

February 17, 2021

Mr. Alex Elvin, General Planner
Martha's Vineyard Commission
PO Box 1447
Oak Bluffs, MA 02557

Re: Follow-up Questions from MVC – 02/04/21

Dear Mr. Elvin.

I am in receipt of your list of seven (7) follow-up questions from MVC staff and Commissioners. I have reviewed those remaining questions and coordinated our reply with the MVPS and project team, and our response are as follows.

- 1. What would be the annual cost of athletic field maintenance if the high school applied the maintenance proposal for Field #2 to all of the athletic fields, including the game field?**

Response: The annual cost of athletic field maintenance if the high school applied the maintenance proposal for field two to all the athletic fields including the game field would be approximately $\$25,500 \times 4 = \$102,000$ for the natural grass surfaces, and an additional \$7,500 for the synthetic turf. You could expect some savings based upon the increased scale of the maintenance. Additional costs should be anticipated for the maintenance associated with the softball and JV baseball infields, and general landscape/exterior maintenance beyond athletic fields.

- 2. Please provide copies of any agreements the high school has with Daedalus and Huntress.**

Response: Those documents have been previously provided by MVRHs staff and can be found on your DRI website.

- 3. Please provide a list of the existing high school fields and the times of year when they are intentionally taken offline in order to support the field maintenance and quality. Please also show how that schedule aligns with the existing and proposed maintenance plans.**

Response: The following represents the current teams scheduled for each of the existing natural grass fields.

Field #1: Varsity Playing Field

Fall: (Games) V Football, boy's V Soccer, girl's V Soccer, JV Football

Spring: (Games) Girl's V Lax, girl's JV Lax, and boy's V Lax, boy's JV Lax

Field #2: Bus Lot Field



Fall: (Practice) Boy's V Soccer, boy's JV Soccer, girl's V Soccer, girl's JV Soccer

Spring: (Practice) boy's V Lax, boy's JV Lax.

Field #3: Field Hockey Field:

Fall: JV Field hockey practice, V field hockey practice and JV field hockey games and V field hockey games.

Spring: Practice for girl's JV lacrosse and V girl's lacrosse

Field #4: Back field/outfield of JV baseball

Fall: Boy's V and JV soccer practice, Girls V and JV soccer practice and boy's and girl's JV soccer games

Spring: Boy's JV baseball practice and boy's JV baseball games

Field #5: Infield of Track

Summer/Fall: Football practice

Spring: Track & Field events

Given the current use of the existing athletic fields at MVRHS, we cannot take any of the existing fields off-line. Rest and rotation are two missing components to a successful grass maintenance program. They are key components which we cannot provide without one synthetic turf field on which to divert the play. This was evidenced throughout Horsley Witten's peer review with each of the four (4) Massachusetts public high schools interviewed attesting to the success the synthetic turf brings to the grass maintenance programs.

With the introduction of one synthetic turf field we can shift 1805 hours of use away from the remaining natural grass surfaces. This will allow MVRHS to periodically rest a field either in the fall or in the spring.

Please see the attached Fall and Spring Sports Management schedules provided by Cornell University Turfgrass Program. These schedules show how MVRHS could successfully rest a field while at the same time continuing the regular season maintenance. Although the actual rest/rotation schedule would depend upon several factors, including overall grass health, weather conditions, soil types, test results and field use, you could hypothetically assign this rest/rotation schedule to the four (4) remaining natural grass surfaces. In this example, each of the four fields would get a summer/fall rest period once every four years, or more often if necessary.

Additionally, depending on use and demand, the rest period could be applied to the fall season instead of the spring, depending on the need and quality of the existing fields.

As an example, Field #2 (Bus Lot) presently accommodates practices and some games for Boy's Varsity & JV Soccer and Girl's Varsity & JV Soccer in the regular Fall season. That use accounts for approximately 357.5 (+/-) hours of practice/game time in the Fall season. When that 357.5 hours is moved to the new synthetic turf field, then Field #2 (Bus Lot) could be



shifted to Rest & Recovery as outlined in the Cornell University Turfgrass Program. Field #2 would be rested from June of 2021 through March 2022. As noted above, actual rest/rotation schedules would depend upon several factors, including overall grass health, weather conditions, soil types, test results and field use.

Finally, I have attached letters from the Athletic Directors for Falmouth High School, Nauset Regional High School, and Monomoy Regional High School who have all attested to improvements to their natural grass surfaces after they introduced just one (1) synthetic turf athletic field.

- 4. Groundwater monitoring: Climate change will bring changes to the Island economy. For example, the potential for fewer visitors due to extreme weather events and their aftermath and a decline in the coastal real estate market. Another thing that will detract from the visitor economy is tainted groundwater, which is our sole source of drinking water and also enters our coastal ponds, affecting recreation and the shellfishing industries. If the two groundwater monitoring wells reveal the presence of microplastics, chemicals, or other contaminants related to the turf field, what will be done since the field will already be in place?**

Response: The greatest impact on microplastic reduction in synthetic turf fields has more to do with the selection and type of infill. SBR crumb rubber infill has long been a staple in artificial turf athletic fields. Numerous studies conducted by the US EPA, the European Chemical Agency (ECHA), and Norwegian Environmental Agency (EA) have classified SBR Crumb Rubber as a microplastic. Based on a range of health and environmental concerns, the European Chemical Agency (ECHA) proposed to the European Commission an immediate ban of SBR rubber infill as of 2022. Further, Norway's Environmental Agency (EA) is proposing new regulations to prevent the spread of microplastic from artificial turf into the environment. Solutions offered by both the EA and ECHA often include adding sediment filters to the drains or building physical barriers to contain the rubber infill. The migration of these particles was part and parcel to the EA and ECHA classifying them as microplastics

*For the new field at Martha's Vineyard Regional High School, we propose a different path, **don't use crumb rubber infill**. By eliminating the use of SBR crumb rubber as an infill product, we can significantly reduce the threat of microplastics, PAH, Lead, Zinc, and other heavy metals from your new field. Organic materials are abundant and provide a sustainable, renewable natural resource that can replace crumb rubber. The United States is home to the largest sustainable forestry industry in the world. We grow and farm trees that are then used to make fuel pellets to replace coal as the fuel source for power plants in Europe. The areas that grow trees as the raw material source are now growing more trees than they are harvesting, despite the growth in the use of biofuels. An organic material to replace SBR is a logical place to start. A wood product engineered explicitly as infill is now available and at a cost not much more than SBR rubber.*

We are proposing to use an organically grown and sustainably harvested wood product, BrockFILL, manufactured by Brock USA. Brock has sent product samples, MSDS sheets, and promotional material directly to Adam Turner at the MVC. I am happy to discuss this further



with you at a public hearing, and Brock has also offered to have a representative attend a public hearing and answer any questions you may have.

*Finally, as you are all aware, MVRHS has agreed to microplastic filter socks in the track drainage system, and rigorous testing of all proposed materials. **Let's make sure the products we intend to use are safe before we put them in the ground.***

5. Will there be stormwater monitoring post-construction within the drainage system for Field #1?

Response: Yes, the system allows for monitoring the stormwater post-construction.

6. Natural versus artificial materials: Wherever possible, working with nature, rather than against it, is the preferred method of climate adaptation. Today there are grass field designs that are said to better withstand heavy use, reduce impacts to the land and absorb more carbon. Based on regenerative landscape practices, these techniques better absorb water, decrease the need for irrigation, and reduce the need for chemical fertilizers. Can the applicant please explain why these techniques have not been proposed for the athletic field renovations? And will the applicant consider proposing them?

Response: The MVRHS High School Staff and subcontractors use Best Management Practices (BMP's) as we care for our athletic fields and outdoor environments. The BMP's utilized at the High School include, but are not limited to, aeration, topdressing, supplemental irrigation, early morning irrigation, field use restrictions, annual soil testing, return grass clippings, keep mower blades sharp, use drought tolerant grass seed, and applying no more than 0.5 lbs of water soluble (slow-release) nitrogen at any one application. Please provide more detail on your reference to "regenerative landscape practices". Specifically, how are they different from Best Management Practices?

The natural grass fields at MVRHS cannot withstand greater usage, with or without additional BMP activities. The best way to increase the playability and safety of our natural grass surfaces is to shift the aggressive use in the spring (ie: Lacrosse in March / April) to a synthetic turf surface. We can also benefit by shifting additional use hours from the natural grass to synthetic turf to allow us to better maintain, rest and otherwise support our natural grass surfaces.

Although the High School staff does not have specific certifications for BMP procedures, our subconsultants do. MVRHS presently subcontracts the annual maintenance of our natural grass fields to Dennis Brolin of Sports Turf Specialties (STS). STS is recognized as one of the best turf and athletic field maintenance companies in the country and continue to work locally on Martha's Vineyard for the MVRHS and several other clients.

More information regarding STS and their capabilities can be found on their website at <https://www.sportsturfspecialties.com/>



7. Job training: Knowledge of regenerative land use practices is a valuable, climate-related workforce skill. Can the applicant please consider using the field renovations and maintenance as a workforce training experience for high school students?

Response: Yes, the high school will consider using field renovations and maintenance as a workforce training experience. This was previously offered by the Assistant Superintendent for Curriculum and Instruction Dr. Richie Smith. The curriculum would have to fit the parameters allowed by the frameworks and guidelines of the Massachusetts Chapter 74 career/vocational technical education programming.

Thank you for your time and consideration. Please let me know if you have any questions or require any additional information to complete your review.

Sincerely,
Huntress Associates, Inc.

Christian C. Huntress
President

Cc: Matthew D'Andrea – MVPS Superintendent
Richard Smith – MVPS Asst. Superintendent
Kimberly Kirk – Chair, MVRHS School Committee
Joseph Sullivan – Daedalus Projects, Inc.



Fall Sports Medium Management Schedule

Management schedules are approximate “ideal” timing for specific practices. These timings will be adjusted based on weather conditions, soil type, and field use.

	Field Rest and Recover					Field in Use			
Operation	March	April	May	June	July	August	Sept	October	November
	Spring			Summer			Fall		
Mowing Keep mower blades sharp to reduce turf injury and fuel usage.	Mow at the highest recommended cutting height for the grass species growing that minimizes mowing.					Reduce mowing gradually at ~ $\frac{1}{2}$ " per week until desired height attained. Increase mowing frequency to increase turf density.			
Watering Base irrigation on ET, soil moisture, overseeding and field use.		Monitor rooting depth and moisture level in the root zone. Allow some moisture stress to encourage deep rooting.			Apply at least $\frac{1}{4}$ " to $\frac{1}{2}$ " every 4 weeks to avoid dormancy. Limit traffic.		Maintain adequate soil moisture but keep surface dry to maximize traffic tolerance.		
Fertilizing Amount of Nitrogen per 1,000 sq. ft. Use soil test for potassium (K) recommendations.	Fertilizer applications may be restricted, check local fertilizer laws.		Apply 1# of a 50% water soluble nitrogen source in mid-late May.			Apply 1# of a 50% water soluble nitrogen source in mid-August.	Apply 1# of a 50% water soluble nitrogen source in mid-September.		Fertilizer applications may be restricted, check local fertilizer laws.
Cultivating Avoid aerifying when turf is under stress or soil is too dry or too wet.						Solid tine cultivate in multiple directions when fields are in use to maintain infiltration of air and water. Focus on high-use areas.		Hollow tine cultivate, break up cores and overseed.	
Overseeding Focus on high-use areas.		Seed perennial rye at 2#/1,000 sq. ft. weekly in high-use areas.				Seed perennial rye at 2#/1,000 sq. ft. weekly in high-use areas.			
Topdressing For leveling low spots, reducing thatch, improving seedbed.						Lightly roll high spots to level surface, check field for low spots and fill in.			Hollow tine cultivate, break up cores to use as topdressing.



Spring Sports Medium Management Schedule

Management schedules are approximate “ideal” timing for specific practices. These timings will be adjusted based on weather conditions, soil type, and field use.

	Field in Use			Field Rest and Recover					
Operation	March	April	May	June	July	August	Sept	October	November
	Spring			Summer			Fall		
Mowing Keep mower blades sharp to reduce turf injury and fuel usage.	Establish mowing height appropriate for particular sport. Increase mowing frequency to increase turf density.			Mow at the highest recommended cutting height for the grass species growing that minimizes mowing.					
Watering Base irrigation on ET, soil moisture, overseeding and field use.		Monitor rooting depth and moisture level in the root zone. Allow some moisture stress to encourage deep rooting.		Apply ¼” to ½” every 4 weeks to avoid dormancy. Limit traffic.			Maintain adequate soil moisture.		
Fertilizing Amount of Nitrogen per 1,000 sq. ft. Use soil test for potassium (K) recommendations.	Fertilizer applications may be restricted, check local fertilizer laws.	Apply before season starts, at green up, ½# of a 50% water soluble nitrogen source.	Apply 1# of a 50% water soluble nitrogen source in mid-late May.					Apply ½# of a 100% water soluble nitrogen source in mid-October.	Fertilizer applications may be restricted, check local fertilizer laws.
Cultivating Avoid aerifying when turf is under stress or soil is too dry or too wet.	Solid tine cultivate in multiple directions to maintain infiltration of air and water. Focus on high-use areas.			Hollow tine cultivate in multiple directions to relieve compaction and aid in overseeding.					
Overseeding Focus on high-use areas.	Seed perennial rye at 2#/1,000 sq. ft. weekly in high-use areas.			Overseed if turf is thin at the end of the season.					
Topdressing For leveling low spots, reducing thatch, improving seedbed.	Lightly roll high spots to level surface, check field for low spots and fill in.			Check field for low spots and fill in.					



NAUSET REGIONAL HIGH SCHOOL

P.O. Box 1887, North Eastham, Massachusetts 0265 1-5046

Tel. (508) 255-1505

Fax. (508) 255-9701



Dr. Christopher Ellsasser, Principal

Sean Fleming, Asst. Principal

Neal Milan, Asst. Principal

Martha's Vineyard Commission:

Our turf field has made a tremendous impact on our athletics program:

1. Decreased maintenance: fertilizer, mowing, lining, seeding, slicing, watering, etc.
2. Creates a practice field for multiple teams. Our old grass field was not open to practice because of the wear and tear. There is minimal wear and tear on the turf.
3. Consistent playing surface, which is especially important in field hockey, lacrosse and soccer.
4. Can use in any weather, including rain and snow. It gives us an opportunity to play games that we wouldn't normally be able to play on grass.
5. Safe, and some research shows that it can decrease the rate of concussions.

Please let me know if you have any questions.

Sincerely,

John Mattson
Director of Athletics
Nauset Regional High School
Office: 508-619-5209



January 12, 2021

To: Martha's Vineyard Commission

After nearly 20 years of discussion and debate, a multipurpose turf field facility opened at Falmouth High School in August, 2019. Support for a turf field here in Falmouth had always been strong, but decisions surrounding site selection, composition of the infill and its environmental impact, and the benefits of grass vs artificial turf required a lengthy period of community input and information dissemination before the project was finalized.

Falmouth High School Athletic programs experienced the benefits of the turf field starting with the Fall, 2019 sports season. Our field hockey, football and boys & girls soccer teams practiced and played games on the new field that season. Community use by youth football, youth soccer programs and some limited use by adult groups also started at that time. Unfortunately, with the cancellation of the spring, 2020 sports season, our boys & girls lacrosse teams have not had the opportunity to utilize the new facility. Community use last spring and summer was also halted due to Covid related restrictions.

The multipurpose turf field facility has had a significant, positive impact on our athletic programs. As promised, the turf field has greatly reduced the two major problems associated with most grass athletic fields; overuse and cancellations due to poor weather conditions. Lights allowed us to schedule the field for high school programs starting at 2pm until as late as 8pm each school day; eliminating the problems we faced with the loss of daylight towards the end of the fall season. It should also be noted that the turf field is used by physical education classes during the school day and the marching band in the evening and on weekends. When a large outdoor venue was needed, Town Meeting and the School District's Convocation were held at our wonderful new facility.

Kathleen Burke
Director of Athletics
Falmouth Public Schools
kburke@falmouth.k12.ma.us
508-540-2200 x3022

Jennifer Police
Principal
jpolice@monomoy.edu

David Alexander
Assistant Principal
dalexander@monomoy.edu



Karen Guillemette
Director of Athletics
kguillemette@monomoy.edu

Jonathan Bennett
Director of Guidance
jbennett@monomoy.edu

Monomoy Regional High School

75 Oak Street
Harwich, MA 02645
Phone 508-430-7200
Fax 508-430-7223

January 8, 2021

Dear Martha's Vineyard Commission;

I am writing this letter in support of Martha's Vineyard Athletic Director Mark McCarthy for adding a turf field at Martha's Vineyard Regional High School. At Monomoy, we built a new school and grounds including a turf field and track about 7 years ago. Our turf has maintained an almost pristine appearance, while getting heavy use from our athletic programs as well as many community and private programs. The turf is an invaluable asset to our athletic department, student-athletes and community. Maintenance is minimal for turf fields and use is very rarely interrupted due to weather or field conditions. I can say without reservation adding field turf will enhance the experience for your student-athletes and become a sought after commodity by your community.

Thank you for your time.

Sincerely,

Karen Guillemette, CAA
Director of Athletics
Monomoy Regional School District
75 Oak St.
Harwich, MA 02645
508-815-5838
kguillemette@monomoy.edu