

**State College Area School District  
Office of Physical Plant  
Ed Poprik, Director**

To: Board of School Directors, Facilities and Grounds Committee

From: Ed Poprik

RE: High School project – Field Update

Date: May 2, 2018

**High School North Field (artificial vs. grass field surface):**

As part of the High School project, a natural grass field is included in the location of the old North building that is currently being razed. This field will be located in a very high demand location for our district sports and other activities, as well as anticipated requests from community groups.

A memo from Chris Weakland regarding current field use is attached. Items not included in Chris’s memo include uses for physical education, marching band, or community groups.

For discussion purposes, we have estimated that an artificial turf field with no lights could expect 240 uses per year. Due the weather-related closures of a natural grass field, we have estimated the number of uses at 200.

ELA has estimated the cost of this conversion as well as any savings from not installing the natural grass as follows:

|                            |             |
|----------------------------|-------------|
| -New artificial turf field | \$1,037,149 |
| -Delete natural grass      | \$46,685    |
| -Net cost                  | \$990,464   |

As this work is currently proceeding, a general decision will be needed in the next few months in order to capture the savings from deleting the natural grass.

### Cost per use:

At the previous meeting, a question was raised regarding the “cost per use” of natural grass vs. artificial turf. Because the cost of replacing artificial turf is significantly lower than a new installation, sample calculations are shown for year’s 1 through 12, as well as year’s 12 through 24. No inflation was used for any of the calculations.

While frequent renovation with seed was discussed, the impact of closing the field for at least 1 season (spring or fall) was also reviewed. In order to mitigate this issue, calculations are also shown for renovation with sod, which could greatly reduce the down-time needed for a renovation.

### Assumptions:

- Cost to install artificial turf \$1,000,000.00
- Cost to replace artificial turf \$430,000.00
- Number of uses per year for natural grass (assuming no lights) – 200
- Number of uses per year for artificial turf (assuming no lights) - 240
- Re-seed or Re-sod interval – 3 years
- Replace artificial turf interval – 12 years
- Cost to renovate via seed - \$45,000.00
- Cost to renovate via sod - \$120,000.00

### Artificial Turf:

*Years 1 through 12*

240 uses per year X 12 years = 2,880 uses  
\$1,000,000.00 / 2,880 uses = \$347.00 per use

*Years 12 through 24*

\$430,000 / 2,880 uses = \$149.00 per use

### Renovation with sod:

200 uses per year X 12 years = 2,400 uses  
\$120,000.00 X 3 renovations = \$360,000.00  
\$360,000.00 / 2,400 uses = \$150.00 per use

An issue that is not addressed in the above calculation is that during the third year the turf would likely decline to a point that impacts the safety and playability of the surface. Consequently, a cost to renovate every 2 years was performed:

\$120,000.00 X 5 renovations = \$600,000.00  
\$600,000.00 / 2,400 uses = \$250.00 per use

**Renovation with seed:**

While the issue of closing the field on a regular, extended basis does not seem operationally feasible, the associated calculations are shown:

200 uses per year X 9 years = 1,800 uses  
100 uses per year X 3 years = 300 uses  
Total uses = 2,100 uses  
\$45,000.00 X 3 renovations = \$135,000.00  
\$135,000.00 / 2,100 uses = \$64.00 per use

**Artificial Turf infill material:**

At the April Facilities and Grounds Committee meeting, the committee questioned whether there were health or environmental concerns regarding the use of artificial turf fields with crumb rubber infill made from recycled tires. Administration is not aware of any conclusive scientific study that has shown a risk; however, additional studies are in progress. The most significant work in progress is being conducted by the EPA. Information regarding this study is below:

*“Concerns have been raised by the public about the safety of recycled rubber tire crumb used in synthetic turf fields and playgrounds in the United States. We know people are concerned and players and their families want answers. Limited studies have not shown an elevated health risk from playing on fields with tire crumb, but the existing studies do not comprehensively evaluate the concerns about health risks from exposure to tire crumb. We are committed to supporting more comprehensive efforts to assess risks from tire crumb.*

*That’s why on February 12, 2016, the U.S. Environmental Protection Agency (EPA), the Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry (ATSDR), and the Consumer Product Safety Commission (CPSC) launched a multi-agency Federal Research Action Plan on Recycled Tire Crumb Used on Playing Fields and Playgrounds to study key environmental and human health questions.*

*The draft report will be sent to external peer-review in Spring 2018, with the expectation of releasing a final peer-reviewed report summarizing study results in mid-2018.”*

Alternate fill materials, that do not include crumb rubber are available at an additional cost. Based on the above information, the field discussion could proceed with a final decision on the fill material being delayed pending the release of this study. A chart of alternate materials is attached and will be discussed at the meeting. Our field would be 87,750 ft<sup>2</sup>, so if the most and least expensive options are eliminated, for reasons to be discussed, we could expect an upcharge of between \$97,000 and \$235,000.

These costs are offered for comparison purposes only and not a final bid or estimate for our project.

**Recommendation:**

The administration would like to take a recommendation to the Board on May 7 regarding the North Artificial surface.

The recommendation should include:

- Committee support (or lack thereof) for presenting the change order for the North artificial surface.

- If supported by the committee, direction to pursue traditional or alternative turf infill material.