direct health implications of artificial turf, there is little debate over the excessive heat created by the presence of artificial turf.

Studies document that the surface temperature on artificial turf is dramatically increased as compared to surrounding land uses, particularly natural grass. Studies have found temperatures on artificial turf exceeding temperatures on nearby natural grass by 86.5° F, by 95 to 140° F, and by 39 to 68.5° F. While irrigation provided significant cooling for the synthetic turf, after only 5 minutes the temperature quickly rose again, with a nearly doubling of temperature (85° F to 164° F) after only 20 minutes. ^[5]

Concerns regarding the excessive temperatures range from the implications for players already exerted themselves playing in such excessively high temperatures, to the implications for burns when players or pedestrians come into contact with the hot surfaces.

Quality of Life Concerns

When the heat issue was raised before the School Board Facility Committee and the concern of excessive heat for small children was raised the response was that small children were going to be prohibited from being on the field. Whether this prohibition is due to the heat or other factors it seems incredible that the community, whether it be through the Commissioners, the School Board or both, is expected to make an initial investment of over \$600,000 in addition to annual maintenance costs and disposal in a mere 8 to 10 years, for a sports field that a large proportion of the community would then be excluded from (i.e. small children and in so doing their parents and families).

Wayne is already well developed, much more so than many of the outer lying areas of the Township. The high levels of pavement and rooftops contributes to increased temperatures in the community. Installing artificial turf with its excessive temperature regimes is bound to contribute temperature wise to the community and kids seeking to enjoy the out of doors.

Natural grass, by comparison, provides a natural cooling affect. "The temperature of natural grass rarely rises above 85 degrees Fahrenheit, regardless of air temperature." [6] The cooling contribution of natural grass can be felt on any hot day - simply lay down on natural grass and you will know what I mean.

Teaching by Example

The Radnor Middle School project has been portrayed to our students, the community and the media (most recently the Philadelphia Inquirer) as an ecologically sensitive development project. Using artificial turf contradicts this commitment. Artificial turf is an environmental threat. In addition, artificial turf is not natural, and as such is certainly not the best environmental choice for our environmentally friendly school.

I like nature, my kids like nature, we enjoy and appreciate the touch, feel, smell and experience of natural things. While grass may not be the best that nature has to offer, it is real and it is far better in every way than artificial turf.

One of the biggest arguments made for artificial turf is the increased playing time it provides. While artificial turf technology has progressed, so too has the science surrounding natural turf grass for sports. The right selection of soils, grass seed, maintenance and playing schedule can significantly enhance the usability of natural grass for sports playing.

The Radnor Middle School is for the entire community, the field behind is for all of our kids and families. It is not okay to confiscate the field from the community and to turn it over to the sporting community. My kids deserve the ability to use and enjoy that field as much as everyone else. It is not okay to force them to spend their recreational time at school on fake grass, with all the odors, heat and environmental harms it causes; and to deny them the ability to enjoy the touch, feel, smell and coolness of real grass.

The drawbacks and risks associated with artificial turf do not warrant our investing in it any further, even if it does mean a few more games can be played within a given period of time.

Internationally there is discussion and research into the environmental and health effects of synthetic turf. Whole countries are discussing the issue including Norway, Italy and Germany. It would be irresponsible for Radnor Township to continue to invest in this technology without taking the time to do its homework and to look at the findings of independent experts rather than the biased, and very misleading, claims of the artificial turf purveyor.

I ask you to reject any further consideration of providing any level of funding to the School District for investing in artificial turf and to instead commit that any savings it might experience by the School District pursuing the artificial turf option will be invested in best management practices up the watershed for reducing the volume and increasing the quality of stormwater runoff that may ultimately make it to the Middle School and on downstream communities.

Yours sincerely,

Maya K. van Rossum
the Delaware Riverkeeper

Attachment: Artificial/Synthetic Turf Fact Sheet

[1] T. Kallqvist, Norwegian Institute for Water Research(NIVA), Environmental Risk Assessment of Artificial Turf Systems, December 2005, p. 5; T. Edeskar, Lulea University of Technology, Technical and Environmental Properties of Tyre Shreds Focusing on Ground Engineer Application, 2004 as cited in KEM, Swedish Chemicals Agency, Facts: Synthetic Turf, April 2007.

[2] T. Kallqvist, Norwegian Institute for Water Research (NIVA), Environmental Risk Assessment of Artificial Turf Systems, December 2005, p. 6.

[3] T. Kallqvist, Norwegian Institute for Water Research (NIVA), Environmental Risk Assessment of Artificial Turf Systems, December 2005, p. 17.

[4] T. Kallqvist, Norwegian Institute for Water Research(NIVA), Environmental Risk Assessment of Artificial Turf Systems, December 2005, p. 5; NIVA (The Norwegian Institute for Water Research), Evaluation of the Environmental Risks of Synthetic Turf, 2005, as cited by KEM, Swedish Chemicals Agency, Facts: Synthetic Turf, April 2007.

[5] Dr. C. Frank Williams and Dr. Gilbert E. Pulley, Synthetic Surface Heat Studies, Brigham Young University.

[6] SportsTurf Managers Association, A Guide to Synthetic and natural Turfgrass for Sports Fields, Selection, Construction and Maintenance Considerations.