School Committee
Meeting Book

October 19, 2016
7:00 pm

Town Hall
Selectmen's Meeting Room

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

AGENDA
October 19, 2016 7:00pm
Town Hall—Selectmen's Meeting Room

Items	**Suggested time allotments**
(Note: The meeting will open at 6:00pm and immediately adjourn to executive session; when executive session is complete, the meeting will be recessed until 7:00pm)	
Executive session	6:00 – 7:00
A. Discussion and vote on grievance	
B. Negotiations with collective bargaining unit(s)	
I. Public Participation	7:00 – 7:10
II. Chairperson's Report & Members' Reports	
III. Superintendent's Report	
IV. Time Scheduled Appointments:	
A. Donation for Coordinators of Development & Volunteer Activities: Vote	7:10 – 7:15
B. Innovation in Learning Study Group: Report	7:15 – 8:00
C. SHS Athletic Campus Improvements: Report & Recommendations	8:00 – 8:40
V. Curriculum	
VI. Policy	
VII. Finance & Operations	
A. Fiscal Year 2018 Fiscal Priorities & Guidelines: Discussion & Vote	8:40 – 8:50
VIII. Old Business	
IX. New Business	
A. Marijuana Legalization State Ballot Question: Discussion	8:50 – 9:10
X. Approval of Minutes	9:10 – 9:15
XI. Executive Session	
XII. Adjournment	9:15

Next regular meeting: November 9, 2016

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

ITEM NO: I Public Participation MEETING DATE: **10/19/16**

SPECIFIC STATEMENT OR QUESTION:
Will the School Committee hear thoughts and ideas from the public regarding the operations and the programs of the school system?

BACKGROUND INFORMATION:
Copies of the policy and procedure for Public Participation are available to the public at each School Committee meeting.

ITEM NO: II. Chairperson's Report/Members' Reports

SPECIFIC STATEMENT OR QUESTION:
Will the School Committee hear a report from the Chairperson of the School Committee and other members of the School Committee who may wish to comment on school affairs?

BACKGROUND INFORMATION:
This agenda item provides an opportunity for the Chairperson and members of the Shrewsbury School Committee to comment on school affairs that are of interest to the community.

STAFF AVAILABLE FOR PRESENTATION:
School Committee Members
Ms. Sandra Fryc, Chairperson
Dr. B. Dale Magee, Vice Chairperson
Mr. Jon Wensky, Secretary
Ms. Erin Canzano, Committee Member
Mr. John Samia, Committee Member

ITEM NO: III. Superintendent's Report

SPECIFIC STATEMENT OR QUESTION:
Will the School Committee hear a report from Dr. Joseph M. Sawyer, Superintendent of Schools?

BACKGROUND INFORMATION:
This agenda item allows the Superintendent of the Shrewsbury Public Schools to comment informally on the programs and activities of the school system.

STAFF AVAILABLE FOR PRESENTATION:
Dr. Joseph M. Sawyer, Superintendent of Schools

ACTION RECOMMENDED FOR ITEMS I, II, & III:
That the School Committee accept the report and take such action as it deems in the best interest of the school system.

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

ITEM NO: **IV. Time Scheduled Appointments:** MEETING DATE: **10/19/16**
A. Donation for Coordinators of Development & Volunteer Activities: Vote

SPECIFIC STATEMENT OR QUESTION:

Will the Committee vote to accept donations for the Coordinators of Development & Volunteer Activities?

BACKGROUND INFORMATION:

1. Shrewsbury Federal Credit Union and Audubon Shrewsbury would each like to make a donation in the amount of $7,500 to Shrewsbury Public Schools to assist in the funding of the Coordinators of Development & Volunteer Activities.

2. The Coordinators of Development & Volunteer Activities - Ms. Michelle Biscotti and Ms. Kathleen Keohane - work on development and sponsorship efforts for the district and coordinate volunteer efforts across the district.

ACTION RECOMMENDED:

That the Committee vote to accept a donations of $7,500 from Shrewsbury Federal Credit Union and a donation of $7,500 from Audubon Shrewsbury to be used as funding for the Coordinators of Development & Volunteer Activities.

STAFF AVAILABLE FOR PRESENTATION:

Dr. Joseph M. Sawyer, Superintendent

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

ITEM NO: IV. Time Scheduled Appointments: MEETING DATE: **10/19/16**
B. Innovation in Learning Study Group: Report

SPECIFIC STATEMENT OR QUESTION:

Will the Committee hear a report from the Innovation in Learning Study Group.

BACKGROUND INFORMATION:

1. The Innovation in Learning Study Group was established to examine innovative practices at various successful schools, in an effort to seek out best practices that confirm the district's current strategic approach and that may inform the future direction of the Shrewsbury Public Schools.
2. Federal grant funding was used to support site visit by the study group to various schools for this purpose.
3. The enclosed report presents findings regarding what the group learned and how it might be applied to Shrewsbury.

ACTION RECOMMENDED:

That the School Committee hear the report and take such action as it deems in the best interest of the school system.

STAFF AVAILABLE FOR PRESENTATION:

Ms. Mary Beth Banios, Assistant Superintendent for Curriculum & Instruction
Members of the Innovation in Learning Study Group

ITEM NO: IV. Time Scheduled Appointments: MEETING DATE: **10/19/16**

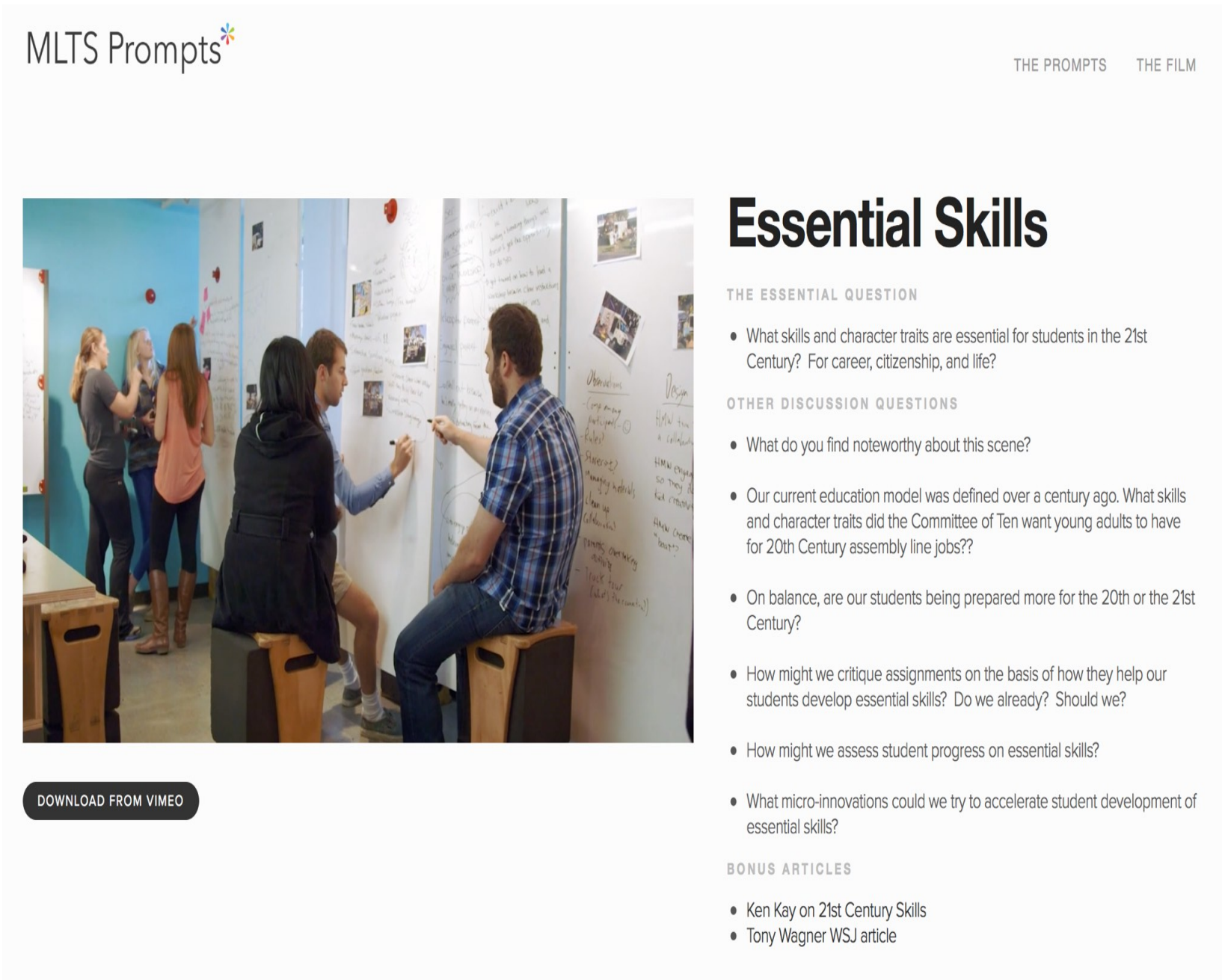
INNOVATION IN LEARNING

Report To School Committee

October 2016

Shrewsbury Public Schools Innovation In Learning Study Group

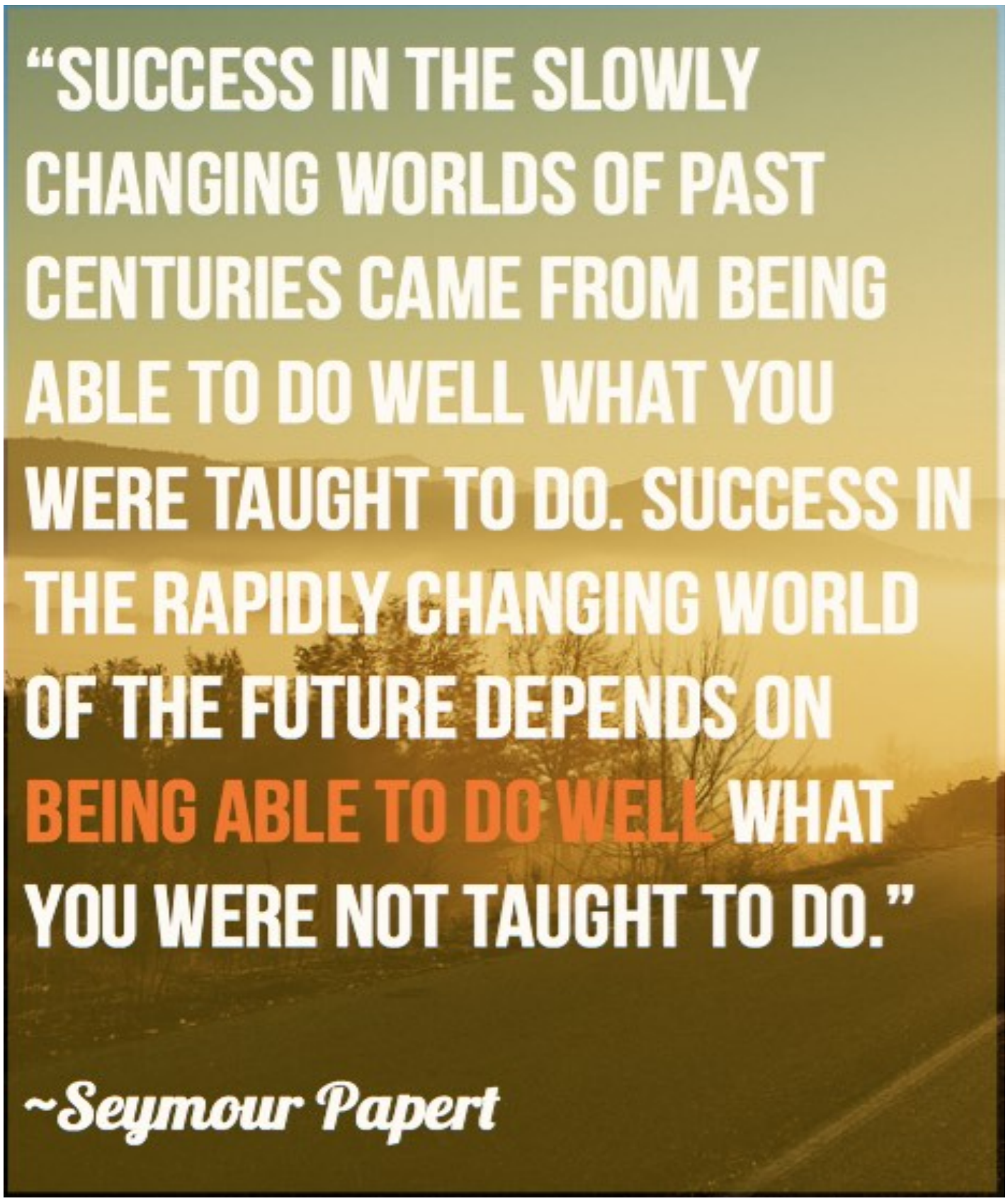
Why an Innovation in Learning Study Group?



http://sparks.mltsfilm.org/essential-skills

What skills and character traits are essential for students in the 21st Century? For career, citizenship, and life?

Problem of Practice



In the fall of 2015, the Shrewsbury Public School District convened an Innovation in Learning Study Group in response to the significant changes that have occurred around access to information, interconnectedness, and the new skill sets being sought after in the work environment.

This group was tasked with visiting a variety of different learning environments that have been recognized for their innovative practices and for effectively preparing their students for the demands of the 21st century. In conjunction with the visits, the group also read the book, Most Likely to Succeed, written by Tony Wagner. This book explores the belief that the basic structures of our education system, which were developed in the late 1800s, are no longer appropriate for contemporary learners.

Using federal professional development grant funding, the team visited five schools during the 2016 winter-spring time frame and met on June 7, 2016, at an off-site retreat, to reflect upon, summarize, and synthesize what had been learned.

Study Group Membership

INNOVATION IN LEARNING STUDY GROUP
SHREWSBURY PUBLIC SCHOOLS

Tiffany Ostrander (Elementary Administration)
Erin Kendrick (Elementary)
Heather Gablaski (Middle Administration)
Moira Cristy (Middle ELA 6)
Megan Graham (Middle Math/Science 5)
Melissa McCann (Middle Curriculum Coordinator/Math)
Ann Jones (Middle Administration)
Jeremy Mularella (Middle Science 8)
Maura Egan (Middle ELA 8)
Jose Schroen (SHS Science/Math)
Jill Carter (SHS Science)
Sarah Powers (Special Education)
Shawna Powers (K-12 Department - Instructional Tech and Media)
Mary Beth Banios (District - Curriculum and Instruction)
Erin Canzano (School Committee)
B. Dale Magee (School Committee)

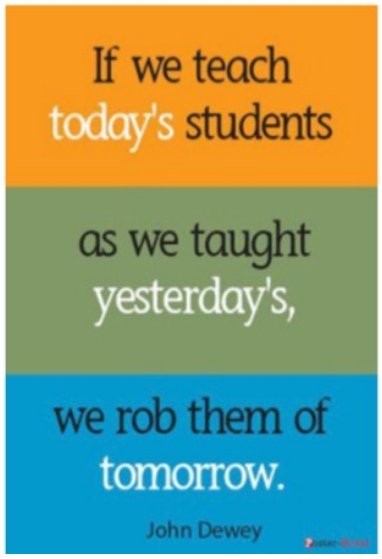
Site Visits

PORTRAITS OF INNOVATION: EXPLORING INNOVATIVE MODELS FOR TEACHING TODAY'S STUDENTS

Innovation Portrait: King Middle School

Posted on May 27, 2016 by spsinnovationinlearning

The King Middle School Mission: "It is not enough to get yourself to the top of the mountain; it is everyone's responsibility to get everyone to the top."



Click here to view the study group's blog: spsinnovationinlearning.wordpress.com

The 16 member Innovation in Learning Study Group visited the schools below during the 2016 winter-spring time frame and met on June 7, 2016, at an off-site retreat, to reflect upon, summarize, and synthesize what had been

learned. Information around the innovative aspects of each school can be found by clicking on the link associated with each site.

Worcester Technical High School, Worcester, MA

Visit Date: January 27, 2016

http://wbur.fm/2e2nDUZ

Olin College of Engineering, Needham, MA

Visit Date: February 9, 2016

http://www.olin.edu/about/rankings-awards

High Tech Elementary, Middle, and High Schools

Visit Dates: March 10 -11, 2016

http://sparks.mltsfilm.org/#/hth-wheel-project/

Rivers and Revolutions Program, Concord-Carlisle High School

Visit Date: March 3, 2016

http://bit.ly/2e6KtPB

Beaver Country Day School, Chestnut Hill, MA

Visit Date: April 12, 2016

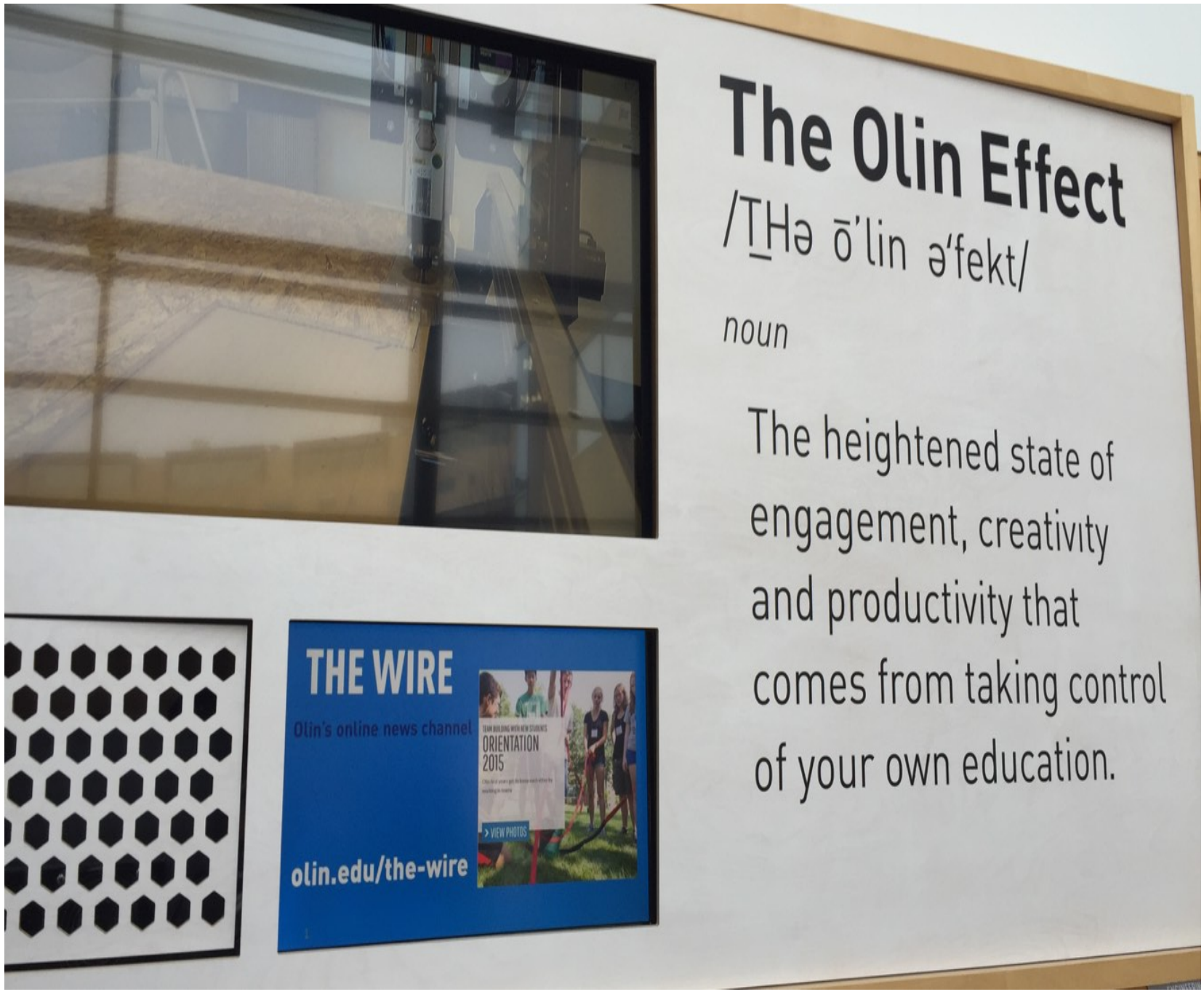
http://bit.ly/1GtdCJP

King Middle School, Portland, ME

Visit Dates: May 12 -13, 2016

https://www.teachingchannel.org/videos/expeditionary-learning

Common Vision



Whenever change is made, and especially when it impacts long and widely-held beliefs, it is imperative to garner support of all stakeholders. Part of the development of a common vision needs to be based on an honest assessment around how our traditional educational system

and success markers may be out of alignment with the realities of our digital, interconnected economy. An understanding of the alignment issue helps to avoid the perspective that innovation efforts in high performing schools are trying to fix something that isn't broken.

The schools we visited:

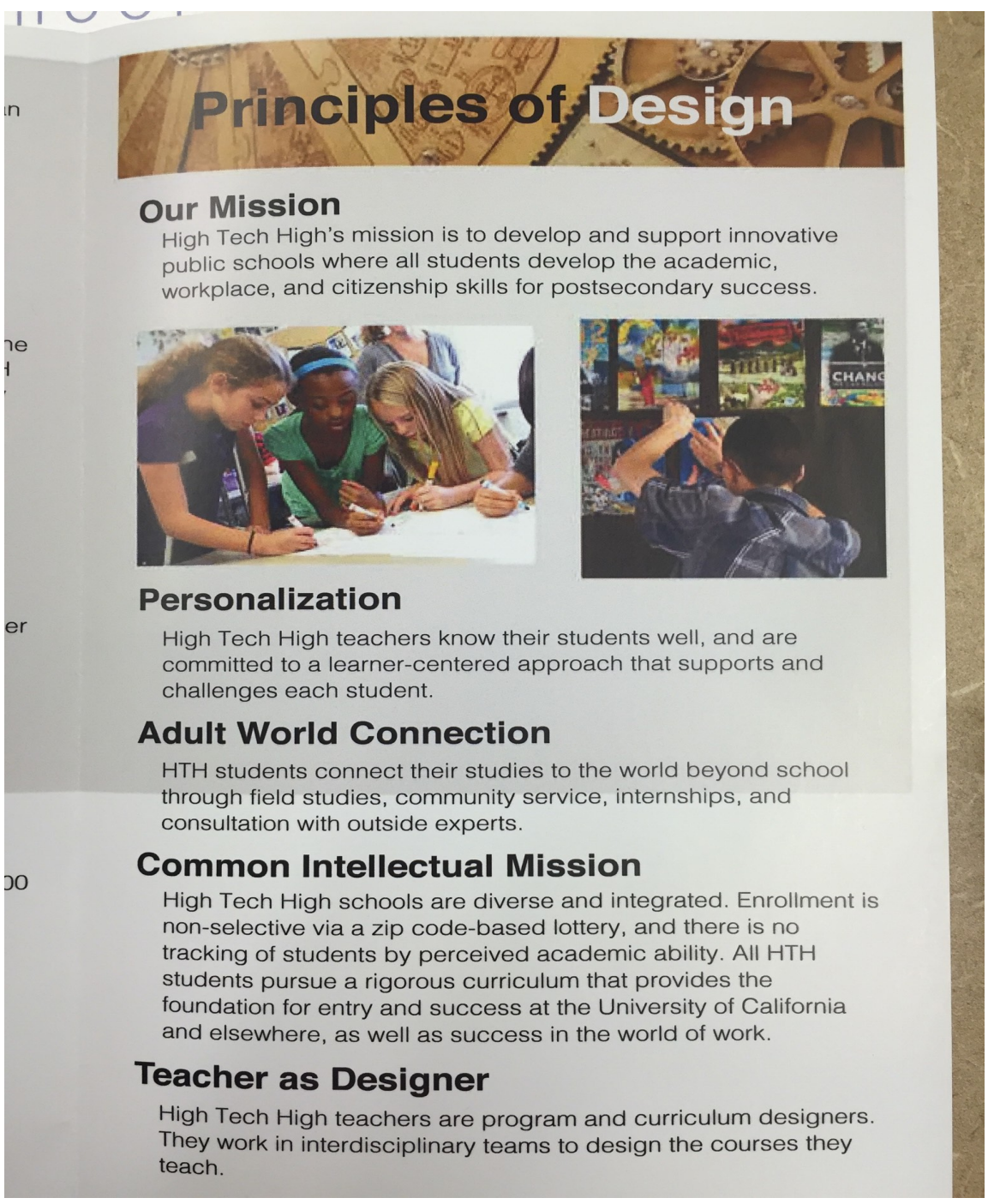
•Started with a clear vision and the instruction and culture in the schools reflected the mission that had been articulated

•Had empowered faculty who shared a common mindset - in some schools this was attained through hiring, in others it needed to be cultivated with existing staff

•Communicated consistently with all stakeholders regarding the mission of the schools and the vision for effective instruction.

Beaver Country Day School

High Tech High



Principles of Design

Our Mission

High Tech High's mission is to develop and support innovative public schools where all students develop the academic, workplace, and citizenship skills for postsecondary success.

Personalization

High Tech High teachers know their students well, and are committed to a learner-centered approach that supports and challenges each student.

Adult World Connection

HTH students connect their studies to the world beyond school through field studies, community service, internships, and consultation with outside experts.

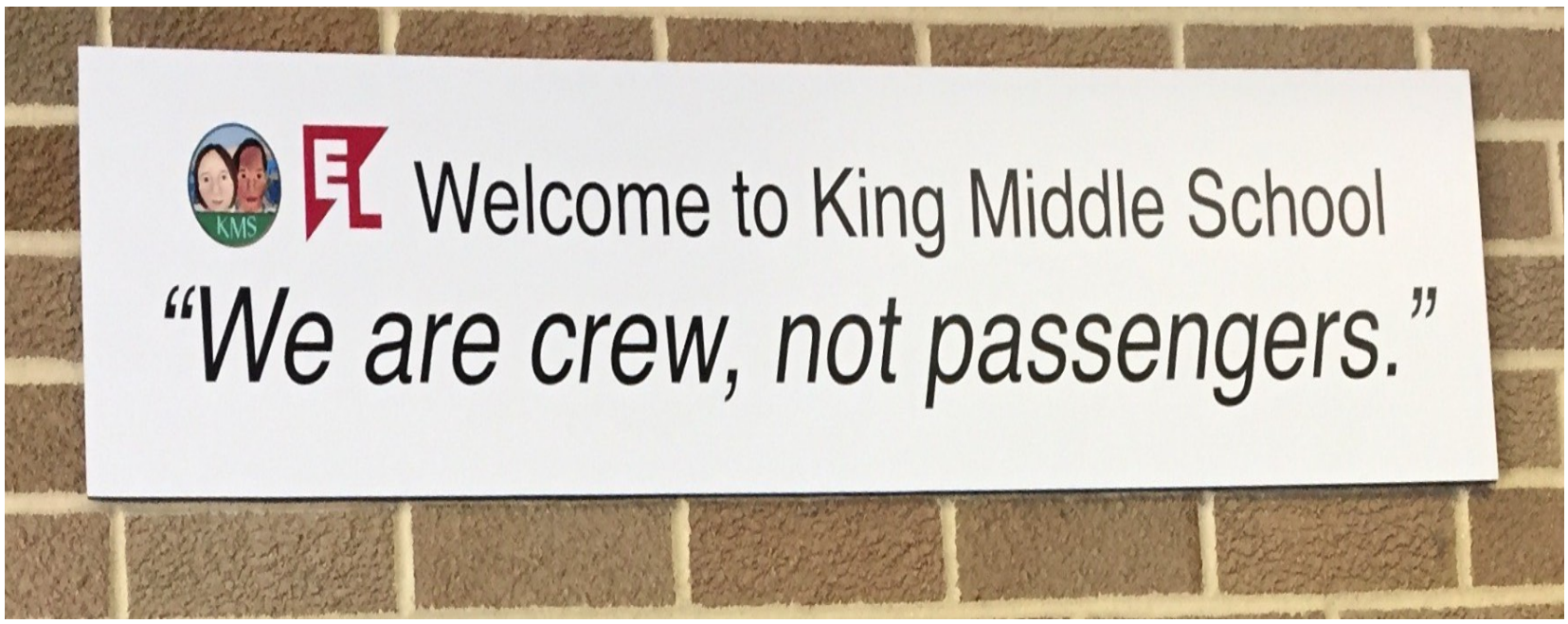
Common Intellectual Mission

High Tech High schools are diverse and integrated. Enrollment is non-selective via a zip code-based lottery, and there is no tracking of students by perceived academic ability. All HTH students pursue a rigorous curriculum that provides the foundation for entry and success at the University of California and elsewhere, as well as success in the world of work.

Teacher as Designer

High Tech High teachers are program and curriculum designers. They work in interdisciplinary teams to design the courses they teach.

Sense of Community



Incorporated into the vision of each of these schools was the sense that everyone was a part of the team. The members simultaneously appreciated both individuality and community. They made it clear that every individual had something of value to offer to the group. Teachers modeled this by genuinely sharing of themselves in a way that removed barriers which, at times, can exist between students and teachers.

Relationships mattered. Relationships among faculty, students, families and the community as a whole. No captain or passengers, everyone had a sense of agency and a sense of responsibility. Advisory time was key. It enforced the importance of connection between adults and

students. Multiple settings used advisory time, which allowed for small groups of students to meet with a designated teacher to engage in dialogue and instruction around the students' sense of self.

Families were strongly connected to the classroom and had multiple opportunities to view student exhibitions of work. Community partnerships were fostered, cultivated, actively pursued and supported in order to provide real-world experience and off-site learning opportunities for students. We saw schools that aggressively pursued community partnerships and also witnessed environments where community partnerships were more in the developmental stages. The efforts to make these connections allowed students to feel a part of the community while simultaneously providing the community with the opportunity to feel connected to the students and the school.

What We Want To Do:

Our goal for this project is to be able to keep artists in San Diego. Oftentimes, artists can't afford to live and produce work in bigger cities because the cost of living is too high. We have been working with local San Diego artists to create affordable housing to help keep the art community and culture alive.

Keep Up With Us On:

@HTHCVTinyHomes

Sempiternal Tiny Homes

Sempiternal Tiny Homes

@HTHCVTinyHomes

@Sempiternal_TinyHomes

hthcvtinyhomes@gmail.com

Please support building tiny homes by checking out the rewards and donating as much as you can on our **KICKSTARTER**

SempiternalTinyHomes

Investigating Normal:

Adaptive + Assistive Technologies

ENGR 3299 | Spring 2015
Assistant Professor Sara Hendren

What counts as "normal"? Whose bodies are broken, and whose need fixing? This design depth course invited students to rethink disability and the technologies designed for atypical bodies and minds. In these images are tiny glimpses into the design-build processes of six teams and their external partners, resulting in high-tech and low-tech tools for daily life.

Thanks to our co-design collaborators:

Children's Hospital Boston
Walker School
Adaptive Design Association
Amanda Cachia
Chris Hinojosa

Course Students:

Grace Ahn, Jennifer Anderson, Morgan Bassford, Kari Bender, Ari Chae, Brandon Chiou, Victoria Coleman, Myles Cooper, Adit Dhanushkodi, Elizabeth Doyle, Naomi Dudley, Lauren Froschauer, Ad Garties, Becca Getto, Ingrid Hagen-Keith, Julianne Jorgensen, Emily Mamula, Kate Maschan, Mary Morse, Cullen Ross, Michael Searing, Jess Sutantio, Brooks Willis, Mei Lang Xiong

Ms. Hanley's Rule to Live By:

Try to Do Something Kind Every Day-

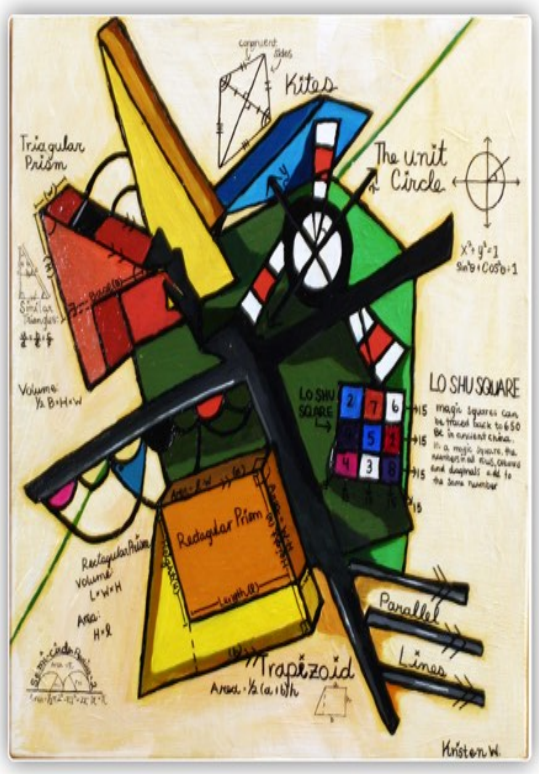
Inclusion and Equity

Graduate School of EDUCATION

Teach. Lead. Transform.

About Us | Programs | Professional Education | Our Students | Apply

Center for Research on Equity and Innovation



The Center for Research on Equity and Innovation engages practitioners, scholars and youth in critical dialogue and networked improvement efforts addressing complex problems of practice in K-12 education. Our work is guided by the following principles:

Excavate: We critically examine our own beliefs, practices, and the systems in which our students live and work.

Disrupt: We use disciplined inquiry to disrupt predictable patterns of success and failure, and the inequitable practices that perpetuate them.

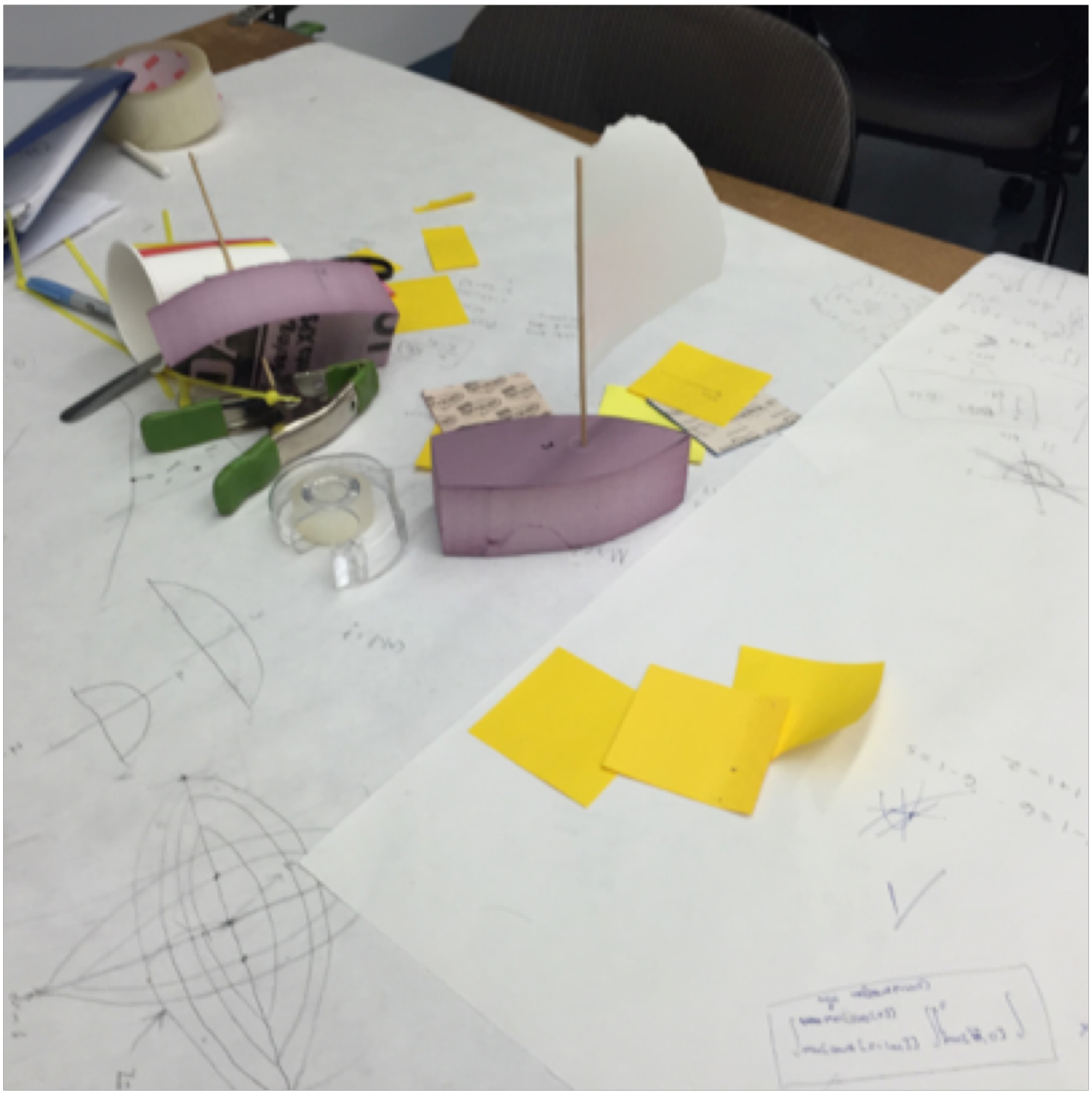
Design: We design practices and transform systems to create more equitable, engaging learning environments for young people and adults.

Grounded in participatory research, the Center merges professional practice and scholarship to actively improve teaching, learning and leadership in schools. Some of the tools we are developing for engaging in improvement science in schools are available here.

Overall there was a clear trend across these schools to fade out tracking structures, such as Advanced Placement (AP) courses and honors courses, in favor of more heterogeneous groups. One model gave all students the ability to “opt in” to the honors pathway within a specific course/class.

The semester based Rivers and Revolution Program had a class comprised of high level honors students to intensive special needs students. Students across the special education spectrum were incorporated into the learning environments at High Tech High, King Middle School, Rivers and Revolutions, Worcester Technical High School Programs. The level to which special needs students were integrated into project based learning experiences did vary between schools.

Project Based Learning



At King Middle School, we don't just learn **about** *things; we* **do** *things.* **Gus Goodwin, KMS Teacher**

All students in the schools we visited participated in authentic, interdisciplinary units of study that incorporated a variety of targeted content, but also allowed for a great deal of student voice and choice. Students we met demonstrated a high level of investment and engagement in their work. They could easily articulate the real world relevance of their work. There was more of an emphasis on the process over the product. Students were given time to receive feedback and make revisions in their work. This led to much higher quality products.

Careful curriculum planning and lesson design, that in some settings including student participation, was evident across all sites. Teachers embraced their role as co-learner and coach. They shared their enthusiasm for trying new things and demonstrated that failure is a natural part of the learning process. These schools made strategic decisions about curriculum content; there was an acceptance that curriculum standards needed to be streamlined in order to accommodate deeper learning activities. It should be noted that none of the schools used a project-based learning approach 100% of the time. In all locations, lectures, quizzes, labs, discrete assignments were utilized in classroom settings.

Across all sites, students' work was ultimately assessed by authentic audiences and some sort of public performance task.

Essential Questions:

How has popular music in the United State developed over the last century?
How does music influence culture and how does culture influence music?

Project Objectives:

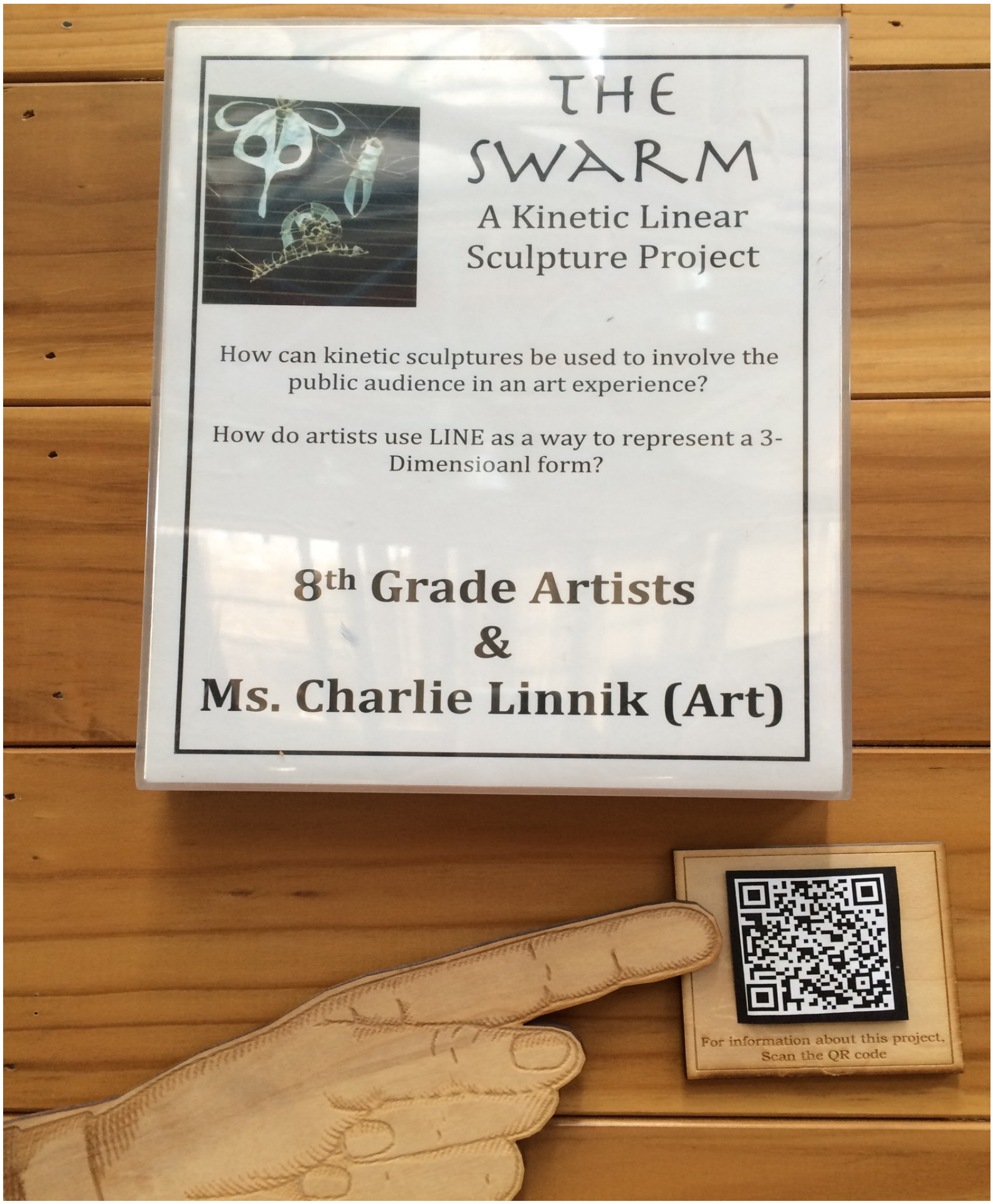
Students will learn about waves (sound and light)
Students will study basic musical rhythms and theory
Students will learn and build basic circuits
Students will investigate the cultural impact of music including the subcultures of age, fashion, & politics.
Students will identify a defining moment within a musical genre as well as an icon of the genre.
Students will look at the social and cultural milieu surrounding a genre

Exhibition and Timeline:

Students will create an interactive infographic complete with their genre research, a pictorial representaion of the icon and a wired soundboard that will play sounds from the genre
Project will run for 10 weeks with an exhibition the week of March 23, 2015

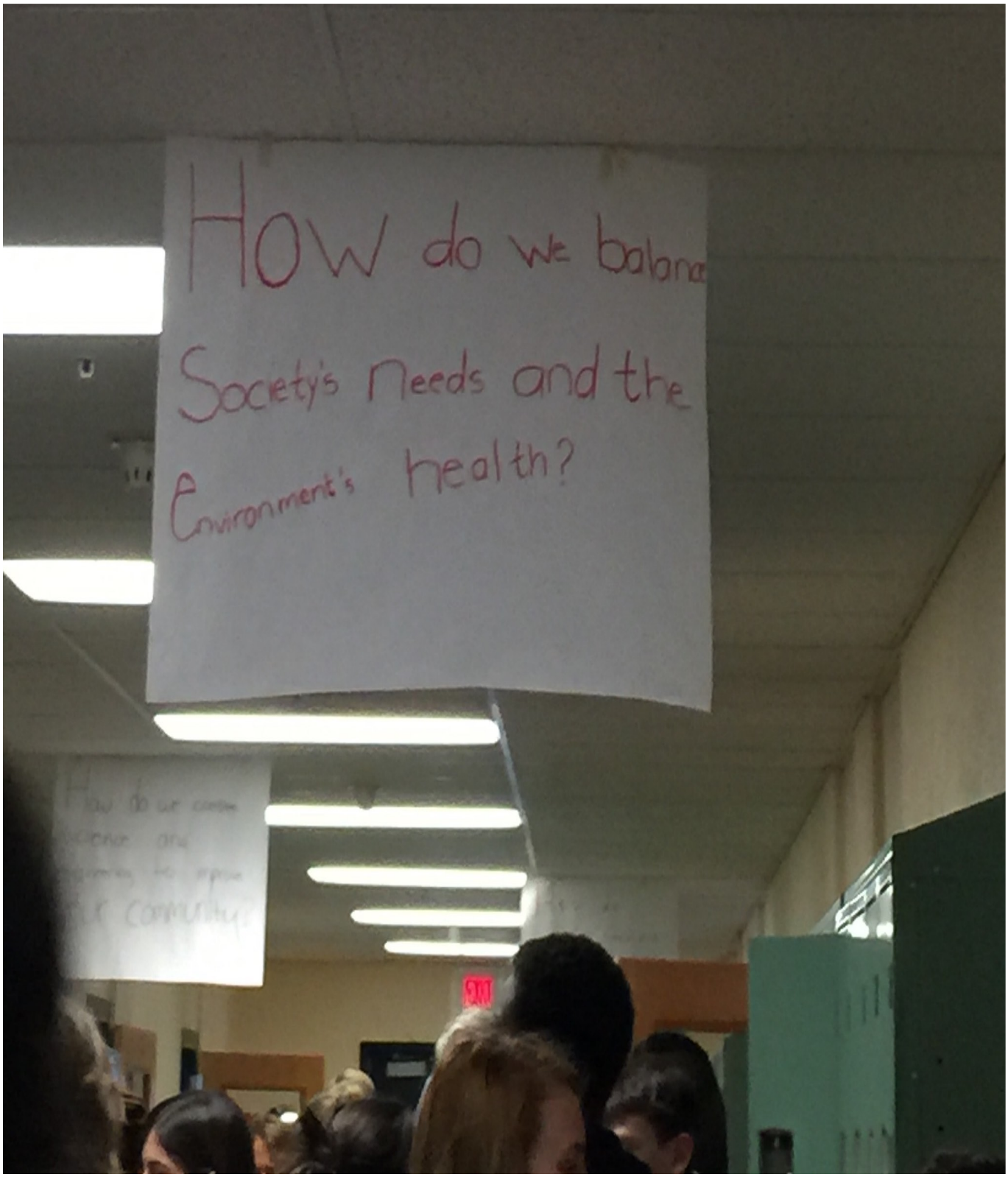
Challenge Option:

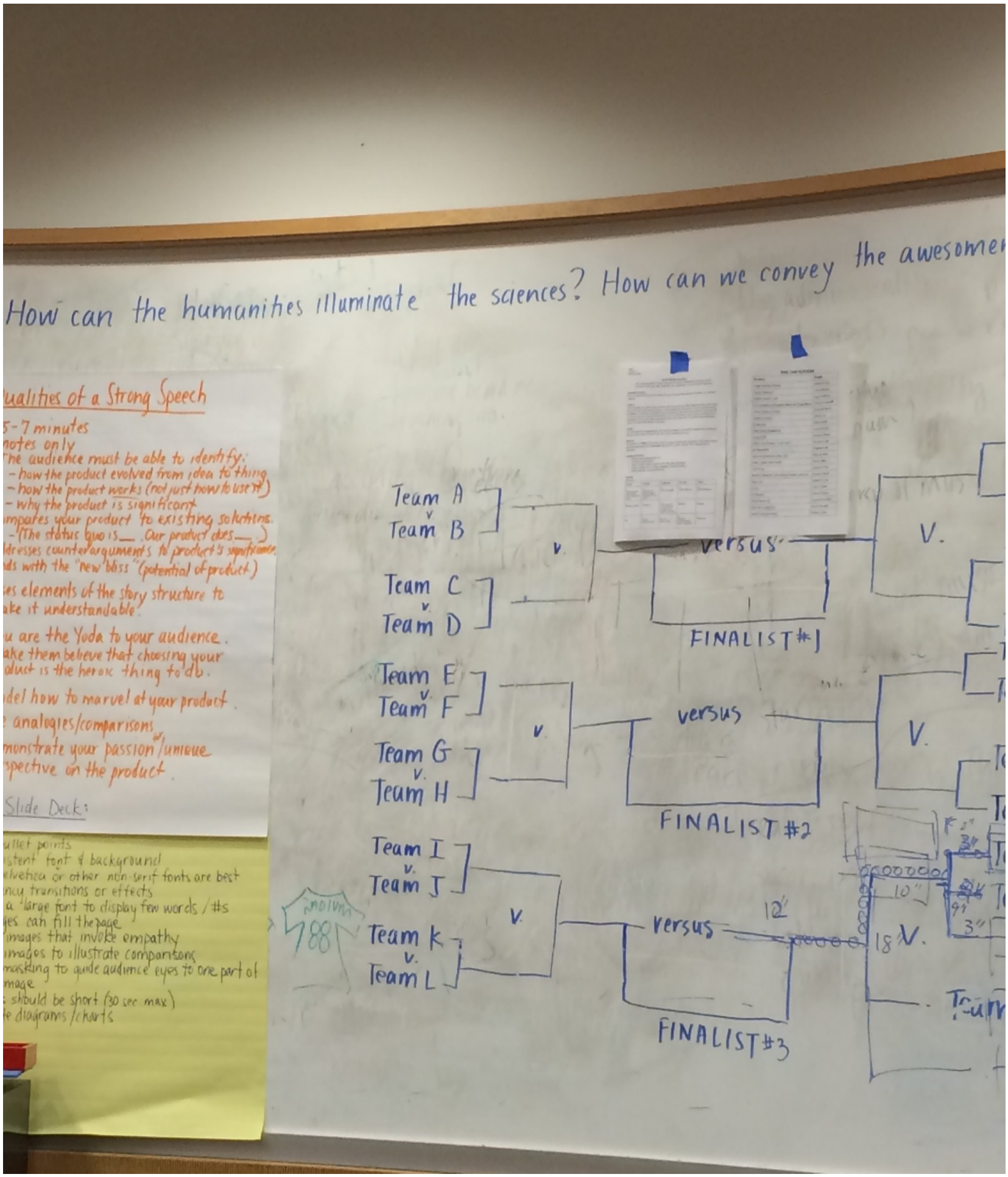
ents may extend their research to create a video to show the evolution of an instrument across genres or an aspect of the instrument. Examples may include the evolution of piano playing across genres, the evolution of the distortion pedal or evolution of the trumpet in east coast music.


THE
SWARM
A Kinetic Linear
Sculpture Project
How can kinetic sculptures be used to involve the public audience in an art experience?
How do artists use LINE as a way to represent a 3-Dimensioanl form?
8th Grade Artists
&
Ms. Charlie Linnik (Art)
For information about this project,
Scan the QR code

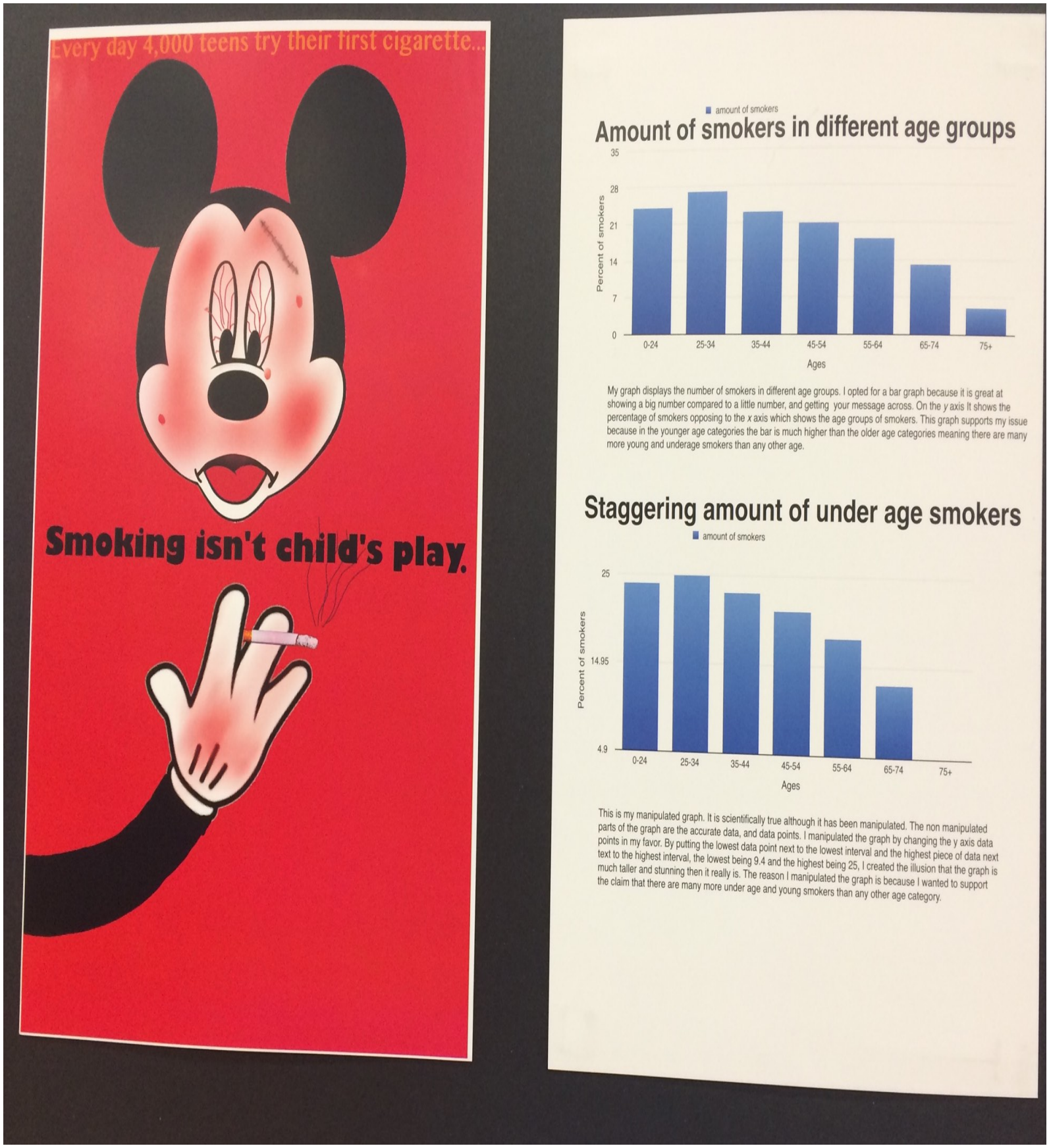

CONSTRUCTION CLUSTER LAB

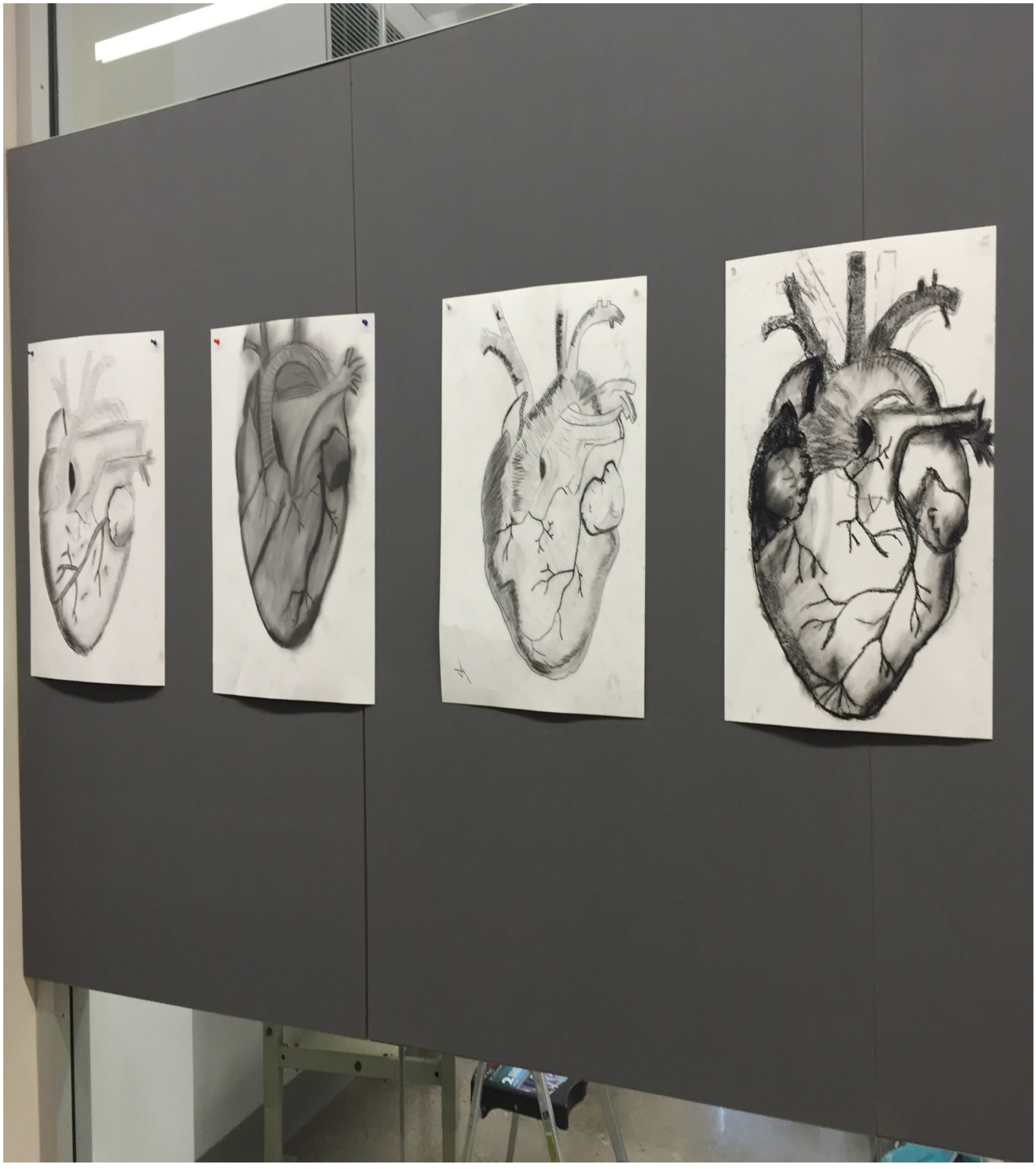

Art in
PUBLIC
SPACE
Abandoned
Reclaim
gentrification
socio-political
interact
prove cative
tactical +
confrontational
-movies
-political posters
-ads
-contextual
-custom built
-approachable
-w/ messages
open -existence
-inexpensive
-interacts w/
environment
GRAFFIT


How do we balance
Society's needs and the
Environment's health?


How can the humanities illuminate the sciences? How can we convey the awesomen
ualities of a Strong Speech
5-7 minutes
notes only
he audience must be able to identify:
- how the product evolved from idea to thing
- how the product works (not just how to use it)
- why the product is significant
mpares your product to existing solutions.
- (The status quo is___. Our product does___.)
dresses counterarguments to product's significance
ds with the "new bliss" (potential of product)
es elements of the story structure to
ake it understandable.
u are the Yoda to your audience.
ake them believe that choosing your
oduct is the heroic thing to do.
del how to marvel at your product.
analogies/comparisons
monstrate your passion/unique
spective on the product.
Slide Deck:
ullet points
stent font & background
elvetica or other non-serif fonts are best
ncy transitions or effects
a large font to display few words / #s
ges can fill the page
images that invoke empathy
images to illustrate comparisons
masking to guide audience eyes to one part of
mage
should be short (30 sec max)
e diagrams / charts
Team A
Team B
Team C
Team D
Team E
Team F
Team G
Team H
Team I
Team J
Team K
Team L
v.
versus
FINALIST #1
FINALIST #2
FINALIST #3
10"
12"
18"
3"

Another clear trend across all sites was the significant integration of visual arts into the project based learning experiences.





King Middle School and Invasive Species Project

http://www.theforecaster.net/portland-students-rise-to-the-occasion-against-invasive-species/

High Tech High School Teacher Project Page

http://www.jeffrobin.com/projects.html

Growth Mindset, Empathy, and Risk Taking

If parents want to give their children a gift, the best thing they can do is to teach their children to love challenges, be intrigued by mistakes, enjoy effort, and keep on learning. That way, their children don't have to be slaves of praise. They will have a lifelong way to build and repair their own confidence. - Carol S. Dweck

Across these innovative schools, classrooms were observed that balanced a focus on rigorous academics, social-emotional well-being, and mindset work.

Cultivating growth mindset (the belief that one can get better through effective effort) was taught both explicitly and consistently across the school settings. This mindset was fundamental to student success and school culture.

An emphasis on developing a sense of empathy was another mindset that was integrated into a number of sites as well. The idea of "kind, helpful, and specific" critique, which requires a sense of empathy towards the person receiving feedback, was promoted at King Middle School and High Tech High. Olin Engineering College focused on empathizing with the user prior to beginning the design and construction process.

Finally, positive messaging around risk taking and learning from mistakes was a predominant theme in the classrooms that were visited. Failure was expected, and viewed as an integral part of the learning process.

MLTS Prompts

THE PROMPTS THE FIL

DOWNLOAD FROM VIMEO

Failure and a Growth Mindset

THE ESSENTIAL QUESTION

- How do we foster a growth mindset?

OTHER DISCUSSION QUESTIONS

- What strikes you as noteworthy about this video?
- How is failure viewed in our school culture? For students? Teachers?
- What is our student mindset around failure?
- When a student is struggling, how do we handle the trade-off between giving them the answer, or letting them continue to struggle?
- What are examples of assignments where students are encouraged to take risks, fail, and iterate until they produce something they're proud of?
- What incentives within our school motivate students to embrace opportunities for failure?
- What micro-innovations could we try that would give students more experience with recovering from failure?

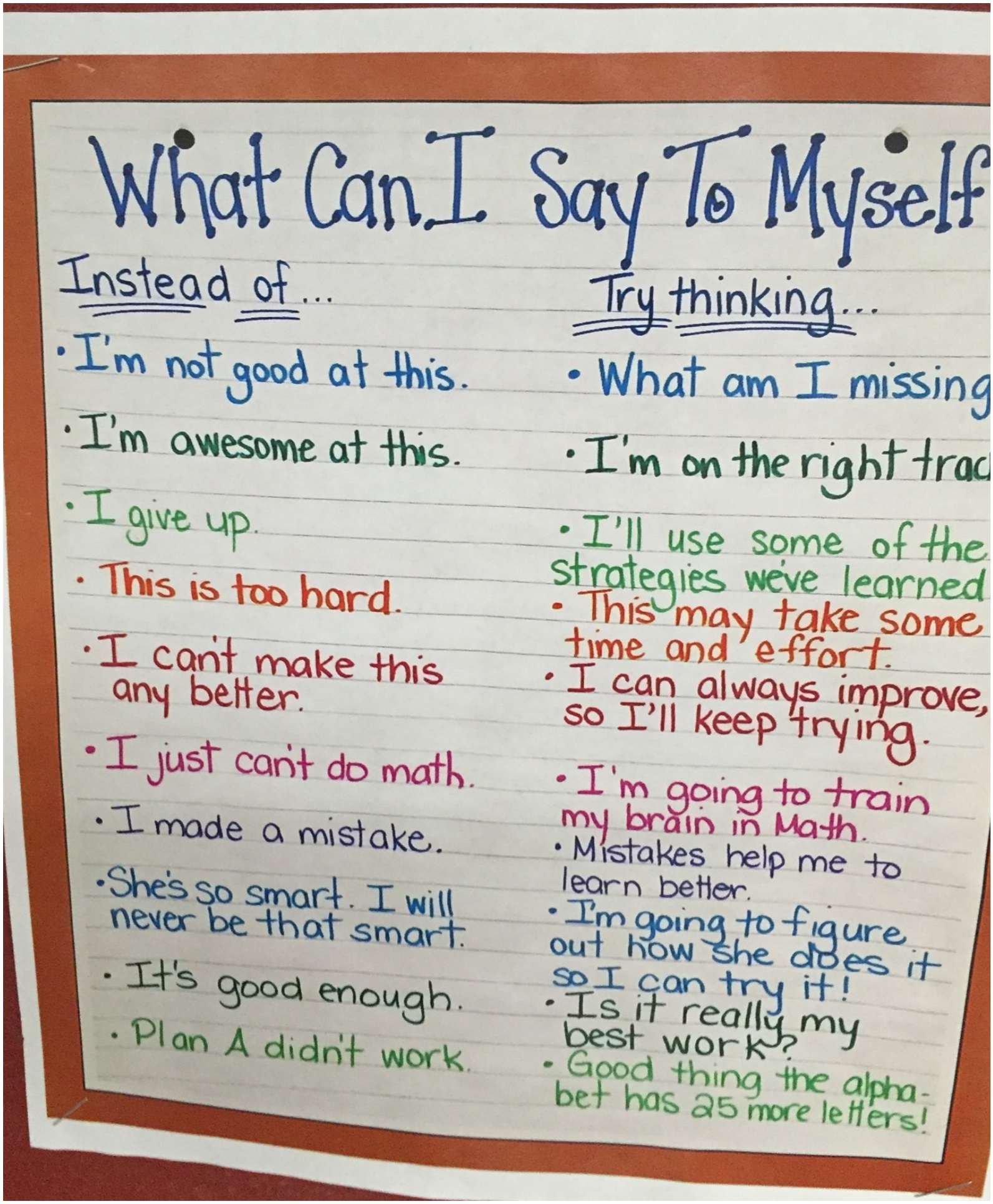
BONUS VIDEO

- Carol Dweck TED Talk

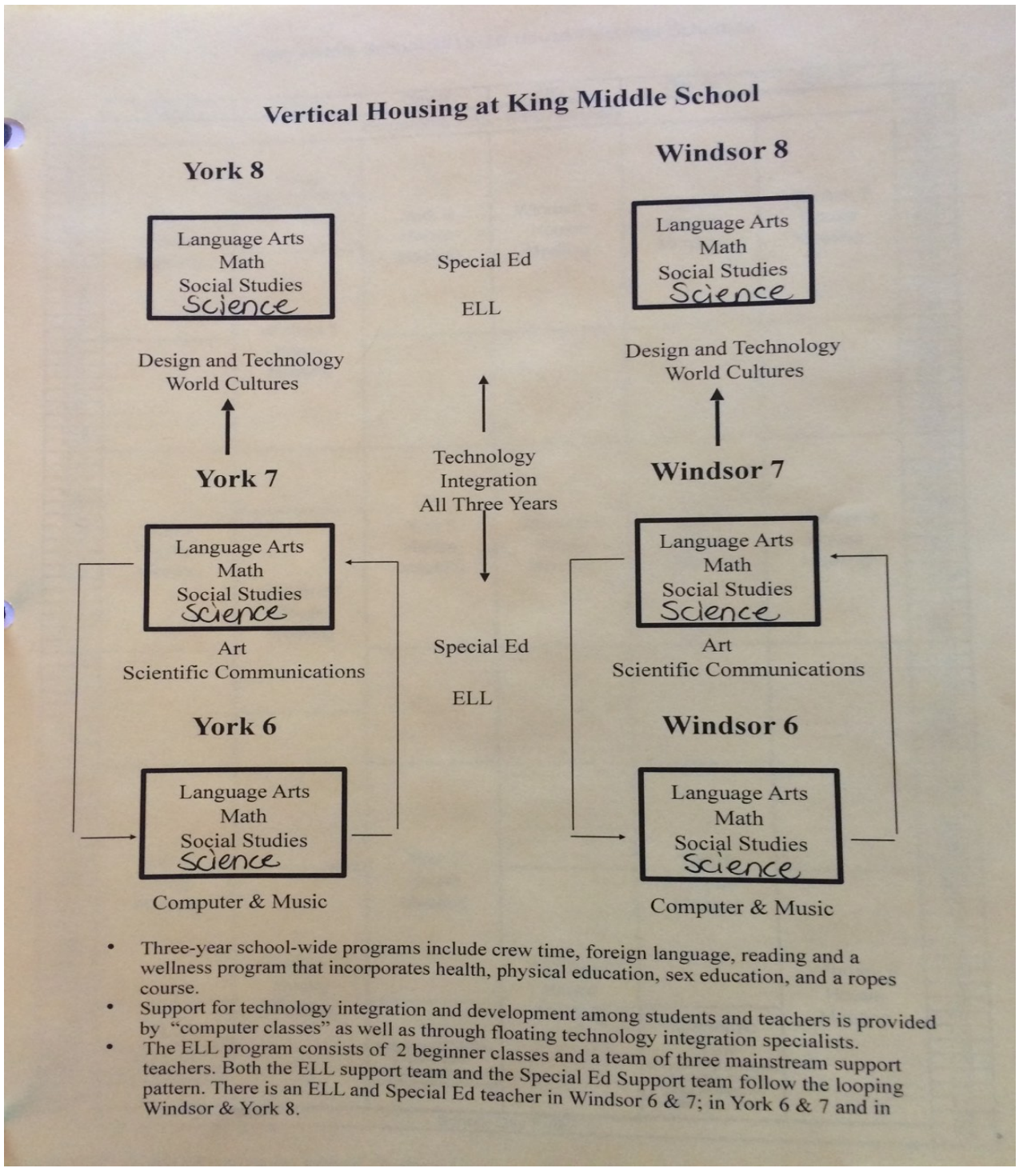
http://sparks.mltsfilm.org/#/failure-and-growth-mindset/

EVER TRIED
EVER FAILED
NO MATTER
TRY AGAIN
FAIL AGAIN
FAIL BETTER

Samuel Beckett


What Can I Say To Myself
Instead of...
Try thinking...
• I'm not good at this.
• What am I missing
• I'm awesome at this.
• I'm on the right trac
• I give up.
• I'll use some of the strategies we've learned
• This is too hard.
• This may take some time and effort.
• I can't make this any better.
• I can always improve, so I'll keep trying.
• I just can't do math.
• I'm going to train my brain in Math.
• I made a mistake.
• Mistakes help me to learn better.
• She's so smart. I will never be that smart.
• I'm going to figure out how she does it so I can try it!
• It's good enough.
• Is it really my best work?
• Plan A didn't work.
• Good thing the alphabet has 25 more letters!

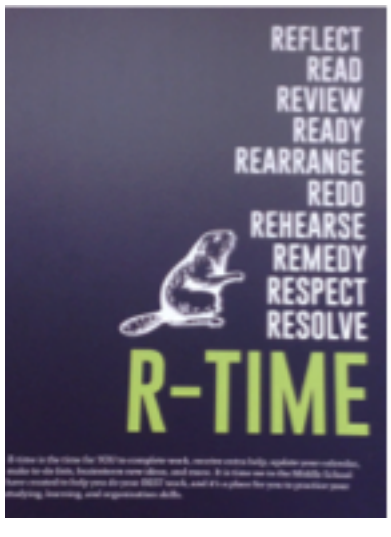
Rethinking School Structures and Making Time for Collaboration



There are very few schools that purposefully try to create lines and connections between different fields. The way most high schools are set up, you're in history class, and then the bell rings; then you go to science class, and then the bell rings.

- Michael Goodwin, Founder of Rivers and Revolution Program

Schools can be constrained by overly complex scheduling that can inadvertently impact the quality of the student experience. At the sites we visited, schedules were designed to support the mission and vision of the school; this meant breaking from traditional educational schedules. A representative from High Tech High shared that the organization operates from a "simple structures lead to complex learning" belief system. Please find below some of the structures that were observed at the different sites that moved away from what is typically seen in most school environments:



- School Within a School Model
- 1 Week Hands On/Project Based, 1 Week Academics
- Experimental classes co-designed by instructors and students in the summer
- Students attending an exploratory class at the end of the day instead of having a different "special" each day
- Physical Education classes held after school with students having the ability to chose from a variety of options - creating additional room in the school day schedule for project based work

•Teachers beginning the school year a week to two weeks prior to students and using this time to collaborate.

Reflections

This section of the report offers the collective wisdom of the group around considerations for the practices and programs of the Shrewsbury Public School district. These insights are provided is service of supporting our district in its on-going efforts to provide all of its students a world class education.

Section 1

Common Vision

•There is a need to broaden the conversation with Shrewsbury educators beyond the Innovation in Learning Study Group.

•The Innovation in Learning Study Group would also be strengthened by inviting parents and community members into the conversation. This group could be involved in the formation of a cohesive vision for the community.

•Shrewsbury is a district that consistently performs above state averages for standardized testing scores, graduation rates, college attendance rates, and AP test scores and prides itself on these accomplishments. Being mindful of this, raising the question of change can be challenging, with the understandable perspective of many being, "If it isn't broken, don't fix it". Revisiting the question of what a successful graduate knows and is able to do, along with exploring our how our current graduates are faring in the college environment, may be helpful starting points for this discussion.

Section 2

Sense of Community

- Explore providing dedicated resources, primarily in the form of personnel, that would facilitate connections to the community. The individual/s in this role could work to create authentic partnerships that would facilitate bringing community expertise and real world problems to be solved into our classrooms. Partnerships could also be used assist in providing our high school students opportunities for internships and on-site work experiences. Finally, these connections could provide a professional level audience for student public exhibition of work.

- Study the issue of transportation and its connection to students' involvement in community based projects. Paying for buses on an ad hoc basis to bring students out in the field is not a financially viable model. Is there a systemic approach to lessening the transportation obstacles to getting students involved in real world/ authentic projects?

- Explore the implementation of an advisory model at the middle level and high school in order to build a personal connection between a staff member and a small group of students.

Section 3

Inclusion and Equity

•Explore areas in the district where students are tracked into different levels, for example 8th grade honors math, to assess if these structures continue to be in the best interest of our collective student body.

•Consider the impact that leveled classes have at SHS. One issue connected to this is that high performing students are often unwilling to take any class that is not available for Honors credit. This creates a situation in which these students may choose not to try an elective out of concern that a non-Honors class will negatively impact their GPA.

•Creating project based learning experiences for students who are in substantially separate classrooms has its unique challenges. Consider forming a team that is dedicated to exploring how to provide these students real world, authentic learning experiences.

•There is increasing evidence that colleges are looking for unique applicants rather than the applicant that can take as many APs as possible, but this shift in mindset will require a great deal of processing and change management at the high school level.

- Teachers are used to focusing on a guaranteed curriculum across classrooms/teams. What parts of the curriculum does every classroom need to cover? How will parents feel if there is one team that does one project and and another team that does something completely different? Studying these questions through an equity lens should be considered.

- Understanding that family knowledge and experience with higher education can impact student success in college, how might the district support first generation college students?

Project Based Learning

•Project Based Learning was the central instructional strategy used at each site visited. The student work and mindsets that resulted from engaging in this type of learning mirrored what is required of knowledge economy workers. The district should strongly consider integrating the adoption of the project based learning approach into the next strategic planning process. Questions of structures and resources should be explored and problem solved as part of cohesive plan.

•A key take away was the importance of emphasizing depth of the content over breadth. By adjusting this, educators are able to free students to develop research, problem solving, project management, and communication skills that are more generalizable. In order to achieve this, "power standards" need be identified to articulate the most important content students must know across all curriculum areas.

•Explore a partnership with EL (Expeditionary Learning) to provide professional development and guidance in transitioning to a more project based learning approach across the district

Growth Mindset, Empathy, and Risk Taking

- Across all sites visited growth mindset, empathy, and risk taking were elevated to the same level of importance as academics. Where these competencies fall in terms of the Shrewsbury Public Schools may be worthy of exploration.
- Consider on-going dialogue with Shrewsbury parents and the community that strong test scores do not necessarily relate to college readiness. Is there a shift needed from seeing college as the "end game" to being more focused on career and citizenship?

Section 6

Rethinking School Structures and Making Time for Collaboration

There are many various ways that the district may want to consider the efficacy of existing learning structures and collaboration time. The following thoughts are offered as starting points for these conversations.

- Consider multi-age classes or multi-age peer support at the elementary/middle grade.
- Consider simplifying the program of studies at SHS and narrow the options of allied arts (exploratory) classes at the middle level to only two or three offerings a year.
- Is there a way to have Allied Arts more integrated into academic teams? Could Allied Arts be the thread that ties together the work that students do in their core classes at the middle level?
- Revisit school-wide schedules to identify opportunities for increasing teacher collaboration, extending learning blocks, and providing for the integration of allied arts into the general education classroom the general setting.
- Explore developing an internship program that is integrated into the overall student program and not an optional extra.

- Explore ways that students at SHS can take courses at local community colleges as part of their school day. This model at HTH allowed students to challenge themselves, be better prepared for college, and to accumulate college credit.
- Explore reorganizing the SHS schedule to include more teacher collaboration time into the regular school day.

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SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

C. SHS Athletic Campus Improvements: Report & Recommendations

SPECIFIC STATEMENT OR QUESTION:

Will the Committee hear a report and recommendations on Shrewsbury High School Athletic Campus Improvements?

BACKGROUND INFORMATION:

1. Gale Associates, Inc., was engaged to assist the school district with a feasibility study for the development and reconfiguration of Shrewsbury High School's athletic facilities.

2. In June 2016, the School Committee agreed that the first priority is the need for a new, competition level, field at the stadium facility. The resultant feasibility study is intended to determine the viability of redeveloping and reconfiguring the existing athletic field areas to include a new synthetic turf game field at the stadium facility.

3. The enclosed information provides a rationale for the recommendation made in the report, and it is suggested that the School Committee seek public input and then vote on the recommendation at its November 9 meeting.

ACTION RECOMMENDED:

That the School Committee hear the report and take such action as it deems in the best interest of the school system.

STAFF & OTHERS AVAILABLE FOR PRESENTATION:

Mr. Patrick Collins, Assistant Superintendent for Finance and Operations
Mr. Jason Costa, Director of Athletics
Ms. Michelle Biscotti, Co-Coordinator of Development & Volunteer Activities
Ms. Kathleen Keohane, Co-Coordinator of Development & Volunteer Activities
Ms. Angela Snell, Director of Parks, Recreation, and Cemeteries
Ms. Kathy Hervol, Project Manager, Gale Associates
Mr. Peter Spanos, Civil Engineer, Gale Associates

ITEM NO: **V. Curriculum** MEETING DATE: **10/19/16**

Prepared by: Gale Associates Inc.
10/6/2016

Alternative Infills for Synthetic Turf - Properties as Infill

Type of Alternative Infill	Material[1]	Color	Shape	Abrasiveness	UV Stability	Typical Turf Pile Height	Availability[4]	Resilient Shock Pad Recommended	Irrigation Recommended	Expected Life Span	Typical Mixture (By weight)	Approximate Cost[5]	Comments[1,2]
Crumb Rubber	Styrene butadiene Rubber (SBR) Recycled tire rubber shredded	Black	Angular shaped granules	Low	Stable	2.25" - 2.50"	Readily Available	No	No	Life of Carpet	50% Sand 50% Rubber	$50,000 per field	1. SBR Rubber and sand is the typical infill system used in the majority of synthetic turf fields installed since 1990's. 2. SBR rubber maintains its resiliency over a wide range of temperature and environmental conditions.
Silica Sand	Rounded Silica Sand	Tan/Brown	Rounded Particles	High	Stable	1.50" - 2.0"	Readily Available	Required (See Comments)	No	Life of Carpet	100% Silica Sand	+$0 net for additional sand +$130,000 for resilient pad	1. Shock pad is required to provide shock attenuation (G-max) 2. Sand stays hard under cold/frozen conditions (regardless of shock pad) 3. Use turf stitch gage of 5/8"or less. 4. Consider turf thatch layer for fly up prevention.
Organic	Cork or Coconut Husk or rice hulls	Natural appearance (tan/brown)	Angular shaped granules	Low	Low Stability	1.50" - 2.50"	Limited Availability	Yes (See Comments)	Yes[6]	Unknown[3] ability to decompose	10%-15% Organic 90% to 85% Sand	+$200,000	1.Reports of early degradation and floating of particles 2. Organics can stay hard under frozen conditions (regardless of shock pad) 3. Shock pad recommended to provide shock attenuation over warranty period 4. Consider increased maintenance
Coated Crumb Rubber	SBR (Styrene butadiene Rubber) Recycled tires shredded and coated with acrylic or EPDM	Custom colors available	Angular shaped granules	Low	Medium stability	2.25" - 2.50"	Readily Available	No	No	Life of Carpet	50% Sand 50% Coated Rubber	+$125,000	1. Still contains SBR Rubber 2. Manufacturers claim coating encapsulates outgassing of SBR rubber 3. Shock pad is not required, consider a combination of shock pad and other infill material to reduce quantity of needed material
EPDM (Ethylene Propylene Diene Monomer) Rubber	Virgin rubber produced for infill of athletic fields only	Custom colors available	Angular shaped Granules	Low	Medium stability	2.25"-2.50"	Limited Availability	(See Comments)	No	Not proven long term	50% Sand 50% EPDM	+ $350,000	1. Similar material to SBR rubber 2. Shock pad is not required, consider a combination of shock pad and other infill material to quantity of EPDM needed 3. EPDM is a generic term and quality can vary greatly. Proven source and propriety formulations are recommended.
TPE (Thermoplastic Elastomer)	Extruded plastic pellets	Custom colors available	Typically Uniform pellets Shape depends on manufacturer	Low to Medium	Stable	1.5" -2.50"	Limited Availability	Required	No	Not proven long term	50% TPE 50% Sand	+350,000	1. Turf thatch layer is suggested to help reduce fly up/displacement of material 2. Shock pad is not required, some owners have used combination of shock pad and TPE to reduce quantity of infill needed. 3. TPE is generic term - Quality can vary greatly. Proven source and propriety formulations are recommended
Coated Sand	Polymer Coated Silica Sand	Green	Fairly Round Particles	Med	Stable	1.50" - 1.75"	Readily Available	Required	No	16 Year Warrantee (See Comment)	100% Coated Silica Sand Particles	+275,000	1. Coating has been reported to last shorter than warrantee period (Flexsand) 2.Shock pad is required. Some manufacturers suggest a mix with TPE to obtain required resiliency (Gmax). 4. Turf stitch gage of 3/8" or less is recommended to prevent displacement. 5. Turf Thatch layers should be considered to reduce fly-up and displacement.
Nike Grind	Nike's Environmentally Preferred Rubber (Meets or exceeds restricted substance standards set for wearable consumer goods)	Multiple Colors	Angular shaped granules	Low	Stable	2.25" - 2.50"	Limited Availability	No	No	Per Nike, Expected life 10 years of play at 40 hours per week	50% Sand 50%Nike grind	+$130,000	1. Proprietary. 2. Reports that infill is not aesthetically pleasing. 3. Has occasionally been used as a supplement to SBR rubber or in lieu of SBR to provide 'renewable' label since 1990's

NOTES:

1. Information provided was compiled by available online data, manufacturers literature and conversations with turf and infill distributors. Gale has not conducted any independent testing of infill materials and does not guarantee the accuracy of information provided here in.
2. Installations of fields with alternative infill material (other than SBR Rubber and Sand) are somewhat limited and many have not been proven long term. Gale does not guarantee performance of any turf system.
3. Few older installations in U.S. More common in Europe. Only one supplier warranties for life of turf (geoturf) in U.S.
4. May become more or less available as demand and popularity fluxuates. Cost fluxuates with availability
5. Costs are generalized approximations. Costs are NET addition to cost of a typical sand/SBR turf infill system. Actual costs will vary based on depth of infill/turf depth, type of resilient pad used. Market costs can vary greatly due to materials demand and availability.
6. Organic Infill suppliers recommend keeping infill moist to aid with resiliency, improve longevity, prevent compaction and material displacement

LABORATORY TESTING
HEAVY METALS ANALYSIS

Project Information

Project Name	Envirofill Infill Heavy Metals Analysis	
Client Information	US Greentech 3607 Church Street Cincinnati, OH 45244	
Date	April 12, 2016	
Job no.	90796/882	
Report Status	Final	
Prepared by	*Jeffrey Gentile* *Laboratory Director*	
Checked by	*Kieran O'Donnell* *Field Operation Manager*	

Notes:

1. This report has been prepared by Sports Labs USA with all reasonable skill, care and diligence within the terms of the contract with the Client and within the limitations of the resources devoted to it.

2. This report is confidential to the Client and Sports Labs USA accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.

3. This report shall not be used for engineering or contractual purposes unless signed by the Author and the Checker and unless the report status is "Final."

Standard / Regulation:

The STC suggests that any toxicological test and analysis of infill for synthetic turf fields be performed according to European Standard EN 71-3 – Safety of Toys Part 3: Migration of certain elements. The analytical method for each metal can be found in the results table below.

Requirements:

The target detection limits for each metal can be found in the results table below. The limits shown are per European Standard EN 71-3 – Safety of Toys Part 3: Migration of certain elements.

Results:

All results were found to be below the limit criteria referenced above.

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Unit #2 ● 155 River Road ● Bow ● New Hampshire ● 03304
Telephone: (603) 715 5453 ● E-Mail: Info@sportslabsusa.com

LABORATORY TESTING
HEAVY METALS ANALYSIS

Results Table:

Analyte	Analytical Method	*Target Detection Limit (mg/kg)	Sample Detection Limit (SDL) Based Result	PASS / FAIL
Aluminum	NF EN ISO 11885	*70,000*	< 50 mg/kg	PASS
Antimony	NF EN ISO 11885	*560*	< 10 mg/kg	PASS
Arsenic	NF EN ISO 11885	*47*	< 5 mg/kg	PASS
Barium	NF EN ISO 11885	*18,750*	< 50 mg/kg	PASS
Boron	NF EN ISO 17294-1 et 2	*15,000*	< 50 mg/kg	PASS
Cadmium	NF EN ISO 11885	*17*	< 1 mg/kg	PASS
Chromium III	NF EN ISO 11885	*460*	< 10 mg/kg	PASS
Chromium VI	NF T 90-043	*0.2*	< 0.1 mg/kg	PASS
Cobalt	NF EN ISO 11885	*130*	< 10 mg/kg	PASS
Copper	NF EN ISO 11885	*7,700*	< 50 mg/kg	PASS
Lead	NF EN ISO 11885	*160*	< 10 mg/kg	PASS
Manganese	NF EN ISO 11885	*15,000*	< 50 mg/kg	PASS
Mercury	NF EN 13506	*94*	< 10 mg/kg	PASS
Nickel	NF EN ISO 11885	*930*	< 10 mg/kg	PASS
Selenium	NF EN ISO 11885	*460*	< 10 mg/kg	PASS
Strontium	NF EN ISO 17294-1 et 2	*56,000*	< 50 mg/kg	PASS
Extractable Tin (Sn)	NF EN ISO 17294-1 et 2	*180,000*	< 50 mg/kg	PASS
Extractable Organic Tin	NF EN ISO 17294-1 et 2	*12*	< 0.2 mg/kg	PASS
Zinc	NF EN ISO 17294-1 et 2	*46,000*	< 50 mg/kg	PASS

*Limits per European Standard EN 71-3 – Safety of Toys Part 3: Migration of certain elements.

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Federal Research on Recycled Tire Crumb Used on Playing Fields

Background

Related Links

- Federal Research Action Plan on Recycled Tire Crumbs Used on Playing Fields and Playgrounds
- Research Protocol and Study Design
- Public Comment and Federal Responses to Public Comment
- Tire Crumb Questions and Answers
- Webinar Recording: Overview of the Federal Research Action Plan
- Tire Crumb and Synthetic Turf Field Literature and Report List (November 2015)
- 2008 EPA Limited Scoping-Level Field Monitoring Study of Synthetic Turf Fields and Playgrounds

Get EPA's Tire Crumb Research UpdatesEnter email address sign up

Concerns have been raised by the public about the safety of recycled tire crumb used in playing fields and playgrounds in the United States. Limited studies have not shown an elevated health risk from playing on fields with tire crumb, but the existing studies do not comprehensively evaluate the concerns about health risks from exposure to tire crumb.

Federal Research

On February 12, 2016 the U.S. Environmental Protection Agency (EPA), the Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry (ATSDR), and the U.S. Consumer Product Safety Commission (CPSC) launched a multi-agency action plan to study key environmental human health questions.

This coordinated *Federal Research Action Plan on Recycled Tire Crumb Used on Playing Fields and Playgrounds* includes outreach to key stakeholders, such as athletes and parents, and seeks to:

- Fill important data and knowledge gaps
- Characterize constituents of recycled tire crumb
- Identify ways in which people may be exposed to tire crumb based on their activities on the fields.

The Federal Research Action Plan includes numerous studies. One of the main studies is gathering tire crumb samples from tire crumb manufacturing plants and from fields across the country. Researchers are evaluating the samples to characterize the chemical make-up of tire crumbs. An additional study will gather activity data from people who regularly perform activities on turf fields.

While additional research questions may require evaluation beyond this year, the information will help answer some of the key questions that have been raised. By late 2016, the agencies will

release a draft status report that describes the findings and conclusions of the research through that point in time. The report will also outline any additional research needs and next steps.

Status

The Synthetic Turf Fields with Tire Crumb Rubber Infill Research Protocol document has been extensively reviewed, including a peer-review and an Institutional Review Board review, and the document is now final. Data collection components of the Federal Research on Recycled Tire Crumbs went through a public comment period and an Information Collection Request review conducted by the Office of Management and Budget. Peer-review and public comments are publicly available on the OMB's website.

Now that the study protocol document is approved, researchers are collecting tire crumb samples from up to 40 field locations and up to nine tire crumb manufacturing plants located across the country. These locations include both outdoor and indoor fields. To protect the privacy, the specific locations of the fields being sampled cannot be released.

Existing Research and Information

Other federal, state, and local government agencies have conducted limited studies on artificial turf fields. For example, from 2009-2011, New York City and the states of New York, Connecticut and New Jersey conducted studies on tire crumb infill and synthetic turf. Also, in 2008 and 2009 the Consumer Product Safety Commission and the Agency for Toxic Substances and Disease Registry evaluated synthetic turf "grass blades" in response to concerns about lead exposure. Their evaluations estimated that any potential releases of toxic chemicals from the grass blades, such as lead, would be below levels of concern. In 2008, EPA conducted a limited Scoping-Level Field Monitoring Study of Synthetic Turf Fields and Playgrounds. The purpose of the limited study was to test a method for measuring possible emissions from using synthetic turf on playgrounds and ball fields, not to determine the potential health risks of recycled tire crumb in playgrounds or in synthetic turf athletic fields.

EPA has developed a *Tire Crumb and Synthetic Turf Field Literature and Report List* (Nov. 2015). It is an extensive, although not exhaustive, survey of the literature from the past 12 years.

Contact Us to ask a question, provide feedback, or report a problem.

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October 4, 2016

Planning Board
Town of Shrewsbury
100 Maple Avenue
Shrewsbury, MA 01545

Re: Advisory Letter
Track and Field Improvements
Shrewsbury High School
Gale JN 717360

Dear Planning Board:

On behalf of the Town of Shrewsbury School Department (SSD), Gale Associates, Inc. (Gale) is providing this Advisory Letter regarding the proposed improvements to the track and field at Shrewsbury High School, as directed in your September 30, 2016 phone message.

The SSD is proposing to renovate the existing track and field at the High School in-kind. The existing track surfacing (top ½") will be stripped and the track and associated D-areas will be re-surfaced with a new urethane track resurfacing system called BSS100 (by Benyon). The existing grass football/soccer field (inside the track) is to be replaced with a synthetic turf field. The field footprint will remain unchanged and the proposed drainage from the new field will tie into the existing drainage system. No increase in stormwater runoff is anticipated.

It is our understanding that based on the fact that the track and field will be replaced in-kind and that there are no wetlands or other environmental constraints in the vicinity of the project, no permits will be required from the Town.

Please do not hesitate to contact me at kdh@gainc.com should you have any comments or questions or should you need any additional information.

Best regards,

Kathleen D. Hervol

Kathleen D. Hervol
Project Manager

cc: P. Collins – Shrewsbury School Department
K. Las – Assistant Town Manager/Ed Coordinator

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EXHIBIT 1

NATURAL GRASS/ SYNTHETIC TURF INFILL COST SUMMARY

YR	SUMMARY OF TURF SYSTEM COST AND TIMING OVER 24 YEARS	Crumb Rubber Infill	Greenplay Organic Infill	FieldTurf PureFill (Cork)	US Greentech Envirofill (acrylic coated sand)	Sprinturf TPE/ EPDM	FieldTurf EcoGreen (TPE)	Natural Turf Grass
1	Initial Construction	$ 1,100,000	$ 1,136,384	$ 1,276,384	$ 1,223,584	$ 1,427,024	$ 1,298,784	$ 90,000
6	Infill Replacement	$ -	$ 144,200	$ 144,200	$ -	$ -	$ -	$ -
8	Maintenance YR 1-8	$ -	$ 112,522	$ 33,600	$ -	$ -	$ -	$ 530,240
12	Maintenance YR 9-12	$ -	$ 46,340	$ 16,800	$ -	$ -	$ -	$ 198,840
12	Carpet Replacement	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ -
12	Infill Replacement	$ 121,691	$ 144,200	$ 144,200	$ 168,400	$ 448,616	$ 243,600	$ -
13	Grass Resod YR 4,7,10,13	$ -	$ -	$ -	$ -	$ -	$ -	$ 360,000
18	Maintenance 12-20	$ -	$ 112,522	$ 33,600	$ -	$ -	$ -	$ 530,240
18	Infill Replacement	$ -	$ 144,200	$ 144,200	$ -	$ -	$ -	$ -
24	Maintenance 20-24	$ -	$ 46,340	$ 16,800	$ -	$ -	$ -	$ 198,840
24	Carpet Replacement	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ -
13	Grass Resod YR 16,19,22,25	$ -	$ -	$ -	$ -	$ -	$ -	$ 360,000
24	Infill Replacement	$ 121,691	$ 144,200	$ 144,200	$ 168,400	$ 448,616	$ 243,600	$ -
	Total 24 YR Budget	**$ 2,343,382**	**$ 3,030,908**	**$ 2,953,984**	**$ 2,560,384**	**$ 3,324,256**	**$ 2,785,984**	**$ 2,268,160**
	SUMMARY							
	Initial Construction	$ 1,100,000	$ 1,136,384	$ 1,276,384	$ 1,223,584	$ 1,427,024	$ 1,298,784	$ 90,000
	Additional Maintenance	$ -	$ 317,724	$ 100,800	$ -	$ -	$ -	$ 1,458,160
	Infill & Carpet Replacement	$ 1,243,382	$ 1,576,800	$ 1,576,800	$ 1,336,800	$ 1,897,232	$ 1,487,200	$ -
	Grass Resod	$ -	$ -	$ -	$ -	$ -	$ -	$ 720,000
	Total 24 YR Budget	**$ 2,343,382**	**$ 3,030,908**	**$ 2,953,984**	**$ 2,560,384**	**$ 3,324,256**	**$ 2,785,984**	**$ 2,268,160**

Source: Loudon County Public Schools, Division of Construction Services

The Commonwealth of Massachusetts
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Frequently Asked Questions
Artificial Turf Fields

1. What are artificial turf fields (ATFs)?

Artificial turf fields (ATFs) are synthetic alternatives to natural grass fields.

2. What are ATFs composed of?

Components of ATFs include artificial grass fibers (blades), crumb rubber infill, and sand infill overlaid on a carpet-like backing that holds the turf together. The grass fibers are typically made of nylon, polyethylene, or polypropylene, and the crumb rubber infill used to soften the surface is most often made of recycled tires.

3. Are chemicals present in ATF components?

Yes, ATF components, such as crumb rubber infill, have been found to contain chemicals including semi-volatile organic compounds (including polyaromatic hydrocarbons, or PAHs), volatile organic compounds (VOCs), and metals.

4. Have studies been done to determine if ATFs impact health?

Several studies evaluating potential exposure opportunities to constituents in ATFs have been conducted by state (e.g., California, New York, New Jersey, Connecticut) and federal agencies (e.g., U.S. Environmental Protection Agency), as well as academic researchers (e.g., Rutgers Robert Wood Johnson Medical Center).

5. How have these studies evaluated exposure opportunities at ATFs?

The studies that have been conducted measured concentrations of chemicals in the air above ATFs as well as in the components of the ATFs. In addition, some studies have evaluated the potential for these chemicals to actually enter the body and reach a susceptible organ (e.g., bioavailability studies).

6. How do public health agencies evaluate whether exposure can result in health effects?

Public health agencies evaluate concentrations measured in studies and compare them to well-established, health-based standards or guidelines (developed through comprehensive research by federal or state governments) or they conduct evaluations using standard risk assessment methods to estimate health risks from environmental exposures.

7. What is a risk assessment?

The term “risk assessment” refers to a process of assessing and evaluating the potential health effects that may result from an environmental exposure. Risk assessments take into consideration information about the toxicity of a contaminant, the estimated amount of contaminant that someone may be exposed to, the sensitivity of an individual to the contaminant (e.g., children are generally more sensitive to environmental contaminants than healthy adults), and other factors.

8. What assumptions have been used in risk assessments done for ATFs?

Exposure assumptions that have been used include assuming someone plays on the field for 3-5 hours a day, 4-5 days a week, 8-12 months a year, and 12 (child) to 30 years (adult). Such assumptions are designed to be conservative and consider worst-case scenarios.

9. What do the available studies that have been conducted on exposure opportunities to ATFs and health impacts show?

Although exhaustive research has not been completed, the available studies have shown that although ATF components contain chemicals in the material itself, exposure opportunities at levels measured do not suggest that health effects are likely.

10. What are the findings of studies that evaluated exposure opportunities based on measurements of constituents (e.g., in air, dust) at ATFs?

Results of samples taken at or above (e.g., air) ATFs and analyzed for VOCs, SVOCs, metals, and particulate matter that can be inhaled into the lungs suggested that adverse health effects were unlikely to occur. These include studies conducted by the Connecticut Health Department, the New York State Health Department, and the California Office of Environmental Health Hazard and Assessment.

11. What are the findings of studies that have evaluated ingestion or inhalation of, and/or skin contact with constituents in ATFs?

The Rutgers study evaluated whether exposures to SVOCs or metals in ATF components might suggest exposures of health concern via ingestion, inhalation, or

dermal contact. They concluded that overall the opportunities for exposure to constituents in these fields presented very low risk among all populations that would use ATFs. Authors of a study in the Netherlands reported that results of urine testing indicted that uptake of PAHs among participants, following playing on an ATF with crumb rubber infill, was minimal.

12. What were the findings of the Rutgers study with respect to lead?

The Rutgers researchers found that lead concentrations in one of seven ATFs tested could potentially result in blood lead levels above the U.S. Centers for Disease Control and Prevention reference value for blood lead in young children (5 ug/dL). It should be noted, however, that the lead concentration in the materials used in this study included a sample of turf fiber with a lead concentration of 4,400 mg/kg, well above the US Consumer Product Safety and Improvement Act limit for lead content in children's products of 100 mg/kg.

13. Do all ATFs have lead?

No. Some ATFs are constructed with components that are certified as having no or low lead content. Use of ATF components that meet the Consumer Product Safety and Improvement Act limit of 100 ppm for lead in children's products would minimize exposure opportunities to lead.

14. What are the findings of studies that evaluated exposures to bacteria?

The California Office of Environmental Health Hazard and Assessment tested for bacterial contamination at both natural grass fields and ATFs. They found fewer bacteria detected on artificial turf compared to natural turf, and therefore less likely to result in infection risks to athletes using ATFs that may have skin abrasions.

15. Have epidemiological studies been conducted to determine if ATF exposures are associated with the occurrence of cancer in children?

Some recent media reports have raised concerns about the possible association between playing on ATFs and the development of cancers. It is important to note that the types of cancers reported are among those that have been more prevalent in children for many years. To date, no epidemiologic studies have evaluated the occurrence of cancer among athletes or others who play on ATFs.

16. How common is it for children to get cancer?

Although cancer is much less common among children than older adults, unfortunately 1 in 285 children in the U.S. will be diagnosed with cancer before the age of 20. Leukemia is the most common cancer diagnosed in children and teens, accounting for almost 1 out of 3 cancers in this age group. From 1975 to 2010, the overall incidence of pediatric cancer in the U.S. increased slightly, by an average of 0.6 percent per year.

17. Has the potential for the development of cancer been assessed using standard risk assessment methods for exposure opportunities associated with ATFs?

Several studies, including those conducted by officials in New York City, New York State, Connecticut, California, the U.S. Environmental Protection Agency, and Norway, have conducted cancer risk assessments based on opportunities for exposures at ATFs. These evaluations were based on testing results from different kinds of fields under a variety of weather and use conditions. These risk assessment studies all indicate that the use of ATFs is not associated with elevated cancer risk.

18. Does MDPH endorse the use of ATFs?

No, MDPH does not endorse any particular consumer product, including ATFs. MDPH routinely evaluates whether exposure opportunities to constituents in consumer products may pose health concerns and provides information to put risk in perspective.

19. What other exposure concerns have been raised about ATFs?

Concerns have been expressed in relation to the increased temperature of fields as outdoor temperatures rise. For these reasons, fields may be frequently watered to cool the surface, and athletes should increase hydration and take frequent breaks to reduce the potential for burns or heat stress.

20. Are there steps that can be taken to reduce exposure opportunities to ATF components?

Yes. MDPH recommends common sense steps to minimize potential exposures to chemicals that may be present, such as washing hands after playing on a field and before eating (particularly for younger children with frequent hand-to-mouth activity) and taking off shoes before entering the house to prevent tracking in any crumb rubber particles.

21. Who should I contact for more information?

If you have any questions about ATFs and health, you may contact the following:

Environmental Toxicology Program
Bureau of Environmental Health
Massachusetts Department of Public Health
250 Washington Street, 7th Floor
Boston, MA 02108
617-624-5757

"What's in a name? That which we call a rose
By any other name would smell as sweet."
— William Shakespeare, Romeo and Juliet

Apologies to William Shakespeare, "names" are vital in our modern-day society. In many cases, they connote the very businesses that they represent. From computer manufacturers, to automobile producers, to purveyors of shoes and purses, "names" mean everything.

For cities and towns in the Commonwealth, which are seeking to increase sources of revenue as a potential means of financing public building and public works projects, the emphasis and prestige of "names" hold great promise. Municipalities that seek to construct or to renovate an athletic field may offer the possibility of naming the complex after a certain donor or individual. This memorandum will consider the steps that a particular municipality is required to undertake during a particular public works project – from fundraising to naming.

1. Fundraising and Accounting and Naming Rights

Suppose that Town X wishes to install a synthetic turf field at its pre-existing athletic complex. It desires to solicit funds from private donors. The immediate question involves the process by which it will privately fundraise and by which it may attach naming rights to that facility and any restrictions placed upon its ability to assign naming rights to such donors and other third parties.

For a city or a town interested in engaging in such project-specific fundraising from private, business, or charitable groups, the first issue involves the mechanics of fundraising and accounting. Ultimately, the city or town is first required to establish a gift account for the project. While this may be basic, and while this step may not involve outside individuals, the establishment of a receiving account is critical to allow any fundraising process to move forward.

At the outset, a city or town may be approached by one or more individuals. Indeed, the law is clear that any officer of the city or the town may receive the grant or the gift. The city or town may also begin to approach individuals. Regardless, a city or a town faces a situation in which monies received are typically donated to the entity for a specific purpose.

Funds are deposited with the city or town treasurer. Once received, such monies remain with the particular gift account and remain in such an account until the time is ripe for expenditure. If expended for an educational purpose, the expenditure of such funds requires the approval of the local school committee. If expended for any other purpose, the expenditure of such funds requires the approval of the board of selectmen of a town and the approval of the mayor and the city council of a city. Monies so received, thereafter, may be spent by the particular city or town under M.G.L. c. 44, §53A, without further appropriation.

For cities and towns which fundraise, is there any prohibition against considering donees for naming rights? The answer is absolutely not. While it is true that current vendors cannot use the process as a means of influencing public contracting in the Commonwealth, local businesses that donate to a public entity for a project in which they do not have a contract may be considered for naming rights.

2. Procurement of Naming Rights

A. Requirements

While cities and towns are required to comply with all applicable public works construction statute and public building construction procurement statutes, M.G.L. c. 30, §39M, and M.G.L. c. 149, §§44A *et seq.*, in constructing facilities, naming rights are not subject to procurement. Moreover, while goods and services are also subject to the Commonwealth of Massachusetts Uniform Procurement Act, and are, therefore, subject to the provisions of M.G.L. c. 30B, naming rights fall outside the scope of the Act.

The Office of the Inspector General, which administratively oversees the Uniform Procurement Act has specifically ruled:

> *Other examples of where the subject of a contract is not a supply or service are advertising and naming rights. A governmental body may grant naming rights to an athletic field or auditorium without following M.G.L. c.30B since naming rights do not fit the definition of a supply or service subject to M.G.L. c.30B.*

Procurement Bulletin, Office of the Inspector General, Volume 18, Issue 1, March 2012, p. 2.

This exemption effectively means that a city, town, or other entity typically covered by M.G.L. c. 30B, M.G.L. c. 30, §39M, and M.G.L. c. 149, §§44A *et seq.* is not required to issue an Invitation for Bids or a Request for Proposals in order to award naming rights to certain facilities.

B. Desirability of Using a Procurement Process

Nothing in the foregoing precludes a city or a town from using a procurement process for seeking naming rights. A city or a town would be free, therefore, to use "sound business practices" to procure naming rights. Alternatively, the town may choose to use a more formal process, such as a proposal process.

There are certainly advantages for a city or a town in choosing to use a formal procurement process (such as a Request for Proposals (RFP) process). At the outset, a formalized procurement process places potential proposers on "equal footing" with each other. Each potential responder or proposer would have equal access and ability to submit a proposal to the particular city or town. This increased level of fairness, moreover, has the potential to attract a broader audience and to assure potential responders or proposers that their proposals would be evaluated fairly and formally.

Formality also helps to insulate cities and towns from charges that they are engaging in favoritism or are engaging in conduct not in the best interest of the public entity. By requiring an

award, for example, to the responsible and responsive proposer which has submitted the most advantageous proposal, a city or a town is ensuring that it will avoid negotiated outcomes and sideline deals with potential donors. Effectively, this promotes the causes of good government on all sides.

While formality is often desirable, however, the decision to use a formal procurement process through a vehicle such as an RFP also is accompanied by drawbacks. The construction of an RFP requires the awarding authority to devise a formal rubric of evaluation criteria and requires it to evaluate proposals according to the criteria specified. The city or town involved loses some of the evaluative flexibility in establishing these criteria and in being required to apply them uniformly and fairly. All proposals are subject to the same standards and are required to be evaluated in the same manner. Therefore, as in any RFP, where proposals are evaluated as being "highly advantageous," "advantageous," and "not advantageous," all proposals are required to be evaluated in this manner.

Additionally, by requiring a formal process, cities and towns using the RFP are also assuming the risk of subjecting themselves to the jurisdiction of the Inspector General's administrative review process unless it clearly states that M.G.L. c. 30B does not apply. Imposing an administrative review process also means that the awarding authority's evaluation is subject to protest and challenge by disgruntled individuals. It could also bring judicial challenge through a potential injunction. Such proceedings are inherently time consuming and expensive. They also have the potential to delay naming public facilities.

Hence, there are certainly advantages and disadvantages to pursuing a formalized procurement process. Cities and towns should weigh their options very carefully in deciding whether to proceed with issuing a formalized procurement process, such as an RFP.

3. Restrictions Placed Upon Naming Buildings after Public Officials.

Cities and towns often name buildings and facilities after individuals, organizations, and groups that have contributed to public service. Moreover, such naming rights have been bestowed upon individuals who have contributed to the public good at the federal, state, or local level. At all times, naming rights should be consistent with the values of the city or town. Local officials should conduct a full and fair background check to ensure that the naming of a particular facility will be consistent with such values.

Where current public officials are involved, however, the process is complicated by the Commonwealth of Massachusetts State Ethics Law, M.G.L. c. 268A. M.G.L. c. 268A, §23(b)(2), which prohibits any public official from receiving, by virtue of his or her position, something not generally available to the public at large. Naming rights would not be excluded from this analysis. Consequently, it would be best to avoid soliciting public officials for gifts and to consider them for naming rights.

4. Types of Policies that May be Adopted for Donations.

Cities and Towns will often desire flexibility in changing names as times change. Individuals and their estates should not hamper such processes. For cities and towns interested in offering an incentive to individuals, the need for flexibility should also be championed.

Any gift given should be unrestricted and unconditional. Cities and towns should be at liberty to spend monies for a particular project without the worry that the donee will attempt to take back its gift should the municipality attempt to alter the naming right. Donees should be apprised that all gifts are unconditional, and that there is no *quid pro quo* or conferring of a property interest in a naming right. By disclaiming a cause of action associated with a potential rescission, as well as notifying potential donees that they shall not be entitled to notice and a hearing of such a potential rescission, cities and towns will best preserve such flexibility.

In this vein, cities and Towns contemplating a naming right after a donation may wish to consider a policy similar to the following:

Town X will consider approving a naming right for a building at the following donor thresholds:
Pressbox - $ xx,000
Concession Stand - $xx,000
Locker Room- $xx,000
Other Building Y - $xx,000
Other Building Z - $xx, 000

Town X recognizes that buildings generally vary in size, scope, geography, and economics. Any donation below such thresholds is considered a valuable contribution to Town X. Town X will consider extending additional naming rights for individuals donating below such thresholds on a case by case basis. Please understand, however, that such naming rights and this policy do not constitute an enforceable contract between the Donee and Town X. Town X reserves the right to rescind such naming rights at any time, and for any reason, and for no reason at all. In any and all such cases, Town X reserves the right to retain whatever donation is made. Such donation is to be considered an unrestricted and unconditional gift to it. Donee shall have no cause of action whatsoever to the rescission of naming rights. Naming rights shall not be considered property. The named individual shall not be entitled to notice or to a hearing. By submitting a donation, and by being considered for a naming right, the individual accepts the foregoing conditions and agrees to abide by Town X's policy.

5. Rescission of Naming Rights

Circumstances also warrant rescission of naming rights for cause. Cities and towns will always desire to remove naming rights immediately for those donees who commit crimes, break laws, or otherwise act contrary to the values of the public good.

To promote such a goal, cities and towns should establish that naming rights will always be rescinded for those who undermine public law or decency.

In fact, in creating naming rights policies, cities and towns should also include in their policies the following clause:

Rescissions of naming rights, notwithstanding the foregoing, will always occur under the following conditions:

1. *The named individual or entity is determined to have violated federal or state law or is inconsistent with public decency, morale, or good.*
2. *The named individual or entity submits a signed, sworn statement that it no longer wishes to have a name associated with a particular building.*

Naming rights are, with apologies to Shakespeare once again, veritable "roses" to those who give. They are tantamount to a recognition of a donee's service and generosity to the community. They remain attached to the public building or work at the will of the public entity and are subject to local desire and regulation. Not subject to procurement, they may be granted in a flexible manner. They may also be rescinded or revoked at the entity's discretion. A wise entity will always seek to convey this to potential donees.

This article is prepared by Attorney David A. DeLuca and Attorney Bryan R. Le Blanc. If you have any questions concerning its contents, you may contact them by telephone at (617) 479-5000, or by email, respectively, at ddeluca@mhtl.com and bleblanc@mhtl.com.

This constitutes information of a general nature and is not legal advice. For legal advice concerning a specific situation, please consult your attorney.

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Shrewsbury High School Athletic Campus Evaluation and Feasibility Study Shrewsbury, MA

June 11, 2015

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SHREWSBURY HIGH SCHOOL
ATHLETIC CAMPUS EVALUATION AND FEASIBILITY STUDY
SHREWSBURY, MA

SECTION 1.0 – BACKGROUND AND FEASIBILITY STUDY OBJECTIVES

Gale Associates, Inc. (Gale) was engaged to assist Shrewsbury High School (Shrewsbury) with a feasibility study for the development and reconfiguration of the School's athletic facilities located in Shrewsbury, MA. The School's athletic campus is located directly behind, or south of the school building. Currently, there is a need for a new, competition level, field at the stadium facility. The resultant feasibility study is intended to determine the viability of redeveloping and reconfiguring the existing athletic field areas to include a new synthetic turf game field at the stadium facility as well as improvements to the baseball and softball fields.

The process used to complete the feasibility study focused on three specific tasks, summarized as follows.

1. To perform a background investigation and site evaluation to determine the geotechnical, topographical and resource area constraints that may impact the development potential of the sites. Development of a base map will help to identify the prevailing site constraints related to the fields and surrounding areas.

2. To determine how the athletic facilities may be developed and reconfigured to best meet the athletic programming needs of the school.

3. To compile several conceptual layout schemes to demonstrate how the athletic fields might be organized and prepare cost estimates for each layout, in a manner suitable for comparison of the alternatives. While these pre-design cost estimates are suitable to assess project feasibility, they are not adequate for establishing actual project budgets.

This report documents the prevailing site conditions, conceptual development layouts, pre-design cost estimates and the permitting requirements to allow Shrewsbury to determine the most advantageous strategy for redeveloping the track and athletic fields at the School.

SECTION 2.0 – BASE PLAN DEVELOPMENT AND ASSESSMENT OF EXISTING FACILITIES

In order to facilitate the planning of the proposed athletic facility redevelopment, Gale prepared an Existing Conditions Base Plan (Enclosure 1). This plan is a compilation of Geographic Information Systems (GIS) data obtained from MassGIS, as well as existing conditions information provided by the School. No on-the-ground survey was completed during the base plan development. This Existing Conditions Plan provides sufficient detail for planning purposes. However, the Existing Conditions Plan is not suitable for design

development or construction purposes. A full existing conditions survey will be required for future design phases and proposed layout plans are subject to change.

In addition, Gale completed site visits to each of the athletic campus facilities to evaluate the topography, groundcover, geology, accessibility, proximity of abutters and potential environmental resource areas.

Athletic Campus Site Description. The athletic campus (Enclosure 1) is bordered by the school building to the north, wooded area and overhead utility lines to the east, wooded areas and Interstate 290 to the south, and wooded areas and a mature residential area to the west. There is a small parking area (about 18 spaces) located just to the north of the track. The remaining available parking is at the main school parking area located to the west of the school building.

There are a total of six (6) natural grass athletic fields located throughout the Shrewsbury athletic campus. Although the varsity baseball and varsity softball fields have rectangular field layouts within their respective outfields, they are considered as one field for the purposes of this feasibility study.

There are a total of six (6) tennis courts located on the western edge of the property, adjacent to the track. In addition to the tennis courts, there are also two (2) basketball courts located just to the north of the tennis courts, adjacent to the school access road. The courts were constructed in 2002 (over 12 years ago) and have not been resurfaced

Similar to the tennis courts, the existing track and stadium field facility was constructed in 20028 (over 12 years ago) and is about halfway through its useful lifespan. A typical track asphalt base mat has a life expectancy of around 20 to 25 years. Other than minor repairs, the track has never been re-surfaced. There is extensive cracking and worn areas throughout the existing track's latex surface.

As is shown in the photographic documentation (Enclosure 2), the track consists of an asphalt mat with a resilient track surfacing. There are 6 lanes in the ovals and 8 lanes in the straight away. There is worn areas throughout the track surface.

Soils. The United States Soil Conservation Services (USCS) mapping for the site identifies the soils as "Canton Fine Sandy Loam" and "Chatfield-Hollis-Rock Outcrop Complex." These classifications of soils consists of stony material at moderate to steep slopes and can be moderately draining. The unknowns are the amount of stone and how much it has compacted and if there is a shallow depth to ledge. This leads to variable soils, which are difficult to classify without onsite investigation.

Test pits were not performed within the field playing areas, due to the fields being used for sports. As a result, the depth of field topsoil was not evaluated. Athletic fields have been known to have topsoil layer depths ranging from 8 to 18 inches. Further evaluations will be needed during future design phases to accurately estimate construction costs.

Environmental Resource Areas. According to the Unites States Geological Survey (USGS) mapping, there is a small area within the current lower practice fields classified as bordering vegetative wetlands (BVW); any work within 100-ft of area is subject to regulation under the Wetlands Protection Act. However, the mapping is not representative of actual conditions, as this BVW is shown in the middle of the managed practice field's playing area. A Request for Determination of Applicability (RDA) may have to be submitted to the Shrewsbury Conservation Commission in order to confirm if the BVW actually exists.

According to the latest Massachusetts Natural Heritage & Endangered Species Program (NHESP) Atlas, there is no Priority Habitat of Rare Species or Certified Vernal Pools located within the project site.

Additionally, project site is located outside the 100-year flood zone, according to the Flood Insurance Rate Map (FIRM) for the site.

Topography. Topography data for project site was obtained through Mass GIS and record plans. In general, the athletic campus gently slopes (between 0 and 8 percent) from north to south then abruptly drops off soon after the limits of the athletic fields. Rock outcroppings were observed along the northeastern edge of the baseball and softball fields. Rock outcroppings may be indicators of ledge and perched water table and may impact the redevelopment potential at the site.

Field Assessments and Short Term Recommendations: As mentioned above, there are a total of six (6) individual athletic fields within the athletic campus, as is shown in the photographic documentation (Enclosure 2). The assessments were performed using accepted industry standards and guidelines, and are based on field usage, by sport, for each field.

The National Federation of State High School Associations (NFHS) and the Massachusetts Interscholastic Athletic Association (MIAA) Guidelines were followed in the evaluation of the field layouts and equipment. Similarly, the Architectural Access Board Guidelines were used to assess ADA compliance.

The fields were also evaluated for serviceability (systems and equipment in good repair and meeting the intended purpose) and safety. The findings within each functional area are categorized as they relate to the safety, serviceability and accessibility of the components.

Gale has compiled a summary list, provided below, detailing conditions and general observations of each field. Gale also included an evaluation of the tennis and basketball courts. The evaluations detail the general condition of each facility as observed by Gale at the time of the assessment. The individual field assessment results are summarized as follows:

Shrewsbury High School Athletic Campus

- Varsity Baseball Field / Multipurpose Rectangular Field

  - The turf is in fair condition.
  - Primarily used for baseball and soccer.
  - The outfield distance is excessively long (approx.. 400 feet)
  - Worn areas around goals need to be addressed.
  - There are no ADA accessible walkways to the field.
  - Spectator seating is located on elevated slope along back of Stadium Bleachers.
  - There are drainage structures at the east and west perimeters.
  - Field slopes towards east and west perimeters and these areas of field are poorly graded and have drainage issues particularly during the spring's wet season.
  - The field has irrigation.
  - Scoreboard is older generation (non LED). Difficult to see in direct sunlight.
  - There is no athletic lighting.

- Varsity Softball Field / Multipurpose Rectangular Field

  - The turf is in fair to good condition.
  - Drainage structures located only along northern section adjacent to baseball field.
  - Field has irrigation.
  - Perimeter fencing (installed in 2002) has tension wire instead of bottom rail. The fabric has become warped/loose in some areas and needs to be re-tensioned
  - Primarily used for varsity softball with soccer in the outfield.
  - Worn areas around goals were being addressed.
  - There are no ADA accessible walkways to the field.
  - Field has scoreboard.
  - Batting tunnel is located along the third base line and is in fair condition.
  - Backstop height is insufficient and need to be repaired in several areas.
  - Spectator seating consists of portable aluminum bleachers along the third base line.
  - There is no athletic lighting.

- Lower Practice Fields (2 Fields)

  - The turf is in poor condition, primarily due to poorly drained areas. According to school officials, this may be due to perched water from shallow ledge located under the playing areas.
  - Fields are "always wet" in the spring.

- Primarily used for practices.
- Backstop height is insufficient and need to be repaired in several areas.
- Perimeter fencing (installed in 2002) has tension wire instead of bottom rail. The fabric has become warped/loose in some areas and needs to be re-tensioned.
- There is no irrigation.
- There is no scoreboard(s).
- There is no athletic lighting.
- There are no formal drainage structures and fields rely on sheet flow for drainage.
- There are no ADA accessible walkways to the fields.
- Track Discus venue is located in the southeast corner of the fields. This is quite far from the other track throwing venues.

➢ <u>Field Hockey/LAX Field</u>

- The turf is in good condition overall the best condition of the fields observed.
- Primarily used for field hockey and lacrosse.
- There are several sinkholes developing around the perimeter drainage structures that need to be repaired.
- Area width is constrained by elevated berm to the east along the track side and grade drop off along the west side.
- There is no spectator seating for the field.
- There is no athletic lighting.
- There is irrigation.
- There are no ADA accessible walkways to the field.
- Field used for track javelin venue.

➢ <u>Track and Stadium Field Facility</u>

- The turf is in fair to poor condition; major depressions running along both sidelines. These do not allow the water to sheet flow towards the track's trench drains in a timely manner.
- The field is primarily used as the football and soccer game field.
- The field is drained by trench drains running along the inside edge of the track.
- Field is irrigated. Irrigation boxes located in close proximity to soccer layout limits.
- The track was constructed in 2002 and the asphalt base mat is over 14 years and track has not been overlaid.
- The D-areas are not paved, other than the high jump and LJ/TJ running lanes.
- Pole vault venue is located outside northern D-area and is in fair condition.

- The latex track surfacing is excessively worn and cracked and is beyond the point of being repaired. Track surfacing needs to be completely removed and track resurfaced.
- Track polymer slot-drains do not have track surfacing. Several sections are broken and need to be repaired.
- Edges of slot-drain and track surfacing have excessive plant growth intrusion resulting in detachment of latex track surfacing.
- LJ/TJ running lanes and take-off boards are worn.
- Perimeter fencing (installed in 2002) has tension wire instead of bottom rail. The fabric has become warped/loose in some areas and needs to be re-tensioned.
- Several fence posts are heaved and need to be repaired.
- The spectator seating at the home side needs some minor repairs at the seating planks.
- Field has athletic lighting system and the fixtures were re-lamped in 2012. However, it is an older generation system with no shielding at the fixtures.

➢ Tennis and Basketball Courts

- The tennis and basketball court venue is comprised of 6 tennis courts and 2 basketball courts built in 2002 and have not been resurfaced.
- There is evidence of full depth pavement cracking along the pavement cold joints and around the net post foundations.
- Several fence post foundations are now heaving.
- Several perimeter trench drains need to be cleaned and repaired.
- Cracks should be repaired and courts should be resurfaced.
- There is no athletic lighting.

Overall, the athletic fields are in fair condition, with the Field Hockey/LAX field in the best condition and the lower practice fields in the worst condition. Their condition is primarily due to the existing site constraints and the degree of the School's maintenance program. The fields throughout the property have deficiencies in similar areas, which include poor drainage, lack of ADA accessibility and permanent spectator seating.

It is not the intent of the field assessments to address the renovation and redevelopment recommendations for each facility. Those will be addressed in later sections of this report. Rather, these comments are intended to define general existing field conditions and establish those repairs and upgrades necessary to make the fields more fully serviceable, safe and compliant.

SECTION 3.0 - FIELD USE PRACTICES - REST AND INCLEMENT WEATHER

How a field is scheduled is an important consideration in its ability to sustain heavy use with an acceptable decrement in turf condition. Obviously, a field with 250 scheduled uses stretched out over the year (May through October), behaves differently than if this use was broken up with rest period(s) provided. Ideally, a natural turf field should have a 30-day rest

period during the active growing season (spring or fall) to repair the root zone damage it has sustained and to propagate new crown growth. Alternatively, this rest period can be in the summer time. However, a summer rest period is less effective, as the turf grass is somewhat dormant.

It should be noted that it only takes playing once on a very wet field to destroy the turf root zone for that season. An effort must be made not to play games or even practice on fields that are excessively wet. An inclement weather policy is strongly recommended as a management tool for preventing damage to fields in the event of inclement weather.

The enforcement of a restrictive inclement weather policy by field managers is the single best management practice available. A typical policy addresses the importance of not playing on fields during wet conditions. Such a policy protects the safety of players, the condition of the fields and serviceability of the facilities. It is also fiscally responsible to the School. The policy should outline condition assessment procedures and the responsibility of the Recreation Coordinator, athletic team staff and players, as they relate to inclement weather and field use. A complete inclement weather policy should include information on its purpose, implementation procedures, field closure guidelines, communication processes, procedure enforcement and penalty procedures. The inclement weather policy should be provided to all permitted field users, as well as posted at all facilities to inform unscheduled users of the importance of prohibiting use during inclement weather. However, the restrictions with MIAA/NFHS policies regarding the scheduling of games and seasons makes adhering to an inclement weather policy difficult.

SECTION 4.0 – SCHEMATIC PLANNING PROGRAM

The main goal of schematic planning program is to provide Shrewsbury with redevelopment options that best meet the needs of the School. Based on programming discussions with the School, the current stadium field facility is not capable of supporting the athletic program demands and the baseball field and lower practice fields are improperly graded and poorly drained. The schematic layout described below will provide the school with development alternatives that range from the redevelopment of the existing track and stadium field facility to the installation of a synthetic turf game field. Site amenities and supporting equipment have also been taken into consideration, specifically the location of grandstands, amenities buildings and athletic lighting.

SECTION 5.0 – SCHEMATIC DESIGN AND ESTIMATED PROJECT COSTS

The main goal of schematic planning program is to provide Shrewsbury with redevelopment options that best meet the needs of the School. Based on programming discussions with the School, the current poor drainage constraints of the lower practice fields put an additional demand on the remaining fields resulting in the athletic facilities as a whole not capable of supporting the athletic program demands. The schematic layout described below will provide Shrewsbury with development alternatives that range from the reconfiguration of the

existing field facilities to the installation of synthetic turf. Site amenities and supporting equipment have also been taken into consideration, specifically the location of a new synthetic turf field, athletic lighting and ADA accessible walkways. At Enclosure #3, we have provided schematic drawings showing alternative layouts and each option is described in detail below.

Conceptual School Layout Option 1 – (See Enclosure #3)

Master Plan Strategy. Under this option, the existing track will be resurfaced with resilient latex surfacing and the D-areas will be paved and surfaced as well. The running lanes to the field event venues such as pole vault, LJ/TJ, and javelin would also be resurfaced. The discus venue would be relocated next to the shot put venue in an effort to group the throwing events together. The track's existing galvanized chain link fence with be replaced with a black vinyl-coated chain link fence.

The stadium field within the track will also be a synthetic in-filled turf field, capable of supporting near continuous use. This construction includes a sub-surface drainage system, consisting of an engineered stone base with flat panel drains and collector pipes used to capture runoff, maximize groundwater recharge opportunity, and discharge overflow outside of the field area into existing track drainage system.

As part of this option, the varsity baseball and varsity softball fields will also be renovated to include new black vinyl-coated backstops (30-ft high) and perimeter fencing, new pre-fabricated dugouts with storage, new bullpens and batting tunnels. A new six (6) pole MUSCO athletic lighting system is proposed to light the baseball facility and a new four (4) pole MUSCO athletic lighting system is proposed for the softball field facility.

Additional improvements to the varsity baseball field will consist of the field being re-graded, receive new drainage and then re-seeded. The outfield fencing will also be brought in so that the center outfield distance is reduced to 350 feet.

The Field Hockey/LAX Field would also be converted to a synthetic turf field. As part of this option, a new 350-person grandstand will be installed along the eastern edge of the field, able to be accessed from the existing walkway along the track side. A new storage/amenities building is proposed at the end of the Field Hockey/LAX field. A new four (4) pole MUSCO athletic lighting system is proposed to light this field facility. Lastly, various walkway improvements will be included into the project to provide ADA accessible routes throughout the site.

The proposed improvements to the Lower Practice Fields will primarily consist of drainage improvements. A series of flat panel drains will be installed in a herringbone pattern (spaced 20-ft on center) within the field playing areas. These flat panel drains would then be connected to perimeter French drains (perforated pipe in stone) and outfall towards the fields' southern edge. Additional improvements to the fields would include new backstops (20-ft high), new dugouts (concrete slab with fencing), and new irrigation system.

In regards to the tennis courts, improvements will consist of repairing of cracks and fence post heaves and then the courts will be re-surfaced and re-striped.

Site improvements under this option will include a new storage/restrooms building located at the southern end of the Field Hockey/LAX Field to compliment and provide amenities to the new spectator seating and much needed storage. Finally, new walkways will be installed to provide ADA accessibility to all of the field facilities.

Cost Estimates – Conceptual HS Layout Option 1. The estimated costs have been summarized as follows:

Track and Stadium Field	
• Synthetic Turf Field (at Track)	$ 780,000
• Resurface Track	$ 270,000
• Pave D-Areas	$ 100,000
• Fencing Renovation (Black vinyl)	$ 45,000
• Scoreboard	$ 40,000
	$ 1,235,000
Field Hockey/ LAX	
• Synthetic Turf Field (at Field Hockey)	$ 850,000
• Athletic Lighting (4 poles at Field Hockey)	$ 350,000
• Grandstand (350 seat at Field Hockey)	$ 94,000
	$ 1,294,000
Varsity Baseball	
• Field Renovation (Re-grade, reseed, drainage)	$ 250,000
• Fencing (Black vinyl)	$ 49,000
• Athletic Lighting (6 poles at V. Baseball)	$ 450,000
• Backstop (30-ft)	$ 40,000
• Dugouts (Pre-fab, w/storage)	$ 45,000
• Bullpens/Batting tunnels	$ 28,000
• Scoreboard	$ 20,000
• Parking (24 spaces)	$ 75,000
	$ 957,000
Varsity Softball	
• Backstop (30-ft)	$ 35,000
• Dugouts (Pre-fab, w/storage)	$ 36,000
• Athletic Lighting (4 poles at V. Softball)	$ 280,000
• Safety Netting (20-ft)	$ 15,000
	$ 366,000
Practice Fields	
• Drainage Improvements (Slit drains)	$ 60,000
• Irrigation System	$ 80,000
• Backstops (2 at 20-ft)	$ 40,000
• Dugouts (4, Gameshade)	$ 28,000
• Fencing Renovations	$ 30,000
	$ 238,000

Tennis

• Crack Repair/Re-surfacing	$ 40,000

Site Improvements

• Amenities Building (storage, restrooms)	$ 330,000
• Walkways and appurtenances	$ 40,000
	$ 370,000

Summary – Conceptual HS Layout Option 1. The estimated costs have been summarized as follows:

• Total Cost	$ 4,498,000
• Design Contingency (20%)	$ 899,000
• Soft Costs (5%)	$ 225,000
	$ 5,622,000

Costs include soft costs (design, geotechnical, testing, etc.), taken as 5% of the constructed cost, as well as a 20% contingency. This estimate is an approximation and more detailed construction cost estimates will be prepared with the detailed design of the facility. Again, the pre-design cost estimates are not suitable for budget development, but are intended to provide a basis of comparison with other alternatives.

Conceptual School Layout Option 2 – (See Enclosure #3)

Master Plan Strategy. Similar to Option 1, this option include the same improvements to the track and stadium field and the same improvements to the varsity baseball and varsity softball fields. However, a new parking area with 24 spaces is proposed along the school access road adjacent to the baseball outfield.

For the Field Hockey/LAX Field, new athletic lighting and spectator seating will be installed. However the field will not be converted to synthetic turf, but remain a natural grass field.

The major change with this option is that a combination multipurpose synthetic turf field with softball field bump out is proposed for the eastern half of the Lower Practice Fields. There will be a new seven (7) pole MUSCO athletic lighting system installed to light this field facility. The western half of the practice field area will receive similar improvements as in Option 1 (irrigation system, backstops, and drainage improvements).

Tennis courts will receive crack repairs and new acrylic tennis surfacing. A new storage/restrooms building located at the southern end of the Field Hockey/LAX Field and new walkways will be installed to provide ADA accessibility to all of the field facilities.

Cost Estimates – Conceptual HS Layout Option 2. The estimated costs have been summarized as follows:

Track and Stadium Field		
•	Synthetic Turf Field (at Track)	$ 780,000
•	Resurface Track	$ 270,000
•	Pave D-Areas	$ 100,000
•	Fencing Renovation (Black vinyl)	$ 45,000
•	Scoreboard	$ 40,000
		$ 1,235,000
Field Hockey		
•	Field (drainage improvements)	$ 50,000
•	Athletic Lighting (4 poles at Field Hockey)	$ 350,000
•	Grandstand (350 seat at Field Hockey)	$ 94,000
		$ 494,000
Varsity Baseball		
•	Field Renovation (Re-grade, reseed, drainage)	$ 250,000
•	Fencing (Black vinyl)	$ 49,000
•	Athletic Lighting (6 poles at V. Baseball)	$ 450,000
•	Backstop (30-ft)	$ 40,000
•	Dugouts (Pre-fab, w/storage)	$ 45,000
•	Bullpens/Batting tunnels	$ 28,000
•	Scoreboard	$ 20,000
•	Parking (24 spaces)	$ 75,000
		$ 957,000
Varsity Softball		
•	Backstop (30-ft)	$ 35,000
•	Dugouts (Pre-fab, w/storage)	$ 36,000
•	Athletic Lighting (4 poles at V. Softball)	$ 280,000
•	Safety Netting (20-ft)	$ 15,000
		$ 366,000
Practice Fields		
•	Synthetic Turf Field (softball, multi-sport)	$ 1,200,000
•	Athletic Lighting (7 poles at syn. turf)	$ 540,000
•	Drainage Improvements (Slit drains)	$ 30,000
•	Irrigation System	$ 40,000
•	Backstops (2 at 20-ft)	$ 40,000
•	Dugouts (4, Gameshade)	$ 28,000
•	Fencing Renovations	$ 80,000
		$ 1,958,000
Tennis		
•	Crack Repair/Re-surfacing	$ 40,000

Site Improvements

• Amenities Building (storage, restrooms)	$ 330,000
• Walkways and appurtenances	$ 40,000
	$ 370,000

Summary – Conceptual HS Layout Option 2. The estimated costs have been summarized as follows:

• Total Cost	$ 5,380,000
• Design Contingency (20%)	$ 1,076,000
• Soft Costs (5%)	$ 269,000
	$ 6,725,000

Costs include soft costs (design, geotechnical, testing, etc.), taken as 5% of the constructed cost, as well as a 20% contingency. This estimate is an approximation and more detailed construction cost estimates will be prepared with the detailed design of the facility. Again, the pre-design cost estimates are not suitable for budget development, but are intended to provide a basis of comparison with other alternatives.

Conceptual School Layout Option 3 – (See Enclosure #3)

Master Plan Strategy. This option also includes the same improvements to the track and stadium field and the same improvements to the varsity baseball and varsity softball fields as with Option 1. However, as with Option 2, a new larger parking area with 36 spaces is proposed along the school access road adjacent to the baseball outfield.

Similar to Option2, new athletic lighting and spectator seating will be installed at the Field Hockey/LAX Field and the field will not be converted to synthetic turf, but remain a natural grass field.

The Lower Practice Fields and tennis courts improvements remain similar to Option 1, in addition to a new storage/restrooms building located at the southern end of the Field Hockey/LAX Field and new walkways will be installed to provide ADA accessibility to all of the field facilities. Layout Option 3 results in maximizing and combining the benefits from the previous two layout options.

Cost Estimates – Conceptual HS Layout Option 3. The estimated costs have been summarized as follows:

Track and Stadium Field	
• Synthetic Turf Field (at Track)	$ 780,000
• Resurface Track	$ 270,000
• Pave D-Areas	$ 100,000
• Fencing Renovation (Black vinyl)	$ 45,000
• Scoreboard	$ 40,000
	$ 1,235,000
Field Hockey	
• Field (drainage improvements)	$ 50,000
• Athletic Lighting (4 poles at Field Hockey)	$ 350,000
• Grandstand (350 seat at Field Hockey)	$ 94,000
	$ 494,000
Varsity Baseball	
• Field Renovation (Re-grade, reseed, drainage)	$ 250,000
• Fencing (Black vinyl)	$ 49,000
• Athletic Lighting (6 poles at V. Baseball)	$ 450,000
• Backstop (30-ft)	$ 40,000
• Dugouts (Pre-fab, w/storage)	$ 45,000
• Bullpens/Batting tunnels	$ 28,000
• Scoreboard	$ 20,000
• Parking (36 spaces, retaining wall)	$ 180,000
	$ 1,062,000
Varsity Softball	
• Backstop (30-ft)	$ 35,000
• Dugouts (Pre-fab, w/storage)	$ 36,000
• Athletic Lighting (4 poles at V. Softball)	$ 280,000
• Safety Netting (20-ft)	$ 15,000
	$ 366,000
Practice Fields	
• Drainage Improvements (Slit drains)	$ 60,000
• Irrigation System	$ 80,000
• Backstops (2 at 20-ft)	$ 40,000
• Dugouts (4, Gameshade)	$ 28,000
• Fencing Renovations	$ 30,000
	$ 238,000
Tennis	
• Crack Repair/Re-surfacing	$ 40,000
Site Improvements	
• Amenities Building (storage, restrooms)	$ 330,000
• Walkways and appurtenances	$ 40,000

	$ 370,000

Summary – Conceptual HS Layout Option 3. The estimated costs have been summarized as follows:

• Total Cost	$ 3,805,000
• Design Contingency (20%)	$ 761,000
• Soft Costs (5%)	$ 190,000
	$ 4,756,000

Costs include soft costs (design, geotechnical, testing, etc.), taken as 5% of the constructed cost, as well as a 20% contingency. This estimate is an approximation and more detailed construction cost estimates will be prepared with the detailed design of the facility. Again, the pre-design cost estimates are not suitable for budget development, but are intended to provide a basis of comparison with other alternatives.

SECTION 6.0 – PERMITTING

As a feasibility study, Gale did not complete a rigorous permitting review or meet with various permitting authorities. However, based on the project locations and scope, both of the project alternatives, as proposed above, would likely be subject to the following permitting requirements:

- Town of Shrewsbury Conservation Commission – Request for Determination of Applicability (RDA) and Con-Com review
- Town of Shrewsbury – Site Plan Review
- Town of Shrewsbury Building Inspector - Building Permit
- NPDES General Permit

A formal wetland delineation and site survey may need to be performed for later design phases of this project if the RDA determines that work within the lower practice fields falls within 100' of the bordering vegetated wetland and be subject to the Wetland Protections Act and Massachusetts Stormwater Regulations.

Synthetic infilled turf fields are typically considered an improvement to adjacent wetlands and drainage systems. Synthetic turf does not require the fertilizers, herbicides or pesticides that natural turf requires to remain playable. In addition, the vertical draining nature of such fields tends to greatly reduce stormwater flows in comparison to natural turf fields.

SECTION 7.0 - Comparison of Conceptual Layout Options

Conceptual Layout –Option 1

Advantages:

- This option provides a new track surface and fully paved D-areas with synthetic turf game field.
- This option provides second synthetic turf field at the lower practice field area.
- Spectator seating at Field Hockey/ LAX field.
- This option provides improvements to the baseball and softball fields.
- This option affords for storage/amenities building.
- It requires little to no encroachment into the wooded area adjacent to residential properties.

Disadvantages:

- It provided less additional parking than Option 3.

Conceptual Layout - Option 2

Advantages:

- This option provides a new track surface and fully paved D-areas with synthetic turf game field.
- New storage/restroom building.
- It requires little to no encroachment into the wooded area adjacent to residential properties.

Disadvantages:

- This is the most costly option.
- It requires more phasing coordination and programming.
- It provided less additional parking than Option 3.

Conceptual Layout – Option 3

Advantages:

- This is the least costly track option.
- New spectator seating.
- New athletic lighting systems.
- New storage/restroom building.
- This option provides improved drainage at lower practice fields.
- Crack repair and resurfacing of tennis courts.
- Additional parking is provided adjacent to baseball outfield.
- It requires little to no encroachment into the wooded area adjacent to residential properties.

Disadvantages:

- This option affords only one synthetic turf field.

The above mentioned advantages and disadvantages were thoroughly vetted with the School. The improvements would result in a new, state-of-the-art track and game field facility and a redeveloped baseball field with athletic lighting, improved drainage system, dugouts and backstop. The proposed synthetic turf field, with athletic lighting, would have a capacity of well over 600 scheduled team uses

SECTION 8.0 - MASTER PLAN IMPLEMENTATION – PHASING PLAN

It is apparent that the implementation of the entire Master Plan may not be feasible in a single project. This is due to the School's fiscal constraints and due to the impacts on current users, who have an on-going requirement for field space during the redevelopment process. The Master Plan is, therefore, broken into discrete projects. These are based on reasonable annual budget expenditures, priority of need and minimization of user impacts. In general, the principles behind the formulation of the Master Plan Phasing are:

- Accomplish the projects which result in the biggest impact first, to set the conditions for the project.
- Accomplish the remaining Master Plan elements in order of relative importance, based on projected use.
- Attempt to accomplish all elements of the Master Plan within four (or more) years, including the current year.
- Attempt to balance the School's expenditure on field renovation throughout the Master Plan implementation period.
- Schedule Master Plan elements which only provide for the renovation of an existing field in place, with no change in layout or use, late in the Phasing Plan.

The following phasing plan is an example of Option 1:

Phase 1, Fiscal Year 2016

Phase 1 should include the improvements to the track and installation of synthetic turf at the stadium field. The improvements to the tennis courts would also be included under this phase.

Given the limited damage to the surrounding, existing fields during construction, and the quick turn-around use of a synthetic turf field, this Phase will provide the School with the ability to relocate displaced users during the renovations to other fields during subsequent phases of the Master Plan.

Phase 2, Fiscal Year 2017

Phase 2 will focus the improvements to the varsity baseball field, with new athletic lighting, backstops, dugouts and new parking area.

Phase 3, Fiscal Year 2018

With the implementation of Phases 1 and 2, the School can shift its focus to the renovations to the Field Hockey/LAX Field to include new spectator seating and athletic lighting. Improvements to the Lower Practice Fields and Varsity Softball Field will also be included as part of this phase.

Phase 4, Fiscal Year 2019

With the field renovations completed, the School can start to look at other areas of their athletic campus where improvements can occur. This phase would also include construction of the storage/restroom building and any remaining site improvements carried over from the previous phases. As the last phase in the Master Plan, the School will be able to assess how the previous improvements / projects have affected the School's athletic program.

SECTION 9.0 – CONCLUSIONS AND RECOMMENDATIONS

Gale's preliminary findings are that the demands and needs of Shrewsbury's athletic programs cannot be supported with the current condition of the athletic campus facilities. As a result of this study, the School is presented with three alternative options that will not only improve the condition of the facilities, but are capable of supporting more demand with the use of synthetic turf and athletic lighting. Although permitting would most likely be involved, we feel this process could be overcome though proper planning and design.

The above mentioned options provide a new state-of-the-art track and game field facility and redeveloped baseball facility with improved drainage. Additionally the improvements to the track and game field facility and the baseball field may also serve as a focus point for everyone entering the athletic campus and provide a sense of school pride for all students.

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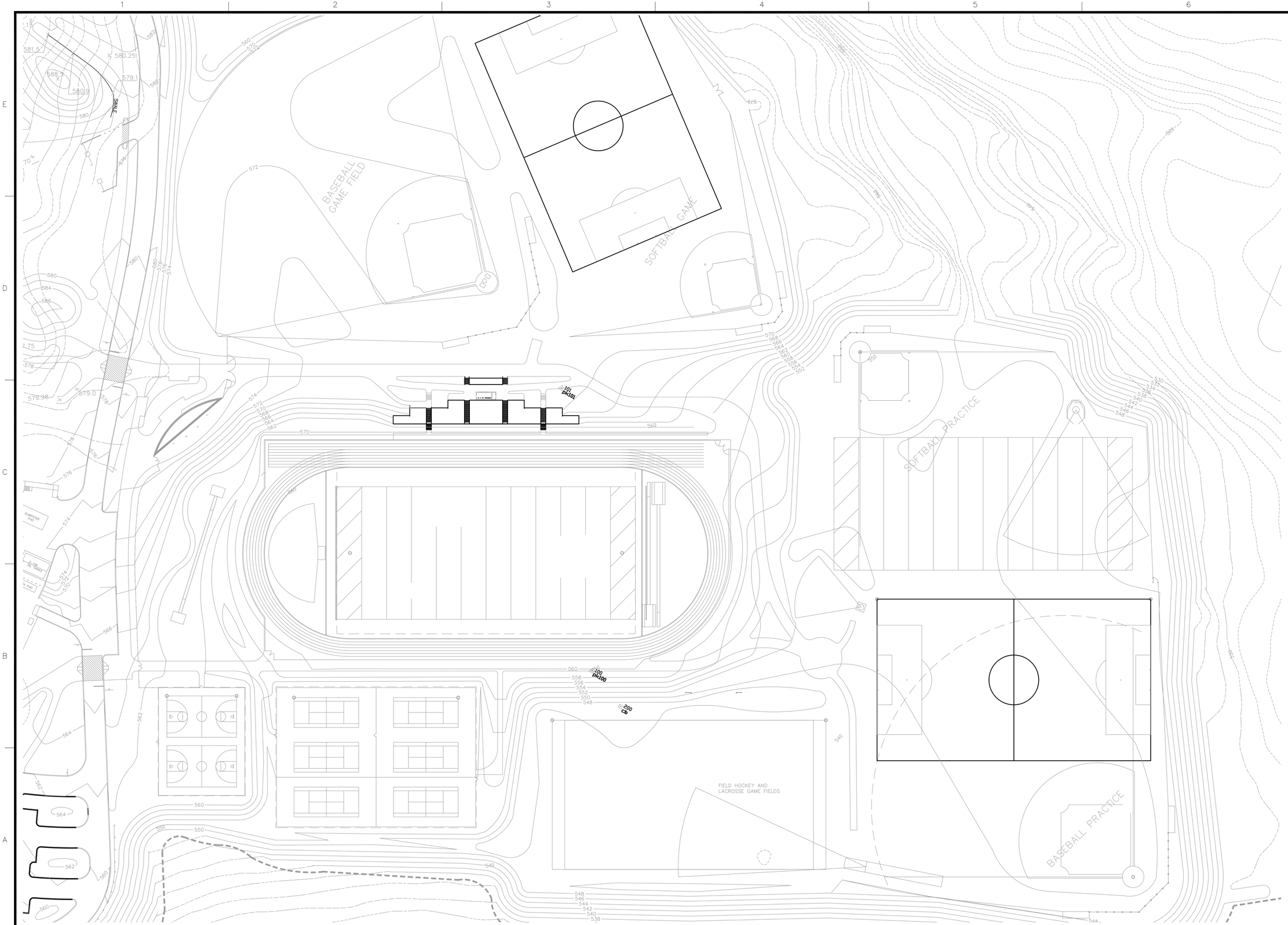

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PROJECT

ATHLETIC FIELD RENOVATIONS
SHREWSBURY HIGH SCHOOL
SEWALL STREET
SHREWSBURY, MA 01545

OWNER

REVISIONS

NO.	DATE	DESCRIPTION

CADD FILE	OPTION1
DESIGNED BY	
DRAWN BY	WAH
CHECKED BY	
DATE	3/19/2015
DRAWING SCALE	1"=50'-0"

GRAPHIC SCALE

0 50' 100'

SHEET TITLE

EXISITNG CONDITIONS PLAN

DRAWING NO.

EX-1

PROJECT NO. 716700

PHOTOGRAPHIC DOCUMENTATION
Athletic Facilities Evaluation
Shrewsbury High School
Shrewsbury, MA
Gale JN 716700

Prevailing Site Conditions

Athletic Facilities

Track and Stadium Field:

Picture 1:

View of pole vault venue.

Picture 2:

Track surfacing worn at pole vault box.

Picture 3:

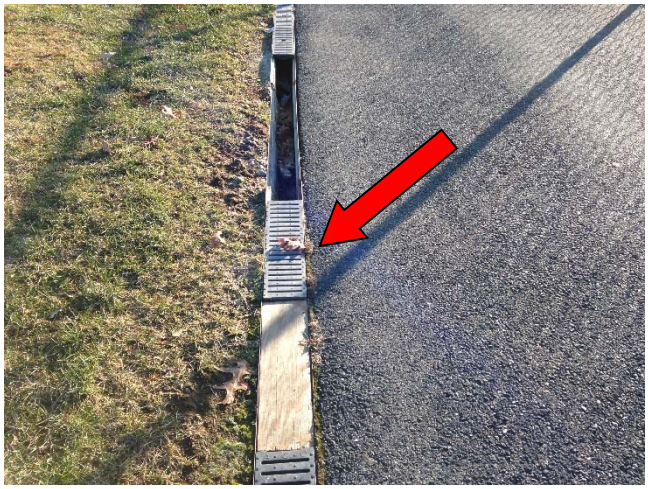
Fence post heaving at northern track chute extension. Also, no bottom rail for any of the fencing.

Picture 4:

Walkway along east edge of straightaway. Areas with excessive cross-slope and evidence of post heaves.

PHOTOGRAPHIC DOCUMENTATION
Athletic Facilities Evaluation
Shrewsbury High School
Shrewsbury, MA
Gale JN 716700

Picture 5:



Damaged trench drain section at paved walkway along east edge of straightaway.

Picture 6:

Stadium field athletic lighting. Older lighting generation with no shielding of fixtures.

Picture 7:

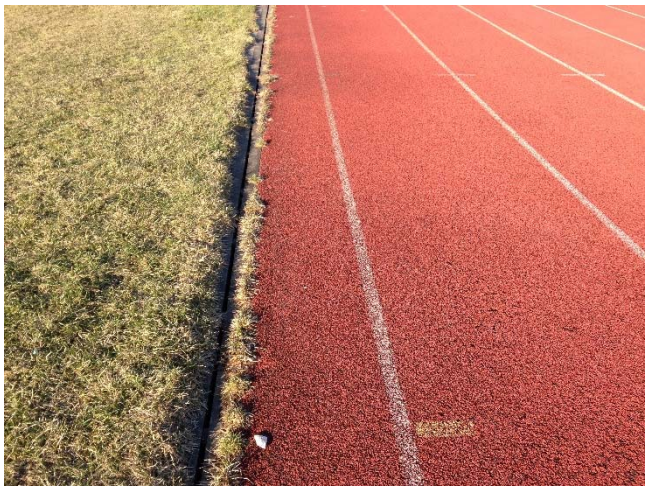
Track meets 1 meter recommended separation from outside lane to fence.

Picture 8:

Track meets 8 inch recommended separation from inside lane line to field (drain).

PHOTOGRAPHIC DOCUMENTATION
Athletic Facilities Evaluation
Shrewsbury High School
Shrewsbury, MA
Gale JN 716700

Picture 9:



Vegetation growth between track drain edge and track surfacing.

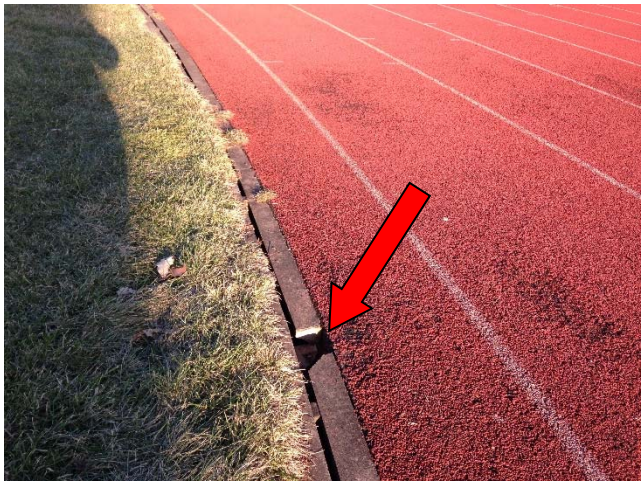
Picture 10:

Vegetation growth deteriorating surfacing and need to be removed.

Picture 11:

View of inline trench drain catch basin. Cover needs to be cleaned and debris in sump removed.

Picture 12:



Section of inline trench drain needing repair.

Picture 13:

Areas of worn track surfacing.

Picture 14:

Area of worn track surfacing.

Picture 15:

LJ/TJ venue with worn track surfacing along running lane.

Picture 16:

Takeoff board at LJ/TJ venue needs to be replaced.

Picture 17:

Previous repair of southern LJ/TJ running lane.

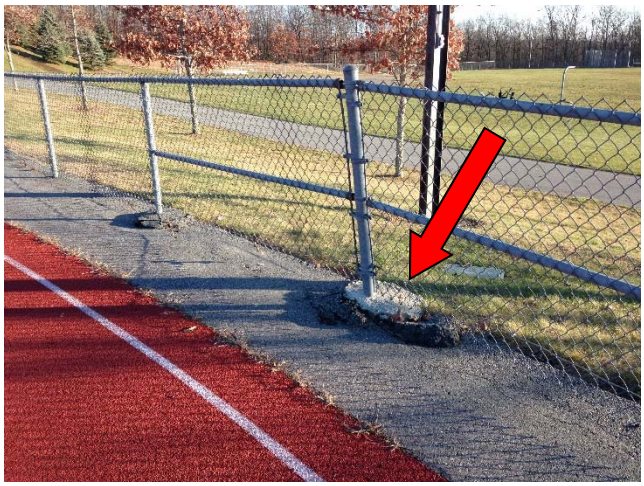
Picture 18:

LJ/TJ venue with worn track surfacing along running lane.

Picture 19:

View of fence posts heaves at southern end of track chute extension.

Picture 20:



View of fence posts heaves at southern end of track chute extension.

PHOTOGRAPHIC DOCUMENTATION
Athletic Facilities Evaluation
Shrewsbury High School
Shrewsbury, MA
Gale JN 716700

Picture 21:

View of Track scoreboard.

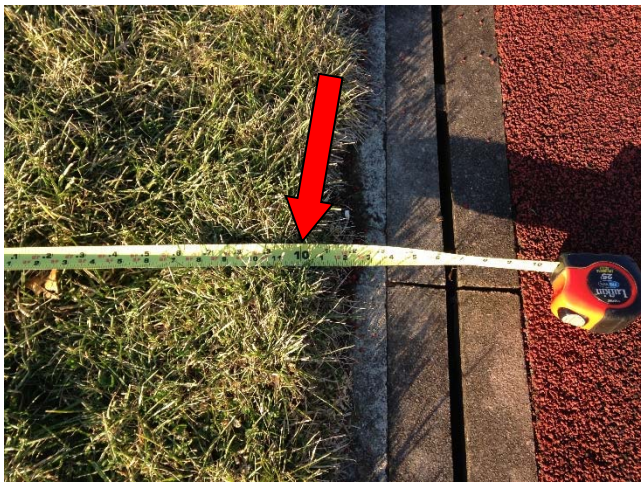
Picture 22:

View of football goal post and worn turf area around soccer goal area.

Picture 23:

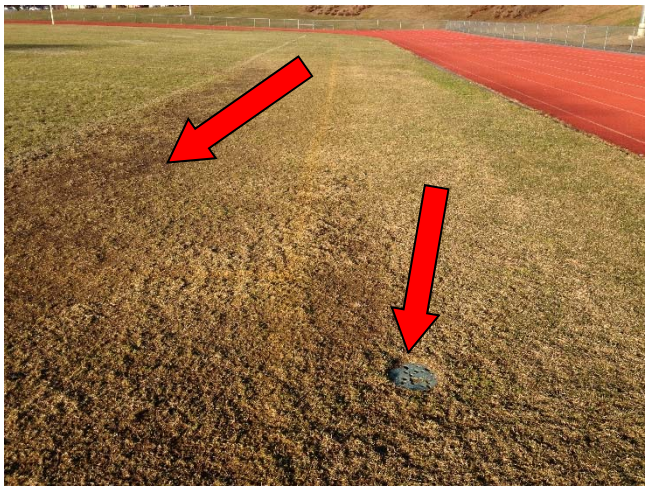
View of soccer corner kick area. Irrigation control boxes are within 1-ft of corner and impede with foot placement during kicks.

Picture 24:



Soccer safety run out area meets recommended 10-ft distance.

Picture 25:



View of uneven depressions, poorly drained areas of field, and irrigation box near soccer playing area.

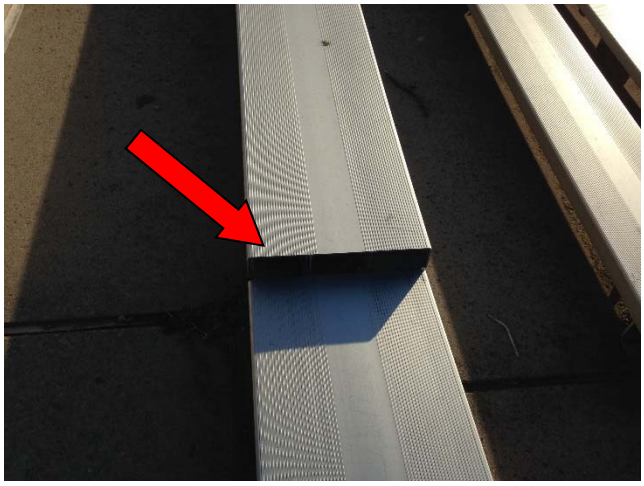
Picture 26:

View of uneven depressions, poorly drained areas of field.

Picture 27:

View of stadium bleachers.

Picture 28:



Section of bleacher aluminum seating offset and in need of repair.

Baseball Field:

Picture 29:

View of spectator seating on varsity baseball side.

Picture 30:

View of poorly drained area at baseball field.

Picture 31:

View of baseball backstop and fencing.

Picture 32:

Detached fence fabric at baseball backstop.

PHOTOGRAPHIC DOCUMENTATION
Athletic Facilities Evaluation
Shrewsbury High School
Shrewsbury, MA
Gale JN 716700

Picture 33:

Separated and warped fence fabric at baseball backstop.

Picture 34:

Worn turf area in front of baseball dugout. No protective fencing in front of dugout.

Picture 35:

Worn turf area at first base.

Picture 36:

Poorly drained area just outside baseball outfield.

Picture 37:

Drainage structure along baseball outfield and just outside playing limits.

Picture 38:

Baseball scoreboard.

Softball Field:

Picture 39:

Rock outcrop on the edge of 10-ft safety run out area at softball field outfield.

Picture 40:

Worn turf at goal area of softball field outfield.

Picture 41:

View of softball field backstop and fencing.

Picture 42:

No bottom rail at fencing to help support fence.

Picture 43:

View of softball dugout.

Picture 44:

Abrupt grade drop off directly behind softball dugout.

Picture 45:

Softball field backstop.

Picture 46:

Spectator seating at softball field. No ADA accessible walkway.

Picture 47:

Batting tunnel adjacent to softball field.

Picture 48:

Softball scoreboard.

Lower Practice Fields:

Picture 49:

View of practice softball field.

Picture 50:

View of ponding at skinned softball at lower practice fields.

Picture 51:

Poor drainage area at lower practice fields.

Picture 52:

Poor drainage area at lower practice fields.

Picture 53:

Discus venue at lower practice fields.

Picture 54:

Broken fence gate at southern edge of lower practice fields.

Picture 55:

View of ponding at skinned baseball at lower practice fields.

Picture 56:

Detached overhang section at practice fields backstop.

Picture 57:

Detached overhang section at practice fields backstop.

Picture 58:

Player dugout area at practice fields.

Picture 59:

Player dugout area at practice fields with abrupt change in slope behind seating.

Picture 60:

Clogged drain at southern end of Field Hockey/LAX field.

Field Hockey/LAX Field:

Picture 61:

Scoreboard at Field Hockey/LAX field.

Picture 62:

Abrupt grade change along western edge of Field Hockey/LAX field.

Picture 63:

Players seating area. No ADA accessible walkway.

Picture 64:

Sinkhole at Field Hockey/LAX field.

Picture 65:

Sink holes due to drainage at Field Hockey/LAX field.

Picture 66:

View of Field Hockey/LAX Field from toe of berm on track side.

Picture 67:

View of Field Hockey/LAX Field from top of berm on track side.

Picture 68:

Shot put venue. Minor maintenance needed to define edge.

Tennis Courts and Basketball:

Picture 69:

Visitor bleachers for stadium blocking ADA access to tennis courts.

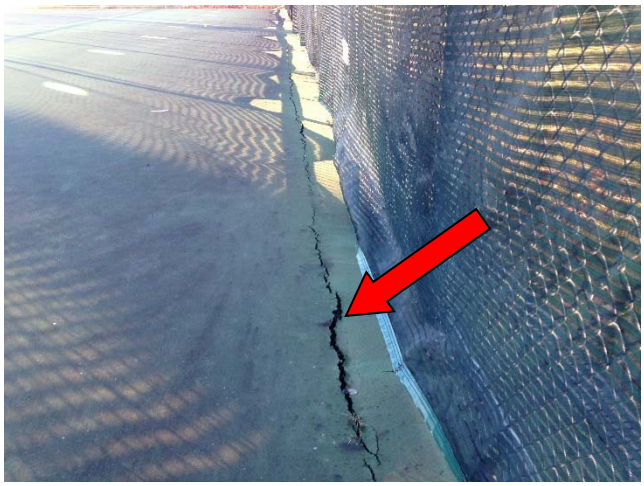
Picture 70:

Failure of pavement edge of walkway due to placement of Visitor bleachers for stadium.

Picture 71:

Cracking and settlement next to trench drain just outside south fencing.

Picture 72:



Cracking along inside of south fencing.

Picture 73:

Pavement cracking at netting post.

Picture 74:

Extensive pavement cracking at netting post.

Picture 75:

Cracking along pavement cold joints.

Picture 76:

Cracking along pavement cold joints with growth intrusion.

Picture 77:

Sediment accumulation at western edge. Area outside fence needs to be cleared so that sediment does not enter onto courts.

Picture 78:

Sediment accumulation and choked out trench drain.

Picture 79:

Gate latch broken.

Picture 80:

Heaving of fence post at basketball courts.

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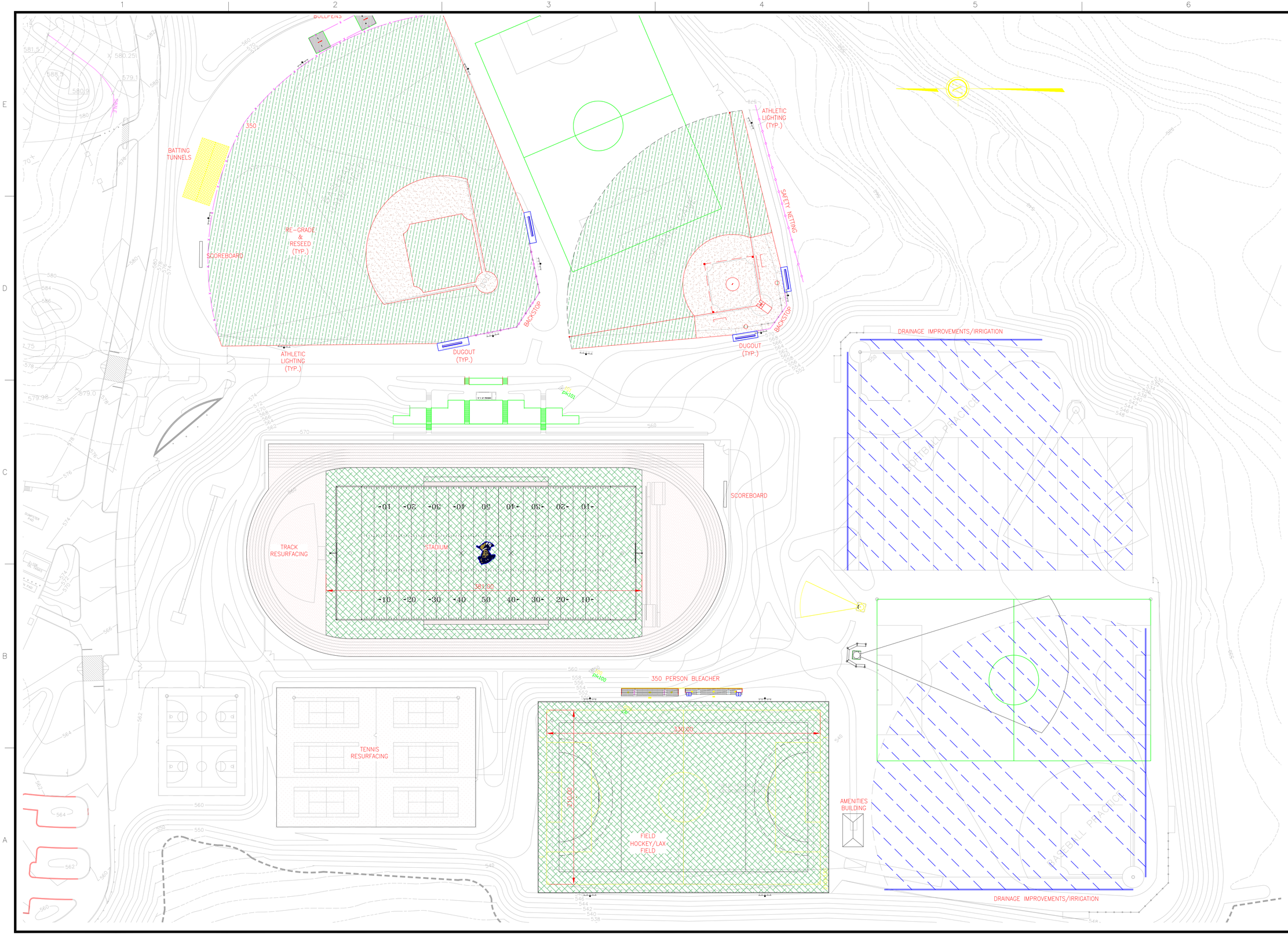

GALE

Gale Associates, Inc.
Engineers and Planners

163 LIBBEY PARKWAY | WEYMOUTH, MA 02189
P 781.335.6465 F 781.335.6467
www.gainc.com

Boston Baltimore Orlando San Francisco

PROJECT

ATHLETIC FIELD RENOVATIONS
SHREWSBURY HIGH SCHOOL
SEWALL STREET
SHREWSBURY, MA 01545

OWNER

REVISIONS

NO.	DATE	DESCRIPTION

CADD FILE	OPTION1
DESIGNED BY	
DRAWN BY	WAH
CHECKED BY	
DATE	3/19/2015
DRAWING SCALE	1"=50'-0"

GRAPHIC SCALE

0 50' 100'

SHEET TITLE

PROPOSED LAYOUT PLAN

DRAWING NO.

SK-1

PROJECT NO. 716700

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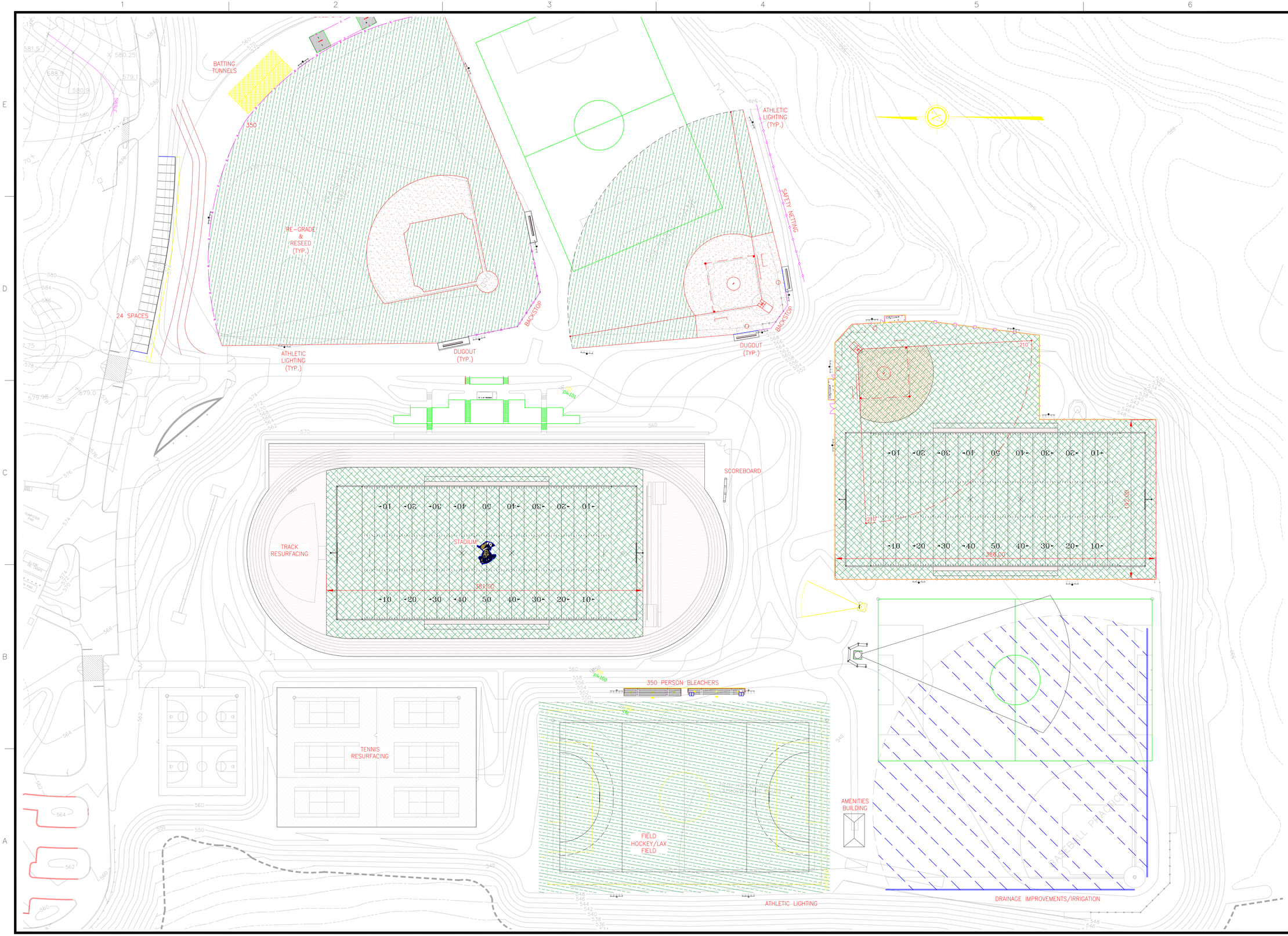

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SHREWSBURY HIGH SCHOOL
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OWNER

REVISIONS

NO.	DATE	DESCRIPTION

CADD FILE	OPTION2
DESIGNED BY	
DRAWN BY	WAH
CHECKED BY	
DATE	3/19/2015
DRAWING SCALE	1"=50'-0"

GRAPHIC SCALE

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SHEET TITLE

PROPOSED LAYOUT PLAN

DRAWING NO.

SK-2

PROJECT NO. 716700

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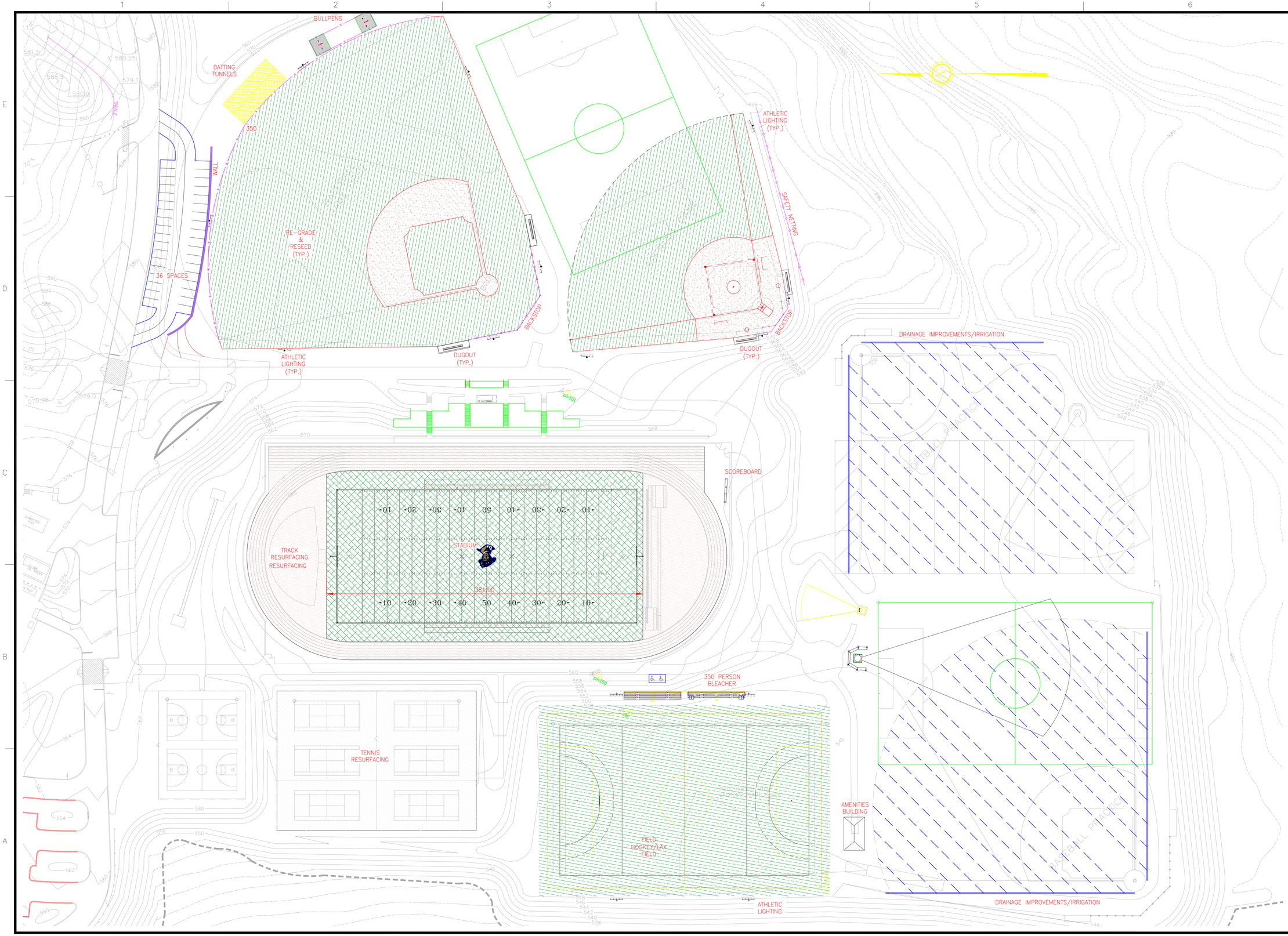

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ATHLETIC FIELD RENOVATIONS
SHREWSBURY HIGH SCHOOL
SEWALL STREET
SHREWSBURY, MA 01545

OWNER

REVISIONS

NO.	DATE	DESCRIPTION

CADD FILE	OPTION3
DESIGNED BY	
DRAWN BY	WAH
CHECKED BY	
DATE	3/19/2015
DRAWING SCALE	1"=50'-0"

GRAPHIC SCALE

0 50' 100'

SHEET TITLE

PROPOSED LAYOUT PLAN

DRAWING NO.

SK-3

PROJECT NO. 716700

RECOMMENDED MAINTENANCE TASKS & BUDGET

SHREWSBURY HIGH SCHOOL

ATHLETIC CAMPUS EVALUATION AND MASTER PLAN

A.1 RECOMMENDED MAINTENANCE TASKS

Soccer, football, softball, and baseball each dictate a different set of conditions, requiring unique management approaches, as each sport wears the turf differently (e.g., soccer goal mouths versus midfield and side line areas). Maintenance requirements also can vary within individual fields based on environmental conditions and changes in the micro climates (sun, shade, drainage, exposure to salt, traffic, etc.). Good turf managers are aware of these variations and apply maintenance accordingly. The following section outlines the tasks and scheduling required to properly maintain natural turf fields in order to formulate maintenance budgets. These are general recommendations and costs that have been obtained from various Owners throughout the northeast and generalized for the purposes of this report. Actual budgets may vary based on actual site conditions, quality of field construction and the turf managers actual budget and time allocations. A general description of typical athletic complex turfgrass maintenance tasks are outlined below.

A1.1 Testing. As an integral part of the Integrated Turf Management Program for natural turf, each field should have its topsoil tested annually for plant nutrient levels. Samples can normally be taken by on-site staff and sent to the UMASS Agricultural Extension Service for testing and results (www.umass.edu/soiltest/). These tests will determine the amounts of fertilizer, lime and sand topdressing that need to be applied as part of regular maintenance. Knowing these results prevents unnecessary fertilizer and lime applications, and can provide savings on maintenance costs and materials.

A1.2 Mowing. Turfgrass in areas of play is mowed at least weekly during the growing season to provide a suitable playing surface. Regular mowing practices enhance turf density, color, texture, root development, wear tolerance and other key aspects of turf quality. Mowing heights are adjusted from two and a half inches (2.5”) during the growing season until mid-July, to three and a half inches (3.5”) from mid-July to mid-September, and then gradually brought back down to two and a half inches (2.5). Clippings are either mulched and left behind, or collected and disposed of, depending on the height of the cut and thatch density targeted by the turf manager.

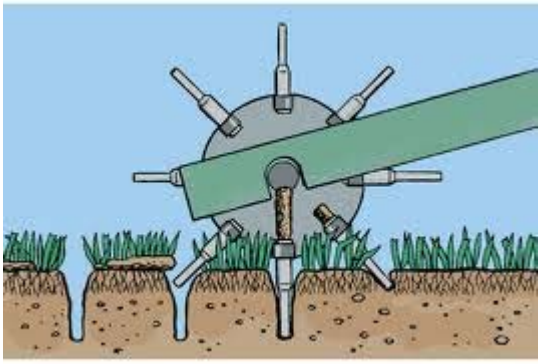
A1.3 Infield Maintenance - Baseball/Softball. During the spring (April-June), season, baseball/softball infields are typically dragged with a machine/drag-mat (intended for infield

work) and amended in order to smooth and dry the infield material, as well as to adjust grades at wear areas near the bases and home plate. The batter box and foul lines are also typically painted. For baseball, the pitcher's mound is adjusted and divots repaired. This work is typically performed weekly during the regular season, and sometimes prior to every game before big games or during play-offs. The budget should also account for the spring clean-up and preparation of the infields to remove leaves, weeds and replace bases.

A1.4 Irrigation. In the New England region, the irrigation season typically runs from June through August. During that period, each field footprint should receive one inch (1") of irrigation per week and be adjusted in accordance with precipitation. For a typical 90,000 SF soccer field, this equates to 54,000 gallons per week. Automatic irrigation systems should not be considered to be 'set and forget' systems. Field managers need to actively monitor irrigation to confirm proper timing, coverage and operation, and monitor irrigation with the goal of using water sparingly. Fields that are watered too much are susceptible to disease, early wear and over compaction. We recommend the use of intelligent controllers with moisture sensors. Maintenance budgets need to account for spring start up and repair of irrigation systems as well as fall winterization.

A1.5 Fertilizing. Fields are fertilized to provide micronutrients to the soil and "food" for the turfgrass plant. Fertilization should generally be performed in the early spring and summer, and later supplemented on selected fields in the early fall, as needed. This will confirm that sufficient nutrients are available to develop healthy root zones during the peak growth period, which includes May and June. Fertilization should be directly related to soil tests performed on an individual field and as part of an overall Integrated Turf Management Program. This is particularly important for facilities that border on wetland receptors that may be unnecessarily contaminated by over-fertilization. Once soil sample data has been obtained, fertilizer with the proper nitrogen/ phosphorus/potassium ratio should be obtained and applied at the recommended rates. Low solubility fertilizers, applied only at rates which ensure uptake, should be used to minimize groundwater or surface water impacts.

A1.6 Lime Application. Lime application is generally performed in late November, as it typically takes up to six (6) months to breakdown. Lime should only be applied to soil based on the results of the annual soil testing recommendations.



A1.7 Aeration. Aeration alleviates compaction and develops deep-rooted turf. It is accomplished by creating spaces in the turf, thus allowing moisture, nutrients and oxygen to penetrate to the root zone. Aeration also breaks up thatch, which helps contribute to the organic content of the soil and breaks the mat on the soil surface. High-use fields should be aerated two to three (2-3) times per year. We recommend six to seven inch (6"-7") hollow core aeration equipment be used for

aeration. If the intent is a long-term modification of the root zone, we recommend removing the plugs and top dressing the field with coarse sand.

A1.8 Topdressing. Topdressing is applied periodically, as a soil amendment, to maintain a smooth playing surface and to vary the root zone particle size distribution. Top dressing adds soil, sand or other beneficial organic material, and soil amendments (as determined by turf needs and based on agronomic testing) to the surface of the turf. It should always follow core aerating.

A1.9 Over-Seeding. Over-seeding is recommended for all high use athletic fields. Over-seeding is the spreading of seed over bare areas or areas that are stressed to enhance (fill in) the stressed/bare areas, establish new turf or improve the condition of the turf. The type of seed used, quantity and application timing varies with turf managers' preferences, time of year, and what they are trying to accomplish (quick patch or long term repair). Over seeding is typically timed to coincide with aeration and topdressing tasks.

A1.10 Pesticide and Herbicide Applications. Pesticides and herbicides should be used sparingly and only by licensed applicators. Pesticides should not be applied as a prophylactic, but rather in response to an observed pest or disease, and then tailored accordingly. Instructions and timing for application of pesticides and herbicides should be strictly followed as they are typically targeted at particular stages of growth of weeds or pests. The use of pesticides and herbicides on public properties is severely limited by Massachusetts Law on public properties and schools. Any chemicals used must be of recent manufacture and have quick, effective results. Chemicals that may present health hazards should not be used. Approved pesticides can be found on the State University System website and are known to change periodically. Again, pesticides should be applied only as part of an overall Integrated Turf Management Program and consistent with jurisdictional policy. This is particularly true for facilities that border on water courses or wetland receptors.

A1.11 Synthetic Turf Maintenance. Synthetic turf is not totally maintenance free. Typically turf only needs to be 'raked' or 'groomed' four times in a typical playing season (April – November). This groomer is a special attachment that tows behind a Gator or tractor. Grooming redistributes the sand and rubber infill, fills in typical wear spots at the goal mouths and improves field appearance as well as the cushioning and traction qualities of the sand and rubber infill. Spot sanitation and rinsing to remove bodily fluids can be done during events and should never be done in a 'blanket' application. Some Owners elect to do 'deep' grooming, which is typical done by a vendor who has the specialized equipment. Deep grooming machines remove the sand and rubber infill, rinse and filter it and replace it as the machine moves over the field. Magnets remove metal debris, and filters remove dust, sediment and debris from the infill. 'Deep' grooming should only be done 'as needed' and is not considered a regular maintenance task. Typically turf comes with an eight 8-year warranty, so Owners should not be paying for repairs or adjustments to the turf during that period.

A1.13 RECOMMENDED MAINTENANCE BUDGETS FOR EXISTING OR NEW FIELDS

The following anticipated maintenance costs are based on the tasks listed above. These costs have been gathered from Massachusetts municipalities over the past ten years and represent average estimated costs based on prevailing wage and materials rates. This calculation includes an estimate of the resources, manpower, equipment and materials to perform each activity on a typical natural turf playing field. In addition to material costs, this calculation accounts for labor and overhead costs, as well as equipment utilization rates and capitalization/depreciation. The following Table summarizes these calculations:

Maintenance Activity	Annual Qty for municipal level Rectangular field	Annual Qty for municipal level Diamond	AnnualTask Cost ($)	Annual Maintenance Cost Rectangular	Annual Maintenance Cost Diamond
Equipment Maintenance, service, inventory, training, etc	1	1	$2,850	$2,850	$2,850
Spring Inspection\sampling	1	1	$850	$850	$850
Fertilization	1	1	$1,254	$1,254	$1,254
Spring Clean-up	1	1	$1,316	$1,316	$1,316
Pesticide/herbicide Application	2	2	$363	$726	$726
Cut grass, empty trash, restripe, rake infield	0	18	$444	$0	$7,992
Cut grass, empty trash, restripe,	18	0	$375	$6,750	$0
Aerate	2	2	$288	$576	$576
Topdress	1	1	$1,504	$1,504	$1,504
Overseed	1	1	$963	$963	$963
Irrigation	18	18	$35	$630	$630
Lime Ph Adjustment	1	1	$574	$574	$574
Winterization/leaves/irrigation	1	1	$1,638	$1,638	$1,638
** maintenance activities based on recommended municipal level regimen					
**Operational costs include resources, manpow er equipment and materials			**Total Per field**	**$19,631**	**$20,873**

A1.14 SYNTHETIC TURF MAINTENANCE

Synthetic turf is not maintenance free, and its costs should be factored into facilities budgets just as much as natural turf. Synthetic turf needs to be groomed four 4-times per year. Assuming five (5) hours for two employees, touching up infill, grooming with a tractor and turf rake and clean up. At $250/hour for crew and machines is $1,250 per grooming, four times per year equals an anticipated turf maintenance budget of $5,000.

A1.15 ATHLETIC LIGHTING COSTS

In addition to the reduction in light spill and glare, todays athletic lighting systems also see a reduction (up to 50%) in energy consumption when compared to previous systems. The average energy consumption estimated over a 25-year span would be approximately 75.1 kW per hour per fixture.

The typical 25-year warranty would include repairs to any lamp outages, control issues and a group re-lamping after 5,000 hours of operation. Assuming energy costs of $0.19 per kWh, annual operating hours of 300, 400 and 500 hours would amount to approximately $4,300, $5,700, and $7,100 per year per field.

A1.16 SUMMARY

Using these basic estimated per-field unit costs, the implementation of a typical maintenance budget for the existing and proposed fields has been calculated.

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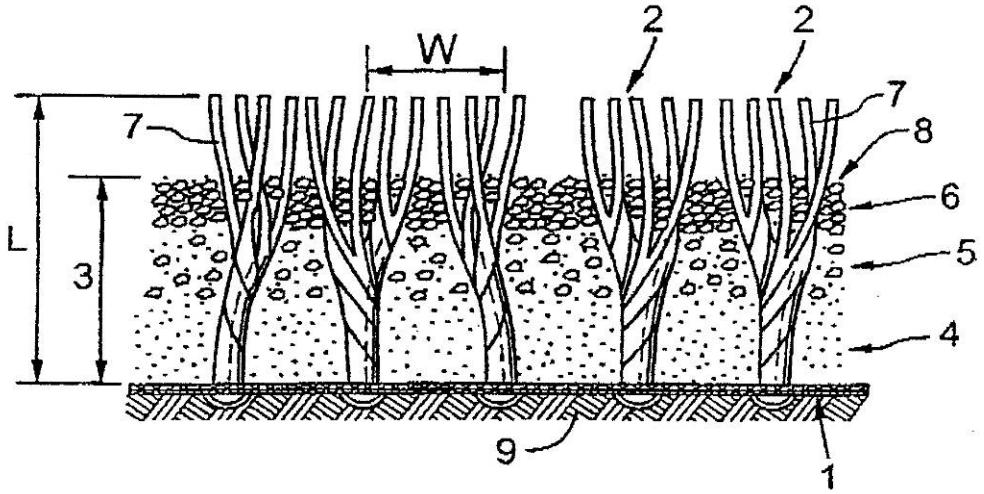
PLANNING CONSIDERATIONS – SYNTHETIC TURF

SHREWSBURY HIGH SCHOOL

ATHLETIC CAMPUS EVALUATION AND MASTER PLAN

A2.0 – PLANNING CONSIDERATIONS - SYNTHETIC TURF

Background. The schematics for proposed renovations on campus call for the installation of an infilled synthetic turf field. The use of synthetic turf is becoming more and more popular, despite environmental concerns, not because of the aesthetics or playability of turf, as much as for the increased use a synthetic turf field can sustain, while reducing maintenance requirements. An unlighted synthetic turf field can sustain twice the amount of play of a natural turf field, without sacrificing playability. With athletic lighting a synthetic field can sustain almost three times the amount of play of natural turf. This increased use can eliminate the need for municipalities to construct, and maintain, additional natural fields to accommodate the demand for more fields. Synthetic turf also can be used in any weather, and can take the pressure off of facilities managers for rescheduling events.



The current generation of Infilled Synthetic Turf is constructed by tufting long fibers of polyethylene through a carpet backing, with sand and rubber infill raked into the fibers to help the fibers stand up, as well as provide cushioning and footing for play. The carpet and infill are constructed on top of a free draining stone base that allows the turf to drain very quickly and remain playable in any weather.

A2.1 Maintenance. Another major advantage of synthetic turf is the relatively insignificant maintenance costs in comparison to natural turf. Synthetic turf does not need to be mowed, irrigated, fertilized, aerated, topdressed or striped. A well-researched estimate suggests that

the maintenance of a grass "game" field costs approximately $30,000 per year in terms of direct labor, materials and equipment costs. Typical annual maintenance for a synthetic turf field is approximately $5,000.00, which includes raking the field with a specialized brush, four times a year to redistribute infill and increase aesthetics and playability.

A2.2 Environment. Typically permitting review boards view synthetic turf as a benefit to the surrounding environment. Synthetic turf does not require the use of any fertilizers, herbicides, pesticides, mowing or irrigation to keep the field in playable condition. In addition the design of the fields typically reduces runoff volume to surrounding waterways, reducing the stress on overburdened waterways.

Since the first synthetic turf field was installed there have always been concerns about the health impacts that synthetic turf may have on players, as well the environment and the rainwater that leaches off the field during storms. There have been multiple studies on both these issues by the industry, state agencies and universities, and none of the studies to date have indicated any hazard to health or the environment that should prohibit the installation of synthetic turf, if it is properly designed and specified. The best independent source of these articles is the Penn State Website;
http://plantscience.psu.edu/research/centers/ssrc/research

A2.3 Safety. The safety of players on synthetic turf has also been a constant concern, and has affected how fields are designed, detailed and specified. There are many sports medicine and safety studies on player injuries and the general consensus is that synthetic infill turf is a safe alternative to natural turf. Though everyone agrees that a natural turf field in "pristine" condition is the best and safest playing surface, synthetic turf however is preferable to an under maintained, or frozen natural turf field. A number of leading sports medicine researchers have studied injury rates on all types of natural and synthetic surfaces, as have the NCAA and NFL. The amount of studies and conflicting results from different materials and methods sometimes lead to confusion and concerns about synthetic turf, and looking at only one study will not likely give a good representation of the available data. Again, one of the best sources of information that includes the most current, independent studies, on turf can be found from Pennsylvania State University at:
http://plantscience.psu.edu/research/centers/ssrc/research.

A2.4 Image and Branding. Synthetic turf offers a unique ability to insert distinctive markings, logos and graphics into the turf itself, which offers the municipalities an opportunity to "brand" their field with logos as well as provide donor recognition. The field logo, end zone markings, sideline markings, colored borders, etc. allow for field naming, and the development of a community or school image. Where the choice exists, student athletes will make decisions based on the perceived image of campus athletic facilities.

A2.5 Procurement Implications. The use of infilled synthetic turf has several implications for the public procurement process. There are currently about 45 different manufacturers of infilled turf and state procurement laws many times prohibit the use of proprietary specifications. This presents challenges for designers, specifiers and Owners who may have

a preference of one brand of turf over another. Regardless of preference, qualifications can be required of contractors and the ability to service new fields should be heavily weighed. Should private money be used to fund the project, restrictions to proprietary product specifications will not apply.

A2.6 Synthetic Turf Costs. While far less expensive than old-style synthetic AstroTurf nylon carpet, the latest generation of infilled synthetic fields are about 2.5 times more expensive than a newly constructed, high-quality grass field. Converting a typical 90,000 SF soccer/football field from grass to infilled turf costs roughly $850,000. The infilled synthetic turf's initial costs are, in theory, offset by the distinct advantages of increased usage, all-weather availability, increased durability, decreased maintenance, enhanced player safety, image and branding opportunities, as well as environmental sustainability (in some aspects). Since synthetic turf can be used two to three times as much as natural turf, when looking at turf with regards to a 'cost per use', the unrestricted use of synthetic turf is less than half the 'cost per use' of natural turf.

A2.7 Synthetic Turf Disadvantages. Apart from initial acquisition costs, there are three common concerns associated with the installation of synthetic turf. These are heat, environmental concerns and managing the end of life disposal of the turf.

A2.7.1 Heat. Because of the heat absorbing qualities of the materials Infilled synthetic turf is constructed of, these type of fields are typically hotter than surrounding pavement or lawn areas during the summer months. In direct sunlight, synthetic turf can be up to 40 degrees hotter at the surface of the field than surrounding natural turf. Here in New England this is more of an attribute than a disadvantage, as fields tend to melt snow quickly and be warmer to play on during colder months. South of the Mason-Dixon Line however, the heat issue is a significant and can restrict field use during the summer months. The further south you go, the more synthetic turf installation becomes undesirable because of the heat these fields retain.

Gale conducted a survey of forty (40) field managers in Massachusetts in order to evaluate how field Owners were addressing the heat issue. All of the respondents to the survey stated that the heat issue was either not a problem or was a minor and manageable issue. All of them stated they had never sustained a head injury attributable to the turf. Only one had used water to cool a field and all of them opined that they would still install an infilled turf field knowing what they now know about the heat issue. Several respondents also noted that it is the additional heat that allows them to play on the field earlier in the spring and remain on it later in the fall. The heat issue is real, however, and field managers and coaches need to be conscious of the temperature of the field and reschedule or restrict field use in hot weather.

A2.7.2 Health Concerns. Over the history of the latest generation of synthetic turf there have been numerous studies of the SBR crumb rubber used in turf and the turf fibers themselves that both propose a connection to health concerns and suggest that there is no link between turf materials and health concerns. As noted in Section A2.2 there are

many studies on the possible health and hazardous materials qualities of the latest generation of turf fibers and infill materials. Unfortunately, Owners need to weed through the sometimes passionate arguments and the many long scientific studies on turf materials to educate themselves on the various concerns surrounding turf in order to make a decision. To add to this process will be the consideration of the many alternative synthetic turf materials now available, all of which have their own pros and cons with regard to cost, maintenance and longevity.

A2.7.3 End of Life Disposal. Modern synthetic turf is constructed of polyethylene fibers and a urethane backing, which are considered petroleum based non-renewable resources. Field materials are not considered hazardous and can be recycled into other products, however the technology for efficiently harvesting old turf is not commonly available. Because of this, recycling fields is usually an additional cost to Owners. Currently most fields that are removed are taken to a conventional landfill or incinerator where they are considered as non-hazardous waste. The technology and availability of machinery to recycle turf is evolving however, and within 10 years recycling or repurposing old turf may be a cost effective option.

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Shrewsbury High School Athletic Campus Improvement Plans:

Part II

Kathy Hervol, Gale Associates
Peter Spanos, Gale Associates

Patrick Collins, Assistant Superintendent for Finance and Operations
Jason Costa, Athletic Director
Angela Snell, Director of Parks, Recreation, and Cemetery
Michelle Biscotti and Kathleen Keohane, Coordinators of Development & Volunteer Activities

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Topics

- Project Origins and Status Update
- Rationale for Improvements
- Benefits of Having a Turf Field
- Construction Process Overview
- Maintenance & Total Cost of Ownership Comparisons
- Player Safety/Injury Rates
- Health & Environmental Considerations
- Scope of Work Project Budget
- Funding Plan
- Project Timeline
- Procurement Process
- Action Required to Begin Process

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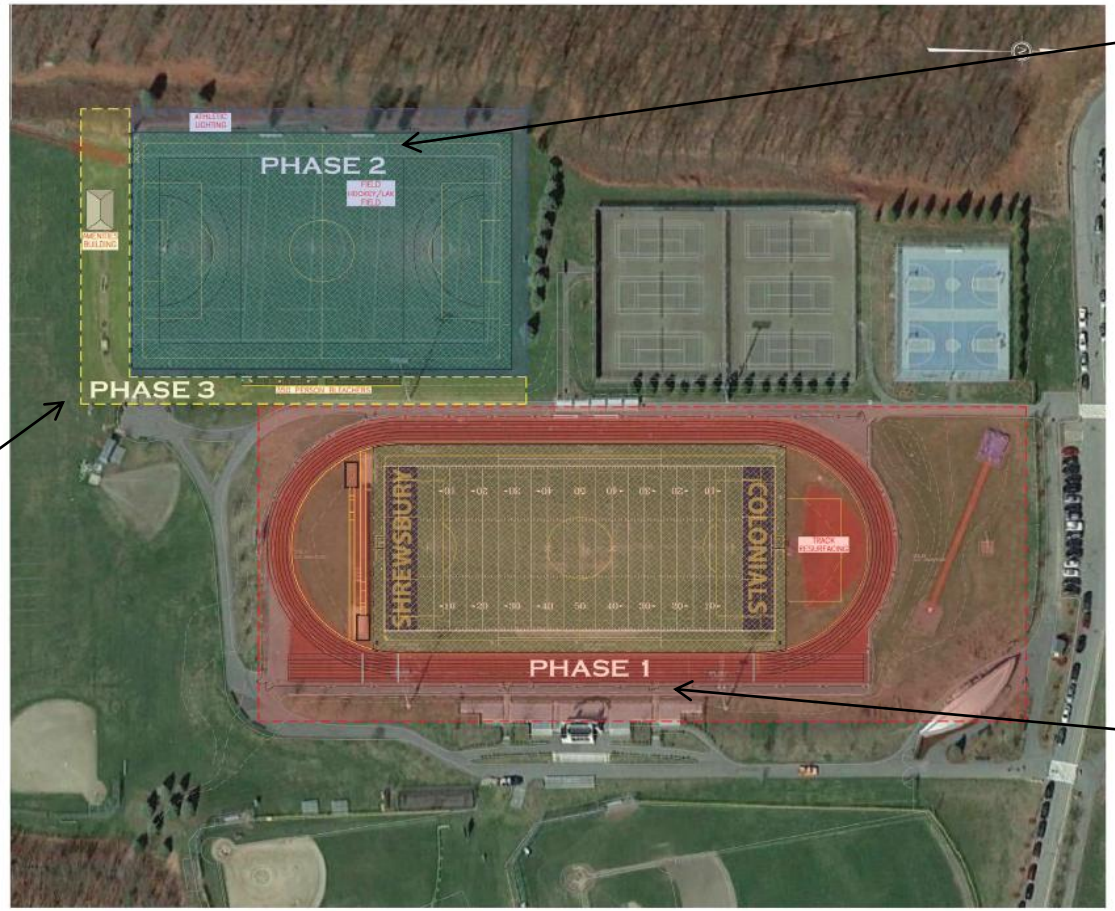
Vision for the Future



Second, multi-sport turf field with lights.

New seating and amenities/storage building

Multi-sport stadium turf and re-surface track with new D areas

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Project Origins and Status Update

- Need for athletic field improvements was identified several years ago and part of District Goals
- SHS Boosters Club funded an athletic campus master plan study [completed June 2015]
- School committee authorized use of up to $65,000 from the Facility Rental Fund to procure a design and project management company for synthetic turf on stadium field. [June 2016]
- Gale Associates was hired due to their extensive experience in developing athletic field complexes all along the East Coast [June 2016]

GALE

Rationale for Improvements

- Current condition of grass fields
  - Rutted, uneven, bare spots, hard-pack, poor/blocked drainage
- Inability to play at home in bad weather
  - Both during and after rain/snow
  - Bus costs incurred to play on turf elsewhere
- Cannot properly maintain grass given athletic schedules and demand for field use
- Teams need more field play time

GALE

Current SHS Field Conditions

Worn areas of lacrosse field.
Mid season-October 2016.

GALE

Current SHS Field Conditions

View of stadium significantly worn and rutted mid-field. -Oct. 2016

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Current SHS Field Conditions

Large, long bare spot on stadium field sideline.
Part of soccer field of play- Oct. 2016

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Benefits of Having A Turf Field

- Better playing conditions for multiple high school sports teams
  - A turf stadium field would be used by soccer, lacrosse, football, field hockey, track, cross country
- All students benefit via use during Physical Education class
- Extended use of fields due to “all weather” playability of turf fields
  - Allows for earlier start to practice seasons
  - Eliminates moving/re-scheduling of games due to rain
  - Allows SHS to host playoff games

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Benefits of Having A Turf Field

- Turf allows for community use of fields
  - Not allowed today because of need to preserve grass fields for SHS teams
  - Youth sport programs for soccer, lacrosse & football could host games and jamborees
- Reduced maintenance: labor, water, fertilizer/seed, field paint
- Potential revenue generator
  - Other districts report revenue from turf field rentals to club teams, other districts, etc.

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Potential Community Use Rentals

Day of Week	Fall	Winter	Spring	Summer
Mon-Fri*	NA	NA	6-9pm	3-9pm
Saturday*	2-9pm	NA	3-9pm	3-9pm
Sunday*	8am-9pm	NA	8am-9pm	3-9pm

Shrewsbury High School programs and athletics will have first priority.

This is an initial, pro-forma availability schedule which is subject to change.

Use fees are TBD and will include all direct and indirect costs.

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Turf In Other Districts

- Mid-Wachusett League turf stadiums
  - Wachusett Regional
  - Leominster
  - Shepherd Hill
  - Nashoba Regional
  - Westborough
  - Lunenburg
  - Oakmont
  - Tyngsborough
  - Marlborough (fall 2016)
  - Groton Dunstable (2017)

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Turf In Other Districts

(Clockwise, L to R) Leominster, Wachusett, Nashoba

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SYNTHETIC TURF FIELD CONSTRUCTION

- Top soil is removed to a depth of about 12 inches
- A concrete anchor curb is constructed around the field perimeter
- Drainage pipe is installed every 20-30 feet
- A free-draining stone base is installed and laser graded
- A slope of 0.5% is maintained across the field
- The carpet is installed on top of the stone
- Field lines and markings are permanently installed
- The carpet is “infilled” with a ballast product

GALE

Why Install Synthetic Turf Multi-Purpose Game Field?

"Filled" Synthetic Turf Advantages:

- **Dramatically increased use (2-3 X)**
- **Very low maintenance**
- **Grass-like look and performance**
- **All-weather availability**
- **Environmentally sensitive**
- **Permanent lines and markings**
- **Enhanced player safety**
- **Image/Branding**
- **Immediate availability after construction**

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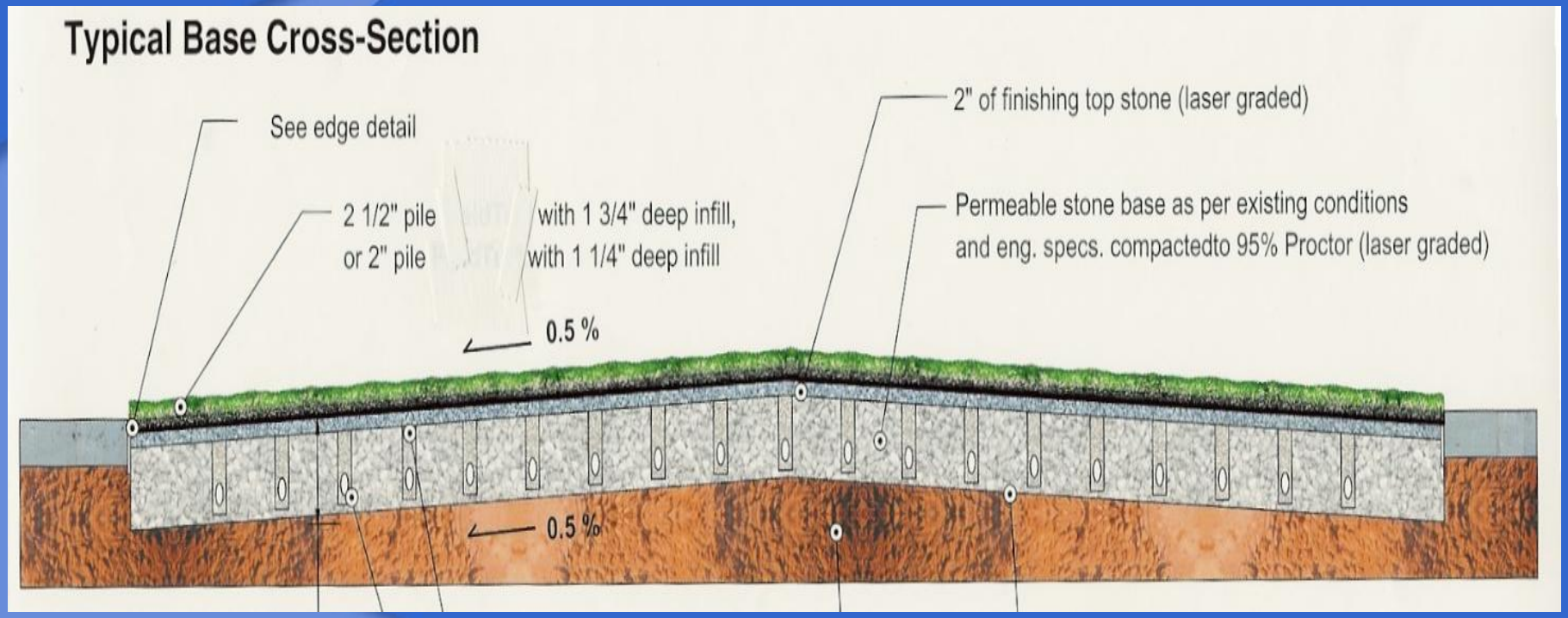
The Layers: A Cross Section



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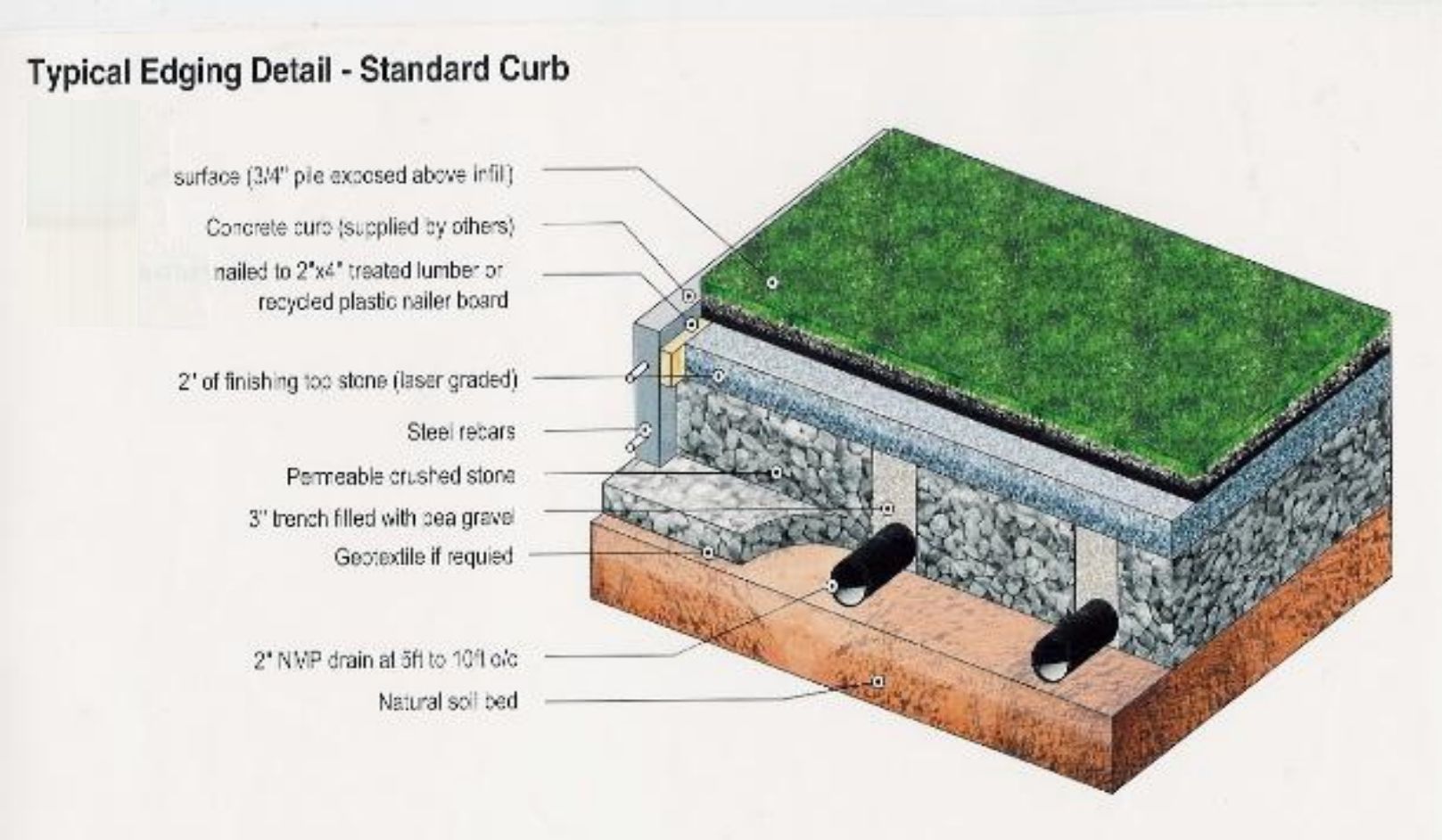
Turf Attachment



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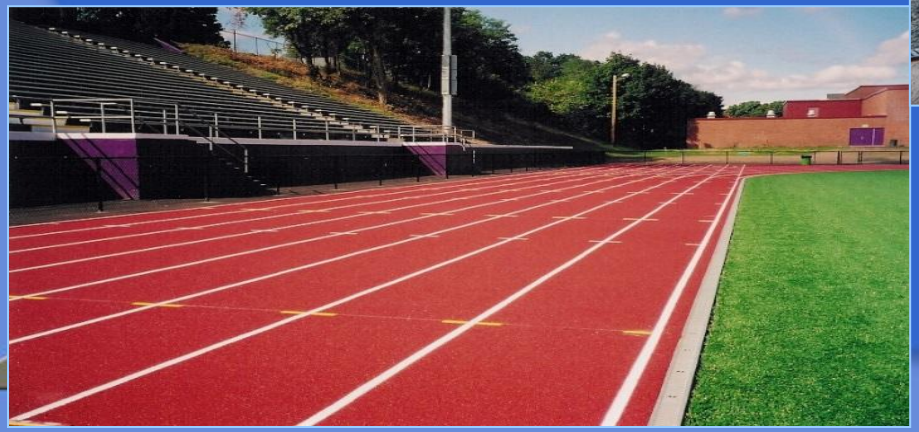
Drainage Construction

- Rated at 16 inches/hour min.
- Where does it go?



How Long Will the Carpet Last?
How Durable Is the Turf?

- **Today's infilled carpets expected to last 10-14 years**
- **UMASS Lowell (the oldest infilled field in New England) used a less durable technology carpet and still lasted 11 seasons of constant use**

UMASS Lowell - 1999

UMASS Lowell Users:

- *Football (2 Seasons)*
- *Field Hockey – Varsity & JV*
- *Soccer – Men & Women*
- *Lacrosse – Men & Women*
- *Intramurals*
- *Club Sports*
- *Community/Youth Sports*
- *Summer Camps/Clinics*
- *Baseball*
- *Softball*

Actual Use Statistics:

- *7 Hours/Day (Mon.-Fri.)*
- *12 Hours/Day (Sat.-Sun.)*
- *30 weeks per year (May-Nov.)*
- *1800 direct use hours per year*
- ***720 events/year @ 2.5 Hours/Event***
- *18,000 hours over the 10-year life*
- ***A well cared for natural grass field cannot maintain more than 300 uses.***

GALE

Does an infilled turf field extend the playing season?

Is it truly an all-weather surface?

Dartmouth College – Lacrosse Field:

- Designed to drain over 16 in./hr
- The field may be plowed

Snow Removal Operations

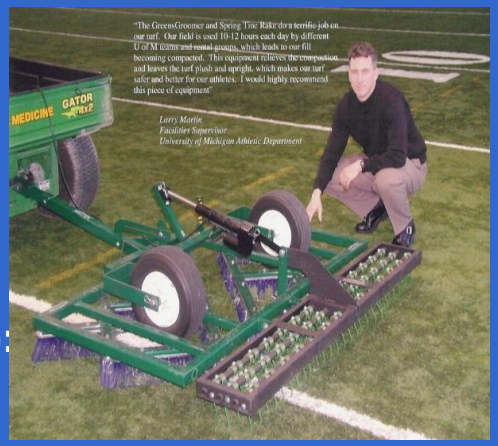
Early March

Same field, next day

GALE

Are there maintenance savings associated with the new field?

YES: Maintenance costs decrease by an estimated $30,000/year and the number of uses increases by 300% on a national level for highly-maintained natural grass fields



Natural Turf Field Maintenance Cost (labor, material, depreciation):

▪ Mowing, 30 cuttings	$5,500
▪ Watering – ½-1 in./week @ 20 weeks	$5,000
▪ Irrigation Winterize/De-winterize	$4,000
▪ Fertilizer x 3, lime, pesticides	$6,000
▪ Aeration, topdressing, overseeding	$6,000
▪ Line markings (weekly @ 24 weeks)	$4,500
	$31,000/year

-The infilled synthetic turf field is groomed with a towed groomer provided with the field, approximately 4-5 Times/Year: **$1,000 / Year**

-Additional costs would include temporary line painting for lacrosse and field hockey.

GALE

Maintenance Cost Comparison

Annual Maintenance Costs

	Natural Grass	FIELDTurf
Mowing Equipment	$7,068.00	-
Labor Cost ($20/Hour)	$6,000.00	$1,000.00
Clipping Removal	$2,861.00	-
Fertilization	$4,856.00	-
Overseeding	$466.00	-
Coring	$2,848.00	-
Topdressing	$9,565.00	-
Thatch Removal	$185.00	-
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Water Cost	$5,400.00	-
Sub Total	43,595.00	2,500.00
Re-Striping Field Lines:	$5,800.00	$1,000.00
Labor	$3,105.00	$1,500.00
Material		
Total	$52,500.00	$5,000.00

Maintenance of FieldTurf

The cost of maintaining FieldTurf is minimal. The primary maintenance item is removing leaves and other debris which may stray onto the field. Removal is accomplished by a tractor-pulled vacuum system. These tractors do not remove the fill material. FieldTurf also recommends brushing the field (every 4-6 weeks depending on use) to redistribute infill material that may have migrated.

Source: FieldTurf Report to Wellesley Public Schools

Maintenance Cost Budget- Shrewsbury

- We do not expect the Parks and Recreation budget to be decreased with installation of a turf field
- Rather, existing staff and supply budgets will be re-deployed from S.H.S. field maintenance tasks to <u>better maintain remaining fields</u> more in line with industry maintenance standards
- Installing a turf field at S.H.S. will enhance the condition of all fields over time

GALE

Long-term Cost Comparison

EXHIBIT 1

NATURAL GRASS/ SYNTHETIC TURF INFILL COST SUMMARY

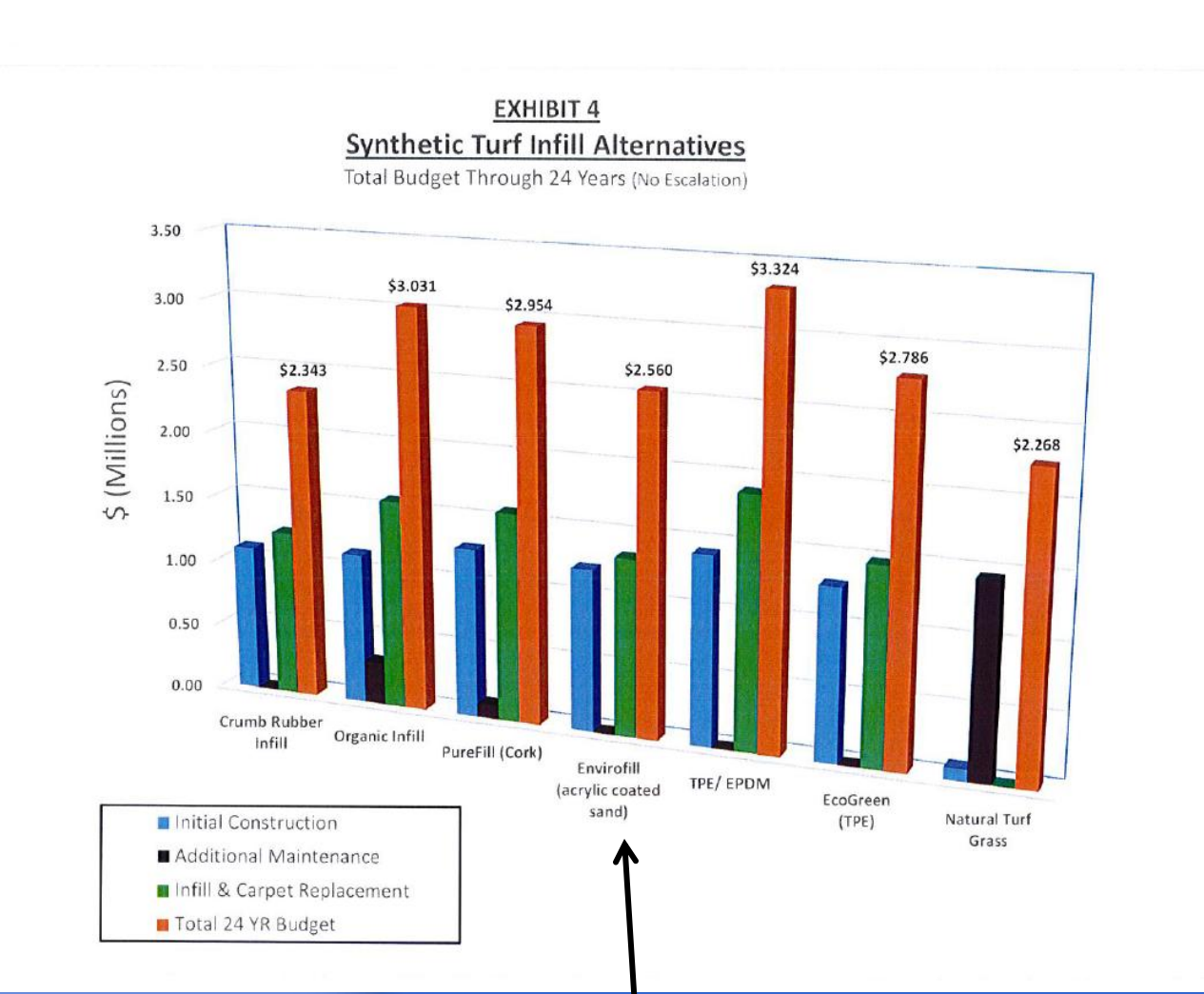
YR	SUMMARY OF TURF SYSTEM COST AND TIMING OVER 24 YEARS	Crumb Rubber Infill	Greenplay Organic Infill	FieldTurf PureFill (Cork)	US Greentech Envirofill (acrylic coated sand)	Sprinturf TPE/ EPDM	FieldTurf EcoGreen (TPE)	Natural Turf Grass
1	Initial Construction	$ 1,100,000	$ 1,136,384	$ 1,276,384	$ 1,223,584	$ 1,427,024	$ 1,298,784	$ 90,000
6	Infill Replacement	$ -	$ 144,200	$ 144,200	$ -	$ -	$ -	$ -
8	Maintenance YR 1-8	$ -	$ 112,522	$ 33,600	$ -	$ -	$ -	$ 530,240
12	Maintenance YR 9-12	$ -	$ 46,340	$ 16,800	$ -	$ -	$ -	$ 198,840
12	Carpet Replacement	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ -
12	Infill Replacement	$ 121,691	$ 144,200	$ 144,200	$ 168,400	$ 448,616	$ 243,600	$ -
13	Grass Resod YR 4,7,10,13	$ -	$ -	$ -	$ -	$ -	$ -	$ 360,000
18	Maintenance 12-20	$ -	$ 112,522	$ 33,600	$ -	$ -	$ -	$ 530,240
18	Infill Replacement	$ -	$ 144,200	$ 144,200	$ -	$ -	$ -	$ -
24	Maintenance 20-24	$ -	$ 46,340	$ 16,800	$ -	$ -	$ -	$ 198,840
24	Carpet Replacement	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ -
13	Grass Resod YR 16,19,22,25	$ -	$ -	$ -	$ -	$ -	$ -	$ 360,000
24	Infill Replacement	$ 121,691	$ 144,200	$ 144,200	$ 168,400	$ 448,616	$ 243,600	$ -
	Total 24 YR Budget	**$ 2,343,382**	**$ 3,030,908**	**$ 2,953,984**	**$ 2,560,384**	**$ 3,324,256**	**$ 2,785,984**	**$ 2,268,160**
	SUMMARY							
	Initial Construction	$ 1,100,000	$ 1,136,384	$ 1,276,384	$ 1,223,584	$ 1,427,024	$ 1,298,784	$ 90,000
	Additional Maintenance	$ -	$ 317,724	$ 100,800	$ -	$ -	$ -	$ 1,458,160
	Infill & Carpet Replacement	$ 1,243,382	$ 1,576,800	$ 1,576,800	$ 1,336,800	$ 1,897,232	$ 1,487,200	$ -
	Grass Resod	$ -	$ -	$ -	$ -	$ -	$ -	$ 720,000
	Total 24 YR Budget	**$ 2,343,382**	**$ 3,030,908**	**$ 2,953,984**	**$ 2,560,384**	**$ 3,324,256**	**$ 2,785,984**	**$ 2,268,160**

20160309 Turf Analysis.xlsx

3/9/2016

Source: Loudon County Public Schools, Division of Construction Services

24 Year Cost Comparison



Injury rates of play on synthetic turf vs. natural grass

2010 long term study by researchers in Norway and Sweden compared knee injury, ankle sprains, muscle strains, concussions, MCL tears and fractures.

Result: Injury risk of playing on artificial turf is no greater than playing on natural grass.

2004 NCAA study: Injury rate on natural turf = 4.4%
Injury rate on synthetic turf = 3.5%

Foot and Ankle Service, Hospital for Special Surgery, New York, NY, USA – Taylor et. al.

- **Shoe-surface interface plays a significant roll in injury results.**
- **NFL players may sustain a higher injury rate on synthetic turf**
- **Lower-level athletes may sustain a lower injury rate on synthetic turf.**

Additional Information from Penn State

http://plantscience.psu.edu/research/centers/ssrc/research/synthetic-turf-injuries

GMAX Testing, ASTM 355-95

Project Status Update

- Test pits were dug to ascertain soil types and depths
- Several meetings with the project team were held to further plan the design and specific features of “Phase 1”
- Schematic design and updated budget completed
- Turf and infill products reviewed

GALE

SHS Stadium Track & Field Rendering

New paved "D" areas for track and field events.

Recommended Scope of Work: Phase #1

PHASE 1	Budget	Notes
General Conditions	$ 310,086	Bonds, insurance, overhead, profit
Erosion Control, Site Preparation, and Demolition	$ 93,483	Site and silt fencing, topsoil removal
Synthetic Turf	$ 798,823	Sub-base, shock pad, carpet, infill, lettering
Track and D-Area	$ 392,892	Re-surface track and new surafce "D" areas
Utilities/Lighting	$ 40,000	Re-route irrigation, lighting contingency
Equipment	$ 89,000	Football and soccer goals, scoreboard, safety net
Repairs	$ 65,722	Stadium seating and asphalt repairs
Project Contingency [15%]	$ 268,501	Unforseen conditions or change orders
Total Project Cost	$ 2,058,508	
Less appropriated/approved funds for track repair	$ (285,000)	Town meeting approved and SHS Bldg fund
Net Cost to Fundraise	$ 1,773,508	Private donors, naming rights, grants

GALE

Health & Environmental Considerations

[from June 15, 2016 presentation]

- Media reports have raised concerns about the possible association between playing on artificial turf and the development of cancers
  - Studies to date do not show elevated cancer risk
  - Government study launched in February but results aren't expected for 2 years
- We'll continue to evaluate new products as they are developed to help minimize public concern & the possibility of risk to our athletes
- Our athletes are already playing on turf, both at the high school level and younger

GALE

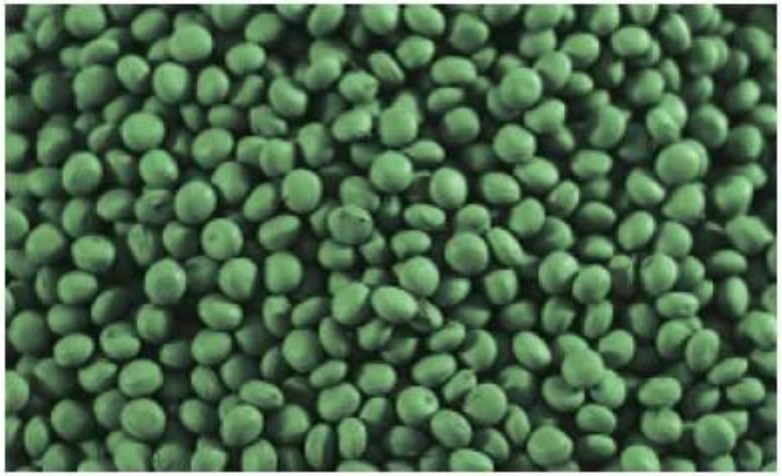
Environmental Impact

- for the greenest artificial turf

- **Recycling turf:**
  - **Pelletizing and re-using the turf & backing**
  - **Complete removal of the infill for re-use on future installations**

Grinding

Field Removal



Pelletizing

Environmental Advantages with Infilled Turf vs. Natural Grass

- Provide water savings of approximately 160,000 gallons per year
- No application of pesticides
- No application of fertilizer

  (reduced nitrogen & phosphorous)
- No pH adjustment
- Improved groundwater recharge
- No mowing, striping, aeration machines, etc.

GALE

Alternative Infill

GALE

Alternative Infill Comparison

Prepared by: Gale Associates Inc.
10/6/2016

GALE

Alternative Infills for Synthetic Turf - Properties as Infill

Type of Alternative Infill	Material[2]	Color	Shape	Abrasiveness	UV Stability	Typical Turf Pile Height	Availability[3]	Resilient Shock Pad Recommended	Irrigation Recommended	Expected Life Span	Typical Mixture (By weight)	Approximate Cost[4]	Comments[1,5]
Crumb Rubber	Styrene butadiene Rubber (SBR) Recycled tire rubber shredded	Black	Angular shaped granules	Low	Stable	2.25" - 2.50"	Readily Available	No	No	Life of Carpet	50% Sand 50% Rubber	$50,000 per field	1. SBR Rubber and sand is the typical infill system used in the majority of synthetic turf fields installed since 1990's. 2. SBR rubber maintains its resiliency over a wide range of temperature and environmental conditions.
Silica Sand	Rounded Silica Sand	Tan/Brown	Rounded Particles	High	Stable	1.50" - 2.0"	Readily Available	Required (See Comments)	No	Life of Carpet	100% Silica Sand	+$0 net for additional sand +$130,000 for resilient pad	1. Shock pad is required to provide shock attenuation (G-max) 2. Sand stays hard under cold/frozen conditions (regardless of shock pad) 3. Use turf stitch gage of 5/8" or less. 4. Consider turf thatch layer for fly up prevention.
Organic	Cork or Coconut Husk or rice hulls	Natural appearance (tan/brown)	Angular shaped granules	Low	Low Stability	1.50" - 2.50"	Limited Availability	Yes (See Comments)	Yes[6]	Unknown[5] ability to decompose	10%-15% Organic 90% to 85% Sand	+$200,000	1.Reports of early degradation and floating of particles 2. Organics can stay hard under frozen conditions (regardless of shock pad) 3. Shock pad recommended to provide shock attenuation over warranty period 4. Consider increased maintenance
Coated Crumb Rubber	SBR (Styrene butadiene Rubber) Recycled tires shredded and coated with acrylic or EPDM	Custom colors available	Angular shaped granules	Low	Medium stability	2.25" - 2.50"	Readily Available	No	No	Life of Carpet	50% Sand 50% Coated Rubber	+$125,000	1. Still contains SBR Rubber 2. Manufacturers claim coating encapsulates outgassing of SBR rubber 3. Shock pad is not required, consider a combination of shock pad and other infill material to reduce quantity of needed material
EPDM (Ethylene Propylene Diene Monomer) Rubber	Virgin rubber produced for infill of athletic fields only	Custom colors available	Angular shaped Granules	Low	Medium stability	2.25"-2.50"	Limited Availability	(See Comments)	No	Not proven long term	50% Sand 50% EPDM	+ $350,000	1. Similar material to SBR rubber 2. Shock pad is not required, consider a combination of shock pad and other infill material to quantity of EPDM needed 3. EPDM is a generic term and quality can vary greatly. Proven source and proprietary formulations are recommended.
TPE (Thermoplastic Elastomer)	Extruded plastic pellets	Custom colors available	Typically Uniform pellets Shape depends on manufacturer	Low to Medium	Stable	1.5" -2.50"	Limited Availability	Required	No	Not proven long term	50% TPE 50% Sand	+350,000	1. Turf thatch layer is suggested to help reduce fly up/displacement of material 2. Shock pad is not required, some owners have used combination of shock pad and TPE to reduce quantity of infill needed. 3. TPE is generic term - Quality can vary greatly. Proven source and proprietary formulations are recommended
Coated Sand	Polymer Coated Silica Sand	Green	Fairly Round Particles	Med	Stable	1.50" - 1.75"	Readily Available	Required	No	16 Year Warrantee (See Comment)	100% Coated Silica Sand Particles	+275,000	1. Coating has been reported to last shorter than warrantee period (Flexsand) 2.Shock pad is required. Some manufacturers suggest a mix with TPE to obtain required resiliency (Sinus). 4. Turf stitch gage of 5/8" or less is recommended to prevent displacement. 5. Turf Thatch layers should be considered to reduce fly-up and displacement.
Nike Grind	Nike's Environmentally Preferred Rubber (Meets or exceeds restricted substance standards set for wearable consumer goods)	Multiple Colors	Angular shaped granules	Low	Stable	2.25" - 2.50"	Limited Availability	No	No	Per Nike, Expected life 10 years of play at 40 hours per week	50% Sand 50%Nike grind	+$130,000	1. Proprietary. 2. Reports that infill is not aesthetically pleasing. 3. Has occasionally been used as a supplement to SBR rubber or in lieu of SBR to provide 'renewable' label since 1990's

NOTES:

1. Information provided was compiled by available online data, manufacturers literature and conversations with turf and infill distributors. Gale has not conducted any independent testing of infill materials and does not guarantee the accuracy of information provided here in.
2. Installations of fields with alternative infill material (other than SBR Rubber and Sand) are somewhat limited and many have not been proven long term. Gale does not guarantee performance of any turf system.
3. Few older installations in U.S. More common in Europe. Only one supplier warranties for life of turf (geoturf) in U.S.
4. May become more or less available as demand and popularity fluxuates. Cost fluxuates with availability
5. Costs are generalized approximations. Costs are NET addition to cost of a typical sand/SBR turf infill system. Actual costs will vary based on depth of infill/turf depth, type of resilient pad used. Market costs can vary greatly due to materials demand and availability.
6. Organic Infill suppliers recommend keeping infill moist to aid with resiliency, improve longevity, prevent compaction and material displacement

G:\ALTERNATIVE INFILL\Alternative Infill - GALE.xlsx

Alternative Infill Costs

Initial cost increase from traditional sand and crumb rubber field.

- TPE + $350k-$400k
- Envirofill + $200k - $250k
- Organic + $150k - $200k

GALE

Health & Environmental Considerations

- Although no study has determined a causal link between crumb rubber and negative health effects, we are recommending a so-called “alternative” or next-generation infill product.
- This strategy avoids lingering health or environmental concerns either perceived or determined to be real in the future
- We believe the increased cost will provide both short and long term benefit

GALE

Envirofill Recommended

- An acrylic, anti-microbial, coated sand
- Requires a “shock pad” under the turf and costs more up front
- Has twice the lifespan of crumb rubber
- Has 75% less “fly-out” than crumb rubber
- Reduced heat retention
- Installed on approximately 125 fields across the U.S. including in MA: Holyoke, Ipswich, Medfield, Newburyport, and UMass-Dartmouth

GALE

Funding Plan

- Given competing demands for public financial resources, this project is being funded through “private” funding.

- Funding sources continue to be evaluated and may include:
  - Grants
  - Corporate sponsorship via naming rights
  - Youth group donations
  - Private, individual donations received via a Capital Campaign to begin upon School Committee approval

GALE

Funding Plan

- A fundraising committee has been established to begin planning a Capital Campaign. Committee includes:
  - Development professionals from the community
  - Past & present SHS administrators
  - Representatives from youth sports leagues
  - SHS alumni
  - Local business people
  - Current school/sports parents

- The quiet phase of this campaign will begin upon School Committee approval of Phase 1 of this project

GALE

Project Timeline: Phase 1

Revised Timeline	
2016	
June	Gain School Committee approval to hire project consultant
June	Form a committee and start meeting to develop fundraising process plan
July	Secure a design firm and begin detailed property and soil survey
August-September	Conduct detailed project planning with consultant
October 19th	Bring final project recommendations to School Committee
Oct. 19-Nov. 8th	School Committee receive public comments/input
November 9th	School Committee vote
November-December	Begin fundraising
December	Complete design and bid package
2017	
January-December	Continue fundraising effort
December	Update design and bid package
2018	
March	Bid award- CONTINGENT UPON SECURING ALL NECESSARY FUNDS
June-September	Construction
October	Begin use of field

***This schedule would be advanced for completion in Summer 2017 if sufficient funds were raised by February-March 2017.*

GALE

Procurement Process

- Because donated funds become the property of the Town of Shrewsbury/School Department, all goods and services related to this project are subject to Massachusetts General Laws pertaining to procurement

- The Prevailing Wage Law will also apply given that it is a public works project

GALE

Recommended Action Required to Continue Process

- Consider all of the information you have received on this topic
- Receive public comment or feedback
- Vote on November 9th .
- If approved:
  - Fundraising will begin
  - A bid package will be prepared but not let out until sufficient funds are raised

GALE

Questions…

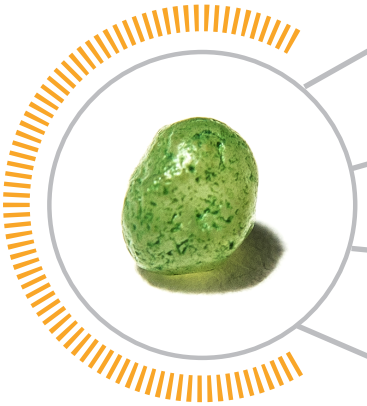
GALE

THE TURF INFILL CHAMPION
Maximum Playability

> An athletic turf infill with expert playing characteristics and an energy absorbing strength.
>
> *- Ken Kushner, Executive Director, Anderson Parks*

Envirofill® is the infill of choice for sports fields everywhere. It's tough enough for any game and players love it for its safety and performance. **Envirofill** has been made in Texas since 2005 from non-toxic components and is backed by a 16-year warranty.

Benefits



Maximum playability. Athletes benefit from Envirofill's firm, fast, safe, and consistent surface. Its highly-rounded quartz core resists compression so it doesn't compact over the life of the field.

It's cool. Envirofill's natural heat-reducing properties have been proven to lower synthetic surface temperatures by up to 25%. It resists changes brought on by even the harshest weather conditions.

It's cleaner. Microban® antimicrobial protection is infused into Envirofill during the manufacturing process to help prevent the growth of bacteria, mold, and mildew that can cause stains, odors, and product deterioration.

It's reusable. Because of its superior durability, Envirofill can be repurposed for multiple turf lifecycles with no decrease in performance.

Envirofill's exclusive partnership with Microban provides an added level of antimicrobial protection for the lifetime of your infill.

www.**usgreentech**.com infills/envirofill

Contact us today at: 800.548.0402

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Source: FieldTurf Report to Wellesley Public Schools

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

SPECIFIC STATEMENT OR QUESTION:

BACKGROUND INFORMATION:

ACTION RECOMMENDED:

STAFF AVAILABLE FOR PRESENTATION:

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

ITEM NO: **VI. Policy** MEETING DATE: **10/19/16**

SPECIFIC STATEMENT OR QUESTION:

BACKGROUND INFORMATION:

ACTION RECOMMENDED:

COMMITTEE MEMBERS/STAFF AVAILABLE FOR PRESENTATION:

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

ITEM NO: **VII. Finance & Operations** MEETING DATE: **10/19/16**
A.Fiscal Year 2018 Fiscal Priorities & Guidelines: Discussion & Vote

SPECIFIC STATEMENT OR QUESTION:

Will the School Committee discuss and vote to approve the Fiscal Year 2018 Fiscal Priorities & Guidelines?

BACKGROUND INFORMATION:

1.Mr. Collins will provide information (enclosed) on Fiscal Priorities & Guidelines for the Fiscal Year 2018.

2. The Fiscal Priorities & Guidelines for FY 2018 provides the community with information about the School Committee's priorities for the Fiscal Year 2018 School Department Budget. It also is designed to provide guidance to the Superintendent of Schools and the School Department administration regarding the development of its initial Fiscal Year 2018 School Department Budget proposal.

ACTION RECOMMENDED:

That the Committee vote to approve the Fiscal Year 2018 Fiscal Priorities & Guidelines.

STAFF AVAILABLE FOR PRESENTATION:

Mr. Patrick Collins, Assistant Superintendent for Finance & Operations
Dr. Joseph M. Sawyer, Superintendent of Schools

Shrewsbury School Committee
Priorities & Guidelines for Fiscal Year 2018 Budget Development

Overview

This document provides the community with information about the School Committee's priorities for the Fiscal Year 2018 School Department Budget. It also is designed to provide guidance to the Superintendent of Schools and the School Department administration regarding the development of its initial Fiscal Year 2018 School Department Budget proposal.

Priorities

The initial FY18 School Department Budget proposal shall include resources to address each of the following priorities for Fiscal Year 2018:

- To sustain the improvements in class size realized through the Fiscal Year 2015 budget by keeping as many sections as possible within School Committee guidelines for class size. These guidelines are: Preschool: 15; Kindergarten: 17-19; Grades 1 & 2: 20-22; Grades 3-8: 22-24; Grades 9-12: 18-20.
- To continue investing in instructional materials, curriculum personnel, and staff professional development in order to ensure that the district's educational program meets local expectations for academic rigor, as well as state mandates.
- To make sufficient investments in technology in order to realize the educational and operational benefits available through digital resources and to provide sufficient capacity for the state's new testing system, while creating opportunities to benefit from short and long term cost efficiencies.
- To make investments in district-based programming and resources in order to provide high quality, cost effective opportunities to educate students with all forms of specialized needs within their own community's schools rather than specialized placements outside of the district.
- To respond to the increase in English Language Learner students and provide sufficient staff and programmatic support for them to be successful learners and master their English comprehension, writing, and speaking skills as quickly as possible, per the state's legal mandate for such services.
- To evaluate and assess the level of administrative support and adjust accordingly to adequately serve our growing student population and meet the ever-increasing compliance and reporting requirements of the federal and state governments.

Assumptions

It is assumed that the initial FY18 School Department Budget proposal will:

1. Provide adequate resources to meet all legal mandates required of the school district.
2. Reflect the terms of collective bargaining agreements and other contractual obligations.
3. Provide sufficient resources to maintain a) the existing educational program and b) staffing levels necessary to meet mandates and priorities.
4. Utilize the best available information to project changes in costs (such as tuitions) and revenues (such as state funding through the Chapter 70 and Circuit Breaker programs, grants, etc.).
5. Estimate the level funding of all federal and state grants and factor known increases or reductions from FY17.
6. Review fee levels for all programs and adjust, as necessary, to reflect market price conditions and specific cost structure of each program.
7. Examine ways to reduce or shift costs in order to achieve district priorities without requiring additional funding allocations wherever possible. This includes a review of our FY17 School Choice seats and consideration of offering any new, additional seats in FY18.

8. Consistent with prior practice, the initial budget proposal will take into consideration the town's tax levy constraints.
9. Budget document preparation will be modified to align with the best practices inherent in the Association of School Business Officials International (ASBO) Meritorious Budget Awards Program.

Guidance

The School Committee recommends that the administration's initial FY17 Budget proposal should reflect the School Committee's fiscal and strategic priorities so that there are sufficient allocations for the following (categorized by strategic priority in no particular order):

Strategic Priority: Engaging & Challenging All Students

- Sufficient number of teachers to stay as close as possible to class size guidelines, based on enrollment projections and available classroom space.
- Curriculum and instructional materials necessary to align the district's curriculum with the updated Massachusetts Curriculum Frameworks and the proposed new state assessment system.
- Professional development for educators to successfully adapt to new curriculum and assessment requirements and initiatives, technology initiatives, and state mandates.
- Creation of innovative programs that extend student learning beyond the classroom and leverage expertise and proximity of institutions of higher education and area business enterprises.

Strategic Priority: Promoting Health & Wellbeing

- Equipment and training necessary to further enhance safety and security.
- Comprehensive support for students experiencing significant social, emotional, mental and behavioral health issues.

Strategic Priority: Enhancing Learning Through Technology

- Continued investments that provide access to digital learning opportunities.
- Increased capacity to implement technology to provide cost-effective, in-district supports for special education.
- Investments to increase opportunities for quality online learning and to improve operational efficiencies.

Strategic Priority: Increasing Value to the Community

- Investments to build additional capacity for creating innovative and cost-effective in-district programs so that cost savings may be applied to minimize impact on taxpayers.
- Expansion of efforts to procure alternative sources of revenue to offset the appropriated budget through sponsorships, grants, and donor giving.

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

ITEM NO: **VIII. Old Business** MEETING DATE: **10/19/16**

SPECIFIC STATEMENT OR QUESTION:

BACKGROUND INFORMATION:

ACTION RECOMMENDED:

MEMBERS/STAFF AVAILABLE FOR PRESENTATION:

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

ITEM NO: **IX. New Business** MEETING DATE: **10/19/16**
A.Marijuana Legalization State Ballot Question: Discussion

SPECIFIC STATEMENT OR QUESTION:

Will the Committee engage in a discussion on the Marijuana Legalization State Ballot Question?

BACKGROUND INFORMATION:

1. On November 8, the voters of the Commonwealth will decide whether to approve a citizens' petition, commonly known as a state ballot question, which would permit the possession, use, distribution, and cultivation of marijuana in limited amounts by persons age 21 and older and would remove criminal penalties for such activities. It would provide for the regulation of commerce in marijuana, marijuana accessories, and marijuana products and for the taxation of proceeds from sales of these items.

ACTION RECOMMENDED:

That the School Committee engage in a discussion on the Marijuana Legalization State Ballot Question and its potential impact on the Shrewsbury Public Schools.

STAFF AVAILABLE FOR PRESENTATION:
Dr. Joseph M. Sawyer, Superintendent of Schools

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

ITEM NO: **X. Approval of Minutes** MEETING DATE: **10/19/16**

SPECIFIC STATEMENT OR QUESTION:

Will the Committee vote to approve the minutes from the School Committee meeting held on October 5, 2016?

BACKGROUND INFORMATION:

The minutes are enclosed.

ACTION RECOMMENDED:

That the Committee vote to approve the minutes from the School Committee meeting on October 5, 2016.

STAFF AVAILABLE FOR PRESENTATION:
Ms. Sandra Fryc, Chairperson
Mr. Jon Wensky, Secretary

SHREWSBURY PUBLIC SCHOOLS
100 MAPLE AVENUE
SHREWSBURY, MASSACHUSETTS

MINUTES OF SCHOOL COMMITTEE MEETING

Wednesday, October 5, 2016

Present: Ms. Sandy Fryc, Chairperson; Dr. Dale Magee, Vice Chairperson; Mr. Jon Wensky, Secretary; Ms. Erin Canzano; Mr. John Samia; Mr. Patrick Collins, Assistant Superintendent for Finance and Operations; Ms. Mary Beth Banios, Assistant Superintendent for Curriculum & Instruction; and Dr. Joseph Sawyer, Superintendent of Schools.

Not present: Ms. Barb Malone, Director of Human Resources

The meeting was convened by Ms. Fryc at 7:06 pm.

I. Public Participation

Shrewsbury resident Bryan Moss addressed the committee regarding health and environmental concerns he has relative to artificial turf fields because of the potential for their installation as part of a proposed Shrewsbury High School (SHS) Athletic Campus Improvement Plan that would utilize private funding. Mr. Moss noted he was especially concerned about the potential use of crumb rubber infill in turf fields, and advised he hoped that Shrewsbury Public Schools (SPS) would look at alternative options, including organic management of natural recreational fields.

Ms. Fryc thanked Mr. Moss for his presentation. She noted that at present, no specific recommendations on materials for the project had been made, and that additional information would be presented at the School Committee meeting on October 19, 2016.

II. Chairperson's Report & Members' Reports

None.

III. Superintendent's Report

Dr. Sawyer congratulated drama teacher, Jennifer Micarelli-Webb, and the cast and crew of last year's SHS fall play, *Picnic*, which won the prestigious Moss Hart award from the New England Theatre Conference.

IV. Time Scheduled Appointments:
A. SHS Athletics: Student Presentation

Mr. Jason Costa, Director of Athletics, Joan Laramee, Grade 12 Student-Athlete, and Matt Ward, Grade 12 Student-Athlete addressed the Committee on athletics at SHS. Ms. Laramee plays soccer, basketball, and track, and Mr. Ward plays hockey and lacrosse. They discussed the importance of their experiences as players and captains of multiple sports at SHS, and as Student Ambassadors for SHS at various leadership conferences.

In response to questions from the Committee, the students talked about how they motivated players when teams weren't doing as well, encouraged teamwork, and worked to successfully onboard younger players to their teams. Mr. Costa added that over the years he has seen very positive changes in the way upperclassmen welcome freshmen to the sports program at SHS, and Dr. Sawyer thanked the student-athletes for their thoughtful presentation.

IV. Time Scheduled Appointments
B. Athletics: Annual Report

Mr. Todd Bazydlo, Principal, Shrewsbury High School, and Mr. Jason Costa, Director of Athletics, presented an annual report on 2015-16 Athletics to the Committee that included the purpose of interscholastic athletics, program highlights, unified sports, and data on athletic offerings and participation. Mr. Costa noted that a number of individual athletes achieved All-Star status, and several teams achieved various league Championships. Two athletes - Adam Twitchell and Brianne Moss - won SHS Colonial Awards for 2015-16 for being Outstanding Senior Athletes.

The Shrewsbury High School Boosters Association and Friends of Shrewsbury Crew were recognized for their support of SHS Athletics, as was Central One Federal Credit Union for being a $20,000 MVP Level Sponsor. The Athletic Operations Budget for FY 15-16 included appropriated budget funding of $219,831; athletic fee account funds of $309,883; and gate receipts of $43,940.

When discussing future considerations, Mr. Costa discussed the potential for making the Athletic Training position full time at SHS, and advised that Massachusetts Interscholastic Athletic Association (MIAA) is looking to mandate this for 2017-18. In response to a question from the Committee about $900 in expenses for doctor's fees, Mr. Costa advised that the presence of an EMT or Athletic Trainer is required at certain sporting events. He added that the advantage of using an Athletic Trainer is that they can both diagnose and treat student-athletes.

The Committee asked clarifying questions about the costs associated with specific sports, how goals were set for coaching positions, and if students had a voice in coaching evaluations. Mr.

Costa responded that students were informally involved in evaluations, and noted that team captains were also involved in the hiring process for coaches.

Dr. Sawyer thanked Mr. Bazydlo and Mr. Costa for a report that presented both a strong set of data and a thoughtful description of why interscholastic sports are so important.

IV. Time Scheduled Appointments
C. Concussion Statistics: Annual Report

Ms. Noelle Freeman, Director of Nursing, and Mr. Walter Hildebrand, Athletic Trainer, presented an annual concussion report that included a definition of concussions, signs and symptoms, statistics by sport, concussion care, return to play protocol, and efforts relative to prevention and education. It was noted that in 2015-16 the fewest diagnosed concussions were reported in a five year period, and that this might be a result of enhanced prevention efforts around neck strength and core stabilization, especially in football, and because of the focus on educating athletes on measures like proper hitting techniques for contact sports.

Dr. Magee noted he was pleased with the contents of the report. Ms. Fryc and Dr. Sawyer both advised that they appreciated the proactive stance that SPS was taking towards education, prevention, and treatment of concussions, and Dr. Sawyer acknowledged that there also seems to be an increased awareness around concussions among families within the community.

IV. Time Scheduled Appointments
D. Nursing Services: Annual Report

Ms. Noelle Freeman, Director of Nursing, provided her annual report on the breadth and scope of nursing services provided within the schools. The information included data on student and staff visits to the nurse, and different health and wellness initiatives at various grade levels. Ms. Freeman noted that teaching staff and administrators at all schools had completed anaphylaxis and Epipen training, that Epipens were now stocked in all health offices (as per recent School Committee policy, which gives parents the option to not send in an Epipen for their student), and that two doses of Narcan (naloxone) are also stored in each health office. Goals for the 2016-17 School Year include Screening, Brief Intervention and Referral To Treatment (SBIRT) Training, and a collaboration with the National Art Honor Society at SHS to create coloring books for students who are struggling with anxiety.

In response to questioning from the Committee, Ms. Freeman advised that it is unclear at the present time as to what would happen if and when a student concern regarding potential drug abuse was raised through the SBIRT screening, and Mr. Patrick Collins advised that SPS currently has two students enrolled at Recovery High School. Dr. Sawyer thanked Ms. Freeman for the report, and the entire Nursing Staff for the important work they do every day to assist

students and SPS staff. He also recognized the help provided earlier in the day by Paton School nurse Lisa Smith, who assisted at an automobile accident near Walter J. Paton School.

IV. Time Scheduled Appointments:
E. Rep. Hannah Kane: Legislative Update
Representative Hannah Kane noted that she has three children in SPS who all had a great start to the school year, and thanked the school nurses in attendance at the meeting for their care of one of her children that has two medical issues. Rep. Kane noted a number of school-related groups that she is affiliated with, and advised that she looked forward to local students coming forward to volunteer at the Massachusetts State House.

Regarding the Fiscal Year 2017 Budget, Rep. Kane noted that tax revenue coming in was down from what was anticipated - approximately $11,000,000 down in the first quarter - but noted it was Governor Charlie Baker's intention to not touch Local Aid or Education Funding if possible. Rep. Kane added that increased funding was appropriated in Per Pupil Spending - $55 per pupil, which represented approximately $330,000 for Shrewsbury - which helped offset losses from the elimination of Kindergarten Expansion Grants. Rep. Kane advised that Special Education Circuit Breaker would be fully funded at the 75% level, and she thanked Dr. Sawyer for meeting with her and the MA Chairman of the House Ways and Means Committee before the budget was finalized to discuss the challenges to districts around the costs associated with out of district placements.

Rep. Kane also discussed the status of the Unfunded Mandate Task Force and the Foundation Budget Review Commission, dramatic increases in health insurance and Special Education costs, McKinney-Vento Act transportation costs, the Financial Literacy Task Force, the Food Policy Council, the loss of Full Day Kindergarten Grants, and the SBIRT program. Rep. Kane went on to talk in depth about the reasons for her opposition to MA Ballot Question 4, which would legalize recreational marijuana, which she described as an implementation question, versus a philosophical question. Dr. Magee thanked Rep. Kane for the information and advised he would like to see Question 4 addressed at the School Committee meeting on October 19, 2016.

Ms. Fryc asked Rep. Kane for her position on MA Ballot Question 2, which would lift the existing cap on Charter Schools in Massachusetts. Ms. Kane advised that she was not philosophically opposed to Charter Schools, but did take issue with the fact that as written it would allow children who were not in underperforming districts to opt into Charter Schools. Dr. Sawyer agreed with Rep. Kane's concern regarding underperforming districts, and thanked her for her report and her work on behalf of Shrewsbury Public Schools.

V. Curriculum

None.

VI. Policy
A.Charter School State Ballot Question: Vote on Position

On November 8, the voters of the Commonwealth will decide whether to approve a citizens' petition which would enable the Massachusetts Board of Elementary and Secondary Education to approve up to 12 additional so-called Commonwealth Charter Schools per year, beyond the limitations that are currently in effect, and Dr. Sawyer had previously recommended that the School Committee take a formal position in opposition to this ballot question through a vote at this meeting. Committee members provided their thoughts in turn, and there was consensus that while all agreed that parents should have choices regarding their student's education, the ballot question did not address funding adequately and would put SPS at risk financially. Dr. Sawyer added that there might be a misperception brought on by recent media adds that indicate that there is no financial impact to public schools by charter schools because their budgets increased by the same percentage. He noted that it was important to realize that money lost to charter schools must be backfilled by other sources and noted that the recent override in Shrewsbury would have had greater impact if almost $1,000,000 per year in funds had not been moved to charter schools. In addition, and following the above line of reasoning, if charter schools do not have a negative fiscal impact on public schools, then public schools would have no incentive to innovate, which runs counter to the argument that competition brought on by charter schools should incent public schools to innovate. Dr. Sawyer added that he continued to recommend that the Committee vote to oppose Question 2.

On a motion by Ms. Canzano, seconded by Dr. Magee, the Committee voted unanimously to support a resolution stating:

The Shrewsbury School Committee formally opposes Massachusetts Ballot Question 2, because the expansion of charter schools without changes to the way charter schools are funded will cause traditional public school districts to be negatively impacted by an increased loss of funds, putting the adequate funding of the Shrewsbury Public Schools at significant risk. The School Committee authorizes the Chair of the Committee to communicate the Committee's position on Question 2 through means such as letters to the editor, in order to convey to the citizens of Shrewsbury why the School Committee strongly recommends that a "No" vote on Question 2 is in the best interests of the Town of Shrewsbury and its public schools.

VII.Finance & Operations
A. Fiscal Year 2018: Review Draft of Fiscal Priorities & Guidelines

Mr. Collins presented a draft of fiscal priorities and guidelines for Fiscal Year 2018 that addressed priorities which included sustaining improvements in class size; continued investment

in materials, personnel, and technology; and investments in district-based programming and resources to be able to educate more special education students within the district. The report listed assumptions about the FY 2018 budget, and offered guidance around the District's four Strategic Priorities. Mr. Collins noted that a vote on the 2018 Fiscal Priorities & Guidelines is recommended for the October 19, 2016 School Committee meeting. Mr. Samia noted that Assumption #7 was the only one to change, that the proposed document sets the table for FY 2018 budgeting and provides a similar format to previous years, and welcomed public feedback. Dr. Sawyer thanked Mr. Collins for his work on the document, and also acknowledged the assistance of Mr. Samia and Dr. Magee who consulted on the draft as members of the Subcommittee on Fiscal Projections.

VIII. Old Business

None.

IX. New Business

None.

X. Approval of Minutes

On a motion by Mr. Samia, seconded by Ms. Canzano, the Committee voted unanimously to approve the minutes of the School Committee meeting on September 19, 2016.

XI. Executive Session

Ms. Fryc requested a motion to adjourn to Executive Session to discuss a student residency issue. On a motion by Mr. Samia, seconded by Ms. Canzano, on a roll call vote: Mr. Samia, yes; Ms. Canzano, yes; Mr. Wensky, yes; Dr. Magee, yes; Ms. Fryc, yes, the Committee voted to adjourn to Executive Session at 10:07 pm.

XII. Adjournment

On a motion by Dr. Magee, seconded by Ms. Canzano, the committee unanimously agreed to adjourn the meeting at 10:12 pm. Roll call votes were as follows: Mr. Samia, yes; Ms. Canzano, yes; Mr. Wensky, yes; Dr. Magee, yes; Ms. Fryc, yes.

Respectfully submitted,

Elizabeth McCollum, Clerk

Documents referenced:

1. 2016 Annual Athletics Report
2. FY 2018 Budget Development & Priorities Guidelines Draft
3. 2015-2016 Annual Concussion Report
4. 2015-2016 Annual Nursing Report
5. Department of Nursing Presentation Slides
6. Concussion Presentation Slides
7. Athletics Presentation Slides

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

ITEM NO: **XI. Executive Session** MEETING DATE: **10/19/16**

SPECIFIC STATEMENT OR QUESTION:

Will the School Committee enter into executive session for the purposes of discussing and voting on a grievance, and of discussing negotiations with represented and/or non-represented employees, where deliberation in an open meeting may have a detrimental effect on the bargaining position of the public body?

BACKGROUND INFORMATION:

Executive session is warranted for these purposes.

ACTION RECOMMENDED:

That the School Committee enter into executive session.

STAFF AVAILABLE FOR PRESENTATION:

Ms. Barbara A. Malone, Director of Human Resources
Dr. Joseph M. Sawyer, Superintendent of Schools

SHREWSBURY PUBLIC SCHOOLS
SCHOOL COMMITTEE MEETING

ITEM NO: **XII. Adjournment** MEETING DATE: **10/19/16**