

Merrimack High School
Football Field/Track Facility
Report
March 12, 2012

Original Charge

On October 17, 2011, the School Board approved the following Charge, which was given to the Planning and Building Committee:

Work in conjunction with the Superintendent, Business Administrator, Director of Maintenance and High School Administration to recommend the kind of surface that should be used for the athletic field at Merrimack High School.

The investigation will include, but not be limited to, the following:

- a. Physical condition of the high school track that surrounds the field, including its short term and long term needs*
- b. Types of athletic field surfaces used (e.g. natural, artificial, synthetic), their life expectancy, installation and maintenance issues and accompanying costs*
- c. Survey of surrounding school districts and/or viewing of their athletic fields to gain their experience factor.*

Report to the School Board by March 2012.

Investigation

Current condition of track and field

Members met with Merrimack High School Athletic Director Andy Krahling, Business Administrator Matt Shevenell, and Maintenance Director Tom Tousseau to gather the following information:

The current grass field behind the high school is in “pretty good” shape, but this is because its use is restricted to actual football and lacrosse games plus occasional soccer and field hockey tournaments. It is not used for any practices. In addition the field, as currently scheduled, is at maximum usage in order to maintain good game day field conditions. The cost for annual field maintenance is approximately \$30,000 a year. This amount includes maintenance products, water and 632 man-hours for inspection, repair, over-seeding, de-thatching, mowing, initial line painting and game-day repainting. (See attached chart.)

The maintenance department believes the track is in “fairly average” shape. It requires \$2,000 - \$2,500 in repairs per year. The District uses Maine Track, the company that originally installed the track in 1999-2000, for repair work. However, repairs have been to the top layer only and the substructure of the track is starting to delaminate. A track has about a 15-year life expectancy. It is expected that the track will need total replacement or large-scale renovation in about 5 years. An estimate of the cost for replacement, to include taking off top rubber layer, grinding the subsurface, and installing new rubber top surface, would be about \$165,000.

Types of athletic field surfaces

Basically there are three main types of athletic field surfaces: natural grass, synthetic or artificial turf and Astro-turf.

1. Natural Grass: The life expectancy of a grass field, when used to its full potential is about one year. Grass fields need to be regularly watered. In addition to the annual cost of water (\$1,900 - \$2,500), one must also give consideration to local water bans. Other concerns include: usage potential varies depending on weather conditions; grass fields need regular mowing and spot repairs; and an amount of time is needed to let new sod establish itself before the field is used.
2. Synthetic (a.k.a. Artificial) Turf: Most synthetic turf has a guarantee for 8 - 10 years. However, the life expectancy of such fields is 12 -15 years, depending on actual usage. The cost to install a synthetic field is about \$850,000. Synthetic fields are kept debris-free using a blower or rake, such as a Green Zapper and are installed with permanent lines, each sport having different colored lines; thus there is minimal maintenance. In addition, synthetic fields are “ready-to-use” virtually all year; however, there is a need for a good drainage system for water (rain and snow melt) run-off.
3. Astro-turf: This type of turf is basically a single layer of carpet over cement. There is no infill under the turf so there is no bounce to the surface. There are concerns about increased possibility of injuries. Most sports facilities are moving away from Astro-turf.

Survey of Athletic Facilities

Members of the Committee contacted athletic directors and/or visited the fields detailed in the attached chart.

Additional Observations

- Injury reports show no significant difference between natural grass and synthetic turf fields. However, if natural grass is not well maintained, injury potential increases.
- Installing a synthetic turf field will significantly increase usage potential.
- Maintenance costs for synthetic fields are less, but initial capital costs are higher.
- The equipment needed to install any type of new field could damage or impact the track.
- The lights at the field were “re-worked” last year and are expected to last 10 years before replacement is needed.
- A synthetic field could potentially generate revenue, such as summer youth sports camps.
- Synthetic turf has environmental advantages, which include use of recycled tires in the manufacture of the turf, less water use and no need for pesticides or fertilizers.
- Synthetic turf would also allow for non-sport usages during the school year.

Recommendation

After investigation, the Planning and Building Committee unanimously recommends a medium-height synthetic turf field be installed at the athletic field at Merrimack High School. The Committee believes that, even though the initial cost for installing a synthetic field is more, the increased usage justifies the cost.

In addition, the Committee recommends that this installation be done concurrently with, or in close succession to, renovation or replacement of the track. This Committee stands ready to help in any way it can to promote the project.

Members of the Committee

Richard Hendricks, Chair

Gage Perry, Vice Chair

Stanley Heinrich

Davis Powell

Finlay Rothhaus

Laurie Rothhaus

George Markwell, School Board liaison

MHS Field Maintenance Expenditures

Item	Item Description	Freq.	Per.	Man/Hrs	Man/Hrs/Year	Cost - Min	Cost - Max
Maintenance Products	Fertilizer, Seed, Paint, Loam and other material needed for general field upkeep					\$6,000.00	\$8,000.00
Water	Watering times and frequency are dependant on seasonal characteristics					\$1,900.00	\$2,500.00
Field Repair	Over-Seeding, Wear Repair, De-Thaching	3	yr	16.0	48.0		
Field Airation	Airrite to alleviate compaction	4	yr	5.0	20.0		
Mowing	Reel Mow to maintain specific grass height (7 mos, April - October)	3	wk	2.0	168.0		
Initial Line Painting	Football	1	yr	16.0	16.0		
Line Repainting	Football (4 mos, August - November)	1	wk	8.0	128.0		
Initial Line Painting	Lacrosse (Boys & Girls)	1	yr	8.0	8.0		
Line Repainting	Lacrosse (Boys & Girls) (3 mos, April - June)	1	wk	4.0	48.0		
Initial Line Painting	Soccer - Season Tournament and Playoffs	1	yr	8.0	8.0		
Line Repainting	Soccer - Season Tournament and Playoffs	2	yr	4.0	8.0		
Initial Line Painting	Field Hockey - Season Tournament	1	yr	8.0	8.0		
Line Repainting	Field Hockey - Season Tournament	1	yr	4.0	4.0		
Initial Line Painting	Track	1	yr	8.0	8.0		
Line Repainting	Track (3 mos, April - June)	1	wk	4.0	48.0		
Field Inspection	Walk the field to identify and review damage (7 mos, April - October)	1	day	0.8	112.0		
				Totals	632.0	\$7,900.00	\$10,500.00

This does not account for:

- Equipment
- Equipment maintenance
- Fuel, oil, electricity or other energy sources used to perform maintenance activities
- One-Time maintenance activities or repairs
- Replacement costs for field hardware (sprinklers, goals, nets, etc)

Survey of Area Athletic Facilities

Field	Built	Number of Fields/Turf Type	Track?	Usage	Maintenance/Life Expectancy	Additional Comments
Stellos Stadium	2001 Recently upgraded: \$750,000 including \$200,000 grant from NFL.			All three Nashua high schools + Nashua youth sports.	Fields expected to last 8+ years.	*Field is very hot in summer. *Sprinkling the field before a game keeps the heat down. *BG pays 15% of maintenance costs.
Governors Academy, MA	The baseball field was the least expensive to build. The Rectangular was the most expensive to build. Initial construction cost: \$1 million	1 Football 1 Baseball 1 “rectangular” (used for soccer & lacrosse) Medium height turf	Yes, but not around the football field		*Takes less time to maintain than grass, but needed to buy special equipment. *Life expectancy of fields: 12+ years as they are only minimally used.	Baseball field is very hot in spring...
Exeter High School	2005 Cost: between \$840,000 - \$1 mil	One field that is lined for football, lacrosse, soccer and field hockey. Medium height turf.	No track	Used only by Exeter High in most cases	*Cleaned & disinfected 3 times per year. *Warranty = 8 years, expected life expectancy = longer.	*Do not put track around the field. *Once you have synthetic turf, you’ll never go back to grass!!
Bedford High School	2007 \$850,000 (part of new school construction)	1 field: field turf	Yes	Lacrosse, soccer and football strictly used by school only	15 years	They suggested no track
Manchester West	2001	Sport grass	Yes	High School + 2 other football organizations + some renters	12 – 15 years	*Field is permanently lined *Melts down great, but be sure you plan for a good drainage system