

Conservation Commission Requests for Information #7



Re: Arlington High School Expansion

SCI File #17211.00

RE: Conservation Requests July 9, 2020 Item #7 Climate Change Summary for Turf Fields

At the request of the Conservation Commission, in addition to the heat island analysis provided, the following details other factors in the alternative analysis for selecting turf fields over grassed fields.

For some background on how this alternative was selected, the Arlington High School Building Committee has held public meetings for over three years and many discussions centered on the benefits of installing an artificial turf field (similar to the one currently at the high school stadium) for all other sports. As designed the new artificial turf fields will serve baseball, softball, soccer, lacrosse, and football. This is due to the ability to layout out overlapping sports within the same footprint. Many discussions regarding costs/benefits analysis occurred when the Committee needed to reduce project costs. It was agreed by the 18-person committee that artificial turf fields versus natural grass turf fields are essential for the high school program. The artificial turf, with its superior drainage, will allow for six (6) more weeks of outdoor activity for Arlington students. This benefit was paramount to the educators, parents, and residents of the School Building Committee.

These additional six weeks of outdoor activity also assumes that the grassed fields remain in playable condition for the entire fall and spring season. In actuality, the grassed fields typically become muddied and bare – causing erosion and siltation – most season due to challenging weather and over-use for that surface versus student activity needs. The selection of turf fields will remove that siltation source to the resource areas.

Regarding the turf meeting ecological standards, the project will now meet the specifications of the New York State Standards per the request of the Commission, the strictest guidelines that are available. Additionally, the project meets all the MA DEP Performance standard for how the turf fields would affect the waters and wetland plantings, as there are no studies nor data available showing that any runoff from turf fields has a detrimental affect on those resources for us to meet. The following are how the Turf Fields (and the overall project as previously illustrated) meets the SMP standards:

- Standard 1 – No new, untreated discharges associated with the synthetic turf field
- Standard 2 - Peak rate attenuation – No increase in peak rates
- Standard 3 – Recharge – None at synthetic turf due to contaminated groundwater and soil (project is a redevelopment of a contaminated site with a hard environmental cap below grade); Standard 3 met overall where infiltration is allowed.
- Standard 4 – Water quality:

TSS reduced due to synthetic turf field providing vertical infiltration and filtering through the turf into drainage pad layer, which discharges into the field's subsurface detention basins. Also the size of the rubber granules is larger than sediment; these granules are filtered and / or covered by the synthetic turf fibers preventing migration of these granules into the trench drain surface collection system and the downgradient subsurface detention system. Runoff flows into the structured voids that are wrapped with drainage fabric and then into the surrounding stone, being stored in both the voids and the stone.

Samiores Consultants, Inc.
Civil Engineers + Land Surveyors

20 A Street
Framingham, MA 01701-4102

T 508.877.6688
F 508.877.8349

www.samiores.com

While it is often said that Owners add infill through the life of these fields due to migration of infill, this perception is not factual as infill is rarely ever added, contrary to popular belief. Most fields are installed with one to two surplus “super-sacks” of infill for infill loss and migration. This material is mostly used to level out the surface in front of goals and at penalty shot area, typically a five-gallon bucket here and there during a season. Sometimes infill is added due to settlement, caused by poor maintenance practices, but this is rare due to improved maintenance practices. A properly maintained field is unlikely to require even a small portion of a single super-sack of infill through its life. There will be some infill which migrates off the field in players socks and shoes due to static cling, but this quantity is again very, very small.

Testing of US manufactured passenger tires under testing using EN 71/3 indicates SBR passes this water quality requirement and ASTM F 3188 (toy standards). Several non-USA manufacturer samples did not pass. Our specification requires only US passengers be used in our infill.

- Standard 5 – Not Applicable
- Standard 6 – Not Applicable
- Standard 7 – Redevelopment – Not Applicable (meets all standards)
- Standard 8 - Construction Period Pollution Prevention and Erosion and Sedimentation Control - Included with overall project
- Standard 9 - Operation and Maintenance Plan – A basic program was provided however, the selected vendor is required to provide a product specific maintenance program
- Standard 10 - Prohibition of Illicit Discharges - None