MINUTES
AVON HIGH SCHOOL SYNTHETIC FIELD PROJECT SUBCOMMITTEE
AVON ROOM TOWN HALL BLDG. 1
MAY 23, 2016

I. CALL TO ORDER

The meeting was called to order at 7:01 AM by Chairman Peter Ponziani in the Avon Room, Town Hall Building 1. Subcommittee members present: Chairman Peter Ponziani, Donald Droppo, David Jadovich, Todd Donovan, David Magrini, Sara Roberson, and Dan Neagle. Staff members present: Director of Operations Myles Altimus and Recreation & Parks Director Ruth Checko attended. BSC Group's representatives present: Manager of Landscape Architecture Eric Roise and Landscape Architect Jess Harris were also in attendance.

II. MINUTES OF PRECEDING MEETING – May 16, 2016

VOTE: Mr. Droppo motioned to accept the May 16, 2016 minutes as presented and Mr. Neagle seconded the motion, which passed unanimously.

V. FIELD RENOVATIONS PROGRAMMING DISCUSSION

Mr. Ponziani noted that this was the third meeting of the Avon High School Synthetic Field Project Subcommittee. Mr. Ponziani asked that we before we proceed there was a question from the last meeting about scheduling by Mr. Magrini and Brandon Robertson is here to address that.

Mr. Robertson said he noticed from the minutes that there were a couple of questions. First he would like to address the schedule for referendum. He couldn't hazard a guess. He hasn't talked to the Town Council about it. Town Council is looking for a recommendation from this group and then we'll have a conversation about what the schedule could look like. In terms of the approval process for appropriation, it really depends on the final amount of the project. If it's under $2.5 million, the approval process will be a Town Meeting. Beyond that, it will be a full blown referendum process, regardless of the funding source. The last cost estimate I saw was just north of $2.5 million, so most likely a referendum. In terms of the approval process, no discussions with Council yet. Part of the formality at this point is having conversations about that.

There was a note in the minutes about naming rights/sponsorships. There's been no discussion yet about that. As part of the discussion going forward, the council will continue to look at this as a partnership. It's very much like we did with the library project – 3 sources of funding. There was local funds involved, fundraising dollars and participation from the state. I'm not too optimistic about the participation from the state. The philosophy remains the same. It would be a partnership. In terms of the town's contribution, I am carrying about $1.5 million debt service projection right now. That would be for recreation and field facilities.

Mr. Ponziani thanked Mr. Robertson and asked if there were any questions.

Mr. Droppo asked when those conversations happen, they don't necessarily affect what we're doing. You don't convey to them, regardless of if its $2.6 million or $2.5 million, the naming rights. Instead of waiting for this to reach conclusion.

Mr. Robertson responded that there's a meeting next week. Rather than have the final recommendations come to the Council at the very end, I want to give them next week an interim report. As part of that process, I'll raise these questions that have been asked to see if we can get those discussions started.

Mr. Droppo added, yes the naming rights discussion. Those will not probably be one meeting and done.

Mr. Robertson agreed.

Mr. Ponziani once again thanked Mr. Robertson and turned the discussion over to Mr. Roise.

Mr. Roise began with the scheduling discussion, as far as the design is concerned, we're aiming at having documents ready for permitting this fall, which would allow you to go to bid over the winter. Optimistically, as long as we can get through zoning and wetlands quickly. At the very earliest, it would allow us to get everything out to bid over the winter and begin construction in the spring or summer of next year.

Mr. Ponziani asked for confirmation that we don't have a wetlands issue.

Mr. Donovan answered that the wetlands are out to the back. The drainage issue that Mr. Neagle had talked about.

Mr. Neagle said he thinks it discharges into the wetlands back by the Fox Den neighborhood. You would be figuring that out with your DEEP permits – storm water discharge.

Mr. Roise agreed that once they get into the actual engineering, we'll know more.

Mr. Roise said that for today, the committee asked him to talk about turf, track surfacing and lighting. Today it's going to be mostly about turf. Luke spoke a lot previously about turf with you. I'm going to do Turf 101.

I'm going to talk about running track surfaces. There are two basic types of running track surfaces – porous surfaces and impermeable surfaces. Then I'm going to talk about synthetic turf – history, maintenance and life cycle considerations, industry trends with infill issue, quality as far as carpet and infill, and health and environmental safety – current issues and trends.

First thing – track surfacing, I'm talking about the rubberized surface that goes on top of either asphalt or concrete, which forms the base of the track. Track surfacing is a fairly expensive item, which is why it's separate category on its own. There's tuned and non-tuned systems. When coaches talk about a tuned track surface, that's a track surface that's been engineered for the

softness or hardness of the track. It's usually high end – Olympic or NCAA Division 1 track surfaces.

Then we start talking about permeable and impermeable systems. A permeable or porous track surface system is most of what is installed at municipalities around the state. It's very similar, unless you knew what you were looking at. You wouldn't know the difference between an impermeable or permeable system. A permeable system breathes air – passes air and vapor through it. Much more forgiving in an outdoor environment where you're putting it on a piece of pavement and you know you're going to be dealing with moisture all the time. Impermeable systems seal up the pavement. They do not pass water or vapor. They are much less forgiving, as far as an outdoor environment because if you do something wrong with the base or there's water passing through the pavement section, you'll get bubbling and blistering all over your track. The impermeable systems are much higher end systems. They're fairly rare in a municipal environment.

The warranties for track surfaces is typically five years. That's the time between the installation of a full system and the first color coat that you put on it. Most of the track systems have a 20 year lifespan. You'll have 3 color coatings that will happen in that 20 years. If you're dealing with a permeable system, the first two color coatings are pretty easy to do. With the third coating, you run the danger of sealing up the surfaces and making it into an impermeable system and causing blistering.

If you don't do the color coating on that five year period, you run the danger of getting beyond the life cycle of the surface underneath. You have to keep on top of color coating to make sure that the track surface lasts for its full life cycle.

Construction of track surfacing is very weather dependent. Very temperature dependent. Season for installing is mid-May – mid-October. If the temperature gets below 45 degrees at night, you're pretty much done for the season. Ground has to be above 45-50 degrees to install these surfaces. It's also humidity dependent.

Mr. Neagle asked Mr. Roise for clarification, you're talking about the coating. Mr. Roise confirmed yes.

Another thing to consider is the cure time for the asphalt underneath. Once you pave the asphalt, the base of the track, that asphalt needs to sit for at least 14 days before they can put the rubberized surfacing on top of it. If you're talking about the impermeable system, they're more sensitive. That's about 28 days cure time.

Mr. Ponziani asked if the base was the same for the track as for the infield. Mr. Roise responded no. The field will be a permeable stone base. The base for the track will be asphalt.

Mr. Ponziani asked what we have on the track right now. Mr. Roise responded that we have an asphalt base with a rubberized surface. I believe it's a urethane surface.

Mr. Ponziani asked if it's permeable and Mr. Roise responded yes, permeable.

Mr. Ponziani asked how that has held up and Mr. Roise responded pretty good.

Mr. Donovan said, we just resurfaced that 2 or 3 years ago. Mr. Roise said it's in pretty good shape. There's not a lot of surface cracks. If the asphalt quality is poor, you'll start to see the asphalt pull apart with age and cracks. Age cracks are expected. It's better than settlement cracks or alligator cracking which would indicate that the base is failing.

Mr. Ponziani asked how long has that been in? Mr. Donovan clarified, the actual track itself? Mr. Neagle added that they've recoated the track, not repaved it. Mr. Donovan said we did the major track, 10 years ago maybe and Mr. Neagle said he thought it was longer than that. He thinks it was recoated 3 or 4 years ago.

Mr. Donovan said, you can spec the base like you can spec everything, right – what kind of asphalt. Mr. Roise answered yes. Typically we spec an asphalt base, in Connecticut.

Mr. Donovan added, the grade of asphalt. Mr. Roise said we play with the grade of asphalt. They add a lot of recycled asphalt. Because of that, the ratio of recycled asphalt to bitumen (liquid asphalt), that ratio gets too similar and there's not enough liquid to hold it together. That's when you see cracks. We actually spec a little bit higher bitumen content. The tolerances for track grading are half of that for road grading. When we specify, we have qualifications for paving crews and surfacing crews. It's 1/8 an inch and 10 feet of variation vs a ¼ inch, which is a big deal.

Construction Period – typically it takes 2 or 3 days for the asphalt to go down. Once that goes down, they have to wait for the curing period. Putting down the actual rubberized surfacing takes 18 – 20 days. The actual period takes less, but if there's weather to worry about. When they're doing the track surfacing, everything in the facility is covered with plastic. There's a paving portion and a spray portion. When they're spraying they actually cover everything – half the bleachers, most of the field, all of the fencing, to keep that track surfacing off.

I talked a little about recoating – staying on top of the recoating. You'll get three recoats out of the life cycle of your track surface.

As far as surfacing systems go, the first two here (samples) are the basic ones. The latex system is permeable, the least expensive. All these systems involve crumb rubber, usually recycled. They take the crumb rubber, they rake it out. They screen it out. They spray a urethane structural spray on top of it. They'll put another screened coat of rubber surfacing and spray it. They'll work themselves up to a ½ inch layer. That's the latex system. Some of the urethane systems work like that also. Latex is the least expensive. It's very temperature sensitive for the runners once it's installed. Latex is paint. Its water based. In cold temperatures it really gets hard. That's why polyurethane with base mat systems are preferred now. The cost difference is about $50,000-$60,000. Polyurethane is a lot less temperature dependent. It stays soft in cold weather. There's a couple different variations of the polyurethane system. It has a better quality because it's put down with a paving machine. There's a special paving machine that puts down ½ inch of rubber

crumb. After that, they spray coat a clear coat to keep it black, which is the cheapest option or they do a color coat on top of that, usually red. There's other options as far as color goes.

Mr. Neagle said he knows there's a couple guys in state that do latex. He's not sure about urethane. He asked if there are people in the state that do.

Mr. Roise said no. They say they do, but they're actually bringing in crews.

Mr. Neagle said there's at least one that does latex. Mr. Roise said yes, Dalton down in Cheshire.

Mr. Donovan asked if Mr. Roise knew what most other towns and cities are doing for their tracks. Mr. Roise answered that most other towns are doing the polyurethane based mat system, which is about a $50,000 - $60,000 upcharge from the latex system. It's a better quality material. It has a better life cycle. It stands up better. It's not as temperature dependent for the runners and players.

Mr. Ponziani asked if we have latex now and Mr. Roise answered that he thinks we have polyurethane. It's hard to tell, once it's in.

Mr. Magrini asked if there were any considerations as far as soccer being played. Soccer cleats being on a latex track vs a polyurethane track? Mr. Roise said he'll be specifying a track protection mat. It's a very heavy milled carpet. We specify a number of those in the players' areas and for the crossing areas. Preferably, you won't have soccer players and football players crossing the track with their cleats mostly because we're worried about the turf getting into the porous system and plugging it up.

Some of the other higher end polyurethane systems that are impermeable. They pave them and then they flood it with polyurethane. Much larger quantity of polyurethane on the surface. They can be tuned, as far as softness or hardness. There's a lot heavier structural coat that goes on top of it. Between the polyurethane base mat and the polyurethane impermeable system, you're talking about a $100,000 upcharge.

Mr. Ponziani asked about the life? Mr. Roise responded with the same useful life.

Then you get into the premanufactured systems – permeable or impermeable. Most of them are impermeable. This is where you get into the Mondo track – Olympic level track. They're not very popular for outdoor installation. The mats are rolled out and glued to the asphalt. Over time, the edges peel up. These are the systems that are used for Olympic level and Division 1 NCAA.

Some of the coatings – latex, polyurethane, pave mat – black color or polyurethane bound pave mat – red color.

Mr. Ponziani asked if the costs shown are the total costs and Mr. Roise responded that the cost is just for the rubber mat that goes on the track.

Mr. Donovan asked if it's $50,000 between latex and what we're looking at. Mr. Roise responded yes.

Mr. Roise continued that we've had a lot of problems with quality of latex going in. He doesn't recommend latex because of the quality issues.

Mr. Donovan asked what the replacement cost of color coating? Mr. Roise answered it's about the same. It's mostly the labor cost – $50,000 to color coat and restripe. He asked if there were any questions on track surfacing. Mr. Ponziani asked that we go back two slides. Under the surfacing systems – latex, second bullet down, crumb rubber – spray. That's not polyurethane? Mr. Roise answered that it is. The crumb is put down with a paver machine. Good quality control. Mr. Ponziani asked if the crumb rubber health issues associated with the field not present in the track because of the way it's installed. Mr. Roise answered that nobody's brought it up. I would think it's the same issue because it's the same material. It's sealed.

Mr. Neagle asked about the track right now. It's not loose. It's not granular. It's not airborne. It's sealed.

Mr. Roise asked if there was anything else on tracks. No response so he moved on to turf. Luke had talked about health implications and choices around turf. I'm going to go over that quickly and get to some of the questions you have on infill and issues.

The history of turf started with the Astrodome in Houston back in 1965. With the dome over the stadium, they couldn't grow grass. They came up with Astroturf, which is basically a ½ inch carpet that went in without any infill. That was the leader in the industry of synthetic turf between 1965 and 1988. It was installed directly over asphalt. It was hard as a rock. Later on, they started putting pads underneath it. It started getting softer, but not nearly as soft as the current generation. In 1998 the second generation of synthetic turf came along. The brand Field Turf came up with the patent for this material. It's a long mat carpet – 2 ½ with a mix of sand and rubber mixed in. That's the traditional system – sand and recycled crumb rubber. There's two different kinds of recycled crumb rubber – cryogenic and ambient. Ambient means when the tires were ground up, it was done at room temperature. Cryogenic means that it was flash frozen with liquid nitrogen and then ground up. Supposedly, you get a better quality when it's frozen.

Third generation of artificial turf involves different fibers – both slit film and monofilament fibers in the carpet itself. It also involves the addition of pads and alternative infills. Right now we're in the third generation.

Why is synthetic turf so popular? The biggest reason is increased usage. For a natural turf field, you get about 200 uses/year. Game fields are guarded religiously. For a synthetic turf field, you can get about 550 uses/year for an unlit field. If you light the field, you get up to 750 uses/year. That was documented at UMass Lowell.

For natural turf, you need specialty maintenance. For synthetic turf, you need someone on a machine who can drag it and level off the infill. Synthetic turf has more consistent play – no divots or clumps. Early or late season play – doesn't freeze. It stays warm.

Turf has lower maintenance costs – $5,000/year. Drag brush on the back of a tractor and dragging the field. As part of the specifications, we provide training to staff on how to use that piece of equipment. It's a special process, but do not need special staff.

Added sports programming – men's/women's lacrosse, youth soccer, ultimate Frisbee, rugby. The fields that you have are really in demand.

Synthetic turf takes best advantage of cost per use. Avoids having to purchase and develop additional land.

Synthetic turf rough life cycle cost – If a natural field is $350,000 plus $20,000/yearly maintenance, plus a $40,000 renovation every 5 years, over a 15 year life cycle at 250 uses/year, that gives you a cost of $205/use. For synthetic turf, $812,000 construction plus $5,000/yearly maintenance, plus year 15 recarpeting the field for $450,000 at 650 uses/year, that gives you a cost of $137/use. That's where the value of synthetic turf comes in – the cost/use.

Mr. Neagle asked if that was an unlit use and Mr. Roise confirmed that it was. With a lit field, you get more.

With non-synthetic turf you get fibers in the infill. When the field gets constructed, all the topsoil comes out. The crown of the field comes out. Natural turf fields have an 18" crown in center of the field. Synthetic turf fields have an 8" crown. All the topsoil needs to come out to make room for the drainage stone that goes under the field. About 15" of topsoil comes out.

The concrete anchor curve that goes around the perimeter gets installed. The flat panel drains go in to drain the field. Stone will go on top of that. If a turf pad is required, it will go in on top of that stone. The stone will be graded to a high tolerance. The turf carpet will be rolled out and either sewn or glued at the seams. The field markings will be permanently inlaid and the infill material is spread over the carpet and raked in or brushed in so the fibers stand up. That's the basic plan.

Mr. Neagle asked if he expected a trench drain around the perimeter. Mr. Roise responded that it's not required. If you test the stone system, most of the systems we've installed drain at 50" per hour.

Mr. Neagle said he's thinking more about the way the water sheds off the track at the intersection with the turf and the curb. Mr. Roise said that they just let it go right onto the field.

Mr. Ponziani asked which systems are sewn and which are glued? Mr. Roise responded that when you put a pad under the field, they go under the turf. Short napped turf. If you sew that seam, it will be very visible, so it's glued. If you go with a longer nap turf, they can sew it and tuck that seam under where you won't see it. Once you get to the radius line, dash line, those are all glued in. The numbers, the hash marks.

The edge detail around the edge of the field is very important – the curb. In some systems, this is incorporated with a trench drain. The curb serves to anchor the turf. It also serves as a level edge for them to base the paving off of.

Topsoil removal typically consists of 3,000 cubic yards of material coming off the site and the same amount of stone coming into the site. Something to think about is the truck traffic in and out of the site – about 300 truck trips over 2 week period.

Field drainage is considered a benefit to store storm water. If it's associated with the installation of the parking lot, it's a wash.

Turf fabrication time – submittals will come in for line striping plans. We will review it and present it to your coaches to review to make sure it's what they want. Once that's approved, it usually takes 3 – 4 weeks for the turf to show up. Every turf field is made custom for the site it's going on.

Installation time – once the turf arrives, it takes 2 or 3 days for the actual carpet to go down and seams to be done. The inlays, yard line numbers, hash marks, that's what takes the most time. Also, brushing in the infill takes 3 or 4 days.

Static electricity – prevents water from going through the field. New field might see puddling on it for the first couple of months. Static electricity causes that. Over time, static electricity causes the infill to stick to the players. There are treatments (soaps) that prevent that static electricity.

Field testing is very important. Testing of the stone to make sure it's draining properly. Testing of the turf materials to make sure what was specified and what was tested is what's arriving at the site. Once it's installed, to make sure it's behaving as it should.

Mr. Neagle asked if the specs require a 5 year inspection by the manufacturer. Mr. Roise responded that they require that the manufacturer come back after 6 months and touch up the infill. Warranties – manufacturer is responsible for an 8 year period for repairing any seams that break or come undone and responsible for any Gmax testing.

Mr. Neagle mentioned that he heard there's an issue with insurability. Some municipalities are requiring an inspection by the manufacturer to make sure that the fields are safe for continued play. Mr. Roise responded that when fields get older, they get harder.

Mr. Neagle asked who would be conducting the inspection and would that be written into the specs? Mr. Roise responded that it gets written into the specs for the period of the warranty that they owe you a Gmax test (hardness of the field) annually. That's a measure of the hardness of the field. Natural turf is a 90 on that scale, asphalt is about 200. We aim to be between 90 and 120 when the field goes in.

End of life recycling of turf – they've started making machines that harvest turf, harvest infill. They're not pelletizing it. They are rolling it up and separating the infill (rubber and sand). Rolls

are containerized and sent to China or firms in the Midwest that repurpose the turf. Every field that we've done has been recycled in some way without us having to specify it.

Mr. Ponziani asked about payment for the topsoil removal – is that included. Mr. Roise responded that will be included in the overall cost of the project.

Mr. Magrini asked about the topsoil – is that trucked off or retained by the town. Mr. Roise responded that if the Town has a project, or a place to put it (75' x 75' x 8' high pile), they take it. If they are planning any natural turf fields, they'll put it over there. Involves logistics. Mr. Magrini addressed Mr. Robertson – this may be something you talk to Town Council about for Fisher or Thompson Road. Mr. Donovan added Alsop.

Mr. Roise continued with how do turf fields fail? The biggest thing is drainage. If the stone is not installed right or tested when it's going in.

Another way they fail is if the seams fail. The sewn seams pull apart – very rarely or the glued seams fail which happens more often. It's usually the result of them gluing the fields together in cold weather or wet weather.

There are also manufacturing failures. The manufacturer is supplied an inferior yarn where it starts degrading too quickly or a backing failure where not enough urethane is put on it. The fibers start pulling out over time.

Plowing is a failure method. Can damage a field very quickly.

Proper intensive usage – 550 uses per year does not kill a field. The biggest thing that ages a field is UV exposure over 10 – 15 years. Fibers are the same as what's used in plastic water bottles. Newer turf has UV inhibitors that extend the life cycle to 12 – 15 years.

Mr. Ponziani brought up the issue that Simsbury has, particularly where the goals are. He asked why that was happening there. Mr. Roise corrected himself. Usage does matter where the goal mounts are. Those are common wear areas. Simsbury is an older generation field.

Mr. Neagle added that someone from Simsbury shared with him that in hindsight, they wished they had regulated the use more. They leave the goals out there – they're getting used. This can be addressed by moving the goals. Fields are used constantly. There are signs of wear and tear. He wishes it were regulated better. Simsbury lets everyone and anybody use the fields. A program that manages how goals are stored, used, dragged off the field after games. Mr. Roise added rotating where they are. That's a management issue.

Mr. Neagle added that they will get beaten up because it's high use concentrated areas.

Mr. Roise stated that this get's into how long the fields last. Older generation fields lasted 10 – 12 years. Current fields last 12 – 15 years. This is because the increased treatment of the fibers. This excludes organic infill materials.

Warranty period is a standard 8 years. All seam and turf failures during that time are on the manufacturer.

Typically turf is warranted by a 3rd party. If the turf manufacturer goes out of business, you still have an insurance policy.

How do you maintain the field – drag brush. It's done once every 100 hours of use. If it's done five times a year, it's about $5,000/year.

Mr. Neagle asked if it would be 6 times if you're using it 600 hours. Mr. Roise answered yes.

Deep cleaning – this has become more popular. Vendors are providing a service that pulls up infill, washes it, treats it through a magnet to pull out all the metal and then puts it back down. It's an expensive machine. It's typically an as needed cleaning.

Mr. Ponziani asked what happens if you don't clean it. Mr. Roise answered that the fields look older. The fibers will lay over. The infill will get compacted and a little harder. Once this happens and you drag brush it, it looks dirty.

UV treatments are not required.

Sanitary and bacteria treatments are not required. Because of the UV and the heat of these fields, it kills bacteria. This excludes organic infill fields.

Turf fiber – green stuff. Height of fiber is a factor of what sport is being played on it.

Infield depth is a fraction of that. Infill holds the fibers up.

Stitch gauge is the spacing of the fibers on the back.

Mr. Ponziani asked what kind of turf was in the box. Mr. Roise responded that it's a monofilament 2 ½".

There's two different types of fibers – slit film. It's a broad blade. It's split down the middle. The latest is a monofilament fiber. It stands up better. The slit film lays over in time and looks shiny. Monofilament stays standing up much easier over time. Newer ones are more durable. Hybrid systems – mix of monofilament and slit film. It gives the appearance of grass and the stand up of monofilament. It has encapsulation of the infill.

Nylon fibers – old style abrasive turf. In not used so much anymore. It's used as a thatch layer in turf. Fibers are curly and they hold the infill and provide cushioning.

Carpet weight and backing weight – weight of backing and fibers on top of it.

Turf pads – go under the field for alternative infill systems. For sand and rubber systems, you don't need a pad.

Mr. Neagle asked if those would telegraph over time. On a short nap field?

Mr. Roise answered that's why short nap fields are glued. He hasn't personally seen them telegraph. There's a paved pad system called an e layer and those sometimes curl at the seams.

Most of the pads are made to go a number of life cycles. Turf is not glued to it. It's laid loosely on top. After the life cycle of the turf, the turf is removed and a new one is installed on top of it.

Gmax and critical fall height. Gmax is the measure of the hardness of the field used for concussion purposes. How dangerous the field is. Natural turf is 90. We aim for Gmax of 120. If a field goes above 160, it's out of specification and needs remediation. If it gets up to 200, it's unplayable and should be shut down.

Fibers – monofilament fibers are the flattened fishing line fibers that stand up. Parallel slit film fibers – lay over, very durable.

Traditional infill materials – silica sand and SBR rubber (crumb rubber that's been manufactured out of recycled tires). It's highly processed. Excellent resiliency and longevity qualities. Low maintenance and highly studies as far as health, performance and environment.

Mix of sand/rubber is always manipulated depending on the sport. More sand, harder the field, the faster the play. More rubber, softer the field, the slower the play.

Deeper infill profiles – no pad is required.

Coated SBR rubber is an alternative infill.

Mr. Ponziani asked if the fill dissipates over time. Mr. Roise answered yes. It settles. It disappears. Mr. Ponziani asked if we have to add to it. Mr. Roise confirmed yes. They specify extra infill.

Mr. Neagle asked if the extra infill was premixed. Mr. Roise answered no. It's usually sand/rubber in separate bags.

Alternative infill systems – not popular until 2 years ago. Every field was sand and rubber. Very scrutinized for usage and cost.

TPE – same plastic that's used to make syringes and medical equipment out of. Can be very unstable, low melting point, bad reputation for clumping up. Comes in earth tone colors.

All of these are alternatives to crumb rubber. Sand is in every one of these systems.

EPDM is virgin rubber. Same rubber used in roofing materials. Many different colors. Very expensive.

Acrylic coated sand – tumbled sand. Abrasiveness is removed. It comes in earth tone colors. It requires a pad. Any sand infill kills play for lacrosse.

100% sand. Requires a pad. It's very abrasive.

Organic infill systems – earth colors. Usually made out of rice husks, coconut, walnut, cork. Most of them need moisture retention. Would have to add irrigation. It keeps the organic infill in place, adds resiliency and cools off the field.

Mr. Ponziani asked why so many entities are looking to alternatives. Mr. Roise answered that coated rubber is the least costly alternative. All the other alternatives are expensive. They require a pad. Adding a pad adds a $100,000. They're all permeable. Water goes right through them.

Why alternative infill systems? Two years ago as a result of an NBC News article concerning soccer players in Washington state. They proposed a link between lymphoma and crumb rubber. No research about any link between exposure to crumb rubber and exposure to Cancer.

Health effects – nothing new. Been around since 2008. Environmental and Human Health, a firm in Cheshire, CT did a report on the supposed hazards of artificial turf. That caused a moratorium in CT for a couple years. Since that time, there's been many independent studies on turf and none of them have indicated any reason not to install this type of field.

Environmental and Human Health has also implied links to Yale research. There's no research study.

A number of reports recently by the CT Department of Health, MA Department of Health, State of CA, State of NY. All of which say there's no reason not to install.

New Federal EPA study commissioned. State of CA has a study about artificial turf and crumb rubber. The State of CT is considering banning SBR rubber in children's playgrounds. City of Hartford has banned use of SBR rubber in fields.

Many municipalities are performing their due diligence on SBR rubber and infill turf and most have decided to proceed with installation. They're also thinking about failsafe solutions. They've been installing pads, short nap turf, and installing sand/rubber in that turf. It's a cheaper system. Should it be deemed hazardous, the crumb rubber can be vacuumed out and can put in alternative system.

Mr. Neagle asked about the encapsulated SBR. Is that one of the options on the fill?

Mr. Roise answered yes. There's not a lot of studies done on the alternatives.

Coated SBR was originally created in 2008/2010, not as a solution to environmental problems, but to cool down fields. It's coated with an acrylic coating. No independent studies that suggest less outgassing.

Mr. Donovan asked what the sealing does? Mr. Roise replied that it's sealing the individual particles. Mr. Donovan asked how much more that would cost over the regular SBR. Mr. Roise replied that without a pad, it would add $50,000. With a pad, it would add $120,000.

As I mentioned, there have been no studies that suggest that any alternative systems are better or worse than SBR. Very few alternative infill systems have been installed in New England. Organic systems, over two years old, you'd have to go to Delaware or Washington, DC to look at. A number of organic infill systems have gone down this past year in Fairfield County and New York. There's no history for these types of fields as far as playability, playability, or longevity.

Are infield turf fields safe? Study done by Field Turf (manufacturer's data) – study on natural turf field compared to infield turf – compelling numbers that artificial turf is safer.

Environmental and health safety topics – lead content of turf. Lead content of turf is part of the fiber. The older nylon fields, had lead problems. Some of the colors have lead.

Leachate potential – Storm water, recharge or storage. Number of studies – only real study shows zinc comes out. Whether the zinc level is detrimental is yet to be determined.

Big concerns are the PAHs – outgassing and players are inhaling those and the Volatile Organic Compounds.

Mold and staph infections. There's been a number of studies. Does not survive in artificial turf because of the UV – on outdoor fields.

There are concerns with latex allergies.

Artificial turf fields are hot. In August, you play elsewhere. Organic fields are cooler. Encapsulated rubber is cooler.

If you wet the fields, will it cool it down? It only reduces it for about 20 minutes.

Mr. Neagle asked if Wethersfield had sprinklers. Mr. Roise advised that he didn't know.

Mr. Roise continued with infield turf vs natural turf. Artificial turf has a number of benefits to the environment – uses a lot less water, no pesticides or herbicides, no fertilizer, not adjusting pH level, improved ground water recharge, no mowing, no striping, no aerating.

I stay away from addressing independent studies.

Some recent similar projects –

Southington High School,
Tolland – Pro Grass – slit film
Western CT – Hellas – slit film,
O'Brien (South Windsor) – slit film

Loomis Chaffe – Shaw Sports Turf
Old Saybrook – Greenfields
Bloomfield – Sprinturf

New ones are under construction or just wrapped up have all gone to a blended system with coated SBR for environmental reasons.

Mr. Neagle asked which one was the oldest one on that list and Mr. Roise responded that they are listed at the top. Mr. Neagle asked how old Southington was and Mr. Roise responded 3 or 4 years old. Mr. Neagle asked how they have held up and Mr. Roise responded that fields don't show their age until 8 years.

Mr. Donovan asked if Sprinturf was a new manufacturer. Mr. Roise responded no. They've been around a while. They've been very aggressive with their pricing. Big 5 – Sprinturf, Shaw, UBU, Pro Grass, Field Turf. There are a lot of other manufacturers.

Mr. Neagle asked if Sprinturf was a shorter pile. He wanted to know if something were to happen in the future – research on the SBR, if we vacuum out and replace the infill. Mr. Roise responded that anything with a pad. When you start putting in the pad, to offset the price of the pad, you make the nap of the fill shorter, so you have less of an infill.

Mr. Neagle asked if the shorter infill is better for field hockey. Mr. Roise answered that it depends on how soft it's done. Football should be softer, than soccer or field hockey. Field hockey likes a special turf – harder/faster.

Suggested reading – I suggest that my clients go to Penn State's Turf Research website. Penn State has done a lot of research on both natural turf and synthetic turf. They do testing, studies on staff. This website list independent studies. A lot of the research that's been done – you'll find that people disagree with environmental findings – they're getting this information online, old reports. Those issues have been corrected with newer generation turf.

That's it. Any questions.

Mr. Neagle added that Mr. Roise did a great job. He learned more in this session.

Mr. Ponziani asked that we talk about lighting. Mr. Roise said that the most popular lighting system is made by Musco. They differentiate themselves in the market. We can provide a performance specification and no other manufacturer will attempt to bid for it. Musco provides a 25 year warranty. New style LED and traditional halogen are both highly focused. Lights have to be installed around the perimeter for safety. On the scoreboard, unless you light the face of the scoreboard, you can't see it.

Mr. Ponziani added that he believes Musco did the lights at Little League fields and the tennis courts, within the last 2 years.

Mr. Roise added that the lights are highly focused. Because of this, they're highly efficient. The new systems have controls – you can control the lighting from your cell phone.

LED lighting systems were not available 2 years ago, they are available now. Albertus Magnus went in last year. We're doing one in New Milford that should be up and running in 4 weeks.

Mr. Neagle asked what the cost comparison was. Mr. Roise answered it's in the $100,000. You're never going to make you money back on the efficiency. It's a feel good upgrade.

Mr. Neagle mentioned that he saw in the estimates, that lighting was valued at $250,000. That would replace the poles and the fixtures. It's not the cost of running conduits – site work, electricians, etc. Mr. Roise confirmed.

Mr. Donovan asked if we lay the groundwork for putting in conduits. Mr. Neagle asked what that would be. How would you design that for future?

Mr. Roise answered that there's two types of footings for lighting. There's a pin and the base of the footing is a piece of concrete. They core a hole down, stick the pin in it and they pour concrete around it.

Mr. Neagle asked if that projects above ground. Mr. Roise confirmed yes, about 8 feet. Some folks do this. Other folks run conduit, and leave it at that. They don't put in any hand holds or anything. They core the hole for the pin, cut the conduit, put in the pull box and run the wires.

Mr. Neagle asked if that is typically outside the track. Mr. Roise answered that it has to be.

Mr. Neagle said we talked about an 8 lane track and a retaining wall. What was the anticipated design for the light foundation?

Mr. Roise answered that typically they're outside the track at the 30 yard line. We're anticipating a pin type system. Once we get further along in the design process, we'll suggest you do geotechnical boring in the locations where the pins are. Those pins go down 16 feet. If we're hitting bedrock, sometimes they can pin it to the bedrock. If we're talking about a spread footing, that's an up charge.

Mr. Ponziani asked if we're talking four light poles. Mr. Roise confirmed four, or eight, if we want to light the other field. Mr. Ponziani asked if the four light poles at the 30 yard line would allow you to see the scoreboard. Mr. Roise said that he would specify a scoreboard with a lit face or we provide lighting.

Mr. Roberson commented that we can see the scoreboard now. It's digital. Mr. Donovan added that we're not replacing the scoreboard.

Mr. Roise asked if there were any more questions about the lighting. Turf?

Ms. Roberson asked about the height of the poles. Can we go deeper at one of our next meetings?

Mr. Ponziani asked what are your questions. Ms. Roberson answered – height, LED, halogen. Mr. Roise answered that typically they're 80 feet high. The shorter you go, the more you have to rotate the fixtures up. When you do that, you lose light control and start spreading light all over the neighborhood. Typically its' four 8 foot poles, sometimes shorter to meet zoning or FAA regulations.

Mr. Donovan asked if he could provide 3 or 4 locations around the area that have different size poles so we could go and look.

Mr. Neagle asked what the bank of lights look like? Mr. Roise answered that there's 12 – 14 on a track and field – 2 or 3 rows. With the LED systems, because the light is focused on the center of the field, the light comes down in a V. The center of the field up high is not lit. With LED fixtures you have to put upside fixtures down lower. When you kick a ball or high ball, that ball is lit. It doesn't go out of the lighting and come back into the lighting. It's so controlled it's going directly on the field.

Mr. Neagle said the usage and the hours are real issue.

Mr. Ponziani said that he agreed with Mr. Donovan. If Mr. Roise could look at the lights we have in town – the tennis courts and the Little League fields. Mr. Roise added that the tennis courts and the Little League fields – the fixtures are very similar. Baseball or softball is lit to a higher degree. Football or soccer can be lit to a lower level.

Ms. Roberson asked if the lights would have a dimmer. Mr. Roise answered that you would light for a higher level. Sometimes a couple of fixtures on each pole would be wired differently. There's an up charge.

Mr. Neagle added that you have to add lighting to get people safely off the bleachers and off the field. He continued that his experience has been that you light this off the bleacher or lower on the pole. Then it's directional lighting. Still need to light the pathways around the field.

Mr. Roise added that the key with that is that it's emergency lighting. Those are very small lights and efficiently put down low.

Mr. Donovan added that pedestrian lighting was a consideration we talked about.

Mr. Roise added that next time he'll talk about lighting. He'll bring sketches of the layouts of the facility to discuss.

Mr. Ponziani added that we should also plan on talking about buffering. He asked that Ms. Checko tell us what she found out from P & Z. Ms. Checko said she spoke with Hiram Peck, our Community Planner, about buffering. He said to think about it in terms of what adverse affects do you want to mitigate – noise, lighting, crowds.

Mr. Roise said you mentioned the usage of the lights and the use of the field at night; consider what you're doing for a PA system. These are linked.

Mr. Neagle added that he talked with people in Simsbury. They project the sound system toward the school, away from the neighborhood. The suggestion is to put it in one corner, blasting it towards the entrance of the school. Pole mounted or ground mounted in the SW corner.

Mr. Roise said that PA systems can run anywhere from $5,000 – $100,000. $5,000 is an amp and controls – not much sound control. PA systems mounted on the scoreboard and how you aim that. When you talk about the ground mounted system, that's a lot of small speakers around the spectators. That really controls the sound.

III. COMMUNICATION FROM AUDIENCE

Mr. Ponziani asked if there were any questions from the audience. There were none. He thanked the audience members for coming.

IV. COMMUNICATION FROM COMMITTEE MEMBERS

Mr. Ponziani asked that we talk about scheduling. Ms. Checko said our next meeting is June 6th. Mr. Ponziani said we'll talk about lighting and buffering.

Ms. Roberson said it's actually June 13th, not the 6th. Ms. Checko then said the next meeting after that is June 27th. She asked if Mr. Roise checked with Curt could do the 27th meeting and Mr. Roise confirmed.

Mr. Ponziani asked if after the 27th, this committee would be in a position to make a recommendation. Ms. Checko said that we have a tentative meeting set up for July.

Mr. Ponziani asked what we were going to talk about on the 27th. Mr. Roise answered field options – sketches of the facility. What's included, what's not included, the layout of the track, the walks, pedestrian access.

Mr. Donovan recommended that we leave it on the calendar. Mr. Ponziani agreed and that we're going to have to have a date by which we make a vote.

Mr. Magrini added that the information's been great. We haven't really discussed anything. Is it possible if people were available on the 6th, we could discuss what we've heard?

Ms. Roberson responded that nothing's changed. We haven't had discussions. Let's be practical.

Mr. Roise said that he needs to get sketches, cost estimates. We'll start having at the next meeting. It will give you a context to start making decisions.

Mr. Ponziani added that he'd like to have this committee make a recommendation by July 18th.

Mr. Neagle asked for a copy of the list of fields to go on field trip. Mr. Magrini added that it would be really bad for this group to make a recommendation having sat in this room.

Mr. Roise put up a different list the one he showed on the slide. It's a list of facilities that were done by BSC Group and all the facilities we're aware of done by other consultants. Most of these are alternative infill fields. This provides – manufacturer, turf, type of turf, depth, pad/no pad, what type of infill.

Ms. Roberson mentioned that Sprinturf is out of Georgia. Are there any big companies in Connecticut?

Mr. Roise answered no. 90% of manufactures are from Dalton, GA.

Mr. Donovan asked if we could get a copy of the presentation. Ms. Checko said we could put it on the website too.

Mr. Neagle said that he's more interested in the projects that Mr. Roise has done. Mr. Roise said he understood. He just wanted to make sure that the group had an idea of alternative infills. We haven't done a lot of those fields.

Mr. Ponziani asked what Mr. Roise's recommendation would be. Mr. Roise asked the failsafe option?

Mr. Neagle asked if the list of projects was what Mr. Roise has done and Mr. Roise said some of them. We're doing Simsbury. We did not do Canton, Farmington or Granby. We did do Plainville, Windsor, Loomis, Tolland, Old Saybrook. We did not do Xavier. I personally was the manager for East Lyme, Reading and Torrington.

Mr. Donovan asked if he knew which ones had lights and which ones didn't. Mr. Roise responded South Windsor and Torrington have lights – new light systems. East Lyme and Simsbury have lights (existing). Plainville has lights (existing), Lyman Hall (new), Bloomfield (older), Tolland (newer).

Mr. Ponziani thanked Mr. Roise. Very informative.

Mr. Magrini added that Mr. Roise's minutes from the last meeting. For safety netting, we said we'll look at the safety netting around the entire field, not just the end zones. The secondary field, field hockey is primary, but it is a youth lacrosse field as well. On the scoring side, removing the old baseball scoreboard.

Mr. Ponziani asked that we remember what our task is. The baseball field is not in our purview.

He asked if there was anything else and thanked Mr. Roise again.

VI. ADJOURNMENT

VOTE: Mr. Ponziani asked for a motion to adjourn, Mr. Magrini motioned, Mr. Neagle seconded and all agreed to adjourn the meeting at 8:49 AM. None opposed.

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Peter Ponziani, *Chairman*

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Usha Srivel, *Clerk*