

**AVON TOWN COUNCIL
SPECIAL MEETING MINUTES
September 13, 2018**

I. CALL TO ORDER

The meeting was called to order at 7:02 p.m. at the Avon Senior Center, in the Community Room by Chairperson Maguire. Members present: Messrs: Pena, Stokesbury, and Bernetich. Absent was Mr. Speich. Also present were Board of Education members: Mmes: Chute, Blea, Young, and Messrs: Cavanaugh, Fleischman, Oprica, and Spivak as well as Superintendent of Schools Dr. Bridget Heston Carnemolla. Absent were Mr. Putnam-Lowry and Mr. Indomenico. Also present were Brandon Robertson, Town Manager; Grace Tiezzi, Assistant to the Town Manager; and Myles Altimus, Director of Operations.

II. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Chairperson Maguire.

III. OLD BUSINESS

13/14-48 Presentation, Discussion and Action Regarding Infill Material: Avon High School Synthetic Turf Field and Track Improvement Project

Chairperson Maguire commented that we are here tonight to address lingering concerns regarding the infill material that is to be used in the proposed synthetic turf field at Avon High School. She noted that by way of background this project has been thoroughly reviewed and vetted by the Recreation and Parks Sub-Committee appointed by the Town Council in 2016. She added that the type of infill material to be used has been a specific concern to the Town Council and the Board of Education, as such, the Sub-Committee was asked to give the topic significant attention. The Sub-Committee worked with its outside expert, the BSC Group, and identified coated crumb rubber as the best solution. The Sub-Committee also recommended including a fail-safe pad that BSC will explain further. The Town staff has done significant outreach to other communities and independent schools that own synthetic fields to better understand their experiences, what type of infill was used and what alternatives were considered. The overwhelming majority of the owners have selected crumb rubber for their fields. Also, keep in mind that the Farmington Valley Health District has been involved in this due diligence process and has answered questions and provided their perspective at various public meetings. The Health District has maintained close contact with the State Department of Public Health, which is published widely in the field to ensure that they are relying on the latest science. Still the Town Council felt that further review by an independent firm was necessary. Gradient, based in Cambridge MA, was highly recommended to provide this review. Gradient employs specialists in environmental science and risk assessment and Julie Lemay, with her extensive background in environmental health and Environmental Science will provide a science based presentation tonight. For those of you that are here tonight or new to the turf field project BSC will provide a brief overview before Ms. Lemay's presentation. After the presentation, we will have discussion and questions from the Board of Education and Town Council before we open this up to the public. Please understand that this should be resolved tonight as we need to lock in the projected cost if we are going to stay on target for the December 12th referendum. There are other options for infill material, none of which appear to be very good. These options come at a cost of up to \$330,000. With that, I'd like to introduce Jessie Harris from the BSC group and then Julie who make a presentation.

Jesse Harris, BSC Group, commented that he has been working with the Town on a turf field in the Town for quite a while now and circled back around to the High School site. He made a presentation (which is attached and made part of these minutes). He noted that the Avon High School site currently has a six lane track and a small undersized interior field located within it, it's located in the southwest corner of the school campus area, has typical high jump and running track events and has an existing set of bleachers. He highlighted the Recommended Layout that they have worked on with the Town and Sub-Committee. He highlighted the Project Scope.

Julie Lemay, M.P.H., Senior Environmental Health Scientist with Gradient, commented that she is here on behalf of the Town, invited by the Town Manager who has provided her with all of the information related to your turf project at the High School. She is here tonight to talk about the state of the science. She highlighted her background. She noted that she does risk assessments. She reported that she got involved with turf research about three years ago and collected data associated with crumb rubber infill and published a study that came out in January 2018 on the risk assessment with such material. She reported that she has done presentations similar to this and also testified in Connecticut in relation to a bill that she was contacted about. She highlighted the High School Project and noted that the Town Manager has shared the Material Data Safety Sheets with her that came along with the crumb rubber infill choices.

Ms. Lemay highlighted Risk Assessment. She added that this can help us understand how we might interpret the studies that we are looking at and talking about; at its base we are looking at risk and that is the likelihood of harm from an exposure to a hazard; risk assessment is done by various agencies of federal, state, and local agencies so there is a little guidance out there on how we do risk assessments; most of the guidance that she relies on is from the Environmental Protection Agency (EPA) who provides a set methodology and framework for how we can understand the likelihood of harm; we rather overestimate uncertainties. She highlighted the 4 Step Risk Assessment Process. She highlighted Why Dose is Important. She noted that we have to consider the amount of chemical that is actually getting into a person. Often times when you see these risk assessments on crumb rubber we will see studies that evaluate just the amount of chemicals that are in the product and do not take it those next couple steps to understand the dose that is getting into the person, their level of exposure, and then to characterize the risk. She noted that we should keep this framework in mind because what we would want to see when we are evaluating crumb rubber is not only what is in that product but how much are you exposed and what the harm is.

Ms. Lemay highlighted Previous Scientific Literature. She noted that these studies started around 2006-2007; each of these agencies did various components of a risk assessment; CT study looked at inhalation, other studies looked at ingestion or amount of chemicals in the crumb rubber; for those that took it from hazard to risk characterization found that there was not a level of concern for soccer players, children or spectators; when doing risk assessment we try to build in some conservatisms that allow us to make sure that if anything we are overestimating risk.

Ms. Lemay highlighted Limitations. She noted that with the studies a lot of them did not look at this all together as a group and did not evaluate bioavailability of chemicals – the amount of chemical that can actually be taken out of the crumb rubber and get into a person; what a lot of these studies did was assume that 100% of the chemical that is in the crumb rubber granule can be taken up and taken into people which gives you a worst case scenario; some of the newer studies have looked at the bioavailability and found that it is actually a very, very small percent of what is bound up in these crumb rubber granules and actually get into people; this can give us a measure of confidence that the estimates that we are seeing in a lot of these are overestimating any concern and that goes along with the fact that these agencies have not found this level of concern despite these conservatisms and overestimates.

Ms. Lemay highlighted A Comprehensive Multipathway Human Health Risk Assessment. She noted that this study started in early 2017 and was published in 2018; look at all of the pathways that a child, adult, soccer player would be exposed to while playing on a synthetic turf field. She highlighted the data used and the exposure assessment in this Risk Assessment. She noted that EPA provides us with a lot of the guidance to help us understand how to do these risk assessments.

Ms. Lemay highlighted Context: Crumb Rubber vs. Natural Soil. She noted that this is the range of the data from the study; it is not to say that natural soil is any more dangerous than crumb rubber but to point out that some people think of natural soil as being without any sort of chemicals but actually has various chemicals in it. She highlighted the Results: Cancer Risks. She noted that the numbers on the left equate to one in ten thousand cancer risks, one in one hundred thousand, etc. She highlighted Results: Non-cancer Hazards. She noted that all bars are below 1.0 so we are not expecting any level of concern. She highlighted New Study Conclusions. She highlighted Ongoing Research. She noted that she would not expect us to see anything distinctly different than what we have seen from the state/federal agencies and international bodies; she thinks we will have similar recommendations in terms of basic hygiene. She concluded her presentation and asked for any questions.

Chairperson Maguire asked the Board of Education and Town Council to ask any questions on this. Mr. Stokesbury questioned the difference between crumb rubber and coated crumb rubber. Ms. Lemay responded that the coated crumb rubber product has a water based colorant that is added to it and one of the primary ingredients in it is titanium dioxide which is a part of our sunscreen; you can have up to 25% titanium dioxide in your sunscreen and this is what we are putting on our bodies; it has been safe for cosmetics; there has not been an issue where it would be coming out and getting onto people as it is part of the crumb rubber granules so the differences are minimal in terms of chemical composition of the crumb rubber versus the crumb rubber plus the titanium dioxide; titanium dioxide is not going to present a major exposure concern for people using it. Mr. Stokesbury questioned, in Ms. Lemay's opinion, if the existing data that she went through today would hold for the coated crumb rubber as well. Ms. Lemay responded yes.

David Cavanaugh, Board of Education member, commented that when it rains the stuff gets wet; water goes somewhere. He questioned if Ms. Lemay's data includes any information on groundwater contamination from the runoff, is it possible for the chemicals from the crumb rubber to end up in this water which drains into the ground. Ms. Lemay responded that most of the designs of the crumb rubber fields have a drainage management system so that is channeled in a certain way. Mr. Cavanaugh questioned where the water goes. Mr. Harris responded that it is going down into the base stone layer which is a reservoir layer that detains it and will infiltrate over time and any overflow would be piped to the drainage system to the south; in 95% of our projects we never see any discharge out of that pipe unless we see a seasonal high ground water or hurricane type scenario. He noted that they did a peer review for a Conservation Commission in Wayland, Massachusetts that are doing a couple of turf fields and they actually sampled the outflow and did not find anything out of that. Ms. Lemay added that she has not seen literature that there is groundwater contamination as a result of the turf fields at this point. A Board of Education member commented on the soil versus the crumb rubber with lead, arsenics, etc. and questioned if there are other chemicals we should be concerned about when it comes to groundwater to water leaching through. Ms. Lemay responded that was just a snapshot of the chemicals that are in crumb rubber; there are other chemicals that might be coming out. Mr. Harris added that in Wayland's case they were within a protection zone so they were very interested in that fact and to this date they have not found any leaching. A Board of Education member questioned how these studies take into account temperature with the rubber and higher heat. Ms. Lemay responded that a lot of the samples we had were taken at various points; she does not have the temperature measurements at the time those were taken because they were pulled from a lot of different sources and they didn't necessarily present that but presumably some were taken during cooler and warmer weather. She noted that the California study looked at volatile

compounds (VOCs) that were coming off of the field during warm weather and didn't find a significant difference from that coming off during cooler weather; while she didn't necessarily look at temperature specifically in her study, she thinks we have a state agency that has looked at specifically and didn't find cause for concern as a result of that.

Jackie Blea, Board of Education member, thanked the work that you guys have done, the Town Council, and the Recreation and Parks Sub-Committee who looked at a lot of things. She thinks it would be helpful to let the public know for sure how many different options that Sub-Committee looked at; she has heard a lot of concern about that over the last couple of weeks but appreciates all of the work that you have done. She questioned if a school has removed their crumb rubber field. Ms. Lemay responded that she testified in Maryland in March who had a problem with their turf fields with a seam separating but does not know if they removed it or repaired it. Ms. Blea asked if there was any place in Connecticut that has removed their crumb rubber or coated crumb rubber turf field. Ms. Lemay responded that she has not heard of anybody removing it for health concerns. Ms. Blea questioned if this is the same stuff that the NFL and professional soccer players play on. Ms. Lemay responded yes; there are different options for infill but it is the crumb rubber product. Ms. Blea commented that she does not know how many other options we are going to have; as she has said for years, she supports this project moving forward and hopeful that we can get this to referendum and really educate the public about the benefits of the turf field; the concerns she has is that when she hears that certain studies aren't in quite yet and what happens if one of these studies come back and it is not good; what happens if the Connecticut study comes back and says go ahead and then the California study says no way, this is too dangerous, what are all of these schools going to do. She was reading the legislative update from the last legislative session and they seem to think that they might be taking action on this in the next session one way or the other. She questioned what would happen if they deem this to be.... Ms. Lemay responded that based on everything that she has seen so far, she would not expect that given that we have several state agencies, federal agencies, international regulatory bodies, the EU that are not coming out and saying that there is a health concern related to this; there would not be that information coming out from the EPA, there may be recommendations for what people can do to ensure, for example, there are no future problems with groundwater or that you wash your hands, which are some of the similar recommendations to natural soil fields; in terms of the legislative issue, in Connecticut that house bill keeps coming up where there is a possible moratorium on funding any kind of crumb rubber playgrounds. Ms. Blea questioned if Connecticut endorses crumb rubber playgrounds at this point or that it is legal. Ms. Lemay responded yes. Chairperson Maguire noted that the fail-safe pad would give us the opportunity to vacuum out the infill if it ever came to a point where there was kind of doubt.

Jay Spivak, Board of Education member, commented that there is a lot of confusion in the community on who is deciding what type of material is going into the field; he appreciates all of the work that has been done, but he is questioned why the BOE is choosing a certain material and wants everyone to understand that we are not deciding the material; the Town Council did ask us to express our opinion on the turf field at the High School as we did years ago and voted in support of it and wanted to maintain the right to approve the material; the Town Council came back and gave us a legal opinion saying that is exceeding our authority so we are not involved in the process, they are allowing us to participate in this meeting but we are not making that decision; our concern was the safety of the students so that is why we have so many questions about the material. He looks at this tonight as his questions are like any other Avon taxpayer and what his concerns are here. He noted that he read about an Environment Human Health Incorporated (EHHI) study about 112 pages examining twenty-two studies that all said crumb rubber was safe and they are finding flaws in all of those studies. He noted that Hartford does not allow crumb rubber fields right now. He added that besides safety he wants to understand why someone would come out so strongly against it, what is their agenda? Ms. Lemay responded that the EHHI study has some issues; studies have limitations; EHHI has a couple of studies out there that have looked at solely the hazard portion of the risk assessment process and trying to understand what chemicals are in crumb

rubber and not necessarily taking it to the next step of how much are people being exposed, what is the dose and what is the risk associated with that. She thinks that sometimes it can be upsetting to read these studies where they highlight the carcinogenic potential where they don't take it to those next steps to try to understand what we are being exposed to and that is how she would characterize the EHHI study; they had Yale do a lot of their chemical analysis. She noted that we understand that there are chemicals in crumb rubber, in natural soil, in everything in this room, but the important part of what she does is try to put all of that in context, understand the exposure, the dose, the actual risk that goes with that; that might be the piece that is missing in the EHHI work where we are focusing on just the chemicals or limitations and throwing these things out the door where what we really want to do is take all of these studies together as a body and yes all of these studies have their limitations but overall we have lots of studies that are saying that crumb rubber is not a health concern for the kids playing on it. Mr. Fleischman commented that while the EPA results should be out any day he hears that they expect it to be favorable to crumb rubber. Ms. Lemay responded that based on what she has seen come out of EPA in the past and other state agencies and the risk assessors that are doing that work she does not expect it to be significantly different than the other regulatory bodies in the United States that are doing this type of work

Laura Young, Board of Education member, appreciated Ms. Lemay's presentation and all the work that has been done to date. She noted that it greatly concerns her that so much of what has been presented is so biased towards the installation of coated crumb rubber when the fact is that we all know that crumb rubber contains heavy metals, carcinogenic substances, and toxic chemicals. She added that the other issue she has with this is that the EPA, CDC, US Consumer Protection Agency, none of them say this material is safe, they are just not coming out and saying it is unsafe. She noted that there is a study going on right now that could very well come back and say it is not safe and yet we are willing to put out to referendum a \$2.8 million project for something that we do not know truly whether it is safe or not. She added that synthetic fields are definitely needed here in Avon; the cost that we spend to transport our student athletes to other places because they can't play here in inclement weather is absurd but there are other options that are non-toxic, silica and coated silica sand that do not contain heavy metals, that are non-toxic, that produce little dust, that are lead free, that can absorb bacteria, that can provide superior performance with the right pad underneath especially – Suffield is a good example of this; other organic materials such as cork or hypo-allergenic walnut and both are used in the state. She added that the cost is an issue but why can't we put it out to the community to decide what they are willing to spend on this project; it is possible to build a safe, cost effective, high performance field that poses no or little health or environmental risk to this community. She thinks we owe it to the Town to allow our community members to be able to do that. She reiterated what Jay said, the BOE has been told in a letter that it has no authority over the right and obligation to construct, equip, or renovate physical facilities so we have no say in this. Dr. Carnemolla asked who does have a say. Ms. Young responded the Town Council. Chairperson Maguire commented that we had this meeting tonight because we like to have this be a partnership and looking for concurrence from both Boards to move ahead with the infill that is selected. She thinks we have tried to keep you as partners and sorry if you don't feel that way. She understands there is a statute that does state that in this type of situation the Town Council is the body that has the last word however we are trying to make this a partnership; we are very concerned about children, people that are going to be using that field, we take it very seriously, that is why we are here and why we have gone to the extra step of bringing in an expert so we take it seriously. Ms. Lemay responded in terms of no specific agency coming out and saying safe, she thinks that is a responsible choice on their part because they are coming out with one study that adds to the whole body of literature that is out there so for them to do one study and say that it is safe would probably not be responsible; so what they do say is we don't have concern so when people like me and researchers out there take together that whole body of research, each of which says we don't see any cause for concern when they have looked at the individual pieces and when she looked at her study and put together a lot of those pieces and also didn't find a cause for concern. She thinks when you look at that body of literature it makes us a little more comfortable saying

that we feel like it is safe because there are so many that haven't found an issue and some of the studies that have found an issue are just looking at that first portion, the level of chemicals that are there, and often not putting it into context with the natural soil that does still have background levels of a lot of these chemicals. She noted that Ms. Young touched on the replacement products which seems there are some other implications here between the Boards but from her perspective sometimes when there is a product that people dislike they sometimes jump to another product they assume is safer; the issue with that is that the body of literature is not there for those ones they assume is safer so while we have dozens of studies from a lot of regulatory bodies saying that this crumb rubber doesn't have any level of concern we don't necessarily have that for some of the other infills. She noted that there may be some other studies out there but it doesn't rise to the level of the research that has been done to date on the crumb rubber infill.

Jeff Fleischman, Board of Education member, commented that maybe his question goes back to the Board or Town Manager for clarification so he can understand the clarification at this point, the referendum doesn't address the specifics of the fill; it is just about regarding should we borrow money for the purpose of pursuing an artificial turf field. The Town Manager responded yes. Mr. Fleischman asked if this is something that can be a decision made later on or must this really be involved in this part of the process and if so, is that going to be added on to the referendum or purely just a dollar amount. The Town Manager responded that it is a material amount; you have two options, you have a project that is in the range of \$2.66 million which includes the fail-safe pad and the coated crumb rubber or it is a plus project so add another \$350,000 and that is a contingency that we identified working with BSC Group which would cover some other alternative. He emphasized that having spent a significant amount of time over the last four years delving into this and talking extensively to public health professionals, other engineers, and most importantly other owners that include not only municipalities in the area, Simsbury and Farmington as an example, also include Miss Porter's School, a whole range of independent schools including Old Farms School in our backyard regarding their experience with this material; that is a \$350,000 for some material to be determined which will inevitably have some negative externality; there will be a chemical issue with it, there will be a playability issue with it or there will be a maintenance issue with it. He gave an example of Hamden, cork and coconut, they are one of few municipalities in the State that he knows of that has gone with material other than crumb rubber or coated crumb rubber; cork and coconut is organic, it freezes so then you deal with irrigation issues, is it a disease vector because you have a food source that now attracts geese and you know what geese do on a field, you all see it at Fisher Meadows so that introduces a whole another range of issues. He added that it does need to be resolved because it is a material cost that is going to impact the amount of the referendum item and it needs to be resolved now because of the timeline that we have to meet to get to December 12th; looking forward to next week we have a Board of Finance meeting on Monday night and one of the things that they have to do is to adopt a series of resolutions to continue it down the path; the Town Council is going to do the same thing on September 20th; we had to schedule those public meetings to stay on that critical path because if we stuck with the original meetings we would never make it to referendum. Mr. Fleischman commented that with the current proposed budget, there is no possibility of us exploring other options besides the crumb rubber or is it just an extra precaution in the case that we decide to go with another option we want to make sure we have the money to pursue that. The Town Manager responded that in the case that we want another option you need to gross it up to almost \$3 million.

Dr. Carnemolla, Superintendent of Schools, commented that it is a good time while we are all here to be clear about the process because of the back and forth with the request from the Board about the decision of the fill and the clarification about the statute regarding public building projects. She asked why this is the way that it is and moving forward with a public building committee and so forth so that everyone is on the same page. The Town Manager responded that there was a two-board meeting back in the spring and one of the outcomes of that meeting was to ask for consensus about the project and we talked about the history, we were looking at the two fields, we were looking at the three legs of the stool for funding and in the end we only had a shaft basically which in part was because of the State and as a result of that

we scaled the project back, it becomes one field, we got consensus on that but there were two other caveats that came out in the letter from the Board of Education (BOE), one of them was that the BOE wanted to ensure that they had representation on the building committee and the other one was that they wanted the final say over the type of infill material; we have to provide a clarification, we don't want anybody to misunderstand roles and responsibilities under the laws so at that point we requested an opinion from the Town Attorney about how that letter overlays with the statutory requirements and the response is that the BOE does not have the ability to make that determination; certainly with respect to the building committee, all along the expectation is that if this project is approved it will be overseen by a building committee which will include representation by the BOE; the composition of the committee we will have to talk about but he would anticipate the BOE to fill one or two seats; bringing that opinion back the Town Council, to Chairperson Maguire's point, the way this has been approached all along is consensus, everybody to feel comfortable with the direction in which this is going and at the Council level there was a very broad discussion about next steps, having that letter back from the BOE and we know that this has been going for several years, when we appointed the Recreation and Parks Sub-Committee which met in total over twenty times to discuss not only this project but the project originally at MH Rhodes and in the resolution appointing that Sub-Committee one of the very first sentences was we are appointing a Sub-Committee to give a recommendation to the Town Council keeping in mind that a prior concern is the infill material so the Sub-Committee went into that with that understanding, they worked closely with BSC Group, there was a discussion earlier about the different types of fill material that were considered, he thinks you have all been provided a copy of the matrix, the Sub-Committee discussed the relative merits and demerits of each one and came out with that recommendation to the Council, that was discussed; at public meetings we have had the Farmington Valley Health District also come out and weigh in on the state of the science; from the Council's perspective they wanted to have the additional belt and suspenders of knowing that we have someone who is a peer reviewed scientist who has all the proper credentials and can really opine on the state of the science which certainly none of us can; the Farmington Valley Health District can certainly opine on what's coming out of the State but they are also not suited to deal with these very difficult risk assessments. He added that the Council said we have done our due diligence, we selected a good material, we've got the Sub-Committee, we've got the Farmington Valley Health District, we've done our discussion with other communities and their owners, but find us somebody with the credentials to look at this product, the entire state of the science, and advise us so that is where he found Julie and she was found through Fuss and O'Neill which is a state-based environmental services firm, their advice was they are the best in the business, so talk with her, and that is why we are here tonight. Dr. Carnemolla recapped that at its base level because this is a public building project just like when you build a new school, is a large scale project on public land, the statute is that there has to be a public building committee and you have to decide who is on it so that is where we get representation and that committee ultimately makes the decisions for how the project is done, then it comes back for your approval and that is in line with the statute, correct? The Town Manager responded yes but unfortunately in this case because of the wide variance involved with the infill material we don't want to get into a position where we go with the wrong number, go to referendum, get it approved, select a building committee and then it's well we don't have any options because we don't have a sufficient budget. Dr. Carnemolla commented that we are moving it the way we are because of the dollar amount for referendum after this question, but generally speaking this is the way that it works and why we have to work through the public building committee. The Town Manager responded yes.

Jeff Fleischman questioned that we don't have to use all of the money but if we choose to go with the higher number and it passes at referendum and we decide to go with crumb rubber or another fill that turned out to be cheaper we don't have to use all of that money, correct? The Town Manager responded correct; the appropriation is up to but not to exceed.

Dr. Carnemolla referred to slide 12 of the presentation and questioned how the tests are done, the ingestion, how does that determine the risk to the individual from the exposure. Ms. Lemay responded

that risk assessments are done by modeling as in most scientific studies you can't actually do tests on actual soccer players or actual spectators; what we do in this situation is look at what EPA recommends for an amount that a child would ingest, we take the chemical concentration that came from the hazard assessment part of it so that's a number and then we combine that with the amount of crumb rubber that somebody might ingest and then over a specific duration of time that they might be out there playing and we come out with a total chemical of concentration that might be in their bodies after being exposed to the field for some amount of time. Dr. Carnemolla commented that this is where the maximum limits come in. Dr. Lemay responded that EPA has this distribution of numbers where they say this is a high end, this is a central tendency, and this is a low end so we use a reasonable maximum so it is not the maximum but a reasonable high number for what a child sitting on the field or a soccer player might ingest.

Dr. Carnemolla referred to slide 13 of the presentation and questioned if that encompassed natural soil meaning out in the middle of the field that no one ever touches out in the middle of the woods versus soil that is treated, for example, to be fair the field that we presently have is treated quite a bit with pesticides, grub prevention, and Round Up and those sorts of products and we don't use those, by law, as you know anywhere besides the High School and they have to be used for the field that we play on; with that in mind, were the tests done on a range of soil that was and was not treated chemically. Ms. Lemay responded that these are natural soils so these are not chemically treated soils; the Massachusetts DEP numbers there is actually another category that is for soil that has been amended with fill materials which is probably a lot of what you are going to get around buildings but we did not include that; we also did not include pesticides and do that comparison; it is no pesticides for crumb rubber and you do have to have some pesticides for natural soil so we didn't feel like that was a fair comparison but it was natural soil to the best of Massachusetts DEP's samplings taking into account a large distribution in Massachusetts and also 90 percentile numbers. Dr. Carnemolla commented that it might be fair to say that these results are actually on soil that is probably better than what most of us are working on. Ms. Lemay responded that the full range probably includes soil that is more clean than what you have at an athletic field but also may include some of the samples, particularly for lead you probably have lower numbers at a field that is not in an immediate vicinity of a building that painted with lead paint but a number around 400 for lead is EPA's soil clean up number so if you ever had to remediate a site you would be getting it down to 400.

Dr. Carnemolla referred to slide 14 of the presentation and noted the adult spectator and asked if there was any indication why the cancer is higher with the recycled rubber. Ms. Lemay responded that there is an inhalation component that we did not consider for the natural soil; we do not have the air inhalation rates for some of those so we did not consider that.

Bogdan Oprica, Board of Education member, commented that we are long overdue that we have artificial turf in Avon; it is a disservice to our community. He questioned that with the referendum, are we grouping the artificial turf with anything else or will it be separate and when and how will the referendum be presented. Chairperson Maguire responded that there will be two separate questions, one for the turf field and one for the public safety communication system, you will have the opportunity to say yes or no to either of them; we will be having public information sessions on both of these, a mailer will go out to the community, referendum is on December 12th here. The Town Manager noted that with the public information component we will most likely in the first couple of weeks of October will do at one if not two public information meetings, just general meetings where we give presentations on both of the projects, have experts present, and take questions and answer questions.

Debra Chute, Board of Education Chairperson, thanked the Council for inviting us and for including the BOE in this decision making process; it is good to have our Board knowledgeable of this project regardless of the fact that you may have final say on what the decision is, by allowing us to ask these

questions publicly it gives greater comfort to the community that they know that we are all invested in this being a safe endeavor; we do appreciate the time that you have taken to do this and bringing us in here, it is a big time commitment but it is worth it because it is for our kids and that at the end of the day is what we are all about it, we want to make sure that we are offering the best environment that we can and knowing that many of you have children yourselves that are utilizing it, she takes that to heart; we certainly appreciate your efforts for consensus; she can tell that is really the motivation behind it and she appreciates that you are including us in this and that we are in support of the turf field, that has really never been debated so we would really like to see this moved forward to referendum.

William Stokesbury, Town Council member, commented that we have talked about the fail-safe layer which is in the budget at an additional cost. He questioned what the total cost of coated crumb rubber is as proposed. Mr. Harris responded that the cost is around \$60,000. Mr. Stokesbury questioned the range for any of these other infills. Mr. Harris responded that if you say coated crumb rubber around \$60,000 for the field is the low end; the high end which would be TPE and EPDM is around \$380,000 and that is just to get it out to the site, that doesn't include putting it in. Mr. Stokesbury questioned what the high end material is. Mr. Harris responded it is a thermoplastic elastomer, a synthetic material. Mr. Stokesbury questioned sand or the other materials. Mr. Harris responded that those would be in the middle range. Mr. Stokesbury asked if Chairperson Maguire was accurate to say that if a problem does occur, get different data down the road that whatever the current fill is could be vacuumed out and replaced. Mr. Harris responded yes. Mr. Stokesbury commented that it is quantifiable right now what that risk is and we can always deal with that as a capital expense when and if it occurs; not much different than the scheduled cost of replacing the infill after its useful life. Mr. Harris responded that you are going to get at least two life cycles out of the crumb rubber so if you suck it up you are going to put it back down when you replace that carpet again. Mr. Stokesbury commented that the infill has a longer life span. Mr. Harris responded that around twelve years you get a life span of the turf, you will vacuum that up, put the new turf carpet back on, put that old reused crumb rubber back in so you will get multiple life spans out of the crumb rubber. Dr. Carnemolla commented that the crumb rubber has an indefinite life and the turf has 12 year life so when we need to replace the turf on top, you vacuum up the crumb rubber, save it, get the new turf, and put in the same crumb rubber. Mr. Harris responded that was correct. Mr. Stokesbury commented that his point is that collectively the Town has the ability to address any adverse data that comes out about crumb rubber and address it in upcoming capital budget meetings; the numbers aren't that large that we couldn't deal with it on an incidental basis. Mr. Harris commented that having the pad in there which is another almost \$100,000 line item because most all of the other alternatives you cannot achieve your G max head impact attenuation with just the raw product so we have to put that pad under there so in the event that you do go to an alternative in the future you still get that shock absorption ability for your players.

Mr. Pena commented that studies are always coming in. He asked Ms. Lemay that as she was doing our study did she come across a study whether it was past or current that spoke negative of a specific product that we are looking at for the infill. Ms. Lemay responded no but there are negative studies out there, the majority of those don't take it to that level of doing the risk assessments, they look at the fact that there are chemicals in there that are at "x" level but fail to do the dose and the exposure part of it to take it to that next level; those have a lot more significant limitations in terms of not doing the rest of the actual risk assessment process and the body of literature that they are seeing from the ones that have done that whole process is a lot stronger. Mr. Pena questioned if they were current studies. Ms. Lemay responded that she reviewed one a couple months ago; there was one that looked at lighting a field on fire and seeing what chemicals come out of it but not necessarily a relevant exposure pathway for soccer players or spectators on the field; these studies do come out, people have different designs, people decide to do it for different reasons, they do continue to come out, they are helpful in that we can understand the levels of the chemicals and then we can take it those next steps to look at the exposure and the dose to understand the risk. Chairperson Maguire opened the floor to the audience.

IV. COMMUNICATION FROM AUDIENCE

Karen Cianci, 21 Volovski Road, commented that we are going to get into a discussion tonight about the comparison between the safety of crumb rubber and other alternatives so before that starts – she wanted to shed some clarity on other issues regarding this, for instance, what are the benefits of crumb fill versus an alternative such as the coconut husks and similar natural alternatives. Ms. Lemay responded there are probably some benefits that seem monetary here also but in terms of the science and the health risks the crumb rubber provides more information, the body of literature that is available around crumb rubber is much greater than any of these newer alternatives so in order to get to that same level of information for any of these alternatives we are going to have to wait a lot longer to get information that will assure us of the safety of those ones; we have a lot more information and a lot of that has indicated that there is not a level of concern. Ms. Cianci commented that aside from the monetary part of it, crumb rubber has more research done on it to prove its safety. She wears cosmetics but hasn't been wearing them lately because she doesn't want to put anything on her face that she can't eat in her mouth because people are dying left and right of cancer and we don't why; one assumption we can make it is that there are a lot of toxins out in the environment and to the extent that we can reduce our exposure to toxins we want to do that; if you notice a lot of people don't use hair dye or cosmetics; if you can't eat it you don't want to use it; you can eat coconut husks without dying, you can eat certain things without affecting you as badly as crumb rubber could; in order to thin out the rubber you have to use paint thinner to do that process; what is concerning her tonight is that we are looking at the safety of crumb rubber and not the alternatives. She asked why there was not another expert here to look at what we know about alternative fill; she talked to one earlier tonight and he was a wealth of knowledge and this guy was thoughtful in the way he spoke, he knew his stuff and he was with a company that distributes all types of fill; she asked him specifically about an organic fill and he knew his stuff but he knew about crumb rubber also; he was very succinct and very smart and wishes he was here tonight. She added that in terms of the cost of the alternative she keeps seeing conflicts; we see somewhere that the Town Manager said \$330,000 for an alternative to crumb rubber yet we are hearing \$60,000 over here, what is the number; let's get the number right here; as she understands it from talking to this person from Shaw Sports earlier tonight the number is around \$60,000; organic fill is \$60,000; crumb rubber is \$60,000. The Town Manager responded that there is no disparity; it is \$330,000; that would be the upcharge for an alternative because it costs more because of the material. Ms. Cianci commented that you're saying an upcharge for the material that he mentioned which was the highest end of synthetic material but the upcharge for an alternative fill is only \$60,000; so it is \$60,000 more than crumb rubber. The Town Manager responded that you are talking to a vendor if you are talking to someone from Shaw so you can take that with a grain of salt to begin with; our professional engineer that we hired to advise us on this project has said that to responsibly move forward with another type of material you would want to budget \$330,000 more than you have now to ensure that the range of possibilities that you could choose would be accessible; he would always caution somebody that is talking to a vendor with a product to sell and he would also say that, not to be repetitive, one of the reasons that the Sub-Committee recommended what they did is that the coated crumb rubber has the greatest amount of experience behind it, it has the highest level of scientific inquiry that has been completed and importantly from an owner's perspective we have a track record to look at so we can talk to Miss Porter's, Simsbury, Farmington and say tell us what your experience with this material has been, have there been surprises, good or bad, what does it require in terms of maintenance or replacement, what has been the experience with the teams; one of the things you will find, particularly with South Windsor, is that they are one of the few communities that used material other than crumb rubber, they used silica and they are not happy with it because of how the ball bounces and playability generally; there is no disparity, the recommendation is \$330,000 and that is what we would need to budget to cover ourselves for some other option. Ms. Cianci commented that she heard a \$60,000 over here and would like to clarify that number. Mr. Harris responded that is for the crumb rubber. Ms. Cianci questioned that he was talking about an alternative above crumb rubber would be around \$80,000-\$90,000, it would be above \$60,000 but not as much as \$330,000. Mr. Harris responded that the coated sand would be within

that range, the \$60,000 to \$330,000. Ms. Cianci questioned if coated sand is coated crumb rubber. Mr. Harris responded no, it is coated silica sand, same coating on the coated crumb rubber. Ms. Cianci referred to a slide that was misleading; the chemical list that you put on the left hand side to compare to natural soil only shows the chemicals that are in natural soil being compared to crumb rubber, well crumb rubber has an additional list of chemicals in it that natural soil doesn't but you neglected to put that in the slide because the crumb rubber probably has paint thinner that was used to thin the rubber and many other chemicals that you neglected to put in the slide, she is not trying to be mean but statistics lie and she is a little concerned that there are too many statistics flying around here and they are not being looked at in a more natural approach to the health of our kids. Ms. Lemay responded that part of the reason that she limited it to those compounds is that there is an exhaustive list so when we did our risk assessment we found several chemicals that were in there; they fall into a couple general buckets, heavy metals is one of those and she picked arsenic and lead in that category; pHs is another big one so we had about eight or ten of those in there so she pulled the carcinogenic pHs out of there because we have something to compare to, and we have phenols and (inaudible) that are a smaller subset, those don't have comparisons in natural soil so not really an apt way to put it into context there; there are definitely other chemicals that did show up in their study, all of those chemicals combined added up to risks that are less than the EGA and Connecticut DEP would say is safe.

Amy Branch, 36 Sunrise Drive, questioned if these studies were done with the coated crumb rubber and just crumb rubber. Ms. Lemay responded crumb rubber; there is a colorant, the cool fill has this water based green colorant that is titanium dioxide, what is in sunscreen that is coating the crumb rubber. Ms. Branch commented that she does not put those sunscreens on anyone in her family anymore; we only use zinc oxide; the titanium dioxide has been outlawed in a lot of countries in Europe and are always leading the way in their cautiousness; she worries about the coating and becoming an inhalant; that is where the trouble lies with that particular chemical. Ms. Lemay responded that she has done a lot of work with the spray sunscreens with titanium dioxide and the concern is the inhalation but particularly for – she did review some of the material that the Town Manager shared with her about the colorant and the material there does not have a concern for inhalation because it is part of the granules so we are not talking about an aerosolized type of situation which is what you are talking about with the sunscreen with the spray applications, it is note in the same form so a lot of times you are talking about the nano form, the very small form, and that is not what we are talking about in the water-based colorant; inhalation is a concern for the sunscreens and why some of these sunscreens have up to 25%, that can be a concern for inhalation, for occupational use, that is not going to be a concern with the water-based colorant for the way that it is used in this context. Ms. Branch questioned the latex that is found in the natural rubber that is part of these ground up tires, part synthetic rubber and part natural rubber. She has a latex allergy, not really bad, she cannot have it touch her skin for too long or she gets a rash but she has a friend who is very bad off and cannot be in a room with balloons because it makes her feel sick. She has been at Town Fair Tire and had to get out of there. She questioned if that is an issue with these fields; is there that kind of smell that comes off of them. Ms. Lemay responded that there is a concern for people with severe rubber allergies and in contact with rubber. She does not look at the allergy side of it in the studies that she has done. Ms. Branch questioned the cool technology and how many degrees it cools it down. Mr. Harris responded that he does not recall off hand but fairly significant. Ms. Branch commented that is an issue with the crumb rubber, it gets very hot and the smell gets worse. She noted that the endocrine, it was close to the limit in Connecticut; that was just for cancers. Ms. Lemay clarified that one was for non-cancers. Ms. Branch commented that there are a lot of endocrine systems that could be affected by those things; it affect pituitary, your adrenals and cause all sorts of growth dis-function, reproduction dis-function. She would be all for the coconut, she looked into that in preparation for coming to this meeting and thought it sounds ideal; her sister lives in Wilton, CT and they have a huge field complex, called Kristine Lilly Field, a mass of soccer fields, and right now taking up crumb rubber and putting the coconut in. She questioned what do you do with the crumb rubber once its life is finished? Mr. Harris responded that it is recycled, just like the turf. Ms. Branch questioned how many times. Mr. Harris

responded that after your two life spans of your turf the rubber would be hauled out to a tire recycling facility. Ms. Branch commented that it is her understanding that in Connecticut they do not accept that as a fill material in any landfill here so it would have to be shipped out of the state and that is a considerable cost. Mr. Harris commented that a lot of contamination is shipped out of state and it goes to Massachusetts. Ms. Branch commented that she would put coconut husks in her garden beds; it does not mold and does not think that geese eat it either, not something that would cause pests or mold. She questioned that when we vote on this referendum on December 12th if we have only the one option of the crumb rubber, that is the only option being offered at that time at that certain price. Chairperson Maguire responded that crumb rubber won't be listed on there and probably say something like synthetic turf field. The Town Manager added that you will be voting on a title and an amount. Ms. Branch commented that we have to educate the public that they are voting on this crumb rubber fill and if we say no to that, then what happens to that as a decision, then we just don't have a field at all or it goes back to the drawing table and get to rethink it. The Town Manager responded that at that point the Town Council would have to have a conversation about next steps but effectively if the referendum does not approve an appropriation the project does not go forward; whether or not the Council at some point six months after the fact would make adjustments one way or the other that is a decision that would have to be made, but the project would be a hard stop. Dr. Carnemolla commented on the timeline, it is December partially because of the bonding requirements and budgetary concerns but the other piece is related to when the ground would be able to be broken and start a project for when it takes the field out of service. She noted that to Ms. Branch's point, if the referendum fails it will be at least another year plus before we would be talking about it. The Town Manager responded that he would assume so unless a decision is made to the contrary. He added that from a bidding perspective the best time to get these projects out on the street especially for a spring/summer construction is in the winter when you have a contracting community that hasn't locked in their schedule yet and tend to get the better rates; it can be fluid but your point is a good one and would be on hold for at least a year. Ms. Branch commented that she would be okay waiting another year if it meant not having crumb rubber.

Chairperson Maguire commented that most people here are against the crumb rubber, would that be a safe assumption. Ms. Cianci and Ms. Branch responded yes, but Mr. Lazinsk said not that is not a safe assumption. Chairperson Maguire brought this back to the Town Council and Board of Education to have a quick conversation.

Mark Zacchio, 15 Ridgewood Road, retired Chair of the Town Council, commented that he has had a lot of these conversations. He noted that everyone here seems very concerned about the crumb rubber, he has heard dire concerns, the field hockey team is playing on crumb rubber tonight, our kids have been playing on it for twenty years, he played on it and he graduated in 1985, his kids played on it; Avon football played on it at a scrimmage in Granby this year, they played on it at Cheney Tech, they will play on it in Tolland on Saturday night; if the concern is this dire he will ask why there hasn't been an agenda item to put a moratorium on all sports that play on these fields because we are here to make the best selection for Avon whether it be crumb rubber, coated crumb rubber, coconut, or some alternative but it doesn't change the fact that all of our kids are going to away games and playing on this very product every single weekend; that is the point he wants to make; he does not want to make a question out of it, he does not want to ask for an answer but wants it to sink in because we've had this conversation a lot of times, he has been at several meetings, he has chaired some of them, we had experts; we are never going to get a definitive answer that says it is absolutely safe and we haven't gotten any kind of answer that says it is absolutely not safe. He does not know if chewing the dirt is better than chewing crumb rubber but he has chewed both and he didn't like either of them but he does not know which one is safe and does not think we are ever going to get a definite answer on that.

Chairperson Maguire commented that she thinks we all want to see this come to a vote; we have been talking about turf fields forever, we need to make a decision and maybe we need to find out more; there is

a study coming out in the fall of 2018, maybe we need to take a look at those results, maybe we better put this out to the taxpayer and let them see, do we want to pay close to \$3 million for a turf field. She is going to talk to Council; Board of Education, if you would like to talk amongst yourself. She is going to make a recommendation that we increase the amount that we put through to referendum to accommodate the additional \$330,000 for a potential alternate substance. Mr. Stokesbury responded that he would react with what he has said throughout their meetings – every time we increase the price of the project, we decrease the likelihood of it passing. Chairperson Maguire commented that she is not 100% convinced that coated crumb rubber isn't the right way to go; she is open and does suggest that we keep looking; it will come down to a Building Committee decision and that will have Board of Education representation and whoever is selected for the rest of the Committee. She still supports the coated crumb rubber at this point and sees it as a good option for us. Mr. Pena agreed with the including the additional increase in the cost but also agreed that increasing the cost is the likelihood that it will fail; money does speak; and certainly not having the field that many of you would like to have in Avon; and we are sending our kids to other towns to play and that is not something they like, they like to play in our Town.

Dr. Carnemolla commented on the \$330,000 being for the top end but still synthetic. Mr. Harris responded that it is a thermoplastic elastomer, TPE, a rubber type product. Dr. Carnemolla commented that you are talking about crumb rubber, not whatever this other synthetic material is from these studies, so regardless, is the price of that other synthetic fill more expensive because it lasts longer or better for playing, etc. and has nothing to do with it being a more natural material. Mr. Harris responded that it is availability with limited manufacturers of that product, it is not tried and true in the industry in terms of an infill and not a lot of documentation on how that performs; it does generally perform similar to rubber but a lot of people from affordability cannot afford to do it; it would be a good alternative. He does not know the exact science of the material but it does not have the same compounds as crumb rubber does. Ms. Lemay commented that we have lots of crumb rubber infill studies, a good body of evidence; we have a lot less on the mix of chemicals that is in some of the other alternatives like the TPE; she cannot speak to those because we don't have the same level of research on any of those that we have out there on the crumb rubber.

Mr. Oprica, Board of Education member, stated that he wants to make sure that we look at all of the alternatives – one is to keep the amount as is, the second one proposed is to raise it by \$330,000, he noted that Mr. Stokesbury had another thought about keeping it as is and if the Committee decides that the crumb rubber study that has come out is negative we revisit it at a different point. He asked if that is an option where we fund it even further down when more data will be available. Mr. Stokesbury clarified his comment that his questions over replacement would be after it is constructed and paid for, not in the selection process; there may very well be a less hazardous product during its lifetime where we would want to replace the infill and wants to have a measure of that cost; he believes that cost, even if not funded today, is manageable within our \$90 million Town budget to cover a couple hundred thousand dollars to switch infills if there is a need to do that down the road. He seconded Chairperson Maguire's thought reluctantly to increase the proposal to go to referendum to just under \$3 million to give us more opportunity now before the referendum and assuming it passes between the referendum and the date the final product is selected by the Building Committee; more time is great but we never have a hard deadline except getting it built, we can wait forever for more studies and they are never going to be good enough for everybody; we have to be conscious of that and move forward with the best science we have available.

David Cavanaugh, Board of Education member, commented that the total project cost as proposed right now is \$2.357 million, if we look at \$330,000 added on as an upcharge or reserve in the case the Committee chooses a different type of fill, it is about 15%, brings us to \$2.7 million; you could look at this as saying we are being more honest with the taxpayers; there is a possibility that the studies may come out and they force our hand and if we do it will cost this much and if the Committee decides instead to go with the crumb rubber and if all of the other studies come out and everything still looks good then

there is \$330,000 unspent money as it wasn't needed; he could buy that as a reasonable compromise just in case; the risk on the table is that if something goes wrong and we don't have the money to finish the project for \$2.7 million if we decide one of those studies comes out either from California or the EPA and says don't use this stuff because of new facts that have emerged then we are at risk of slipping a year which is exactly what would happen if the referendum is defeated; it is the same problem either way. He would put it out there for the \$2.7 million. He does not think there are too many people who would vote yes to \$2.35 million and suddenly vote no to \$2.7 million; once you cross the \$3 million barrier there are all kinds of things that begin to happen there and the public safety communication system as he understands is a big ticket item as well and we are asking the taxpayers to do a lot this year by historical standards; it is not every year that we do either of these activities; he hopes we can get them both passed; he realizes that every dollar we add to this increases the chance of it failing but there are other risk factors as well; there is a chance that it might not pass at the \$2.357 million depending on how spawn out the community gets over the choice of the fill and how they feel about it regardless of how many facts we have and from where they came. He supports the initiative to build in the reserve just in case that becomes necessary. The Town Manager clarified that in the interest of keeping the numbers straight, those aren't the right numbers. He stated that you have \$2.3 million on the project scope which is what you are looking at but you have to add in the soft cost and then looking at the \$2.6 million versus the \$2.9 butting right up against \$3 million.

Chairperson Maguire paused the meeting for a brief break at 8:55 p.m. She reconvened the meeting at 9:06 p.m.

Megan Belval, 64 Daventry Hill Road, commented as a concerned parent with Middle School twin boys who plan to play football at Avon High School and would love to play on a new turf field. She asked to reject any form of crumb rubber infill material and to look instead at affordable and safe materials of which there are several; we had the benefit of learning from mistakes and experiences of other towns that previously installed crumb rubber and should use that information to our advantage; due to the mounting evidence about the dangers of crumb rubber many towns and schools across the country are spending enormous sums of money to replace their crumb rubber fields with safer alternatives; we just heard about that tonight in Wilton she believes; she has spoken with a representative of Green Tech which offers both an organic and non-organic fill material which would be expected to cost, she was told, roughly an extra \$50,000 over the cost of coated crumb rubber which depend on what you choose but it wasn't \$300,000 that she was quoted. She noted that these Green Tech fields have the same maintenance costs as the crumb rubber but don't require the significant disposable costs of crumb rubber which must be taken to a landfill because it is hazardous; there are over 160 artificial turf fields across the country using Green Tech infill materials; there are local Connecticut schools that have used Green Tech's fill including South Windsor High School and Greenwich High School; others in the northeast including the Wheeler School in Providence, RI, Medfield and Ipswich High Schools in Massachusetts, Brooklyn Bridge Park, Franklin and Marshall College and many more; there are numerous reasons why it is imperative to use an alternative fill instead of the coated crumb rubber; crumb rubber is made up of ground up scrap tires and is extremely controversial due to its cocktail of harmful and cancer causing chemicals, latex and highly toxic heavy metals including mercury and lead; because of these chemicals the tires are regulated as hazardous waste with strict rules for disposal, however once they are ground up they are considered to be recycled and permitted to become fill for the athletic fields and playgrounds that our children play on; this is illogical and our own lawmakers in Connecticut are looking to stop the practice of using crumb rubber in any form in our playgrounds with a fill that has a more favorable report but has not yet been called to the floor for a final vote and copies have been placed on both of your tables there, and that is very recent in 2018. She noted that repeated exposure to these chemicals found in crumb rubber are known to cause birth defects, neurologic and developmental defects and cancer; the crumb rubber has small particles which fly into the air as they spray when an athlete slides or runs on the field; an athlete who is sliding and falling on the fields will get the carcinogenic particles in their mouth, nose, and eyes as well as in

their socks and shoes so there will be ingestion; the particles will also dig into the skin when someone skins their knee or elbow on the field; the Children's Environmental Health Center at Mount Sinai Hospital in Manhattan has issued a moratorium on the use of crumb rubber and warned about the dangers and concerns so it is just not the (audible), it is the federal government, it is health agencies around the country; there have been allegations of an alarming increase in childhood cancers linked to children who play on these field extensively particularly soccer goalies. She added that as we know crumb rubber fields can become extremely hot reaching up to 146 degrees in one study report by the New York State Department of Health; safe shell organic material which is ground up walnuts, and does not know if we have considered that option and it is not going to be \$330,000 more than the crumb rubber from what she understands, is sold by Green Tech and it stays cool, does not have the disposal problem and she would think that we would at least consider it; it is not toxic; people are scared of the allergens from it but it is triple washed, they use it out west at Dinosaur Dig where children are digging their hands in it and 80,000 people have been through that Park with the walnut shells and they have never had an allergy problem so that is not an issue; if the only thing we are looking at is the cost it might be worth it to consider something that is not controversial and safe; in March 2016 our own Senator Blumenthal asked our President to spearhead a study of the effect of crumb rubber stating, "There is now very concerning evidence that crumb rubber fields may pose serious health hazards to children and others that use them." She noted that this resulted in our federal government announcing an action plan, we heard about that, to investigate the safety of crumb rubber; this investigation is still ongoing. She concluded that given all of this information she does not believe that it would be a responsible or logical decision to move forward with coated crumb rubber infill for Avon's proposed artificial turf field; we do not want our children ingesting toxic crumb rubber whether it has a food grade coating or not; you cannot put a coating on hazardous waste and call it safe; furthermore, installation of crumb rubber today with the knowledge of: 1) the science is not settled, 2) the federal government is still investigating its safety, 3) the State government may issue a moratorium on it for playgrounds and potentially athletic fields in the near future could potentially give rise to litigation against the District or Town in the event a young athlete uses the field and were to develop cancer years from now. She commented that to go forward with this information is irresponsible and it could subject us to potential litigation. It is her hope that the members of the Town Council and the Board of Education will consider all of the above evidence for the health and safety of our children and residents – thank you for your time.

Adam Lazinsk, 88 Deepwood Drive, commented that he has been following these meetings for most of the past four years, perhaps longer, and he has not been to every meeting but has been to many and he is seeing faces here that he is seeing for the first time; he is glad to see you; it is his opinion that he is seeing an eleventh hour organized movement to try and shut down a project that has been painfully moving slowly forward for at least four years; for the past four years we have had subject matter experts, two of them are here tonight, tell us that crumb rubber has been studied and is safe; there may be arguments to the contrary, he is not a scientist and he does not discount what Ms. Belval, Ms. Cianci, and Ms. Branch are saying but he can't believe that professional subject matter experts would come before us and propose using an infill that would be harmful to our children; it makes no sense; your charge tonight was to meet as two groups and move the project forward saying let's move it to referendum or let's not but now is not the time to relook at an issue that has been moving forward for four years. He is terribly frustrated about this; he has been a proponent of turf fields; he wanted a football turf field and a field hockey turf field and it has been paired down to a monetary figure that was supposed to be palatable; if you delay it, if you start looking to add a different type of infill you start reaching that optic of \$3 million; that is a bad number whereas may be \$2.96 million may be more palatable; this cannot drag on; there is no guarantee that if it were to move to referendum in December it would get approved because not only do we want a turf field, the Police Department and the emergency services also need a \$3 to \$5 million radio system; this meeting has dragged on for two hours and seventeen minutes; your charge was to move it forward or not and that is what he is asking you to do right now – thank you. Chairperson Maguire responded that we are moving forward to referendum in December; tonight we are going to decide on the number.

James Beaudoin, 18 School Street, commented that he is for the turf field with the crumb rubber; he has a 9-year old and a 7-year old, his 9-year old is a soccer goal keeper and plays it all the time; his background is that he owns and runs a transportation company in Connecticut and we haul scrap tires from a facility in West Haven, they shred it and we bring it to Albany where they make the crumb rubber so he is familiar with the process. He noted that tires are not hazardous. He questioned if the crumb rubber is coming from the United States. Mr. Harris responded that it will probably come from Albany. Mr. Beaudoin stated that he is very familiar with that location. He noted that this facility will only take in Grade A tires; Grade A is on road use in the United States, Grade B is off road use, and Grade C is tires of Asian influence or overseas tires; if you are only grinding up tires in the U.S. that is an A rating and you process those in a certain way there is no more threat to what we are talking about. He added that when you bring those tires for recycling, they sort them out and shred them, when you bring them to the facility to make the crumb rubber they grind them down to a further point, they freeze them, they crack them to size cryogenically then they encapsulate them and you don't have a release any more from the material. His position is that, he has lived in Town for about five years now, he moved to the Town for the school system and it is kind of crazy that our field the way it is right now is a black mark on the Town with the way it looks; he has been on the field with his kids; it is amazing that we have a Town that has that kind of field; it is crazy to him. He noted that regarding the alternate fills, coconut, walnut, that stuff is going to get moldy and cause health problems too; mold is a problem as well; cork fill floats away when it rains; there is a heavy maintenance cost involved. He is speaking from the position of knowledge on both parts of that. He added that his company hauls non-hazardous contaminated soil as well; in the State there is one landfill that is closed, there are some that are open still for construction demolition, but everything they haul goes out of state so we don't haul hazardous waste, they haul tires so if it is hazardous he should be in jail because he is hauling something that he is not permitted to do. He commented that our concern is the risk of cancer causing agents and he does not think the risk is there; his son is a goal keeper and hopefully he gets to play on a field here someday; he plays on it now and he is not concerned about it because of the research he has done and what he is involved with from that perspective of transporting the raw material and the finished product. He has spoken before and he came here tonight to see what was going on in the process; he wouldn't certify himself as an expert but he knows more than most about the process and someone who is concerned should go to a plant and speak to the plant manager and see the finished product.

Debra Chute, Board of Education Chairperson, commented that the Board of Education continues to support the artificial turf field project given that there are further decisions that need to be made by the Public Building Committee, other than that we are support of this project.

Mr. Bernetich commented that we have worked together, the Board of Education and the Town Council, and he does not know what happened where it feels like there is some kind of rift and the statute is a statute that is not within our control but he knows pretty much all of you and he would rather work collaboratively than "this is my territory, this is your territory" so if something like that is going on and it happened, he does not know how it happened but he will do whatever it takes to bring us back to the way that it was. Dr. Carnemolla commented that is why she asked the question earlier because now there is a clearer understanding of the Public Building Committee and the process because there was a feeling on the Board that they did not understand how it went there and she thought it got cleared up tonight. Chairperson Maguire commented that this is a community project and we all need to come together and be happy when the ribbon is cut and need to feel good about it and that our children and community are safe. She added that this topic is ever revolving, there are studies coming out; Ms. Lemay, your presentation was wonderful, it cleared up a lot of things for her but there is a lot of research still coming; is it going to be here by December 12th she does not have the answer to that but there does look to be one study coming out in the fall of 2018 so that could maybe add additional information and better insight to the final decision that is made. She is going to support and recommend that we increase our budget by \$330,000 to take into account the possibility of an alternate infill. She is not saying that is a definite

either way but we need more time to take a look, we have been looking for years, but seeing the hot issue that it is and with a study coming out, perhaps if we plan ahead with an additional \$330,000 it would put us in a position to look at an alternate infill. The Town Manager clarified that we would be going with an appropriation of \$2.9 million and change.

On a motion made by Mr. Stokesbury, seconded by Mr. Pena, it was voted:

RESOLVED: That the Town Council move the Avon High School Synthetic Turf Field and Track Improvement Project forward with a budget for referendum of \$2.9 million and change.

Chairperson Maguire, Messrs: Pena, Stokesbury, and Bernetich voted in favor.

Chairperson Maguire noted that this is a conversation that is going to continue and input will be appreciated; there will be more research and hopefully more answers. She thanked Ms. Lemay for coming and making her presentation and Mr. Harris for coming and talking to us from BSC Group; we really appreciate it. She thanked the audience for coming and for their comments and suggestions and input. She thanked the Board of Education for coming. She noted that this is a partnership; we are one community and we all need to work together and be happy about the product that we put out.

V. ADJOURN

On a motion made by Mr. Pena, seconded by Mr. Stokesbury, it was voted:

RESOLVED: That the Town Council adjourn the meeting at 9:27 p.m.

Chairperson Maguire, Messrs: Pena, Stokesbury, and Bernetich voted in favor.

Attest:

Grace Tiezzi, Assistant to the Town Manager

Avon High School Synthetic Turf Field Project

September 13, 2018



Existing Conditions

RECOMMENDED LAYOUT



 BSC GROUP

PROJECT SCOPE

Base Project

1. Synthetic turf field
2. 8 lane track with run-outs and field events
3. Access, walkways, and driveway
4. Existing bleachers to remain
5. Visitor bleacher pavement (existing bleachers to be used)
6. Retaining walls
7. New security fence North and East
8. LAX safety netting footings
9. Maintenance equipment
10. Pre-fabricated storage shed

Base Project Cost: \$2,357,000

Includes 10% Contingency
(\$214,257)

Plus approx. **\$308,000** in soft costs (attorney fees, bonding costs, referendum costs, etc.)

 BSC GROUP

Materials

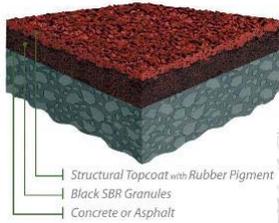
- Synthetic Turf, resilient pad, sand & coated SBR rubber infill
- Bituminous concrete running track with urethane base mat surface

Project Alternates

1. Field and/or track logos



PROJECT SCOPE – RUNNING TRACK



Structural Topcoat with Rubber Pigment
Black SBR Granules
Concrete or Asphalt

- Polyurethane base mat (porous system)
- Color: red
- High school track event layout & standard markings



PROJECT SCOPE – SYNTHETIC TURF

- 1.75-inch knap turf sand and coated SBR (crumb rubber infill), resilient pad.
- Should crumb rubber ever be deemed hazardous: Infill can be removed and new infill can be installed; resilient pad allows flexibility as to future type.
- Add approx. \$60,000 over traditional non-coated rubber infill
- Stone base layer for stability and drainage.



Synthetic Turf: The State of the Science

Julie C. Lemay, M.P.H.

Two-Board Special Meeting with the Town Council and
the Board of Education

September 13, 2018



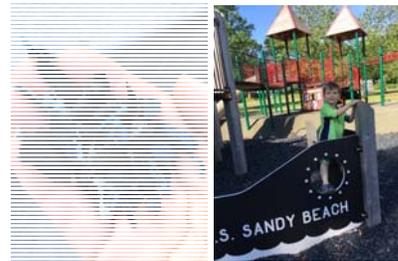
Agenda

- My background
- High school project
- Risk assessment process
- What does the science say?
 - Previous scientific literature
 - New scientific literature
 - Crumb rubber in context
 - Ongoing research
- Discussion/Questions



Background

- Work history – over 15 years, 5 years DPH
- What I do at Gradient
- How I became involved in turf research
- Disclosures – working with the town to provide scientific advice on the synthetic turf field project
- Gradient has been involved with many projects related to synthetic turf/ recycled rubber with a number of entities, including health districts, school districts, synthetic turf manufacturers, rubber recyclers, and trade associations



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High School Project

- Synthetic turf sports field
- Running track
- Turf infill
 - Crumb rubber "CoolFill"
 - Water-based green colorant
 - Sand

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What is Risk Assessment

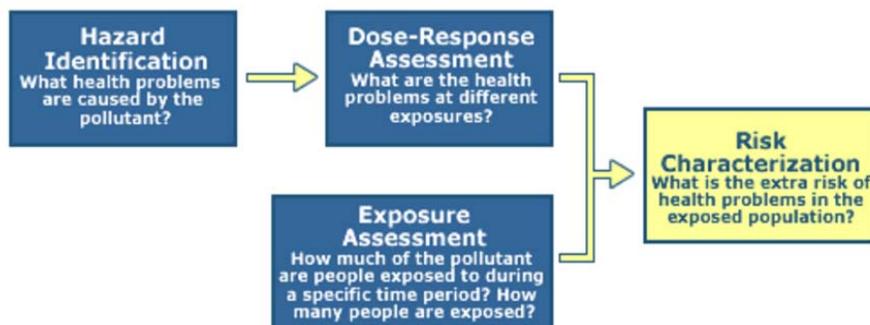
$$\text{Risk} = \text{Exposure} \times \text{Toxicity}$$

- Evaluation of potential for adverse effects, and the severity of those effects, from a chemical exposure
- Better to overestimate rather than underestimate risks

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The 4 Step Risk Assessment Process



National Research Council. 1983. "Risk Assessment in the Federal Government: Managing the Process." National Academy Press, 191p.

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Why is Dose Important?

"All things are poison and nothing is without poison, only the dose permits something not to be poisonous."



*Paracelsus (1493-1541)
Father of Modern Toxicology*

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Previous Scientific Literature

- Artificial turf reports from federal (US EPA, CPSC), state/local agencies (CT, MA, CA, NJ, NY), international regulatory bodies
- Dozens of studies have evaluated recycled rubber, crumb rubber, or artificial turf
- Overall: Studies that evaluate chemical risk (not simply presence) do not identify concerns
- Limitations: Yes, all scientific studies have limitations

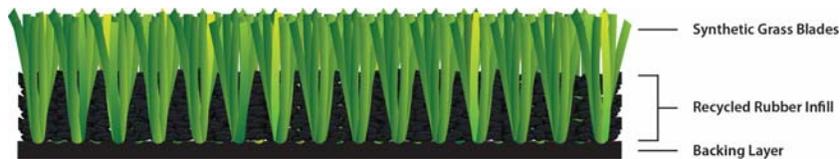


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Limitations

- Yes, there are limitations (as with ALL scientific inquiries)
- However, studies have:
 - Evaluated ingestion, dermal contact, inhalation
 - Evaluated ~90 chemicals
 - Evaluated the impact of hot surfaces
 - Taken samples of air above crumb rubber
 - Evaluated the bioavailability of chemicals in crumb rubber



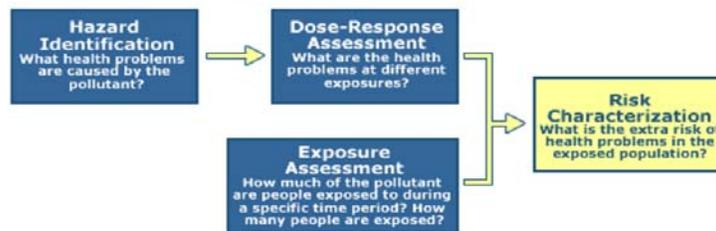
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A Comprehensive Multipathway Human Health Risk Assessment (*Peterson et al., 2018*)

- Coauthors: Michael Peterson, M.E.M., DABT; Julie Lemay, M.P.H.; Sara Pacheco-Shubin, Ph.D., M.P.H.; Robyn Prueitt, Ph.D., DABT
- Peer-reviewed and published in January
- Funding: No industry funding for risk assessment/manuscript; Verdant Health Commission provided funding for initial data collection and preliminary risk assessment

The 4 Step Risk Assessment Process



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A Comprehensive Multipathway Human Health Risk Assessment (Peterson et al., 2018)

- Data Used
 - Collected all available data in the literature
 - Over 100 recycled rubber samples
 - Nearly 100 air samples
 - Over 100 different chemicals evaluated
 - Also evaluated natural soil fields



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A Comprehensive Multipathway Human Health Risk Assessment (Peterson et al., 2018)

- Exposure Assessment
 - 95% UCLs/maximum concentration
 - Standard US EPA equations and assumptions (time spent on field, number of times per week, etc.)
 - Scenarios
 - Players
 - Spectators (adult, children)
 - Pathways
 - Dermal
 - Ingestion
 - Inhalation



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Context: Crumb Rubber vs. Natural Soil

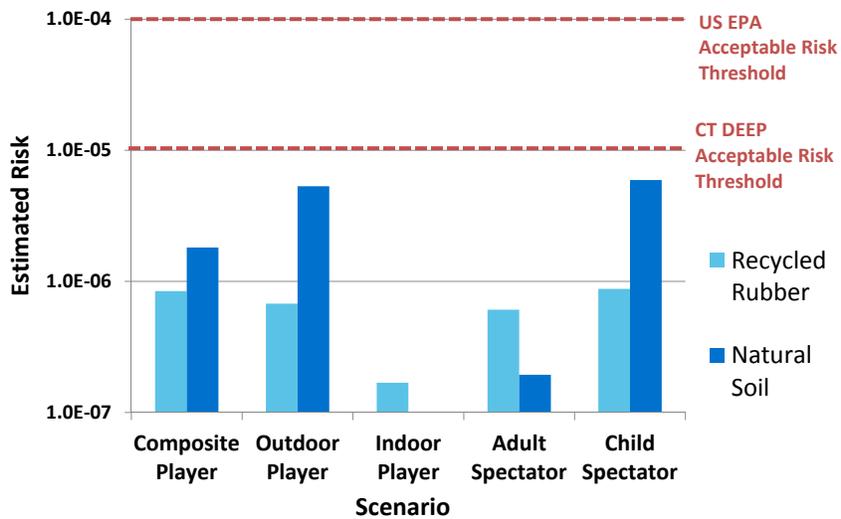
Chemical	Crumb Rubber (mg/kg)	Natural Soil (mg/kg)
Arsenic	0.3-4.0	0.1-97
Lead	0.4-142	10-700
Carcinogenic PAHs	6.2	8.5

Data are only a subset of chemicals found in recycled rubber/soil. Recycled rubber data (and c-PAH data) are from literature review; data from chemical composition studies do not consider bioaccessibility. Natural soil data are from MADEP, 2002 (90th percentiles) and USGS, 1984 (ranges).

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Results: Cancer Risks

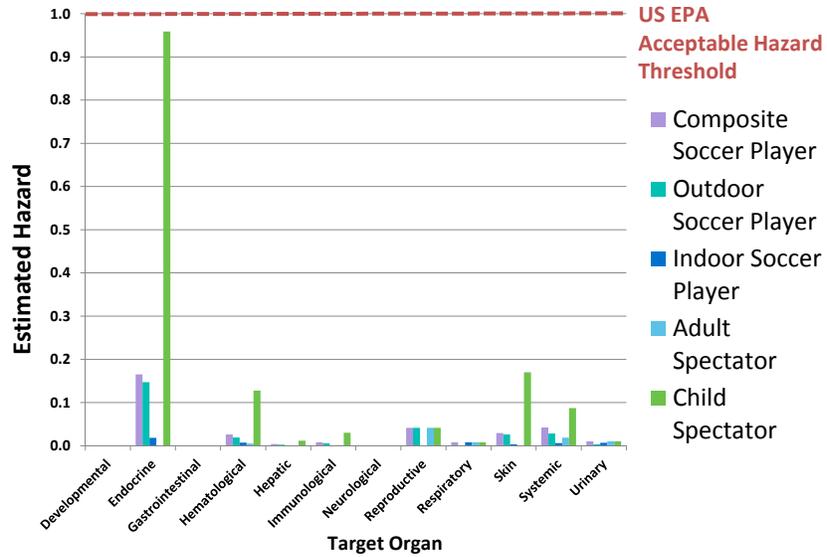


US EPA acceptable risk level: US EPA, 1990, 1991; Rodricks and Rieth, 1998
 CT DEP acceptable risk level: CT DEP, Remediation Standard, Sections 22a-133k-1 to 22a-133k-3

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Results: Non-cancer Hazards



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New Study Conclusions

- All exposure scenarios are within US EPA acceptable risk limits
- Even considering:
 - Maximum or 95% UCL concentrations
 - 100% bioavailability (aside from As, phenols, phthalates, and PAHs)
 - All spectators and players assumed to play 100% of games/practices on synthetic turf



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Ongoing Research

- US EPA/CPSC/ATSDR
 - Published data gap analysis in December 2016
 - Requested two-year extension
 - Aim to release draft in Fall 2018
- California OEHHA
 - Four-year study
 - Very comprehensive
 - Results currently scheduled for 2019



Questions

Julie C. Lemay, M.P.H.

jlemay@gradientcorp.com