



# MSBA PRELIMINARY DESIGN PROGRAM SHARON HIGH SCHOOL

SHARON, MASSACHUSETTS

ARCHITECT



**TAPPÉ**  
ARCHITECTS

OWNER'S PROJECT MANAGER



**PMA Consultants**

NOVEMBER 21, 2018

Fenton Bradley  
Project Coordinator  
Massachusetts School Building Authority  
40 Broad Street, Suite 500  
Boston, MA 02109

Nov 21, 2018

RE: Preliminary Design Program for the Sharon High School Building Project

Dear Fenton,

In accordance with the MSBA's Feasibility Study Submittal Procedures, PMA has reviewed and coordinated the materials contained within the Sharon High School Project's Preliminary Design Program submittal.

PMA finds the submittal to be complete and certifies that Sharon High School Building Committee has officially approved the submittal and the materials contained within. The formal approval of the School Building Committee was obtained on the evening of Tuesday, November 20<sup>th</sup>, 2018. Final approved SBC meeting minutes will be certified and submitted to the MSBA when they are made available as required under section 7.2.

The District, along with PMA and Tappe have explored 5 sites, performed in-depth analysis on each site and are reviewing 8 options for the purposes of this study.

At a School Building Committee meeting on November 20<sup>th</sup>, 2018 the committee met to determine which options would be included in the Preliminary Design Program submission to the MSBA. These options include a Code Upgrade and Renovation option, two addition/renovation options, and five new build options on the existing High School site. Due to site size constraints, consideration to construct a new school on alternative sites is not feasible and has been dismissed.

With the MSBA's support the Town of Sharon wishes to further evaluate the following options during our final evaluation of alternatives as outlined in the MSBA's module 3 guidelines leading up to submission of a Preferred Schematic Option.



35 Braintree Office Hill Park  
Suite 300  
Braintree, MA 02184  
Tel: 781.794.1404  
Fax: 781.794.1405



1. Code Upgrade and Renovation of Sharon High School, 1250 students
2. Addition/Renovation at Sharon High School site, 1250 students
3. New Construction at Sharon High School site, 1250 students

We look forward to the MSBA's review and are eager to begin final evaluation of the proposed alternatives. As always, please feel free to contact me with any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew Gulino". The signature is fluid and cursive, with the first name "Matthew" and last name "Gulino" clearly distinguishable.

Matthew Gulino  
Senior Consultant | Owner's Project Manager  
PMA Consultants, LLC

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# SECTION 1

## INTRODUCTION

# 1.1

## INTRODUCTION

## 1.1 INTRODUCTION

### Overview

The feasibility study is being undertaken to analyze the best options for the Town of Sharon and the Sharon School District to resolve issues around an aging high school facility that does not have adequate space to house current and future programs.

### Statement of Interest – Identification of Facility Deficiencies

The Statement of Interest identifies a number of deficiencies at the existing High School. Issues noted as particular concerns are overcrowding and the physical condition of the school.

In terms of building capacity the SOI notes that the existing building was designed for 950 students and has a current enrollment (2016) of 1,142. Of particular concern to the District are narrow corridors that restrict student movement throughout the school, an inadequate cafeteria and gym that can't accommodate students and a shortage of teaching spaces. In particular the SOI notes inadequate classrooms and square footage for the art and music curriculum, technology infrastructure for teaching, classroom space for STEM instruction including the size and condition of science classrooms. The District also notes a lack of space for special education and for non-traditional educational programming such as forensic science and wellness programs. This shortfall in space has led to limitations to the curriculum offerings that can be provided by the District.

Regarding the buildings physical condition the District brings attention to building systems that can't adequately regulate temperature and that there is poor lighting in many locations. In addition, the SOI records a history of water infiltration into the building at multiple locations and from multiple sources. It also notes that the building is not fully accessible or code compliant and that this condition has forced the District to move around classrooms to provide accommodation and access for all students.

### Summary of Process Undertaken

The study process to date has included an existing conditions analysis of the Sharon High School including walk-throughs and reviews by structural, mechanical, electrical and plumbing engineers as well as the Architect. The site has also been reviewed and analyzed by the Landscape Architect and the Civil Engineer as well as a consultant associated with the on-site waste water treatment plant. Testing has been completed for hazardous materials (ACM) within the building and a budget for future potential abatement completed. Preliminary geo-technical exploration has been taken place and a geo-technical and geo-environmental report with preliminary recommendation is complete. The traffic

engineer has been on site to make existing conditions observations and complete traffic counts.

The Town of Sharon has provided information on all available properties that could be used for a new high school site. The assumption was that any property identified must be 28 acres at a minimum which is the size of the current school site. The Town was able to provide information on four undeveloped sites that met this criteria. Three sites are privately owned, and one site is partially owned by the Town but would require taking property from an adjacent camp in order to increase the size to make it adequate for a school parcel. The geographic location of the existing school in the center of town, the fact that the site is already developed for a school and has significant site improvements already associated with it such as fields, parking, a waste water treatment plant, and site utility infrastructure and the fact that there is no required acquisition cost indicates that there is no compelling financial or educational reason for the Town of Sharon to relocate the high school to a new location.

Three educational visioning sessions have taken place to discuss the goals for the project and how to develop an educational program and design that best supports the Sharon High School. These three meetings were held which included students, faculty, parents, members of the School Committee and Building Committee, and citizens of the Town. In addition, the project team held meetings on a consistent basis with District Administrators and the senior curriculum team in order to develop an approach to the educational program, space template and conceptual options.

Preliminary options have been developed by the Design Team for a renovation option, two renovation addition options and multiple approaches to a replacement school on the site. These were reviewed by the District's leadership team and presented to the Building Committee. Generally the approach to a replacement building is to construct a structure adjacent to the existing school to avoid displacing students during construction. The renovation addition options are more complex and will require periodic relocation of students during the construction phase and at least one option requires temporary classrooms to accommodate students during construction. It is anticipated that during the Preferred Schematic Phase the District, the Building Committee and the School Committee will review these various options further in anticipation of selecting a final preferred option.

### Date of Invitation to Conduct a Feasibility Study

An invitation to enter into a feasibility study was issued by the MSBA Board of Directors on March 15, 2018. The Feasibility Study Agreement is attached to this PDP as an appendix.

### **Agreed Upon Design Enrollment**

The proposed design enrollment for a grade 9-12 High School is 1,250 students. The Enrollment Certification and letter dated September 25, 2017 is attached to this PDP as an appendix.

### **Capital Budget Statement Summary**

Capital planning is an integral part of the Town of Sharon's financial planning process. The Sharon High School Project is a high priority capital project and will require long-term debt funding via bond issue supported by the tax levy of the town, following a successful passage of a Proposition 2 ½ debt exclusion vote. Arrangements for financing will be coordinated with existing debt service and anticipated needs of other capital projects.

The estimated total project cost will be determined when the preferred option is identified in the next phase of design, the Preferred Schematic Report (PSR), to be completed in March of 2019. The Massachusetts School Building Authority's base reimbursement rate for this project is 45.32%. The Town intends to seek approximately 3.5% in incentive points beyond the base rate, thereby bringing the total anticipated reimbursement rate to approximately 48.82%. With the reimbursement rate being applied only to eligible project costs, a Massachusetts School Building Authority grant of approximately one-third of the total project cost is anticipated. The remaining two-thirds of total project cost would be funded locally through the debt exclusion outlined above.

### **Project Participants and Updated Project Schedule**

Inserted into this section of the PDP is a preliminary list of project participants as well as an updated schedule. The schedule indicates that the proposed MSBA Board Meeting for approval to proceed to Schematic Design will be 6-26-18. The Board Meeting for Project Scope and Budget is anticipated to be 10-30-19 and the projected Town of Sharon vote to approve funding and borrowing for the project is tentatively projected to be 12-10-19.



# 1.2

## PROJECT DIRECTORY



DATED  
11/7/2018

## Project Directory : Sharon High School

Name & Title	Role	Phone No.	Ext.	E-Mail	Cell	Address
<b>OWNER/CLIENT</b>						
<b>School Building Committee</b>						
Gordon Gladstone	Building Committee Chair	781-820-1796		<a href="mailto:gwgladstone@gmail.com">gwgladstone@gmail.com</a>		2 Bruce Ave
Robert Atwood	Member			<a href="mailto:robertatwood24@gmail.com">robertatwood24@gmail.com</a>		14 Lilac St
Deborah Benjamin	Member			<a href="mailto:dbenjamin@cff.org">dbenjamin@cff.org</a>		2 Lyndon Rd.
Rick Rice	Member, MCPPO certified	781-784-4493		<a href="mailto:r.rice@dinisco.com">r.rice@dinisco.com</a>		25 Ashcroft Rd
Slater Richard	Member			<a href="mailto:richslater@comcast.net">richslater@comcast.net</a>		47 No. Main St.
Steve Smith	Member			<a href="mailto:steven.smith@northstar-pres.com">steven.smith@northstar-pres.com</a>		1 Old Wolomolopoag Rd
Roger Thibault	Member			<a href="mailto:rogethi@gmail.com">rogethi@gmail.com</a>		31 Country Lane
Colleen Tuck	Member			<a href="mailto:colleentuck@hotmail.com">colleentuck@hotmail.com</a>		103 Glendale Rd
Kenneth Wertz	Member, Director of M & O	781-784-1548	2	<a href="mailto:wertz@sharon.k12.ma.us">wertz@sharon.k12.ma.us</a>		75 Mountain St.
Sara Winthrop	Member			<a href="mailto:sjwinthrop@gmail.com">sjwinthrop@gmail.com</a>		1563 Bay Rd.
Fred Turkington	Town Administrator			<a href="mailto:fturkington@townofsharon.org">fturkington@townofsharon.org</a>		90 South Main St.
Amy Garcia	Member	781-784-1570		<a href="mailto:a_garcia@sharon.k12.ma.us">a_garcia@sharon.k12.ma.us</a>		75 Mountain St
William Heitin	Local Chief Executive, Selectmen, Chair	781-784-1500		<a href="mailto:wheitin@comcast.net">wheitin@comcast.net</a>		90 South Main St.
Dr. Victoria Greer	Superintendent of Schools	781-784-1570		<a href="mailto:v_greer@sharon.k12.ma.us">v_greer@sharon.k12.ma.us</a>		75 Mountain St
Dr. Jose Libano	School Principal	781-784-1554		<a href="mailto:j_libano@sharon.k12.ma.us">j_libano@sharon.k12.ma.us</a>		181 Pond St.
Dr. John Marcus	Member	781-784-1548	3	<a href="mailto:j_marcus@sharon.k12.ma.us">j_marcus@sharon.k12.ma.us</a>		75 Mountain St
Emily Burke	Member	781-784-1554		<a href="mailto:e_burke@sharon.k12.ma.us">e_burke@sharon.k12.ma.us</a>		181 Pond St
<b>School Committee</b>						
Mary Kaplan	Chair			<a href="mailto:mkaplan@sharon.k12.ma.us">mkaplan@sharon.k12.ma.us</a>		
Amy Garcia	Member	781-784-1570		<a href="mailto:a_garcia@sharon.k12.ma.us">a_garcia@sharon.k12.ma.us</a>		75 Mountain St
Dr. Victoria Greer	Superintendent of Schools	781-784-1570		<a href="mailto:v_greer@sharon.k12.ma.us">v_greer@sharon.k12.ma.us</a>		75 Mountain St
Dr. Jose Libano	School Principal	781-784-1554		<a href="mailto:j_libano@sharon.k12.ma.us">j_libano@sharon.k12.ma.us</a>		181 Pond St.
Johnathan Hitter	Member					181 Pond St.
Kathleen Currul-Dykeman	Member					181 Pond St.
Heather Zelevinsky	Member					181 Pond St.
Mena Mesiha	Member					181 Pond St.
<b>Town</b>						
Fred Turkington	Town Administrator	781-784-1500	1160	<a href="mailto:fturkington@townofsharon.org">fturkington@townofsharon.org</a>		90 South Main St.
Lauren Barnes	Assistant to the Town Administrator	781-784-1500	1161			90 South Main St.
William Heitin	Local Chief Executive, Selectmen, Chair	781-784-1500		<a href="mailto:wheitin@comcast.net">wheitin@comcast.net</a>		90 South Main St.
Melissa Imbaro	Administrative Assistant to the Board of Selectman	781-784-1500	1162			
James W Wright	Fire Chief	781-784-1522				211 South Main Street



DATED  
11/7/2018

## Project Directory : Sharon High School

Name & Title	Role	Phone No.	Ext.	E-Mail	Cell	Address
John Ford	Police Chief	781-784-1587				213 South Main Street
	Inspectional Services					
Joe Kent	Building Commissioner	781-784-1525	2310			
Paul Connors	Wiring Inspector	781-784-1525	2310			
Anthony Piazza	Plumbing (Local) Inspector	781-784-1525	2310			
	MSBA					
Fenton Bradley	Project Manager			Fenton.Bradley@MassSchoolBuildings.org		40 Broad Street Suite 500 Boston, MA 02109
Allison Jones	Project Coordinator	617-720-4466		Allison.Jones@MassSchoolBuildings.org		
PROJECT MANAGER (PMA)						35 Braintree Hill Office Park, Suite 300 Braintree, MA 02184
Chris Carroll	Executive Director	781-794-1404		ccarroll@pmaconsultants.com		35 Braintree Hill Office Park, Suite 300 Braintree, MA 02184
Kevin Nigro	Project Director	781-794-1404	1056	knigro@pmaconsultants.com		
Paul Queeney	Project Manager	781-794-1404		pqueeney@pmaconsultants.com		
Deb Shaer	Assist. Project Manager	781-794-1404		dshaer@pmaconsultants.com		
Matthew Gulino	Assist. Project Manager	781-794-1404	1078	mgulino@pmaconsultants.com		
Cristian Sailer	Project Controls			csailer@pmaconsultants.com		
Jon Pope	Clerk of the Works			jpope@pmaconsultants.com		
ARCHITECT (Tappe)						
Charles Hay	Principal			chay@tappe.com		6 Edgerly Place, Boston MA
Chris Blessen	Project Manager			cblessen@tappe.com		
Cesar Dedios	Project Architect					
Jennifer Littlefield	Project Architect					
Jeffrey Hoover	Project Architect					

# 1.3

## SCHEDULE

Baseline BL00 Sharon High School					PMA Consultants				07-Nov-18																								
Activity ID	Activity Name	Original Duration	Start	Finish	Actual Start	Actual Finish	Total Float	Calendar	2017				2018				2019				2020				2021				2022				2023
Baseline BL00 Sharon High School									Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1				
Designer Selection																																	
S-1000	OPM Draft Designer RFS		9	17-Apr-18 A	30-Apr-18 A	17-Apr-18	30-Apr-18	Standard 5 Day Workweek w holidays	OPM Draft Designer RFS																								
S-1080	MSBA Approval Designer RFS	15	01-May-18 A	22-May-18 A	01-May-18	22-May-18	Standard 5 Day Workweek w holidays	MSBA Approval Designer RFS																									
S-1160	Designer RFS Advertisements	9	23-May-18 A	06-Jun-18 A	23-May-18	06-Jun-18	Standard 5 Day Workweek w holidays	Designer RFS Advertisements																									
S-1230	Briefing Session at Sharon HS	0		30-May-18 A		30-May-18	Standard 5 Day Workweek w holidays	Briefing Session at Sharon HS																									
S-1240	Deadline for submission of questions	0		06-Jun-18 A		06-Jun-18	Standard 5 Day Workweek w holidays	Deadline for submission of questions																									
S-1250	Designer RFS Response Period	15	23-May-18 A	13-Jun-18 A	23-May-18	13-Jun-18	Standard 5 Day Workweek w holidays	Designer RFS Response Period																									
S-1310	Evaluate Responses & Submit to MSBA	10	14-Jun-18 A	28-Jun-18 A	14-Jun-18	28-Jun-18	Standard 5 Day Workweek w holidays	Evaluate Responses & Submit to MSBA																									
S-1370	Designer Selection Panel Mtg #1	0		10-Jul-18 A		10-Jul-18	Standard 5 Day Workweek w holidays	Designer Selection Panel Mtg #1																									
S-1480	Designer Selection Panel Mtg #2 (Designer Interviews)	0		24-Jul-18 A		24-Jul-18	Standard 5 Day Workweek w holidays	Designer Selection Panel Mtg #2 (Designer Interviews)																									
S-1430	Award Design Contract	0		20-Aug-18 A		20-Aug-18	Standard 5 Day Workweek w holidays	Award Design Contract																									
Feasibility Study																																	
Preliminary Design Program																																	
S-1030	Kick Off Meeting with MSBA	0	23-Aug-18 A		23-Aug-18			Standard 5 Day Workweek w holidays	Kick Off Meeting with MSBA																								
S-1110	School Dept Update Education Program	30	24-Sep-18 A	22-Oct-18 A	24-Sep-18	22-Oct-18	Standard 5 Day Workweek w holidays	School Dept Update Education Program																									
S-1190	Evaluation of Existing Conditions	40	24-Aug-18 A	28-Sep-18 A	24-Aug-18	28-Sep-18	Standard 5 Day Workweek w holidays	Evaluation of Existing Conditions																									
S-1270	Establish Site Development Requirements	50	24-Aug-18 A	12-Oct-18 A	24-Aug-18	12-Oct-18	Standard 5 Day Workweek w holidays	Establish Site Development Requirements																									
S-1330	Identify Short List of Alternate Sites if/as required	45	11-Sep-18 A	23-Oct-18 A	11-Sep-18	23-Oct-18	Standard 5 Day Workweek w holidays	Identify Short List of Alternate Sites if/as required																									
S-1390	Draft Initial Space Summary	50	01-Oct-18 A	30-Oct-18 A	01-Oct-18	30-Oct-18	Standard 5 Day Workweek w holidays	Draft Initial Space Summary																									
S-1450	Preliminary Evaluation of Alternatives	30	24-Aug-18 A	28-Sep-18 A	24-Aug-18	28-Sep-18	Standard 5 Day Workweek w holidays	Preliminary Evaluation of Alternatives																									
S-1530	Final Review & Acceptance of Education Program	10	23-Oct-18 A	06-Nov-18 A	23-Oct-18	06-Nov-18	Standard 5 Day Workweek w holidays	Final Review & Acceptance of Education Program																									
S-1550	Cost & Schedule Analysis of PDP Alternatives	6	13-Nov-18	20-Nov-18			0	Standard 5 Day Workweek w holidays	Cost & Schedule Analysis of PDP Alternatives																								
S-1570	SBC Approval of PDP Alternatives	6	13-Nov-18	20-Nov-18			0	Standard 5 Day Workweek w holidays	SBC Approval of PDP Alternatives																								
S-1580	Compile & Submit PDP to MSBA	5	14-Nov-18	20-Nov-18			0	Standard 5 Day Workweek w holidays	Compile & Submit PDP to MSBA																								
S-1590	PDP submitted to MSBA	0		21-Nov-18			0	Standard 5 Day Workweek w holidays	PDP submitted to MSBA																								
S-1600	MSBA Review Period	15	26-Nov-18	14-Dec-18			0	Standard 5 Day Workweek w holidays	MSBA Review Period																								
S-1610	Respond to MSBA Review Comments	6	17-Dec-18	24-Dec-18			30	Standard 5 Day Workweek w holidays	Respond to MSBA Review Comments																								
Preferred Schematic Report																																	
S-1040	Evaluation of Existing Conditions (Phase II Exploration)	52	23-Nov-18	07-Feb-19			0	Standard 5 Day Workweek w holidays	Evaluation of Existing Conditions (Phase II Exploration)																								
S-1120	Final Evaluation of Alternatives	52	23-Nov-18	07-Feb-19			0	Standard 5 Day Workweek w holidays	Final Evaluation of Alternatives																								
S-1200	Identification and Development of Preferred Solution	52	23-Nov-18	07-Feb-19			0	Standard 5 Day Workweek w holidays	Identification and Development of Preferred Solution																								
S-1280	Local Actions and Approvals	52	23-Nov-18	07-Feb-19			0	Standard 5 Day Workweek w holidays	Local Actions and Approvals																								
S-1340	Develop System Narratives & Conceptual Bldg Plans/Site Plans	52	23-Nov-18	07-Feb-19			0	Standard 5 Day Workweek w holidays	Develop System Narratives & Conceptual Bldg Plans/Site Plans																								
S-1400	Cost Estimate - 3rd Party Estimators	10	08-Feb-19	22-Feb-19			0	Standard 5 Day Workweek w holidays	Cost Estimate - 3rd Party Estimators																								
S-1460	Reconciliation of 3rd Party Estimates	6	25-Feb-19	04-Mar-19			0	Standard 5 Day Workweek w holidays	Reconciliation of 3rd Party Estimates																								
S-1500	SBC Approval of Preferred Solution	6	05-Mar-19	12-Mar-19			0	Standard 5 Day Workweek w holidays	SBC Approval of Preferred Solution																								
S-1540	Compile and Submit PSR	6	13-Mar-19	20-Mar-19			0	Standard 5 Day Workweek w holidays	Compile and Submit PSR																								
S-1560	PSR submitted to MSBA (no later than 5/8)	0		21-Mar-19*			0	Standard 5 Day Workweek w holidays	PSR submitted to MSBA (no later than 5/8)																								
S-1630	MSBA PSR Review Period	47	22-Mar-19	28-May-19			0	Standard 5 Day Workweek w holidays	MSBA PSR Review Period																								
S-1640	Design Team Response to MSBA PSR Review Comments	5	29-May-19	04-Jun-19			0	Standard 5 Day Workweek w holidays	Design Team Response to MSBA PSR Review Comments																								
S-1650	MSBA Facilities Assessment Subcommittee (FAS MTG)	0		29-May-19*			0	Standard 5 Day Workweek w holidays	MSBA Facilities Assessment Subcommittee (FAS MTG)																								
S-1660	MSBA Board of Director's Meeting (Approve PSR)	0		26-Jun-19*			0	Standard 5 Day Workweek w holidays	MSBA Board of Director's Meeting (Approve PSR)																								
Schematic Design																																	
DESE Submittal																																	

Remaining Level of Effort

Actual Work

Remaining Work

Critical Remaining Work

Milestone

Date Date: 07-Nov-18

Page 1 of 2

Note: Preliminary Schedule

A© Oracle Corporation

Baseline BL00 Sharon High School						PMA Consultants			07-Nov-18																											
Activity ID	Activity Name	Original Duration	Start	Finish	Actual Start	Actual Finish	Total Float	Calendar																												
								2017				2018				2019				2020				2021				2022				2023				
								Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1				
S-1010	Prepare DESE Submittal - Submit to MSBA	90	05-Jun-19	10-Oct-19			0	Standard 5 Day Workweek w holidays																												
S-1090	MSBA Review of DESE Submittal	5	11-Oct-19	18-Oct-19			700	Standard 5 Day Workweek w holidays																												
S-1170	DESE Review and Approval	40	21-Oct-19	17-Dec-19			700	Standard 5 Day Workweek w holidays																												
Schematic Design Submittal																																				
S-1020	Updated System Narratives & Preliminary SD Drawings - for Estimator Pricing	30	05-Jun-19	17-Jul-19			0	Standard 5 Day Workweek w holidays																												
S-1100	Cost Estimate - 3rd Party Estimators	10	18-Jul-19	31-Jul-19			0	Standard 5 Day Workweek w holidays																												
S-1180	Reconciliation of 3rd Party Estimates	14	01-Aug-19	20-Aug-19			0	Standard 5 Day Workweek w holidays																												
S-1260	SBC Review Schematic Design Submittal	5	21-Aug-19	27-Aug-19			0	Standard 5 Day Workweek w holidays																												
S-1320	SBC Meeting - Vote Approval of SD Submittal and Budget	0		27-Aug-19			0	Standard 5 Day Workweek w holidays																												
S-1380	Compile and Submit SD to MSBA	10	28-Aug-19	11-Sep-19			0	Standard 5 Day Workweek w holidays																												
S-1420	SD submitted to MSBA	0		11-Sep-19*			0	Standard 5 Day Workweek w holidays																												
S-1440	MSBA and Town Review Period	16	12-Sep-19	03-Oct-19			13	Standard 5 Day Workweek w holidays																												
S-1520	Design Team Respond to MSBA	5	04-Oct-19	10-Oct-19			13	Standard 5 Day Workweek w holidays																												
S-1620	MSBA Board of Director's Meeting : Approve SD	0		30-Oct-19*			0	Standard 5 Day Workweek w holidays																												
S-1680	Special Town Meeting : Vote on Project Scope & Budget Agreement (PS & BA)	0		10-Dec-19*			0	Standard 5 Day Workweek w holidays																												
Design Development																																				
S-1060	Design Development	55	11-Dec-19	02-Mar-20			0	Standard 5 Day Workweek w holidays																												
S-1140	MSBA Design Development Review Period	15	03-Mar-20	23-Mar-20			0	Standard 5 Day Workweek w holidays																												
Construction Documents & Award																																				
S-1050	60% Construction Documents	40	24-Mar-20	18-May-20			0	Standard 5 Day Workweek w holidays																												
S-1130	MSBA 60% CD Review Period	15	19-May-20	09-Jun-20			0	Standard 5 Day Workweek w holidays																												
S-1210	60% CD Review Response & Drawing Revisions	5	10-Jun-20	16-Jun-20			0	Standard 5 Day Workweek w holidays																												
S-1290	90% CDs and 100% Early Package	35	17-Jun-20	04-Aug-20			0	Standard 5 Day Workweek w holidays																												
S-1350	MSBA 90% CD Review Period	15	05-Aug-20	25-Aug-20			0	Standard 5 Day Workweek w holidays																												
S-1410	90% CD Review Response & Drawing Revisions	5	26-Aug-20	01-Sep-20			0	Standard 5 Day Workweek w holidays																												
S-1470	100% Construction Documents (Bid Package)	20	02-Sep-20	30-Sep-20			0	Standard 5 Day Workweek w holidays																												
S-1510	Construction Bid & Award	40	01-Oct-20	30-Nov-20			0	Standard 5 Day Workweek w holidays																												
Construction of Sharon High School																																				
S-1070	Construction, Testing and Start-Up	400	01-Dec-20	29-Jun-22			0	Standard 5 Day Workweek w holidays																												
S-1150	Substantial Completion	0		29-Jun-22			0	Standard 5 Day Workweek w holidays																												
S-1220	FF&E, IT, Move, Punchlist	60	30-Jun-22	23-Sep-22			0	Standard 5 Day Workweek w holidays																												
S-1300	Closeout documentation	20	26-Aug-22	23-Sep-22			0	Standard 5 Day Workweek w holidays																												
S-1360	Project Completion	0		23-Sep-22			0	Standard 5 Day Workweek w holidays																												

Remaining Level of Effort

Remaining Work

Actual Work

Critical Remaining Work

 Milestone

Data Date: 07-Nov-18

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Note: Preliminary Schedule

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■ Remaining Level of Effort   
 ■ Remaining Work   
 ◆ Milestone  
■ Actual Work   
 ■ Critical Remaining Work

Data Date: 07-Nov-18  
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Note: Preliminary Schedule

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# SECTION 2

## EDUCATIONAL PROGRAM

# 2.1

## EDUCATIONAL PROGRAM

## **Sharon High School Education Program (3.1.2)**

### **Introduction & District/School Configuration:**

Sharon Public Schools (SPS) is a high performing school district that is “committed to providing an inclusive, safe and healthy learning environment for all.” Our core values of acceptance, equity, honesty/integrity, respect, kindness and teamwork guides our practices and decision-making and are key to the success of our students.

Sharon is a suburban community of approximately 18,000 residents located approximately 22 miles south of Boston, and almost midway between Boston and Providence, Rhode Island. Incorporated in 1765, the town’s location, beautiful scenery and historically high-performing schools attract culturally, linguistically and religiously diverse families that deeply value education.

The school district serves approximately 3,700 students in its five schools which includes a high school (9-12), middle school (6-8), three elementary schools (K-5), and an early learning center (Pre-K). As the reputation of the community and its schools continues to spread throughout the Common Wealth, the district has seen exceptional growth over the past several years. Over the past 15 years, the enrollment in Sharon Public schools (SPS) has consistently increased by approximately 600 students. Currently, the overall enrollment in SPS is 3,548 students. This school year, SPS enrolled the largest kindergarten class in seventeen years of 247 students. We reached the projected enrollment in kindergarten two years earlier than was projected. The ten-year projected enrollment for SPS is 3,988 students, which is an additional 400 students above the current enrollment. The make-up of the new students enrolling in SPS show a shift in the past five years in our demographics with non-English speaking families with a 30% increase (# of students here).

According to the Sharon 2017 Annual Town Report, “...80% of the total budget for the Town is allocated to the School Department.” Residential property taxes account for roughly fifty percent of the allocated budget to the school department. According to the Department of Elementary and Secondary Education (DESE); Sharon’s per expenditure is \$16,316.98 which is slightly higher than the state average of \$16,014.90.

SPS prides itself in being academically rigorous, socially conscious and ensuring the highest quality education for our students. Upon graduation, 92% of students matriculate to four-year public or private colleges/universities, 2% matriculate to two-year academic institutions, and the rest pursue work, military, or life exploration in the form of a gap year.

As of 2017, the four-year adjusted cohort graduation rate was 98.3%, and the drop-out rate stood at less than 1%. The attendance rate for students at Sharon High School is 95.9%. The faculty attendance rate is also high at 94.6%, which is indicative of our educators' commitment.

Sharon High School offers a strong college preparatory program to its students. Current graduation requirements include four years of Math and English, three years of Social Studies and Science, two years of the same Foreign Language, one year/two semesters of Unified Arts, one year/two semesters of Wellness, and additional course credits that can fulfill the 102-credit standard. The Program of Studies is published annually and includes over twenty Advanced Placement course options. Students can also pursue educational interests as well as meet some graduation requirements by taking courses through The Virtual High School, Dual-Enrollment at Massasoit Community College, or by proposing and completing an independent study.

The Sharon community is very active and supportive of our schools. Through parent and community partnerships such as the Sharon Education Foundation (SEF), Parent-Teacher-Student-Organization (PTSO), Friends of Art & Music Education (FAME), and Sports Boosters; grants and funds are provided to enhance our work with additional programming and supplies. Additional learning opportunities for our students and staff are realized through additional community partnerships with the Council on Aging, Sharon Pluralism Network, Police, Fire & Emergency Departments, and the Norfolk County District Attorney's office. Annual events such as the Financial Literacy Fair, Sharon Green Day, and Veterans and Memorial Day Activities are further examples of the kind of enrichment that exists in town.

SPS has a unique structure to ensure a strong connection with the community through the Community Education program which is a primary department within the school district. Over the past, five years, the programs and services offered through Community Education has seen exceptional growth. The Community Education program, currently serves 1050 students in all programs including the summer programs. They also offer programs for adults throughout the year that serves 738 of Sharon's adult residents. The Community Education Program is in high demand both by students and adults but has been limited in regards to the availability of adequate space for adult and summer programs.

## **Vision for Learning**

*The Sharon Public Schools is committed to providing an inclusive, safe, and healthy learning environment for all. Our District is dedicated to developing an educational foundation that fosters academics, model citizenship, and cultural diversity, in collaboration with all stakeholders. We maintain the vision that all students will apply their skills and knowledge to inspire our global society.*

Our mission is to provide an educational community that nurtures each student on their unique journey to be lifelong learners and caring and engaged citizens of our world.

In order to achieve our vision and mission, we have four strategic objectives that guide the teaching and learning process in our district.

- Social-emotional learning- Promote student success by ensuring a healthy school environment that supports the social and emotional well-being and the mental health of each learner.
- Relationships and Culture- Foster an equitable and inclusive learning community that ensures respectful and culturally competent relationships.
- Learning Environments- Provide safe, secure, accessible environments conducive for learning and adaptive to changing teaching practices that meet the needs of each learner.
- Curriculum and Professional Development- Implement a consistent curriculum with responsive instructional practices that meet the needs of each learner.

We are committed to achieving vision through the implementation of our objectives by adopting and implementing the principles of universal design for learning, exploring 21<sup>st</sup> century learning concepts and structures such as small learning communities/academies, project-based and interdisciplinary instruction, and technology integration.

### **Class Size:**

Class size is an important element of ensuring that students receive the best educational opportunities. The Sharon School Committee is committed to ensuring that class sizes remain at a manageable range by supporting and approving budgets to ensure a reasonable class size.

Class size is established through the collective bargaining agreement between the Sharon School Committee and the Sharon Teachers' Association. The current guidelines have been created over time and are guided by best practice, as well as space availability. As outlined in the collective bargaining agreement, the class sizes are as follows:

- Special Education programs and services follow the outlined regulations permitted by the Department of Elementary and Secondary Education.

- Elementary class sizes range from twenty-two to twenty-eight students with the potential to increase to thirty students if there is an unusual increase in enrollment after the opening of schools.
- Middle school class sizes for academic courses except for physical education range from twenty-two to twenty-six students; physical education range from twenty-five to thirty students.
- High school class sizes for the following classes range from fifteen to twenty-five students: English, Foreign Language, Science, Mathematics, Social Studies, Physical Education, and Health and Wellness.
  - NOTE: Due to space and safety concerns in science classrooms and laboratory spaces, a maximum of 24 students per classroom have been enrolled in Science classes
- Technology classes that depend on a computer lab, range from 15-20 students
- Music, maximum 50 students
- Art-Intro, maximum 22 students
- Art-Clay and AP Art, maximum of 16 students
- Other Art classes, maximum of 18 students

Currently, the average class sizes by grade and/or subject area are as follows:

#### **Elementary**

K	1st	2nd	3rd	4th	5th
22	20	21	23	20	24

#### **Sharon Middle**

6th	7th	8th
18	23	22

#### **Sharon High**

	9	10	11	12
ELA	22	20	19	22
Social Studies	21	23	21	22
Math/Comp Sci	21	20	19	22



Science	21	20	22	20
Foreign Lang	15	17	18	15

**Note:** We do not propose any further changes in the class size guidelines.

### Sharon High School Schedule:

The school day begins at 8:05 a.m. and ends at 2:40 p.m. Prior to the 2010-2011 school year, the school day began at 7:25 a.m. and ended at 2:00 p.m. The schedule consists of 6-periods that rotate on a 6-day schedule with each period meeting 5 days per cycle.

### Sample Schedule:

SHARON HIGH SCHOOL - BELL SCHEDULE						
Time/Day	A	B	C	D	E	F
<b>Block One</b> 8:05 am – 9:00 am (55 minutes)	Period 1	Period 6	Period 5	Period 4	Period 3	Period 2
Passing (4 minutes)						
<b>Block Two</b> 9:04 am – 9:59 am (55 minutes)	Period 2	Period 1	Period 6	Period 5	Period 4	Period 3
<b>Eagle Block</b> 9:59 am – 10:44 am (45 minutes)	Directed Study <i>Mon, Wed, Fri: Chorus, Band, &amp; Orchestra Tue, Thurs: Designated Ensembles</i>	Directed Study <i>Mon, Wed, Fri: Chorus, Band, &amp; Orchestra Tue, Thurs: Designated Ensembles</i>	Directed Study <i>Mon, Wed, Fri: Chorus, Band, &amp; Orchestra Tue, Thurs: Designated Ensembles</i>	Directed Study <i>Mon, Wed, Fri: Chorus, Band, &amp; Orchestra Tue, Thurs: Designated Ensembles</i>	Directed Study <i>Mon, Wed, Fri: Chorus, Band, &amp; Orchestra Tue, Thurs: Designated Ensembles</i>	Directed Study <i>Mon, Wed, Fri: Chorus, Band, &amp; Orchestra Tue, Thurs: Designated Ensembles</i>
Passing (4 minutes)						
<b>Block Three</b> 10:48 am – 11:43 am (55 minutes)	Period 3	Period 2	Period 1	Period 6	Period 5	Period 4
Passing (4 minutes)						
<b>Block Four</b> 11:47 am – 1:41 pm (86 minute class) (28 minute lunch)	Period 4 and Lunch  1 <sup>st</sup> Lunch: Gr. 11 2 <sup>nd</sup> Lunch: Gr. 9 3 <sup>rd</sup> Lunch: Gr. 10 4 <sup>th</sup> Lunch: Gr. 12 + PE	Period 3 and Lunch  1 <sup>st</sup> Lunch: 11:43 – 12:11 2 <sup>nd</sup> Lunch: 12:14 – 12:42 3 <sup>rd</sup> Lunch: 12:46 – 1:14 4 <sup>th</sup> Lunch: 1:17 – 1:45	Period 2 and Lunch  1 <sup>st</sup> Lunch: 11:43 – 12:11 2 <sup>nd</sup> Lunch: 12:14 – 12:42 3 <sup>rd</sup> Lunch: 12:46 – 1:14 4 <sup>th</sup> Lunch: 1:17 – 1:45	Period 1 and Lunch  1 <sup>st</sup> Lunch: 11:43 – 12:11 2 <sup>nd</sup> Lunch: 12:14 – 12:42 3 <sup>rd</sup> Lunch: 12:46 – 1:14 4 <sup>th</sup> Lunch: 1:17 – 1:45	Period 6 and Lunch  1 <sup>st</sup> Lunch: 11:43 – 12:11 2 <sup>nd</sup> Lunch: 12:14 – 12:42 3 <sup>rd</sup> Lunch: 12:46 – 1:14 4 <sup>th</sup> Lunch: 1:17 – 1:45	Period 5 and Lunch  1 <sup>st</sup> Lunch: 11:43 – 12:11 2 <sup>nd</sup> Lunch: 12:14 – 12:42 3 <sup>rd</sup> Lunch: 12:46 – 1:14 4 <sup>th</sup> Lunch: 1:17 – 1:45
Passing (4 minutes)						
<b>Block Five</b> 1:45 pm – 2:40 pm (55 minutes)	Period 5	Period 4	Period 3	Period 2	Period 1	Period 6
<b>Dropped Period</b>	Day A - Period 6	Day B - Period 5	Day C - Period 4	Day D - Period 3	Day E - Period 2	Day F - Period 1

For the 2009-2010 school year, a 45-minute directed study (“Eagle Block”) was added to the schedule (9:59 a.m. - 10:44 a.m.) to address the needs of our students and faculty. We were faced with conflicts regarding our music programs and extra-curricular activities, equitable distribution of students amongst the Wellness Department and an impact on clinical counseling services.

Additionally, Eagle Block provides students with opportunities to access school-based services, academic and social-emotional interventions and supports.

The lunch period is 114 minutes long, during which students attend class for 86 minutes and lunch for 28 minutes. Lunches have historically been organized by grade.

The master schedule is developed collaboratively by administration and school counseling. Course offerings include full-year and semester classes. Students request courses for September beginning the preceding March. Course sections are based on the number of student requests in the course request phase.

A committee was created during the 2015-2016 school year to consider the possibility of transitioning to a trimester schedule. Among the considered benefits to this type of schedule were opportunities for students to take a broader array of electives, an expansion of the visual and performing arts programs, and elimination of mid-year examinations. Although the committee did not conclude that a transition to trimesters was appropriate at the time, the conversation is likely to reemerge in the near future. At present, there are no imminent plans to change the schedule.

Professional collaboration time is built into the schedule. Currently, all members of ELA, Foreign Language, Mathematics, Science, Social Studies, and Special Education have a common period off for the purpose of collaboration on four of the six days in the cycle. Departmental professional development is currently built into these common planning periods, including full-department, grade-level, and curriculum partner collaboration.

Our current facilities impede our ability to explore cross curricular collaboration and professional development offerings during the school day.

The vision for future collaboration includes opportunities for teachers in all disciplines (including unified arts, PE/wellness) to have common planning time and increased time and space for cross-disciplinary collaboration.

The advantage of our current scheduling methodology is the involvement and leadership of the process by the School Counselors. Our school counselors have a very good understanding of the individual students and their unique needs, goals and aspirations. A disadvantage to the current scheduling methodology is the way in which classes are determined by the number of students who select a class or have interest in the specific class selection. Students have been faced with not being able to take their top selected course because there may not be enough students who select the class in order for the class to run. In addition, the scheduling is managed solely by administration and the counseling department with limited opportunities for teacher input. In the future, it would be advantageous for us to develop class scheduling teams that are integrated and inclusive of a cross section of departments who share students.

## **Teaching Methodology and Structure:**

### **Administrative and Academic Organization/Structure - Curriculum Delivery:**

Sharon High School is a traditional college-preparatory school that is organized by departments. Due to the limits of available classroom space, many teachers share classrooms that are available, regardless of the department assignment. While the teachers are organized by departments, many classrooms are located outside of their department. There are no policies that determine how we are organized or room assignments.

The district implemented the Digitally Enhanced Learning Initiative five years ago which provides a 1:1 computer to enhance the teaching and learning process. Currently, students in grades 9-11 have their own laptop which is used in many of their classes. While the current 12th graders were a year ahead of the implementation of the initiative, they do have access to technology laptop carts or they bring their own device. We value responsible technology use and integration and believe that technology is an additional tool that enhances the learning experience.

In order to continue to enhance innovation by our students and teachers and meet 21st century college and career readiness expectations, we envision expanding our curricular offerings to allow students to explore various careers and build their 21st century skills.

Through the innovation and creativity of our staff, we have been able to create courses that peek the interests of our students and support their matriculation to post-secondary education and/or career. We have been able to continue our high performance although our current facility significantly inhibits our capacity to broaden our courses of study to include courses and programs that allow for project-based learning and career exploration.

Through community partnerships with Sharon Community Television, our students receive real-life opportunities to learn various aspects of communication, television and media. While our current facility has a functioning television studio, it is aging and there are limits to our students' experience during the school day. Students only have access to the television staff after school hours and have to leave the school campus to travel to the local television studio or satellite sites to work with the television staff.

Our students have a wide array of strengths and interest which correlates with the diversity of our student body. This attributes to the emphasis on the Arts, Science, Technology, Engineering and Mathematics. We have an award-winning theatre company and have secured many awards in various areas of the Sciences. Currently, many science classes, all of which have laboratory components, are taught in traditional classrooms that have been repurposed. The rooms are cramped and are thus considered unsafe based on MSBA standards and the National Science

Teachers Association (NSTA) Safety Advisory Board recommendations for minimum square footage per occupant.

The current facility and school structure do not foster the opportunity for interdisciplinary and collaborative teaching. The current facility lacks adequate space for large groups of students to work collaboratively across classes. Currently, when classes want to meet together they either open the access door between classrooms and go back and forth or look for available times when other locations in the school are not occupied. When students are collaborating and working on projects, they use the hallways. Large interdisciplinary project-based learning rooms would provide the flexible spaces needed for students to develop and present their projects.

Currently, there are no specific areas specified for teacher planning and collaboration. This is often done in a classroom during a teacher's planning period. Therefore, it limits the depth of opportunity to collaborate and plan across departments.

The goal of a new Sharon High school would be to plan a newly reorganized school that fosters innovation, collaboration and integration of academics and the arts.

We envision a new school would provide:

- flexible classroom space,
- student collaboration and study spaces,
- project rooms to support project-based learning,
- teacher planning rooms for the faculty and staff to collaborate within and across disciplines,
- privacy rooms to support students in need of additional academic and/or emotional supports,
- flexible conference rooms to support student team meetings and individual parents/guardians' meetings,
- and innovation labs.

The new facility would need to be reflective and adaptable to the district's core values of acceptance, equity, honesty/integrity, respect/kindness, and teamwork.

## **Academics, Programs and Services**

Currently, Sharon High is organized and structured in a department model. This has been the structure and design of the school for many years which has been driven by our facilities. As our educational programming continues to evolve and expand, we would like to be organized based on 21st century learning concepts. While there is some interdisciplinary learning occurring at

varying degrees, we desire to explore the academy model and implement more project-based learning opportunities.

### **English Language Arts:**

The Sharon High School English Language Arts Department focuses on strengthening reading, writing, and research skills. Instruction is delivered through a range of methods, which include lecture, Socratic discussion, and group and individual projects and investigations. Literature is used as a tool for learning about human nature, and to that effect, teachers also use their classrooms as interactive learning spaces, where students can role play and engage in activities that allow them to experience and explore some of the themes and questions proposed in their course texts. Teachers and students use technology for research, presentations, visual arts and texts, and writers' workshop. In grades 10 - 12, ELA and Social Studies interdisciplinary courses are offered, and these classes collaborate to make connections between history and literature.

In addition to full-year ELA classes, the department also offers semester-long electives in Film, Creative Writing, Journalism, and Comics and Culture. These courses are offered for elective credit, and they do not meet the graduation requirements for ELA course credits. These classes use technology for writers' workshop, research, film viewings, and Skype conversations with authors and interview subjects. Sharon High School has three computer labs, and one is used by the ELA department, though also shared with other departments. Other classes use laptop carts in lieu of the lab.

In the future, we would like to have more project-based and interdisciplinary learning opportunities so that students can further explore not only the connections between history and literature but also expand the connections between the electives offered and literature. Due to our space limitations, technology integration and the use of smart technologies have been limited. In the future, we are committed to more thoughtful and meaningful technology integration in the delivery of curriculum and instruction.

The ELA department also offers a Writing Center during our 45-minute Eagle Block. Due to lack of space, the writing center rotates from room to room which is inconvenient for both students and staff. Because there is no social space for students in the current building, the only space available to students is the library. As a result, the library is not a quiet, academic workspace.

Ideally, there would be adequate space to deliver core academics, electives and interventions. The space would include the following components:

- Open areas (or the potential for open areas through moveable walls) in order to create collaborative learning environments and conference spaces.
- Classrooms with adequate shelving and storage for classroom libraries and showcasing student work and materials/tools for learning.
- Age appropriate desks and workspaces that are easy to move around.
- Blackout shades for effective use of technology.
- More whiteboard space, and projection systems in each room.

Additionally, there needs to be access and space to support the writing center with an expanded academic library that could serve as a quiet workspace, and flexible spaces that could serve as small lecture halls for presentations, public speaking, and outside/community speakers.

### **Mathematics/Computer Science:**

The Sharon High School Mathematics and Computer Science Department strives to provide appropriate courses for all students. Students are encouraged to take the courses at the level that best reflects their interests and strengths and allow for exploration so they are not locked into a particular level for their high school experience. Mathematics and science are a focused interest of a large number of our students who desire rigorous and challenging content and instruction, therefore, students are allowed to take more than one mathematics course when feasible. The mathematics and computer science courses are fully aligned with the Massachusetts Curriculum Frameworks and with National Council of Teachers of Mathematics (NCTM) and International Society for Technology in Education (ISTE) standards. All courses stress critical thinking, problem solving, written and oral communication, reasoning, and connections to other mathematics and computer science courses and real-life applications. All courses at Sharon High School incorporate the use of technology as a meaningful teaching and learning tool, and problem solving is a universal theme.

Currently, four years of Math are required for graduation. There is no current requirement for Computer Science and Computer Science courses do not satisfy the Math graduation requirement. Sharon High follows a traditional path of courses in Math leading to Calculus and Statistics in senior year. The department offers 3 AP classes in math, AP Calculus BC and AB and AP Statistics. It also offers 4 levels of calculus for seniors, 2 at the AP level and 2 at the standard level. There are four levels of Math taught at Sharon High: AP/Honors, Accelerated, Standard, and Foundations. The Computer Science Department offers four courses: AP Computers Science A, AP Computer Science Principles (both full year), Fundamentals of Python Programing (Semester), and Intro to Computer Science (semester).

The math classes meet in any room in the school as no classrooms are designated for Math instruction. Math instructors use traditional methods of instruction as well as more contemporary



methods of project-based learning, collaborative groups, large and small group discussion, and direct instruction. While current space is functional, it presents difficulties when trying to implement project or collaborative group instruction. With lack of whiteboard space and aging technology, having students working together or presenting their work to the class is difficult. In addition, the current furniture in the classroom makes rearranging for collaborative or project work extremely difficult and uncomfortable thus preventing some meaningful and innovative instruction from taking place. Spaces that are flexible and have flexible furnishings would better support the delivery of instruction in this area. This would promote more effective collaborative groups and project-based learning opportunities.

In planning for new space for math instruction, the classrooms should be large and have write-on walls that would allow collaboration at any point in the room. Flexible, comfortable seating should be available to allow for easy rearrangement for project-based and collaborative instruction to take place. There should be break out space where small groups could work and larger spaces where interdisciplinary groups could work together. A teleconferencing space or capabilities should be made available in classrooms to further permit collaboration with experts/schools outside Sharon High School.

Currently, the Math/Computer Science Department also offers a Math Center during our 45-minute Eagle Block. Due to lack of space, the math center rotates from room to room which is inconvenient for both students and staff. Because there is no social space for students in the current building, the only space available to students is the library. As a result, the library is not a quiet, academic workspace.

The computer science classroom currently utilizes a computer lab which is shared with a class from another department. The room is small and the technology is aging. It is not currently conducive to simulating a software programmer's project-based work environment. It presents difficulties in collaboration as there is no room for multiple or large screen workstations.

In planning for space for computer science, there needs to be a large, flexible space that can function as a computer lab but can also accommodate collaborative work among students. This would require large/multiscreen work stations throughout the room. As the computer science program expands to include hardware and network courses, large dedicated laboratory and/or project spaces would be optimal to support this expansion.

Based on student interest and need, we desire to expand our offerings to include business courses, such as accounting, finance, marketing etc. which would require space that is flexible, able to adapt easily to new technology and software, and permit project based and collaborative instruction/learning to take place.

## **Science:**

The goal of the science department is to ensure that all students graduate from Sharon High School with the skills and knowledge necessary to become scientifically literate citizens who can make informed decisions. The curriculum emphasizes scientific process and inquiry skills, problem-solving, and non-fiction reading and writing. The department is continually working to move students from procedural-based laboratory activities to more inquiry-based laboratories.

Currently, three years of science is required for graduation although the majority of students take 4 or more science courses prior to graduation. Sharon High School follows a physics first course sequence where students take physics in grade 9, chemistry in grade 10, and biology in grade 11. Each of these core science courses are offered at the foundations, standard, and honors levels. Beginning in sophomore year, students may choose to take additional elective science courses beyond the 3 core sciences. By senior year, all science courses are elective-based. Currently the department offers 5 AP, 5 multileveled (standard/honors), 2 standard, and 2 honors elective options. Of these, 4 courses are semester based and 10 are full year electives. In the 2012-2013 school year, Biotechnology was developed as a STEAM-based science elective. Over the last 5 years, the department has added more STEAM (Science, Technology, Engineering, Arts and Mathematics) focused courses such as Advanced Engineering Design, Environmental Science, and Forensic Science. The department would like to consider adding other STEAM courses however there is no physical space in which to add more courses. For example, for the past 10 years, the department has considered adding robotics courses however there is no large available space in which to run this type of course. The department is also very interested in adding an innovation/maker lab for use by several disciplines and courses. In designing a new or renovated Sharon High School these needs should be considered and plan for spaces that are flexible, located so to integrate the curriculum areas, and large enough for student projects and collaboration.

All Sharon High School science courses are designed to be lab-based courses. Currently, 13 rooms are used as science spaces. Of the 13 rooms, only 2 meet minimum space requirements for laboratory classrooms. Six rooms were designed as science labs many years ago however they are grossly undersized and thus cannot be used effectively. Future space considerations should consider the need for dedicated Science labs that ensure the safety of students and staff and support the goals of the department and district.

In planning for new science spaces, there should be flexible work space in all science classrooms. Rooms need to be designed so that there is a combination of content teaching space as well as lab space since classes blend content with hands-on experiences. A dedicated space for storage and sterilization of safety equipment should be readily available and accessible in

every room. Ideally, this would be in a universal location in every science room. Drains in the floors especially underneath emergency showers is something that should be considered.

Currently, there is one chemical storage room which can only be accessed by 2 chemistry rooms and the main hallway. One central chemical storage room is needed so that teachers do not have to carry chemicals far distances to their classrooms for use in laboratories.

In building authentic learning opportunities including project-based learning and inquiry-based learning labs, space is often needed to be dedicated to these more long-term labs. For example, AP Biology students conduct a plant lab where plants are grown over a month of time in varying conditions. This means that the lab space used by the AP Biology classes cannot be accessed by other classes during that month of time. Ample and numerous lab spaces would be able to accommodate this need more easily.

Since each science discipline has slightly different needs for lab space and this is not likely to change significantly in the future, rooms should be designed as biology specific rooms, chemistry specific rooms, physics specific rooms, and flexible science rooms which could be used for any of the three core science disciplines or a variety of science electives. Most science classes, particularly the Astronomy and Environmental Science classes, should have easy access to an outdoor space for making observations and conducting experiments. Bringing classes outdoors allows for more space for experiments as needed and helps to make important connections to the content being taught in natural science classes.

Science electives at Sharon High School are very popular courses in which to enroll. In addition to AP science courses, the department currently offers a range of electives including but not limited to: Biotechnology, Engineering Design, Environmental Science, Anatomy and Physiology, Astronomy, and Forensic Science. Some of these courses have very specific building needs which would enhance their already robust curriculum.

Forensic Science was introduced in the 2015-2016 school year and has been consistently enrolled with 2-3 sections of seniors per year. Now that the course is in its fourth year, the teachers have identified a need that cannot be fulfilled in the current building. Space is needed in which to set up a crime scene and let it remain set up over the course of a week, since the course requires students to fully process a scene. A flexible, open, small room with a shower hose and drain would be ideal.

The engineering design curriculum allows students to use technology, 3D printers, and other readily available materials to design solutions and test their designs for various products. The ideal space would be climate controlled, wired for various technology including laptops with

ethernet access points throughout the room. It would have an adjacent space with open counters and floor space so that students can assemble products and test design solutions.

The environmental science course, AP Biology classes, and Biology courses all grow plants at varying times of year as a part of labs. A flexible space that could act as a greenhouse with outlets for grow lamps and water access would support the curriculum and instructional needs. Having such a space would allow for inclusion opportunities for students serviced in our Pathways special education program.

### **Social Studies:**

In the Social Studies Department, teachers and students do what historians, psychologists, geographers, sociologists, lawyers, economists, anthropologists, and archeologists do. Students are taught to analyze, investigate, speculate, argue, classify, compare, generalize, hypothesize, question, and debate. Most of the Social Studies Department courses are historical in nature. Studying history means asking questions, answering questions, testing and revising answers in an ongoing attempt to know who we are, to understand how we got here and to determine where we might be going.

The Social Studies department has been developing a curriculum for grades 6 through 12 that accomplishes what Howard Gardner describes in *The Unschooled Mind*. Gardner makes the case that student learning should not be focused on isolated bits of knowledge but rather understanding the causes and implications of our past and current decisions.

Currently the Social Studies Department uses 14 classrooms around the building, which are shared with other members of the department as well as members of the foreign language, math, science, and ELA departments. The lack of classrooms designed for integrated, project-based learning hinders the delivery of instruction and collaborative opportunities for students. Project based activities, Socratic dialogues and collaborative learning are impeded by some of the classrooms to which teachers are currently assigned. For example, social studies classes are taught in science labs with fixed workstations that do not lend themselves to many of the group activities and collaborative dialogues conducted in Social Studies classes. Also, the lack of space within these classrooms limits the resource materials (maps, books, etc...) available to teaching staff. Plans for a new building should have some flexible spaces that lend themselves to the investigation of primary source materials. This might include technology, physical artifacts and documents. Serious planning should be given to creating comfortable learning spaces where guest speakers in person, or virtually could be invited or theatrical re-enactments, civic role-plays or the viewing of film and documentaries might take place. This kind of consideration to space design would enhance and compliment the kinds of activities the Social Studies department seeks to deliver. Additionally, an appropriate flexible space design would aid in the department's efforts to implement the new state frameworks in the classroom.

## **World Languages:**

Language learning and culture exploration is a very important part of the learning experience for SPS students starting as early as first grade. Therefore, our goal is to ensure that students have exceptional opportunities to continue to develop and execute their language skills in a way that enhances their learning experiences in the other curricular areas.

Currently, students typically remain in one course for the whole academic year (e.g. Spanish II). We would eventually like to see proficiency-based grouping where students could move between courses as they meet the curricular expectations.

Students are eligible to earn a Seal of Biliteracy if they can demonstrate a certain level of proficiency either in their home language or their language of study at SHS. It would be useful to have small conference areas where students could meet native speakers from the community to learn and/or maintain their home language or practice their language of study in an authentic context.

To support student's development of languages, we currently have a language lab where students can conduct their listening and speaking assessments without distractions and background noise. The current space impedes the ability to expand this lab to include virtual experiences with native speakers via SKYPE or some other video conferencing technology.

Given that food is an important component of any culture, it would be beneficial to have access or in proximity to a space that is flexible and has equipment to support simple food preparation to accompany the language instruction.

Exchange programs are an important part of the language instruction at Sharon High. We host at least two exchange groups from Spain and China each year. It would be ideal for there to be a space for the exchange students to collaborate on a virtual project prior to their arrival and culminate the project with their English-speaking peer during their exchange visit.

Currently, students participate in exchanges such as the Chinese, French, Spanish Exchanges and the CIEE (Council on International Educational Exchange) during the summer.

## **English Learner Program:**

The changing demographics of the Town of Sharon has also led to the growth of our English Language (EL) programs. The number of students identified as an English Learner has tripled in less than five years. The growth of the English Learner program at Sharon High mirrors the

growth of the district. The program has grown from a half-time traveling teacher between Sharon Middle and Sharon High to two full-time teachers. The teachers provide individual and in-class services to students in grades 9-12. They work collaboratively with general education/content area teachers to ensure the success of each of our students. The work collaboratively with the K-8 EL teachers to develop and modify curriculum to meet the needs of each individual student based on the student's language level.

Due to limited space, the two EL teachers and their students move from room to room around the building, sharing space with teachers from other departments. The teachers do not have a dedicated instructional space which limits their ability to provide hands-on, authentic learning opportunities for their students. In addition, the teachers do not have a space to collaborate with one another or the content area teachers to review accommodations for students.

The EL program requires a dedicated space that includes an instructional space that is flexible to provide small group and individualized instruction. It would be optimal for the instructional space to include office space, storage space and meeting space for parent and teacher meetings/collaboration.

#### **METCO:**

Sharon has been a METCO district since 1967 and values the cultural and racial diversity that the program brings to our suburban district. Sixty-six of our students are enrolled in the METCO program in grades 1-12. The program is staffed with a Director and one support staff person. It is expected that students enrolled in the program fully participate in school and community life in Sharon.

Over the past year, the program has gone through a reorganization to emphasize the need to ensure that students are fully integrated and achieve at the same level as resident Sharon students. We envision that the program will continue to evolve by offering academic enrichment support, parent/community engagement activities, and revitalizing the host family portion of the program. The program supports students in academic competition as well as socially and emotionally.

The METCO Director's office is located at Sharon High. The current space consists of a moderate sized office within the library that also acts as a meeting space. Future building plans should include office space and a meeting space that is flexible in order to provide before/after school tutoring support, parent meetings and guest speakers.

## **Special Education Programs/Services:**

The majority of special education services are delivered inclusively in the general education classroom. Whenever required, individual and small group services are delivered through “academic labs.” These are opportunities for students to work individually or in small groups with a special education teacher and/or service provider on their IEP goals and objectives. Currently, the spaces designated for “academic labs” are dispersed throughout the academic areas of the school and the school library.

In order to maximize learning for students, we envision that students receiving special education services, or require supports through accommodations access those services and supports through large-room learning centers staffed by teams of special educators, specialist and related service providers. This space should be flexible and able to accommodate individual and small groups for intervention supports from general education support staff. It should be designed using universally designed concepts for the space as well as the teaching tools. These spaces would be located amongst the academic areas in the building.

Currently, substantially separate programs exist for students with autism spectrum disorder (ASD), those with social-emotional disabilities, those with cognitive and/or neurological impairments, and students in transition (18-22). They are served in the team-based learning, autism spectrum disorder, and a vocational/life skills program. These programs were developed in order to service students who would historically have been placed out of district due to the intensity of service needs. Currently, these programs are located in different areas throughout the building, separate from the core academic areas. In order to ensure a more inclusive learning community for all students regardless of need and ability, the sub-separate program classrooms should be located within the primary academic areas of the school. They should be placed in close proximity to one another so to increase the collaboration amongst the staff and ensure the safety and oversight of all of the students. This would also allow for better resource management by the overlap of support staff and instructional assistants as well as the use of various tools and equipment.

Due to the skills that students in the vocational/life skill program are working on, they require not only a space for academic instruction but also a space to develop daily living and work skills. There are various related service providers who support the programs, therefore, a moderate sized office space should be located within at least two of the sub-separate instructional spaces to ensure that the related service providers are able to provide counseling and conduct assessments with students.

The district developed a partial sub-separate program for students with language-based learning disabilities called LEAP almost three years ago. The first cohort of students in the program will



enter the high school in two years. Due to the matriculation of the program, we are planning to develop a high school level LEAP program. Students receiving services through the LEAP program receive individualized, small group instruction in a sub-separate classroom from a special education teacher for reading and writing and receive math, science and social studies through a co-teaching model in the general education classroom.

The spaces designated for special education programs in the new building should maintain the current space allocations for the academic labs and the sub-separate programs. The spaces while located amongst the school and academic areas should also consider the needs for the program servicing students (18-22) and ensure easy access into the building and instructional areas.

Nursing services are a very important part of supporting the students attending SHS whether they receive special education services or not. There is a large number of students in the district who have varied medical needs including those with chronic illnesses. Currently, we have one full-time school nurse and a part-time floating nurse to support the medical needs of the students at Sharon high. The clinic is currently located in the main office area. It includes a waiting area for students, a small office space, a sick and well child space, a restroom and an examination area. Due to the increased needs of students with allergies and diabetes, proper storage for medications and medical supplies are imperative in a new school where this is currently limited. The clinic should be located in an area of the building where it is easily accessible to students yet discretely located to ensure student confidentiality. It should be a welcoming space that offers a waiting area and a triage area for students. It should be properly equipped with the ability to refrigerate medications. Due to the growing needs of students, two restrooms would be optimal to support students who need assistance from the nurses or for those who are able to manage their medical needs independently. We should maintain a large examination area where curtains can be drawn for privacy. Two small office spaces are needed to accommodate the nursing staff. To support the nurse's workload, the space should be equipped with up-to-date technology to keep detailed medical records and information.

## **Guidance and Support Services:**

### **Social Emotional Supports:**

Currently the high school provide social emotional supports and services through the School Adjustment Counselor and School Psychologists. They conduct individual and group counseling as well as social skills groups either during lunch block or during Eagle Block. They also provide seminars focused on various topics to build students' coping and social, emotional skills and to support families in the support of their children. In addition, they provide services to students enrolled in our sub-separate special education programs and work closely with the teachers and staff of those programs.



They are key members of the special education process, specifically, the school psychologists spend a significant time conducting confidential testing/assessments to determine eligibility for special education services and 504 accommodations. They currently are located in the library to access conference room spaces. However, their office locations are remote to the special education staff and administration for which they frequently collaborate.

Ideally, their office and conference room space would be located in a common area that is in close proximity to the special education programs that they serve, to classrooms and to the special education administration. They require spaces that ensure discretion and confidential engagement with students and families.

### **School Counseling:**

Six school counselors and the Dean of Academic Affairs provide academic, social, and post-secondary planning services for students at Sharon High School.

Upon entering grade 9, students are assigned a counselor based on the alphabetical split of the class. Counselors currently carry an average caseload of 187 which can go up to 200 students and continue to work with the same group of students from grade 9 through graduation. This allows counselors and students to develop meaningful relationships over the years that aide in counseling students through annual course selection and eventually to post-secondary planning.

School Counselors also provide services for students through lunch period counseling seminars that meet 8 - 10 times per year. Because there are not adequate large group meeting spaces, counselors take time out of academic periods to meet with students, and present the same information twice to groups of 25 students, rather than the cohort group of approximately 50. These seminars are scheduled into available classrooms when possible, but are more frequently scheduled into classrooms from which those students are being taken (e.g. into an English I classroom when the seminar is for grade 9 students). To better support our students through the delivery of small group seminars, we require a moderate to large capacity meeting space that is flexible and allow for movement and discussion. It should be wired and equipped with presentation and amplification equipment.

The counseling office hosts over 120 college and university admission representatives each year. Representatives meet with as many as 70 students or as few as 1. Currently, these meetings take place most frequently in a small conference room in an area of the building that is far away from the school counseling offices. The library or the Dean's office is often used for moderate to larger meetings. The library is located upstairs at an opposite side of the building from the

counseling offices. The Dean must find an alternate work space when his office is used for such meetings.

The department would benefit from a College/Career Center space that would provide accessible meeting area and minimize staff disruption. Such a space, if in or nearby to the counselors' offices would allow significantly improved efficiency for the counselors in working with students, families, other staff, and college representatives.

Counselors work closely with school psychologists, adjustment counselor, METCO director, school resource officer, and special education liaisons on a regular basis, including weekly "Case Conference" meetings. Despite the close collaboration, the staff are housed at opposite ends of the building, making this work very challenging.

We envision a "student services suite" where students would be able to access all counseling and special education services, including the Special Education Administrator and the Dean of Academic Affairs. Considering the significant number of parent meetings these individuals conduct, such a space would ideally be located near the administrative offices, or near a building entrance to ensure the safety and security of students and staff.

### **Teacher Planning and Room Assignment Policies**

Teachers are provided with a preparatory planning period once per day. In addition, most departments are scheduled to have the same planning period so that departmental professional development and common planning can occur during the school day. Currently no teachers in the building have their own classroom as every classroom is shared by 2-5 teachers. When planning room assignments, considerations are made so that teachers are not traveling far distances between periods unless the teacher has a prep period separating the two courses so that they have time to travel the further distance. Departments meet in classrooms for professional development since space is limited.

The current schedule is designed to allow for ongoing professional development during the school day. It is an integral part of the day that would be better enhanced with spaces that are conducive to teacher collaboration time and site-based professional development. In addition, the district utilizes half day release time for professional development. There is no plan to change the current practices for professional development but a new facility designed for this purpose would enhance the current practices and enhance cross disciplinary and vertical planning and collaboration opportunities.

Teachers currently have a few small and inadequately equipped workspaces in the building. As a result of the growth with students and teachers, previous spaces designated for teacher workspaces have been converted to staff office space or instructional spaces.

To support and promote cross curricular collaboration and to implement more interdisciplinary and project-based units of study, teachers require work spaces that centrally located near the instructional classrooms that can also act as a space for individual, content level and cross-curricular planning and professional development spaces. The space should be flexible so to allow for small group planning to occur simultaneously with a moderate group of educators receiving professional development.

There are five curriculum coordinators who serve grades 6-12. They serve as department chairpersons at the high school level. Therefore, the majority of their time is spent in the high school building. Currently, there are three small office spaces that are shared by them. The current spaces impede their ability to plan and review teacher evaluations in a safe, private area.

To ensure that the curriculum coordinators have space that supports their work. It requires spaces for both individual and collaborative work as well as shared meeting space where confidential conversations and phone calls can occur. In addition, their space should be such that they can meet with both small and large groups of teachers for curriculum planning, development and professional development. This space would be equipped with the technology supports such as charging stations and large monitors.

Although we have implemented a 1:1 technology initiative, educators still rely on actual textbooks and other supplemental materials, therefore, a small storage space is needed to store those materials to be easily accessible to the teaching staff. Additional shelving would be an adequate space to support the professional growth of teachers by providing a professional library of books and resources.

### **Pre-Kindergarten:**

The Sharon Public Schools Children's Center provides full-day and half-day substantially separate and integrated preschool education for students with disabilities. It is located in the Sharon Middle School. It serves approximately sixty-six students with and without special needs in an integrated environment. No changes to our current preschool program is proposed as part of this project.

**Kindergarten:**

The Sharon Public Schools offers full day tuition-based kindergarten in each elementary school in addition to a free half day program housed at Heights Elementary School. No changes to our current kindergarten are proposed as part of this project.

**Lunch Program:**

There are currently four lunches, each lasting 28 minutes long. Students generally dine by grade, and there are no plans at this point to integrate the lunches. However, if in the future, we transition from a departmental model to an academy model, the lunch schedule will be reviewed and revised as needed.

Currently, there is limited seating in the cafeteria for all students to eat within the lunch area. Many students can be found sitting in the hallway or in the library during their lunch periods. The serving lines are narrow and challenges the time frame for which students need to be served. There is an outdoor inner courtyard that students use when the weather permits.

In the future, the ideal cafeteria space would be large enough to seat  $\frac{1}{3}$  or  $\frac{1}{2}$  of the student population to optimize time on learning. Well-spaced food service stations and line with a variety of student seating options (i.e. booths, round tables, high tops) would enhance the student experience and allow this time to be one of social interaction and relaxation during the school day. In light of our robust visual and performing arts program, students would welcome an opportunity to share and display their talents. Therefore, the dining hall should include an integrated sound system, visual media (i.e. televisions), modern payment options, cameras, and charging resources for electronics to ensure its use throughout the school day. The space should be designed to allow students to use it after-school to study and complete homework rather than needing to leave campus for the local coffee shop.

The dining area should also include a separate but visible space in the area or proximity for a teacher/staff dining hall. Currently, there are two adjoining rooms that serve as a very small dining hall for educators. A proper dining facility for staff would allow teachers an opportunity to decompress between classes and collaborate over lunch. This space would include at least two staff restrooms. If student lunches decrease from four sittings to three or two sittings, the staff area would need to be large enough to accommodate a moderate group of teachers comfortably.

**Technology Instruction Policies and Program Requirements:**

Technology is a tool that is necessarily and intrinsically embedded into much of the daily work of our students and staff. Teaching and learning is not only enhanced by the use of contemporary tools, it is hard to believe that any powerful learning experience didn't start with,

was developed on, made use of, or was assessed using some form of technology. Our goal in how technology is used at SHS is consistent with that philosophy stated above, that technology is a necessity that holds the potential to enhance teaching and learning in profound ways.

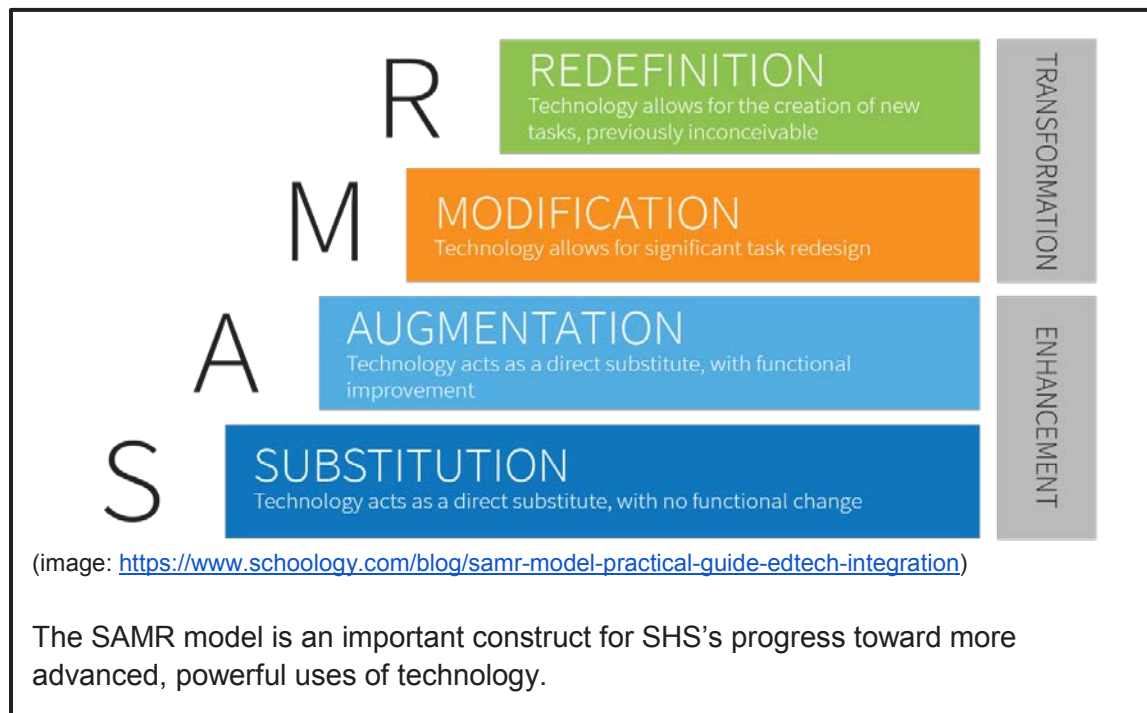
Currently, Sharon High School is in its third year of a gradual implementation of 1:1 access to mobile devices for all students and staff. All teachers and all grades 9 through 11 students have a MacBook Air laptop. Seniors and their classes still rely on either bringing their own devices or using laptops in the remaining carts stored around the building. There are 5 carts of 25 11” MacBook Airs.

Along with the advancements in mobile technology access, we have continued to cobble together a more contemporary infrastructure in and around existing, aging, often inadequate learning, working, and storage areas of SHS. One head end room with virtually no emergency back-up, and three IDFs with no A/C, connected by 1 Gig fiber, are connected to the internet with a shared 1 Gig/s fiber connection through Comcast (which is the primary connection for all five schools in the district). Over the last few years, we have run about 75 ethernet “home-runs” and have connected most of those to Aerohive wireless access points, getting close to an AP in each classroom. Each classroom is equipped with either a wall-mounted Epson interactive projector (2016-2018), a ceiling mounted projector (2012-2018) shooting to a Promethean Board (2008-2011), or a large format monitor (2016-2018). Projection and sound systems are all connected to a classroom Mac desktop. SHS has two Mac labs dedicated to graphic design and art, one general purpose lab used by computer science, journalism, and as a flex space, one foreign language lab, and one TV studio and classroom with 12 desktops. Those devices and all of the systems running on them are supported by two tech support staff.

Instructionally, the integration of technology and the promotion of best practices are supported by a .75 technology coach and the library teacher who are part of the district’s Digital Literacy Team. Teachers use technology in a variety of ways throughout the high school. The Digitally Enhanced Learning Initiative (DELI or 1:1 program) has brought with its professional development, incentives, and resources to promote a more hands-on, differentiated, innovative environment in the classroom. The use of a base Learning Management System, Schoology, allows teachers to organize, store, and present class materials and assignments electronically, making best use of student access. Additionally, the promotion of digital forms of presentation, assessment, research, communication, and writing have all been emphasized with this program. More time for teachers to collaborate, share, and explore technologically is always needed.

Unfortunately, keeping up with the demands of newer student learners who are used to being able to find, examine, and use information from anywhere at any time requires both infrastructure and pedagogical advancements. The current high school structure, with limitations on connectivity, power, storage, collaborative spaces, and open classrooms inhibits teacher

creativity and student learning using technology. With each added hindrance, teachers grow increasingly reticent to experiment and develop more tech-based innovations in their instructional practice. For technology to be more fully and effectively integrated, teachers need to have more reliable access in spaces that promote collaboration, creativity, and communication. Increased support through more robust professional development is also key.



In a future-ready building, our hope is that technology is not only ubiquitous, but it is incredibly reliable, powerful, and easy to use. A new high school with a strong, scalable, and advanced infrastructure, would allow English teachers to bring in primary resources, make connections with authors and journalists, write and edit with peers around the world, and publish works in ways we haven't even invented yet. Science teachers would be able to embed 3D virtual labs and investigations into their regular routines, perform experiments with new levels of precision, and also collaborate with experts from around the world. Math students could be exploring advanced models and developing complex representations of algebraic, computational, or geometric theorems using more powerful tools. Musicians, artists, and designers could be creating visual and aural projects that are unimaginable today.

Key to these exciting possibilities will be research and exploration of new tools and new pedagogies, supported by curriculum coordinators, digital literacy team staff, and the sharing of colleagues within the high school. The support team is in place now, but will need to continue to do research and advance their own knowledge of newer, more powerful networks, devices, and curricular tools. The technology coaching staff will also be critical to the success of the

integration and the ability to get more and more instruction in the Redefinition portion of the SAMR model shown above.

### **Media Center/Library:**

Another critical component of the advancement of teaching and learning is the school library. As a hub of curated resources, a space for collaboration and presentation, a place to incubate and develop ideas, and an area devoted to research and literacy (in all its forms), the modern library can be one of the most important spaces in a school. If designed well, SHS's library could be a central spoke in the daily life of our school.

Today, the SHS library, which consists of one large 50' x 50' open space and several small offices, is one of the most up-to-date spaces in the building, and yet its distance from most classrooms, its closed-off entryway, and its slightly awkward second floor location provide challenges to its full use and effectiveness as a learning common. That being said, the current staff and administration have worked hard over the last few years reshaping the furniture and fixtures of the library to create more open and varied spaces, more flexible seating options, more mobile work spaces that promote collaboration, and more creation tools in a Makerspace complete with a green screen video area, robotics, electronics, art, and musical equipment. While there are some fixed desktops, the expansion of mobile devices and "collaboration stations" allow for more teams of students to work and learn together.

Students come to the library throughout the day, sometimes with a class, and sometimes on their own or in small groups. All 9th graders are introduced the current resources at the beginning of the year, and then receive brief tutorials on responsible research/citation practices and use of the online catalogue and databases. One full time Librarian and one part time assistant teach those classes, as well as co-teach with several classes throughout the year, offer before and after school open library time, sponsor book clubs and poetry projects, and help organize community events from STEM Talks to cultural performances.

While the library has grown in many positive ways over recent years, the actual architecture of the space has continued to present challenges. Our hope is to have a library with a variety of spaces that allow for multiple uses simultaneously. Where maker activities are more active and collaboration is louder, many come to the library to read, write, and research in a quiet place. Better acoustics, design elements like knee walls or glass dividers could allow for all kinds of work and learning while avoiding either the space getting too loud/distracting or the need for staff to hush students relaxing or exploring together. Furniture that is comfortable, flexible, and includes the requisite need for power and data are sorely lacking in our current space, but could enhance the library experience for everyone. Having those larger and changeable set ups in the library would also allow for whole classes to research or receive direct instruction, would allow



for community performance space, and could be the launching point for real-time connections with the global community.

### **Visual and Performing Arts Programs:**

The arts are highly valued in Sharon. Our community prizes the arts as an important piece to living a balanced life, and as a result, a significant proportion of students are involved in visual and performing art opportunities throughout their school career.

Students can take courses in Art, Music and Theatre. They have opportunities during the day and in a variety of extra-curricular clubs after school. Students from Sharon are award winning. Currently, the Sharon High School Theatre Company is the state champion in Drama. Students from our music program are nationally recognized on their instruments and in singing and consistently place in the top tier at Districts and SEMSBA. Each year our visual artists are Gold Key winners at the Scholastic Art Festival. Students from visual and performing arts go on to the top colleges and universities in the country to pursue their passion in the arts.

The Sharon High School Art Department offers 20+ Visual Arts classes spanning traditional and digital media, 2D & 3D animation, from Intro to AP level. All of the classes run at least 1 section per year, putting enrollment in the arts between 40-45% of the student population.

The Sharon High School Performing Arts Department consists of theater, vocal and instrumental music courses and performance ensembles. Ensembles include the Band, Jazz Band, String Orchestra, Chorus, a number of small instrumental and vocal ensembles, and Drama. Elective courses are Theater Production, Acting, Improvisation, Music Technology, Guitar, School of Rock, and Music Theory. Approximately 35% percent of the student body participates in the program.

All courses in any art require specific facility needs which are woefully inadequate at Sharon High School. There is one music room and one auditorium to accommodate the rehearsal and performance needs of the entire music and theatre program, resulting in a significant shortfall of space, time, and learning opportunities. As a result of the shortfall, music courses are taught in the following areas: the string program meets in the cafeteria; the music technology classes meet in a technology lab in another part of the building and in an art room; vocal music groups, music theory, and drama classes meet in the auditorium, sometimes at the same time; and guitar class meets in the music room. Teaching in rooms not intended for performing art use prevents the direct instruction and interaction students' need. They also create classroom management issues that distract from learning and work output.



One of our current hurdles is the use of the auditorium as classroom space. This space is large and is not set up for a classroom. Our drama classes do not have access to adequate technology, privacy, or space when the class is conducted in the auditorium. Much of drama is about taking risks as a performer, and the fact that the auditorium is often a pass through, or in use by other groups during a class time, prevents teacher and student from building a trusting relationship.

As in the performing arts, the visual art facilities are sorely lacking. The 2 studio rooms were originally built for the early childhood program. The former art rooms were taken over for science labs, as these rooms were much larger, but they were designed to meet the demands of an art room, unlike our current space. The newer rooms are much smaller and limit the ability to deliver the curriculum adequately and, in some cases, we are not meeting the state standards. The furniture, which lacks any flexibility, is inappropriate for the kind of artwork done in an art room, and severely limits mobility. In addition, the room was not designed with art in mind and therefore lack any functional display spaces, demonstration spaces, storage spaces, still life set-up spaces, life drawing spaces etc. In short, the curricular needs of art are not being met due to lack of appropriate space.

All of the arts share the same problem in that the spaces were not designed with flexibility in mind. All rooms lack storage for student book bags, which are placed next to chairs since, along the walls, there are all the materials associated with each discipline. The music room not only accommodates instruments, chairs and stands, but a large collection of percussion instruments along the rear wall. Art rooms have pottery wheels, easels, still-life setups, and displays. In each of these rooms there is little room to maneuver thus preventing the instructor from circling the room to assist students.

In our music room, the three walls are cinder block and the fourth is glass. Only recently were sound absorption panels installed to lower the decibel range in the room.

Currently there are no practice rooms in the building, and since our after-school programs are so robust there is little space for students who wish to increase their abilities to work. Without practice rooms dedicated to individual and small group rehearsing, there is little opportunity for one-on-one teacher-to-student coaching before, during, or after school. Such instruction can greatly improve the student's musical development and achievement. With so many classes and so little space, the music room and auditorium experience rapid turnover when setting up for multiple classes every day. This results in the loss of a large amount of instruction time because of setting up at the beginning and resetting at the end of class.

The auditorium, which must function as a classroom, and a performance space, constantly has to be set up and broken down to meet the demand of the space and the wide variety of users. This significantly cuts into instructional time for our drama teacher, and requires students to work as a moving company to get the space set up, rather than attending to academics. In addition, the

stage lighting and sound are completely out of date and each year require costly repairs and adjustments.

The computer labs, where our digital art and music take place are marginally better. While the rooms accommodate standard class sizes, the equipment is cobbled together, old and new. Printers are often not working in the photography classes, and the budget limits the number of cameras available for instruction and student use. The furniture, both tables and chairs, are large, old and worn, and are not conducive to collaboration or focused work. While one lab has more recent iMacs, the other, which was not designed for real graphics work, is made up of five-year-old Mac Minis, that cannot handle the rendering demands of contemporary programs.

The lack of additional labs in the building limits additional course offerings like Architecture, Urban Design, and Industrial Design, to name a few. More art rooms/facilities are needed in addition to larger, more adequately designed spaces. Though we teach photography, there is no dark room, nor is there room for a spray booth.

Additionally, there is currently insufficient access to outdoor spaces, further limiting instructional opportunities.

Overall, a future facility should address all of the above-mentioned issues by providing dedicated space for all visual and performing arts, space that has storage, and rooms that maximize instruction opportunities will infuse all our programs with excitement and enthusiasm, as well as show a respect for visual and performing arts instruction in the school.

We envision our visual arts department t would live in a place where it can be observed daily, where students and staff can see the art-making process and the results. Ideally, the arts and other curriculum areas work together regularly and the facilities support that. Therefore, the spaces should be integrated into the content curriculum areas.

A future performing arts center would have two dedicated performance spaces. One Mainstage Proscenium Theatre/Auditorium with seating for 750 to be used for assemblies, large-scale performances, and other high-attendance events. And one drama classroom /multi-purpose room, with potential seating for 100-150 to be used for classes, presentations, small scale productions, and other low-attendance events.

The addition of a non-furnished theatre/multi-purpose room with space to build, rehearse, and design would help ensure that the educational needs of our drama classes and after-school program can always be met. At times and with frequency, use of the stage and auditorium is compromised by school/community events. This hampers daily lessons, as well as progress on the development of theatre and music productions. A supplemental space such as envisioned would eliminate this problem. Additionally, the existence of the space could foster opportunities

for larger groups of students or community members (50-75) to come together for speeches, debates, min-forums, exhibitions, video presentations, smaller musical/acting performances, and interdisciplinary programming - both during and after the school day. Scheduling conflicts with other gathering spaces such as our library, cafeteria, and gymnasium could also be eased.

## **Wellness & Athletics Programs**

Sharon High School strongly values the health and wellness of all of its members: students, faculty, staff, and community. Our current facility does not permit the offering of programs, services, or activities that the schools or town of Sharon deserves. All would benefit from a well-designed gymnasium, fitness center, multi-purpose rooms, and locker room facilities. Our existing facility and adjoining fields are currently utilized by the school for all of its wellness/PE classes, interscholastic athletics, and our town's community education and youth sports' programs. The indoor and outdoor facilities play host throughout the school year and through the summer for these various programs.

Our existing gymnasium, due to its 1950's construction and lack of renovation, is not air conditioned, not well-ventilated, and runs the extremes of being uncomfortably cold in the winter and intolerably hot in the summer. We have managed to put temporary upgrades into sound and technology, but all updates are patches and not permanent renovations. Our facility fails to meet most state laws and regulations for handicap accessibility, hosting playoff games, and lacks the capability to be divided into adequate spaces for simultaneous multiple-group use. Consequently, in our new facility we aim to solve most of these shortcomings of our current facility.

The new gymnasium should be air conditioned and large enough to accommodate three teaching stations with proper drop-down curtains. The new facility should also include a modern fitness center and adjacent multi-purpose rooms for wrestling, yoga, dance, cheer and other club activities. The fitness center must improve upon the existing "weight room" that services football players and wrestlers. An emphasis will be placed on outfitting the new center with modern cardio-vascular training equipment that will be accessible and beneficial to all students and all sports teams. It should also be made readily available to our faculty and staff. Its current small size (900 sq. ft.) and emphasis on strength training is not ideal for the school and community. The current gymnasium and weight room negatively impacts the Wellness program we can offer to our high school students. Due to the lack of space, our curriculum only requires Wellness credits from our freshmen and sophomore students. Juniors and seniors are excluded from the lifelong benefits of wellness education concerning physical activity, nutrition, and sex education. We would like to expand our Wellness offerings to students in grades 11 and 12 as well as offer various elective classes such as Yoga and Dance, sports-skills development, and cardiovascular fitness training while continuing to enhance the students' knowledge of healthy living. Our Wellness curriculum is also hampered with the lack of a turf field in the stadium adjacent to the

gymnasium. Most Wellness classes are restricted to indoor activity or to the parking lot due to the typically wet mornings in the fall and spring seasons.

Our new facility should include a gymnasium large enough for three teaching stations which can be divided off by drop-down curtains. Due to the programming we offer, two additional multi-purpose rooms including a Yoga/Dance/Cheer studio and Wrestling/Fitness classroom should accompany the new gymnasium. Wellness locker rooms and teacher offices must be located within easy access of the gymnasium to allow our Wellness students to be properly supervised for changing before and after class without losing valuable instructional time due to traveling from the locker rooms to the facility.

Additionally, the existing facility, and the new proposed gymnasium and Wellness rooms, are, and would be, utilized by our extensive state-sanctioned athletics' programs:

- Baseball (boys): varsity, junior varsity, and freshmen
- Basketball (boys and girls): varsity, junior varsity, and freshmen
- Cheerleading: competition and game-day
- Cross Country (boys and girls): varsity and junior varsity
- Field Hockey (girls): varsity, junior varsity, and freshmen
- Football: varsity and sub-varsity
- Golf: varsity
- Gymnastics: varsity
- Ice Hockey (boys and girls): varsity and junior varsity
- Indoor Track (boys and girls): varsity and sub-varsity
- Lacrosse (boys and girls): varsity and junior varsity
- Sailing (boys and girls): varsity
- Soccer (boys and girls): varsity, junior varsity, freshmen
- Swimming and Diving (boys and girls): varsity
- Tennis (boys and girls): varsity
- Track and Field (boys and girls): varsity and sub-varsity
- Ultimate (boys and girls): varsity, junior varsity
- Volleyball (girls): varsity, junior varsity, freshmen
- Wrestling: varsity and junior varsity

These extensive programs serve over two-thirds of our student body annually. Consequently, state-of-the-art facilities both indoors and outdoors are a critical need of our program. Our numbers continue to rise with the addition of new sports programs such as Ultimate, and club sports such as Rugby, Disc Golf, and Badminton. The new facility should be able to accommodate this growth and development. Male and female locker rooms are essential for both home and visiting teams, ample storage for large equipment, Athletic trainer office and

exam/treatment area, an office for the Athletic Director and the Administrative Assistant, wrestling practice mat storage adjacent, or as an integral part of the wrestling/fitness class room, locker room with shower facilities for our coaches and referees. Careful consideration should be given to the location of the Athletic Director's office. They are responsible for the supervision and scheduling of all teams and areas of play in regards to our athletic program. Therefore, this office should be located in an area that allows easy access to the fields and is in close proximity to the gymnasium, fitness center, multipurpose rooms and team locker rooms.

Our vision for the gymnasium is a multi-purpose facility that has a regulation court down the center and appropriate stands for varsity athletics and the expected crowds that attend. We need to meet current and future regulations and standards for handicapped seating and movement into and out of the gymnasium. Additionally, the gym floor should include three standard basketball/volleyball training courts laid side-by-side, and counter-posed to the regulation court, to maximize practice space and times for the three levels of high school sports programs we have, and for three simultaneously scheduled Wellness classes to utilize during the school day.

With our large running program (cross country, indoor and outdoor track and field, wellness classes) an elevated track above the gymnasium floor should be installed. This would give full-time use for faculty and staff, the community, as well as our daily high-school students, at any time throughout the school day, week, and year. The design of the ceiling should also be thoughtfully considered to include essential components of the wellness and athletics programs. These essentials include motorized curtains, basketball hoops, and an indoor batting cage that can be lowered upon demand and setup with ease. The ceiling equipment should have a centralized keypad control station for operator use and safety.

Our outdoor facilities are also in need of modernization. On the school campus itself, we are fortunate enough to have a stadium, however, it lacks adequate seating capacity to host tournament events, has no outdoor restrooms, utilizes a stand-alone basic shed with no internal power as a concession stand, a poor-quality grass field which takes hours of maintenance to keep in playable condition, and a 6-lane track that limits the size events that can be hosted. These facilities are far from ideal for the level and number of competitions hosted throughout the fall and spring seasons. The baseball diamond and field hockey field share the same patch of grass eliminating simultaneous use. Soccer, lacrosse and football teams, plus all sub-varsity teams, must practice and compete offsite of the high school campus. This too creates safety issues and awkward practice schedules for athletes who are not fortunate enough to practice at the high school itself. It is essential to update the grass field within the stadium to turf. This would allow extensive practices and games for all of our sports programs to enjoy. The addition of lights in 2018 allows for sequential games and practices to be held. The community and youth groups could also utilize the facility on weekends and in the summer. Permanent playing surface and game-field lines would allow DPW to focus its efforts elsewhere.

While our indoor and outdoor facilities may have met the needs of our students from the 1950s to the 1990s, they have certainly lapsed since and fallen behind what is required of all state schools today. We look forward to enhancing our current Wellness curriculum and expanding its offerings to upper class students once again. Our athletic programs will truly benefit as well from a well-designed modernization plan and quality construction of both indoor and outdoor facilities.

The last Coordinated Program Review was in 2013 and any identified issues have since been remedied. The next Coordinated Program Review will be in the spring of 2019.

### **Vocational Education Programs (non-chapter 74 programming):**

Sharon High School currently offers several different vocational, technical, and STEM options for students. More offerings will be added in the future with the space that a new facility would provide. Current offerings include two engineering design courses (semester), four computer science courses (2 full year and 2 semester), several STEAM courses in both the science and art departments for example 2D/3D animation, forensic science, and TV/media production to name a few. In addition, the library includes a Makerspace. For details about these offerings and information about proposed programs please see the following departmental sections of the Educational Program as follows:

- For computer science and business courses see the Mathematics section.
- For engineering, robotics, and other STEAM courses see the Science section.
- For TV/Media production, 2D/3D animation and other STEAM offerings see the Visual and Performing Arts section.
- For information about the Makerspace see the library/media section.

### **Chapter 74 Programming:**

There is currently no Chapter 74 programming at Sharon High School, nor is there a desire to add Chapter 74 programming at this time.

### **Core Educational Activities Inside General Classrooms:**

Within general classrooms teacher utilize a blend of traditional learning, inquiry-based learning, project-based learning, dialogs and discussions, audio/visual presentations, group work, and hands-on activities. As such each classroom needs to have the infrastructure to allow for each of these types of activities to take place. In addition, teachers frequently use technology in the form of PowerPoint presentations, short videos, and utilize the 1:1 student laptop to assist in delivery of instruction and in assessing student learning.

### **Core Educational Activities Outside General Classrooms:**

Currently, Sharon High School has one outdoor classroom space within one of the school's three courtyards. There is a sign-up sheet for teachers to book this space. In addition, several teachers will use the grounds around the school to bring their classes outside. Science classes take students outside to complete laboratory activities such as estimating populations, making observations, and investigating natural phenomenon. Physics classes will use outdoor space for labs on projectile motion which cannot be done as easily indoors. Whenever outdoor space is utilized teachers remain with their classes to monitor them.

Students in the Pathways Program assist in maintaining gardens both in the courtyards and around the school facility. They also help manage the recycling program in the school. Environmental Science students have also completed project work in the courtyards and around the outside of the school. As such outdoor garden and lab space should be easily accessible to both the science classes and the Pathways Program.

### **Transportation:**

School buses, parent/guardian pick-ups/drop-offs, and arriving/departing staff all currently use the same entry and exit areas. The primary point for the vast majority of the population is in front of the high school off the only main road passing the high school. This creates significant congestion and puts drivers and walkers at risk. Three parking lots in the vicinity of the high school are used by students - one directly across the street from the high school, one adjacent to the lake near the high school, and one about a block away from the high school at a nearby religious center. Student busing and parking are fee-based. Staff currently park in four different areas around the school, which isn't ideal for the security of the facility before or after school.

The future complex should consider that there are limited public roadways leading to the school, so congestion is unlikely to be eliminated. Steps could be taken to mitigate the traffic and improve safety, however, by creating an access road around the school with additional entry/egress points, identifying helpful walkways with adequate lighting, ensuring separate vehicular paths for school buses and parent/guardian picks-ups/drop-offs, and developing a centralized parking area for staff that also preferably steers them to one main entrance.

### **Functional and Spatial Relationships and Key Programmatic Adjacencies:**

Administration Offices and the Nurse's Office should be located at the main entrance of the building to provide easy access to administration and to assist in building security. A Guidance



and Student Support Services suite should be located toward the main entrance but separate from the administrative offices.

The following spaces should be accessible to the community without compromising the security of academic portion of the building: Community Education, TV/Media Studio, Gymnasium, Auditorium, and Library Media Center.

The cafeteria and student gathering space should accommodate  $\frac{1}{3}$  to  $\frac{1}{2}$  the student population at any one time, be centrally located, and have secure access to the outside. A school store would be located near the cafeteria/student gathering space. Custodial area should be near the cafeteria and convenient to deliveries. This should include a loading dock and mechanical area.

Site adjacencies should include an outdoor laboratory space for science classes, especially for environmental science and biology. Within the outdoor laboratory space, should be a greenhouse of sufficient size to support the science department. An observatory to house a 12" celestron telescope is necessary to support the astronomy classes and ideally would also be accessible to the community for evening events.

The proposed high school would maintain a departmental structure while creating the opportunity to move toward an interdisciplinary or academy structure in the future. A large academic center or centers should be located within the academic areas of the school.

### **Security and Visual Access Requirements:**

Emergency response plans are developed in collaboration with the police and fire departments. The in-house SRO is part of the team that evaluates what's in place, and the principal, nurse, and various members of the staff play important roles in drills and crisis moments pertinent to the safety of the school community. This group, in concert with local officials, would update existing emergency response plans. The most recent Medical Emergency Response Plan was submitted to the DESE in September of 2018.

Currently, there is an antiquated b/w camera system that helps monitor a number of exterior points around the perimeter of the school. This will need to be significantly improved. There are also no cameras on the inside of the building, which will be a necessity in a new or updated complex to emphasize the district's commitment to safety. Further, there is limited to no ability to secure and/or close off large sections of the building that do not require access from public or school populations that may use one section of the building (e.g. gym, auditorium). Restricting portions of the building from access when they are not being used will help maintain the integrity of those spaces.



Access to the building before and after the school day is difficult to control at this present point in time. There are several entryways, and students, staff, and guests arrive from different points. In the future, it would be ideal to design the facility so that stakeholders are guided (via signage/walkways/intercom stations/parking) to limited entry ways that can be monitored by school staff and a modern security camera system.

The school's current main entrance is awkward and not user-friendly or straightforward to guests who come into the school. Though security doors, a buzzer system, and camera are in place to help with safety, existing stairs, a lack of signage, and a series of required turns make it difficult for those visiting the school to figure out exactly where they should report to check in. Students also gather in this area before/after school making the space very congested. A future building would resolve these and other concerns with a larger foyer, with improved sightlines to check-in areas (i.e. main office or student services) and with student gathering spaces stationed away from the main entrance.

# SECTION 3

## INITIAL SPACE SUMMARY

# 3.1

## NARRATIVE DESCRIPTION

### 3.1 NARRATIVE DESCRIPTION

#### Introduction

The MSBA has issued an approved enrollment of 1,250 students Grades 9-12 for Sharon High School. The proposed draft space template included within the PDP submission dated 11-21-18 was developed with the Sharon School District in a series of meetings with the senior curriculum leadership team as well as three visioning sessions that included faculty and staff. The template reflects the goals that are established by the District in their Educational Program document.

#### Core Academic

The core academic category exceeds the MSBA template by 3,440 NSF. This overage is in part due to a desired classroom size of 900 NSF. In addition, the District would like to have twelve science lab while the MSBA guidance only shows eleven science labs. The existing school already has eleven labs and this is inadequate for the current enrollment and curriculum offerings so an expansion to twelve science spaces is critical to the science program already in place.

#### Special Education

This category is consistent with the MSBA template. Only five self-contained classrooms are needed however the District envisions large resource areas that are designed to have multiple centers within them to serve a variety of students and programs.

#### Art & Music

This category exceeds the MSBA template guidance by 3,000 NSF. This overage is due to the addition of a drama classroom both to accommodate the schools robust drama program and as a project space for other programs which currently depend on larger spaces that are already heavily utilized during the day such as the gym and cafeteria. It is anticipated that the space will be used for multiple periods each school day for drama courses. In addition, it will be used as a theater/ multi-purpose room with space to design and build sets and rehearse performances when the auditorium is in use for some other purpose. Additionally, the room offers opportunities for larger groups of students to come together for speeches, debates, min-forums, exhibitions, video presentations, smaller musical/acting performances, and interdisciplinary programming both during and after the school day.

#### Vocations and Technology

This category is consistent with the MSBA template.

#### Health and Physical Education

This category is consistent with the MSBA template.

#### Media Center

This category is consistent with the MSBA template.

#### Auditorium / Drama

This category exceeds the MSBA template by 1,400 NSF. The schools current stage is 3,197 NSF. Reducing the size of the stage from the current size will be a limitation on the type of productions already being staged by the drama department today. Therefore the proposed stage is 3,000 SF to allow the same level of drama productions to continue at an expanded or new facility.

#### Dining and Food Service

This category is consistent with the MSBA template.

#### Medical

This category is consistent with the MSBA template.

#### Administration and Guidance

This category is consistent with the MSBA template, it is shown as 4 NSF below guideline.

#### Custodial & Maintenance

This category is consistent with the MSBA template.

#### Other

This category lists two spaces that are not included on the standard MSBA High School template.

**School Store:** The current Sharon High School has a store. The school would like to continue the tradition of having a location to sell school branded products and general supplies. This space is listed at 500 NSF.

**Community Education:** The Sharon School District administers a unique community education program on behalf of the Town that offers residents the opportunity to take enrichment courses. This program falls under the jurisdiction of the School District. The intent of the proposed allocation of space is to provide a home base for this program along with a limited amount of classroom space to allow a small number of program offerings to be provided during the school day without using the high school itself. Once the school day is complete, the entire building will be available for use and the Community Education program will expand into the high school facilities for their programs. The area in question will have a separate public entrance and a controlled access point into the high school to prohibit entrance into the school itself during school hours.

# 3.2

## SPACE TEMPLATE: GRADES 9-12

**PDP Submission 11-21-18**

### ***Proposed Space Summary - High Schools***

Sharon High School		Existing Conditions		
	ROOM NFA <sup>1</sup>	# OF RMS	area totals	
ROOM TYPE				
CORE ACADEMIC SPACES			42,735	
(List classrooms of different sizes separately)				
Classroom - General (type 1)	755	26	19,630	
General (type 2)	815	7	5,705	
General (type 3)	925	2	1,850	
General (type 4)	1,050	2	2,100	
Teacher Planning			0	
Small Group Seminar(20-30 seats)- [5-8]	300	1	300	
Science Classroom / Lab	1,432	2	2,864	
Science (type 2)	1,126	5	5,630	
Science (type 3)	874	4	3,496	
Prep Room	232	5	1,160	
Central Chemical Storage Rm			0	
SPECIAL EDUCATION			8,788	
(List classrooms of different sizes separately)				
Self-Contained SPED	1,047	4	4,188	
Self-Contained SPED Toilet			0	
Resource Room	1,030	1	1,030	
Small Group Room	510	7	3,570	
Conference Room (near Guidance)				
ART & MUSIC			3,555	
Art Classroom - 25 seats	898	2	1,796	
Art Workroom w/ Storage & kiln	375	1	375	
Band - 50 - 100 seats	1,126	1	1,126	
Chorus - 50 - 100 seats	stage			
Ensemble			0	
Music Practice			0	
Music Storage	258	1	258	
Drama Classroom				
VOCATIONS & TECHNOLOGY			3,116	
Tech Cirm. - (E.G. Drafting, Business)			0	
Tech Shop - (E.G. Consumer, Wood)			0	
T.V. Studio	735	1	735	
Digital Arts	783	1	783	
STEAM	823	1	823	
Computer Science/Coding	775	1	775	
Innovation Lab/Maker Space				
CAD Lab (attached to Innovation Lab)				
HEALTH & PHYSICAL EDUCATION			16,467	
Gymnasium	9,206	1	9,206	
PE Alternatives			0	
Trainer	575	1	575	
Wellness Center Weights & Cardio	1,666	1	1,666	
Gym Storeroom	550	1	550	
Locker Rooms - Boys / Girls w/ Toilets	1,675	2	3,350	
Phys. Ed. Storage	420	1	420	
Athletic Director's Office	300	1	300	
Health Instructor's Office w/ Shower & Toilet	200	2	400	
MEDIA CENTER			9,299	
Media Center / Reading Room	7,699	1	7,699	
Computer Lab	800	2	1,600	
AUDITORIUM / DRAMA			11,177	
Auditorium	6,423	1	6,423	
Stage	3,197	1	3,197	
Auditorium Storage	1,357	1	1,357	
Make-up / Dressing Rooms			0	
Controls / Lighting / Projection	200	1	200	
DINING & FOOD SERVICE			8,408	
Cafeteria / Student Lounge / Break-out	4,974	1	4,974	
Chair / Table Storage	135	1	135	
Scramble Serving Area	700	1	700	
Kitchen	1,536	1	1,536	
Staff Lunch Room	1,063	1	1,063	
MEDICAL			614	
Medical Suite Toilet	35	2	70	
Nurses' Office / Waiting Room	384	1	384	
Interview Room	78	1	78	
Examination Room / Resting	82	1	82	
Nurse Storage/Wheelchairs, etc.				
ADMINISTRATION & GUIDANCE			4,066	
General Office / Waiting Room / Toilet	421	1	421	
Teachers' Mail and Time Room			0	
Duplicating Room			0	
Records Room	58	1	58	
Principal's Office w/ Conference Area	245	1	245	
Principal's Secretary / Waiting	214	1	214	
Assistant Principal's Office - AP1	206	1	206	
Assistant Principal's Office - AP2	160	1	160	
Supervisory / Spare Office SRO	270	1	270	
Conference Room			0	
Guidance Office	232	6	1,392	
Guidance Waiting Room	330	1	330	
Guidance Storeroom	225	1	225	
Career Center			0	
Records Room			0	
Teachers' Work Room (incl. teacher research)	545	1	545	
CUSTODIAL & MAINTENANCE			942	
Custodian's Office	180	2	360	
Custodian's Workshop	240	1	240	
Custodian's Storage	200	1	200	
Recycling Room / Trash			0	
Receiving and General Supply			0	
Storeroom			0	
Network / Telecom Room	142	1	142	
OTHER			777	
School Store	777	1	777	
Community Education				
Total Building Net Floor Area (NFA)			109,944	
Proposed Student Capacity / Enrollment				
NON-PROGRAMMED SPACES				
Other Occupied Rooms (list separately)				
Unoccupied MEP/FP Spaces				
Unoccupied Closets, Supply Rooms & Storage Rooms				
Toilet Rooms				
Circulation (corridors, stairs, ramps & elevators)				
Remaining <sup>2</sup>				
Total Building Gross Floor Area (GFA) <sup>2</sup>			168,422	
Grossing factor (GFA/NFA)			1.53	

PROPOSED								
Existing to Remain/Renovated			New			Total		
ROOM NFA <sup>1</sup>	# OF RMS	area totals	ROOM NFA <sup>1</sup>	# OF RMS	area totals	ROOM NFA <sup>1</sup>	# OF RMS	area totals
		0			63,080			0
			900	42	37,800			
			1,000	4	4,000			
			200	8	1,600			
			1,440	12	17,280			
			300	6	1,800			
			200	3	600			
		0			13,090			0
			950	5	4,750			
			58	5	290			
			1,400	4	5,600			
			250	8	2,000			
			450	1	450			
		0			11,200			0
			1,200	3	3,600			
			150	3	450			
			1,500	1	1,500			
			1,500	1	1,500			
			425	1	425			
			75	3	225			
			500	1	500			
			3,000	1	3,000			
		0			12,800			0
				0	0			
				0	0			
			2,400	1	2,400			
			1,200	2	2,400			
			2,000	2	4,000			
			1,200	1	1,200			
			2,000	1	2,000			
			800	1	800			
		0			23,200			0
			12,000	1	12,000			
			3,000	1	3,000			
			300	1	300			
			7,000	1	7,000			
			500	1	500			
			150	1	150			
			250	1	250			
		0			7,713			0
			7,713	1	7,713			
					0			
		0			11,800			0
			7,500	1	7,500			
			3,000	1	3,000			
			500	1	500			
			300	2	600			
			200	1	200			
		0			10,426			0
			6,250	1	6,250			
			463	1	463			
			800	1	800			
			2,550	1	2,550			
			563	1	563			
		0			1,110			0
			60	1	60			
			250	1	250			
			-		-			
			150	5	750			
			50	1	50			
		0			5,010			0
			600	1	600			
			100	1	100			
			200	1	200			
			200	1	200			
			200	1	200			
			145	1	145			
			145	1	145			
			100	1	100			
			450	1	450			
			135	12	1,620			
			300	1	300			
			100	1	100			
			450	1	450			
			200	1	200			
			625	0	0			
		0			2,563			0
			150	1	150			
			250	1	250			
			375	1	375			
			400	1	400			
			463	1	463			
			725	1	725			
			200	1	200			
		0			3,500			0
			500	1	500			
			3,000	1	3,000			
		0			165,492			0
	% of GFA	0	% of GFA		76,126		% of GFA	0
	#DIV/0!		0%				#DIV/0!	
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	#DIV/0!	0	32%		76,126		#DIV/0!	0
		0			241,618			0
	#DIV/0!				1.46			#DIV/0!

Date: 11/21/2018			Preliminary Design Program	
MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)				
ROOM NFA <sup>1</sup>	# OF RMS	area totals	Comments	
		59,640		
850	42	35,700	825 SF min - 950 SF max	
100	42	4,200		
500	3	1,500		
1,440	11	15,840	9 x85% ut=20 Seats-1 per /day/student	
			District asked for 12 science labs	
200	11	2,200		
200	1	200		
		13,090		
950	9	8,550	825-950 SF equal to surrounding classrooms	
60	9	540		
500	4	2,000	1/2 size Genl. Clrm.	
500	4	2,000	1/2 size Genl. Clrm.	
		8,200		
1,200	3	3,600	Assumed use - 25% Population - 5 times/week	
150	3	450		
1,500	1	1,500	Assumed use - 25% Population - 5 times/week	
1,500	1	1,500		
200	1	200		
75	6	450		
500	1	500		
		12,800		
1,200	4	4,800	Assumed use - 50% Population - 5 times/week	
2,000	4	8,000	Assumed use - 50% Population - 5 times/week	
		23,200		
12,000	1	12,000		
3,000	1	3,000		
300	1	300		
7,000	1	7,000	5.6 sf/student total	
500	1	500		
150	1	150		
250	1	250		
		7,713		
7,713	1	7,713		
		10,400		
7,500	1	7,500	23 Enrollment @ 10 SF/Seat - 750 seats MAX	
1,600	1	1,600		
500	1	500		
300	2	600		
200	1	200		
		10,426		
6,250	1	6,250	3 seatings - 15SF per seat	
463	1	463		
600	1	600		
2,550	1	2,550	1600 SF for first 300 + 1 SF/student Add'l	
563	1	563	20 SF/Occupant	
		1,110		
60	1	60		
250	1	250		
100	3	300	none required	
100	5	500		
		5,014		
625	1	625	3 secretaris + Waiting + Toilets	
100	1	100		
200	1	200		
200	1	200		
375	1	375	Room for small meetings; will use larger conference	
125	1	125	desk/secretary + waiting	
150	1	150		
150	1	150		
120	1	120		
450	1	450		
150	7	1,050		
100	1	100	2 secretaries + waiting	
100	1	100		
463	1	463	doules as a conference room when needed	
181	1	181		
625	1	625	Teacher Work room is in Teacher Planning Centers	
		2,563		
150	1	150		
250	1	250		
375	1	375		
400	1	400		
463	1	463		
725	1	725		
200	1	200		
		0		
		154,154		
		1,250	180	
			Non-Programmed space areas are required to be included in the following submittals:	
			Schematic Design Submittal	
			Design Development Submittal	
			60% Construction Documents	
			90% Construction Documents	
			Final Construction Documents	
		225,000		
		1.46		

<sup>1</sup> **Individual Room Net Floor Area (NFA)** Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.

<sup>2</sup> **Total Building Gross Floor Area (GFA)** Includes the entire building gross square footage measured from the outside face of exterior walls

<sup>3</sup> Remaining Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the difference between the Total Building Gross Floor Area and area not accounted for above.

Architect Certification	
I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.	
Name of Architect Firm: _____	
Name of Principal Architect: _____	
Signature of Principal Architect: _____	
Date: _____	

# 3.3

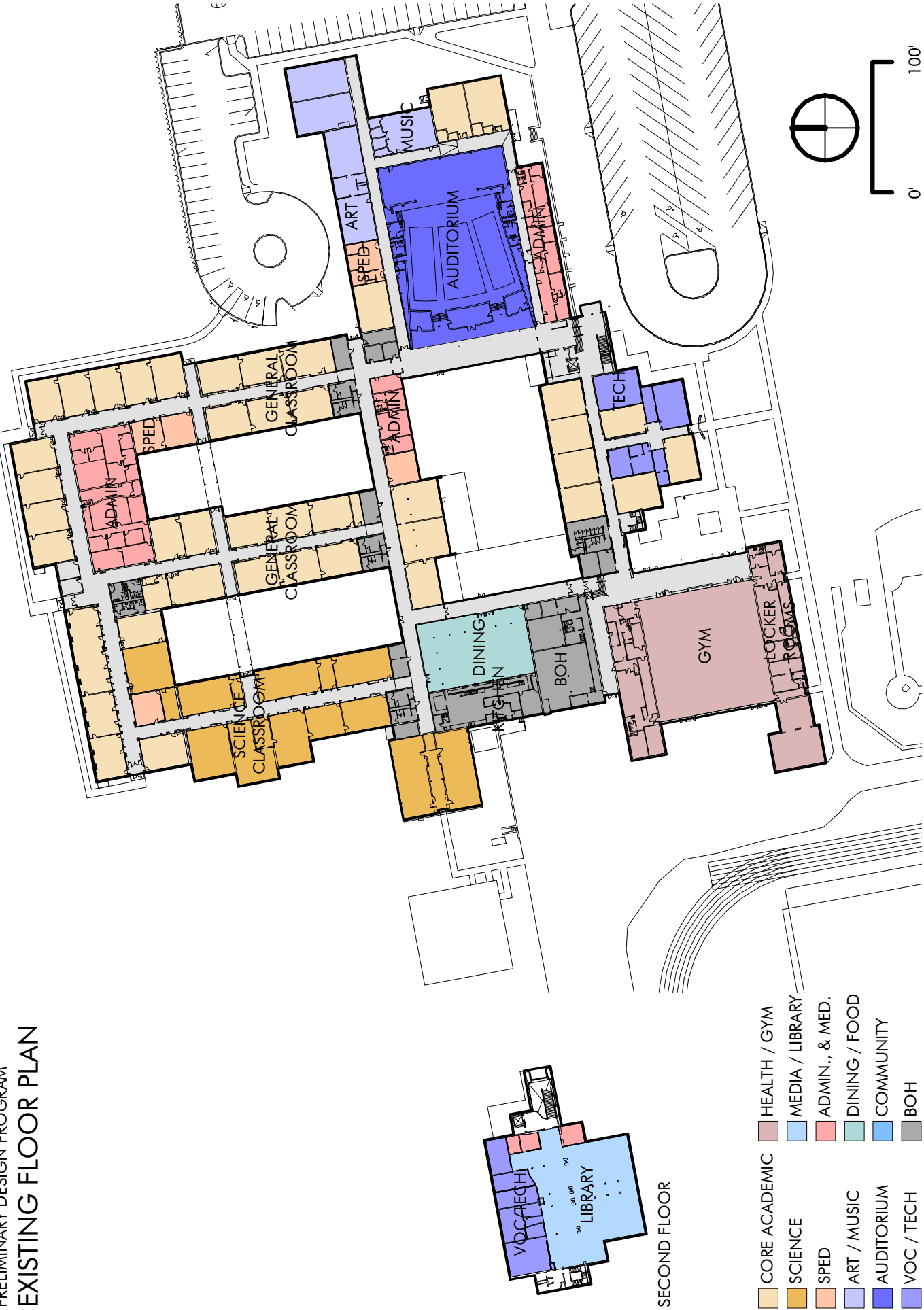
## EXISTING CONDITIONS FLOOR PLAN



# SHARON HIGH SCHOOL

PRELIMINARY DESIGN PROGRAM

## EXISTING FLOOR PLAN



SECOND FLOOR

# SECTION 4

## EVALUATION OF EXISTING CONDITIONS

# 4.1

## SUMMARY - EVALUATION OF EXISTING CONDITIONS

## 4.1 SUMMARY - EVALUATION OF EXISTING CONDITIONS

### **District Title to Property**

The Sharon High School is located on property acquired for the purposes of erecting a school. The deed for the property is included under tab 4.1

### **Property Available for Development**

The existing High School is on a fully developed site associated with high school use including fields, parking and a waste water treatment plant. Therefore the Town of Sharon has available property for the purposes of housing a high school.

### **Historic Registrations**

There are no known historic registration for the existing school site. The property is not in a historic district. The property and school building is not inventoried by the Massachusetts Historical Commission (HHC). As the project will receive State funding participation, the Designer will submit a project notification form (PNF) to the MHC during the Schematic Design phase of the project.

### **Development Restrictions**

The Design team is not aware of any development restrictions to the existing school property.

### **Need for Soils Exploration**

A preliminary geo-technical investigation has been completed. Test borings were located near the existing high school in areas where additions might be located and on the portion of the site that could be suitable for a replacement building. The initial data indicates a high water table and fill at certain locations that may need to be removed. Generally the native undisturbed soils appear to be adequate for new construction.

### **Initial Evaluation of Existing Conditions**

Following this introduction are the following documents that represent the initial evaluation of the existing Sharon High School site:

- Code and accessibility evaluation
- Existing conditions evaluation
- Structural evaluation of existing building
- Mechanical, Electrical, Plumbing evaluations
- Hazardous materials report

Also attached to the PDP submission as appendices are the following:

- Phase 1 ESA report
- Phase 2 ESA report
- Preliminary geo-technical report
- Preliminary existing conditions traffic observations

# 4.2

## LEGAL TITLE TO PROPERTY

CERTIFICATE OF ENTRY

3264

283

Whereas, a taking was made of various properties,  
particularly described in the Order of Taking which is on  
record in the Registry of Deeds, Norfolk County, Book 3253,  
Page 213, I hereby certify that entry was made on or about the  
4th day of May, 1954, for municipal purposes, namely as a site  
for a new high school, for and in behalf of the Town of Sharon,  
Massachusetts.

*Quinn J. Peterson*  
Chairman, Board of Selectmen

COMMONWEALTH OF MASSACHUSETTS

Norfolk ss. Sharon, Mass.

May 20, 1954

Then personally appeared the above-named, Clarence

I. Peterson, and acknowledged the foregoing to be <sup>the</sup> ~~his~~ free  
act and deed, <sup>of the Town of Sharon,</sup>  
before me,

*Dwight J. Colburn*  
Notary Public

My commission expires May 17, 1957



Recorded May 25, 1954 at 10h.21m.A.M.

**KNOW ALL MEN BY THESE PRESENTS**

that I, Ralph O. Porter of Brookline, in the County of Norfolk, in  
the Commonwealth of Massachusetts, \_\_\_\_\_  
holder of a certain mortgage by \_\_\_\_\_ Ralph O. Porter, Inc., \_\_\_\_\_  
to \_\_\_\_\_ me \_\_\_\_\_  
dated \_\_\_\_\_ January 11, A. D. 1954, \_\_\_\_\_  
and recorded with \_\_\_\_\_ Norfolk \_\_\_\_\_ Deeds, book 3235, page 81 \_\_\_\_\_  
for consideration paid, release to the said Ralph O. Porter, Inc. \_\_\_\_\_  
\_\_\_\_\_ all interest acquired under said mortgage in the following described portion of the mortgaged premises.

# 4.3

## CODE & ACCESSIBILITY ANALYSIS

## 4.3 CODE & ACCESSIBILITY ANALYSIS

The existing Sharon High School does not fully comply with all ADA and MAAB requirements. Despite the fact that most of the school is on one story, it is still on multiple levels. There are three ramps entering into the original classroom wing and in each case the ramp is too steep and not accessible. A number of the existing bathrooms do not meet current standards for accessibility. The existing auditorium does not comply with code as accessible seating areas are not distributed and the ramped aisles are too steep. In addition, the stage has no accessible route from the auditorium itself. Exterior courtyards are not accessible. Not all casework is accessible including classroom casework and science lab casework. Corridors are not only narrow but have projections that exceed accessibility code. Entrances on the exterior are not accessible in all cases. Not all doors in the building are wide enough and / or do not have appropriate pull and push clearances. In general, the building will require significant modifications and upgrades in order to meet current universal design standards.

The existing building will also require upgrades to meet current building codes. In addition to major modifications to meet energy code, as noted elsewhere, there are deficiencies related to the building code that would need to be addressed in any renovation or renovation/addition upgrade. In particular, attention should be paid to means of egress design, widths and doorways, fire and smoke separation requirements, sprinkler system, as well as the aforementioned ADA/MAAB considerations.



# 4.4

## EXISTING BUILDING CONDITIONS

## 4.4 EXISTING BUILDING CONDITIONS

The Sharon High School has been constructed in multiple phases over many years. The original school was built in 1956. There were then a major classroom addition constructed in 1963 to the north of the existing school. In 1997 an addition was constructed on the south side of the school with a main entrance and lobby along with classrooms and a second floor media center. In 2001 a modular classroom addition was constructed near the auditorium and in 2009 another modular addition was constructed behind the stage. Finally, in 2010 a masonry addition was constructed to house a weight room near the gym. Various upgrades to existing buildings have also been completed over the history of the school. The scope of the 1997 addition included window replacement in the 1956 and 1963 buildings and a small science lab addition along with the waste water treatment plant. In 2011 the 1956 and 1963 buildings had the roofs replaced.

The exterior walls of the 1956 and 1963 additions are brick with CMU back-up. The 1997 addition is also brick veneer but with a 6" metal stud back up system. At various locations throughout the various buildings there is evidence of water penetration and moisture within the walls. In addition there is cracking and deterioration of backer rod and sealant. At openings there is cracking at lintel locations. Any code renovation of these structures will require a significant restoration scope of work including removal of veneer at various locations along with replacement and added flashings, and lintel replacement. However, in the case of a major addition renovation it is assumed that in order to meet code and sustainability requirements the exterior masonry veneer at all locations would be removed and replaced in order to install new insulation over the existing CMU (56,63) and stud (97) back up walls.

Existing windows and fenestration vary in terms of condition and age across the building. Much of the school has windows from 1997 including the 97 addition and replacement windows in the earlier structures. Original storefront is still in place at the older buildings and is single glazed and in poor condition and it should be replaced. Some of the replacement windows also have damage including loose gaskets and snap on covers. Exterior doors and frames and louvers are still in place at the original buildings and are in poor condition and in need of complete and comprehensive replacement. Water penetration at both heads, thresholds and jambs have led to damage to floor tiles, ceilings and finishes in the school.

As previously noted, the majority of the school has a

roof dating from either 1997 (EPDM) or 2011 (Sarnafil PVC). Any renovation or renovation / addition of this school would require modifications to the roof as well as upgrades to scuppers and internal drains and the addition of gutters or drains at the 1997 building to alleviate the current run off of water onto the exterior walls. It can be anticipated that any project would replacement of the 1997 roof although the 2011 roof could be retained as it is not at the end of its useful life.

The interiors of the school are generally all original and of the vintage of the dates of construction. Interior partitions in the older structures are painted CMU or glazed CMU. The newer structures are painted GWB or ceramic tile over GWB. The auditorium has wood paneling that is tired with panels applied over the wood. Millwork and casework in classrooms is typically original and out of date although it has been updated in some of the science labs as well as administrative areas. Bathrooms in the older structures have finishes that require updating. Flooring in the older buildings is also original and worn. In locations where there is carpet it is also worn. Gymnasium flooring appears to be in acceptable condition. There is water damage in several locations. Some of this is due to pipes failing and water flooding a portion of the building, some from exterior infiltration. In addition, it should be noted that there are below slab tunnels in the older buildings that periodically flood, introducing moisture into the building below the slab. Included in the PDP is a preliminary geo-technical report. The results of early borings on site indicate high ground water at most locations around the site. As the project proceeds into later phases of design, consideration should be given to addressing the issue of water penetration below slabs if the existing building remains and managing the ground water if new construction is considered. Generally, it should be anticipated that any renovation or renovation/ addition will include the replacement of a majority of the buildings finishes including flooring and ceilings.

A majority of the school complex is one story and it is very spread out making for long travel distances. The corridors are also narrow and this has been noted as a limitation of the building as students try to make their way from class to class in what is already a spread out facility. There are lockers on both sides of most corridors and this adds to the restricted passage, particularly in the original school. The nature of the existing layout also poses security challenges including visual site lines and many exterior doors.

# 4.5

## EXISTING STRUCTURAL ASSESSMENT

**Sharon High School**  
**181 Pond Street**  
**Sharon, Massachusetts**  
**Structural Assessment**  
**October 23, 2018**

## **STRUCTURAL ASSESSMENT**

The purpose of this report is to describe, in broad terms, the structure of the existing building; to comment on the condition of the existing building; and on the feasibility of renovation and expansion of the school.

### **Scope**

1. Description of existing structure.
2. Comments on the existing condition.
3. Comments on the feasibility of renovation and expansion.

### **Basis of the Report**

This report is based on our visual observations during our site visit on September 19, 2018; a review of the available structural drawings of the additions and alterations prepared by Rich & Tucker, Inc. dated January 29, 1962; and a review of the drawings for the additions prepared by Symmes, Maini, McKee Associates dated March 26, 2014. We did not have access to the drawings of the original construction in 1956 or the drawings of the addition constructed in 2001, 2009 and 2010.

During our site visit, we did not remove any finishes or take measurements, so our understanding of the structure is limited to the available drawings and observations of the exposed structure and the exterior façade.

### **Building Description**

The high school is located on Pond Street in Sharon, Massachusetts. The entire school is essentially a one story structure, except for the 1997 addition which is a two story structure. The school has several utility tunnels below the first floor.

The original school was constructed in 1956. In 1963 a major, single story addition was constructed and expanded the number of classrooms serving the school. In 1997, a two story addition was constructed that houses the media center on the second floor and classrooms on the first floor. In 2001 and 2009, single story modular structures were constructed to add a total of four classrooms to the school. In 2010, a single story addition was constructed adjacent to the existing gymnasium that housed the weight room.

The school and the additions are configured in a fashion to create three interior courtyards.

The typical first floor for the entire school is a concrete slab on grade. The slab above the utility tunnels is a reinforced concrete slab spanning between the tunnel walls. The second floor of the 1997 addition is a 5 in. deep composite metal deck slab spanning between composite wide flange steel beams, girders and columns.

The roof of the 1997 addition is a metal roof deck spanning between open web steel joists, wide flange steel beams, girders and columns.

The foundations for the entire school are reinforced concrete foundations.

The original structure and the 1963 addition do not have any specific lateral load resisting system. The lateral loads are probably resisted by unreinforced masonry walls that are not specifically detailed to resist the lateral loads. The 1997 addition, which is separated by way of expansion joints, has ordinary concrete braced frames that form the lateral load resisting system for this portion of the structure.

## **EXISTING CONDITIONS**

Based on our observations, the existing school structure is performing adequately. We observed signs of water infiltration into the building through the masonry façade, we observed minor cracking and efflorescence in the façade. We observed larger cracks at the corners of the structure and damage in the façade at the interface with the canopy structure.

We observed excessive rust on the underside of the exposed metal deck at the canopies.

Minor cracks in the interior masonry were observed at various locations. We observed signs of water damage on the floor finishes and ceilings at various locations.

We did not observe any signs of foundation settlement or excessive vibrations in the supported floors due to footfall.

## **PROPOSED SCHEMES**

Based on our observations and our analysis of the existing drawings, no structural upgrades are required for any proposed scheme that has limited renovation scope and does not require any structural modifications. The extent of the code required structural upgrades is dependent on the extents of the proposed renovations. The following is a description of the compliance methods that may be triggered depending on the extents of the proposed schemes as dictated by other disciplines.

## **GENERAL CODE CONSIDERATIONS**

### **Primary Structural Code Issues Related To the Existing Structure**

If any repairs, renovations, additions or change of occupancy or use are made to the existing structures, a check for compliance with 780 CMR, Chapter 34 "Existing Building Code" (Massachusetts

Amendments to The International Existing Building Code 2015) of the Massachusetts Amendments to the International Building Code 2015 (IBC 2015) and reference code "International Existing Building Code 2015" (IEBC 2015) is required. The intent of the IEBC and the related Massachusetts Amendments to IEBC is to provide alternative approaches to alterations, repairs, additions and/or a change of occupancy or use without requiring full compliance with the code requirements for new construction.

The IEBC provides three compliance methods for the repair, alteration, change of use or additions to an existing structure. Compliance is required with only one of the three compliance alternatives. Once the compliance alternative is selected, the project will have to comply with all requirements of that particular method. The requirements from the three compliance alternatives cannot be applied in combination with each other.

The three compliance methods are as follows:

1. Prescription Compliance Method.
2. Work Area Compliance Method.
3. Performance Compliance Method.

#### **Comment**

The approach is to evaluate the compliance requirements for each of the three methods and select the method that would yield the most cost effective solution for the structural scope of the project. The selection of the compliance method may have to be re-evaluated after the impact of the selected method is understood and after analyzing the compliance requirements of the other disciplines, Architectural, Mechanical, Fire Protection, Electrical and Plumbing.

Since the existing building contains un-reinforced masonry wall structures, the anchorage of the walls to the floor and roof structure will have to be evaluated if the work area of the project exceeds 50 percent of the aggregate floor and roof area of the building.

#### **Prescriptive Compliance Method**

In this method, compliance with Chapter 4 of the IEBC is required. As part of the scope of this report, the extent of the compliance requirements identified are limited to the structural requirements of this chapter.

#### **Additions**

Based on the project scope, the following structural issues have to be addressed:

- All additions should comply with the code requirements for new construction in the IBC.
- For additions that are not structurally independent of an existing structure, the existing structure and its addition, acting as a single structure, shall meet the requirements of the Code for New Construction for resisting lateral loads, except for the existing lateral load carrying

- structural elements whose demand-capacity ratio is not increased by more than 10 percent, these elements can remain unaltered.
- Any existing gravity, load-carrying structural element for which an addition or its related alterations causes an increase in the design gravity load of more than 5 percent shall be strengthened, supplemented or replaced.

### **Alterations**

- Any existing gravity, load-carrying structural element for which an addition or its related alterations causes an increase in the design gravity load of more than 5 percent shall be strengthened, supplemented or replaced.
- For alterations that would increase the design lateral loads or cause a structural irregularity or decrease the capacity of any lateral load carrying structural element, the structure of the altered building shall meet the requirements of the Code for New Construction, except for the existing lateral load carrying structural elements whose demand-capacity ratio is not increased by more than 10 percent, these elements can remain unaltered.

### **Work Area Compliance Method**

In this method, compliance with Chapter 5 through 13 of the IEBC is required. As part of the scope of this report, the extent of the compliance requirements identified are limited to the structural requirements of these chapters.

In this method, the extent of alterations has to be classified into LEVELS OF WORK based on the scope and extent of the alterations to the existing structure. The LEVEL OF WORK can be classified into LEVEL 1, LEVEL 2 or LEVEL 3 Alterations. In addition, there are requirements that have to be satisfied for additions to the existing structure.

The extent of the renovations (includes Architectural, FP and MEP renovations) for this project exceeds 50 percent of the aggregate area of the building, thus, the LEVEL OF WORK for this project would be classified as LEVEL 3 Alterations. This would require compliance with provision of Chapter 7, 8 and 9 of the IEBC. If the scope of the project includes new additions to the existing structure; this would trigger compliance with provisions in Chapter 11 of the IEBC.

### **Level 3 Alterations**

- Any existing gravity, load-carrying structural element for which an alteration causes an increase in the design gravity load of more than 5 percent shall be strengthened, supplemented or replaced.
- For alterations where more than 30 percent of the total floor area and roof areas of a building or structure have been or proposed to be involved in structural alterations within a 12 month period, the evaluation and analysis shall demonstrate that the altered building complies with the full design wind loads as per the code requirements for new construction and with reduced IBC level seismic forces.

- For alterations where not more than 30 percent of the total floor and roof areas of a building are involved in structural alterations within a 12 month period, the evaluation and analysis shall demonstrate that the altered building or structure complies with the loads at the time of the original construction or the most recent substantial alteration (more than 30 percent of total floor and roof area). If these alterations increase the seismic demand-capacity ratio on any structural element by more than 10 percent, that particular structural element shall comply with reduced IBC level seismic forces.
- Existing anchorage of all unreinforced masonry walls to the structure have to be evaluated.

#### **Additions**

- All additions shall comply with the requirements for the Code for New Construction in the IBC.
- Any existing gravity, load-carrying structural element for which an addition or its related alterations cause an increase in design gravity load of more than 5 percent shall be strengthened, supplemented or replaced.
- For additions that are not structurally independent of any existing structures, the existing structure and its additions, acting as a single structure, shall meet the requirements of the Code for New Construction in the IBC for resisting wind loads and IBC Level Seismic Forces (may be lower than loads from the Code for New Construction in the IBC), except for small additions that would not increase the lateral force story shear in any story by more than 10 percent cumulative. In this case, the existing lateral load resisting system can remain unaltered.

#### **Performance Compliance Method**

Following the requirements of this method for the alterations and additions may be onerous on the project because this method requires that the altered existing structure and the additions meet the requirements for the Code for New Construction in the IBC.

#### **PARTICULAR REQUIREMENTS OF COMPLIANCE METHODS**

For our project, in order to meet compliance with one of the two compliance methods "Prescriptive Compliance Method" or the "Work Area Compliance Method", we have to address the following:

#### **Prescriptive Compliance Method**

##### **Additions**

The proposed additions would be designed structurally independent of the existing structures, thus, would not impart any additional lateral loads on the existing structure.

If the proposed alterations are such that the alterations increase the design lateral loads on the existing building or cause any structural irregularity or decrease the lateral load carrying capacity of the building, the structure of the altered building shall meet the requirements of the Code for New Construction in the IBC.



If the proposed additions increase the design gravity load on portions of the existing roof members, these members would have to be reinforced and this incidental structural alteration of the existing structures would have to be accounted for in the scope of the alterations to the existing school and would trigger requirements for alterations.

### **Alterations**

Alterations that would increase the design gravity loads by more than 5 percent on any structural members would have to be reinforced.

If the proposed alterations of the structure increases the demand-capacity ratio of any lateral load resisting element by more than 10 percent, the structure of the altered building or structure shall meet the requirements for the Code for New Construction.

## **Work Area Compliance Method**

### **Level 3 Alterations**

If the proposed structural alterations of an existing structure are less than 30 percent of the total floor and roof areas of the existing structure, we have to demonstrate that the altered structure complies with the loads applicable at the time of the original construction and that the seismic demand-capacity ratio is not increased by more than 10 percent on any existing structural element. Those structural elements whose seismic demand-capacity ratio is increased by more than 10 percent shall comply with reduced IBC level seismic forces.

If the proposed structural alterations of an existing structure exceed 30 percent of the total floor and roof areas of an existing structure, we have to demonstrate that the altered structure complies with the IBC for wind loading and with reduced IBC level seismic forces.

Existing anchorage of all unreinforced masonry walls to the structure have to be evaluated. If the existing anchorage of the walls to the structure is deficient, the tops of the masonry walls will require new connections to the structure.

### **Additions**

Any proposed additions would be designed structurally independent of the existing structures, thus, they would not impart any additional lateral loads on the existing structures.

### **Comment**

The compliance requirements of the two methods, in most respects, are very similar. The Prescriptive Compliance Method would require that the existing lateral load resisting systems meet the requirements of the Code for New Construction of the IBC, even for small increases of design lateral loads. The requirements of both methods will require anchorage of all existing masonry walls. Based on this, we would recommend the Work Area Compliance Method for the project.

## **SUMMARY**

The existing school is performing adequately. All of the structural components that are visible appear to be performing adequately.

Any major, proposed renovations and additions would likely require that the structure be upgraded to meet the requirements of the code for new construction. This may require the addition of masonry shear walls to the structure. All of the existing masonry walls would have to be adequately connected to the roof structure.

# 4.6

## EXISTING MECHANICAL ASSESSMENT

SHARON HIGH SCHOOL  
EXISTING CONDITIONS REPORT

HEATING, VENTILATING, AND AIR CONDITIONING

A. General:

1. This report is based on a September 19, 2018 site visit walk-through with Sharon school facilities personnel, existing partial set of HVAC drawings dated July 10, 1997, and the Sharon High School Study by Symmes, Maini & McKee Associates dated March 12, 2014.
2. The building was originally constructed in 1956 with renovations and additions occurring in various phases through 2010. The HVAC systems underwent a major renovation in 1998 (assuming work shown on the July 1997 plans was constructed the following year. Therefore, the mechanical equipment installed during that renovation is now 20 years old.
3. Most of the systems are either at or have exceeded their normal life expectancy and are recommended to be replaced within the next 5 to 10 years.

B. Hot Water Heating System

1. The building is heated by four gas-fired cast iron hot water boilers manufactured by Burnham. The boilers have a gross heating capacity of 2,154 MBH each and were installed during the renovations in 1998. Median Service Life estimates for boilers of this type based on ASHRAE data is on the order of 25 to 30 years. Replacement of equipment should be considered beyond this service life since the probability of failure begins to increase significantly. Based on this assessment, the existing boilers, which are 20 years old, have a remaining service life of about 10 years. Earlier replacement with high efficiency boilers may be feasible for economic reasons.



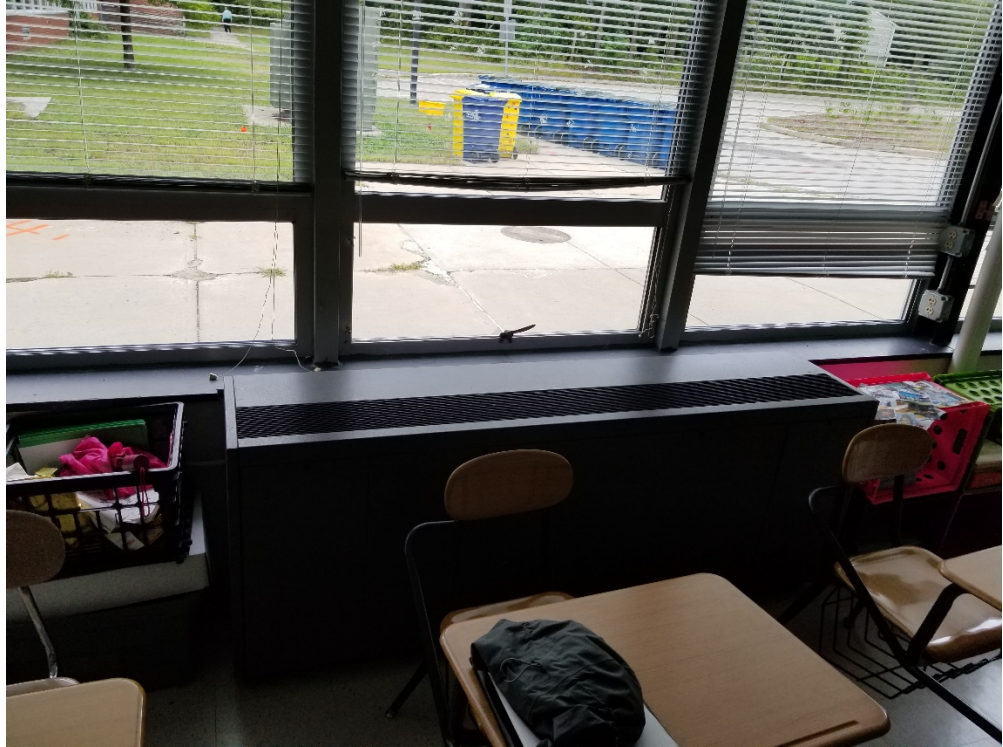
2. Each boiler is fitted with a boiler circulation pump to maintain a constant flow during operation. The boilers appear to be piped in a successive series arrangement to the main hot water return as opposed to the more traditional parallel arrangement with a zero-pressure loss bypass used in a primary-secondary piping system. The existing arrangement acts like a primary-secondary system hydraulically, but since the boilers are connected to the return main in series, each one will experience a different entering water temperature, which may impact the system efficiency.
3. There are two sets of primary hot water pumps with two pumps each, which serve different parts of the building. One set serves the three main academic wings, while the other set serves the south side of the building. Each pump is controlled by a variable frequency drive to vary the amount of flow delivered to the system based on demand. The pumps appear to be in good condition, although they are at their median service life of 20 years.



4. Combustion air is supplied to the boiler room by a heating and ventilating unit. Boiler combustion gas venting is through a combined double wall gas vent to a vertical chimney.
  5. Heating hot water is distributed to; air handling units, heating and ventilating units, unit ventilators, fan coil units, fan powered terminal units, cabinet unit heaters, unit heaters, perimeter fin-tube, and convectors.
  6. The hot water piping is expected to have at least a 40 year life expectancy and therefore should be in good condition with the current 20 year use.
- C. Typical Classrooms
1. Classrooms are heated and ventilated with floor mounted unit ventilators located on the exterior wall. Outside ventilation air is provided through an exterior wall louver for each unit.



2. The units are provided with hot water for heating and have pneumatic temperature controls.



3. The classrooms are exhausted through combined exhaust systems serving multiple rooms, which connect to roof exhaust fans. The exhaust fans are designed for two speed operation. It is intended that they operate at minimum speed during the minimum outside air mode and at maximum speed during the unit ventilator economizer mode. It is not certain if this operation is working properly.
4. The median service life for unit ventilators is about 20 years, therefore the units are beginning to exceed their normal life expectancy and should be considered for replacement within the next 5 years. The unit ventilator outdoor air and recirculation dampers require significant maintenance to ensure that sufficient outdoor air is delivered during the minimum outside air mode.

D. Classrooms – Part A First Floor

1. Four classrooms on the first floor of Part A are heated by ducted ceiling mounted fan coil units provided with hot water for heating. Each unit distributes supply air through ceiling diffusers. The units are fitted with motorized recirculation and outside air dampers. Outside air is provided through a combined outside air duct connected to an intake roof vent.
2. The classrooms are exhausted by one common exhaust fan with an open-ended duct over one of the classrooms. Transfer ducts are provided above the ceiling from each of the classrooms.
3. The median service life for fan coil units is about 20 years, therefore the units are beginning to exceed their normal life expectancy and should be considered for replacement within the next 5 years.

E. Classroom Additions

1. There are two small two classroom additions. One was constructed in 2001 and the other in 2009. Each addition has two self-contained rooftop air conditioning units. The units have gas-fired furnaces for heating.



2. The units installed in 2001 appear to be in poor condition, while the units installed in 2009 are in good condition. The median service life for these units is about 15 years, therefore the units installed in 2001 are exceeding their normal life expectancy and should be considered for replacement within the next 5 years. The units installed in 2009 should be considered for replacement within the next 10 years.

F. Library

1. The Library is on the second floor of Part A and is heated, air conditioned and ventilated by a self-contained rooftop unit. The unit is variable air volume with supply air distributed to zone fan powered terminal units and variable air volume terminals. The terminal units have hot water coils for heating and supply air to ceiling and perimeter diffusers.
2. Air conditioning is provided by a DX refrigerant coil served by a packaged condensing unit. The unit is provided with a hot water coil for heating.



3. The median service life for self-contained rooftop air conditioning units is about 15 years, therefore the unit is in excess of its normal life expectancy and should be considered for replacement within the next 5 years. The unit appears to be in good condition except for some corrosion along the unit base.

G. Computer/Technology Labs

1. The technology area is on the first floor of part A and is heated, air conditioned and ventilated by a self-contained rooftop unit. The unit is variable air volume with supply air distributed to zone fan powered terminal units and variable air volume terminals. The terminal units have hot water coils for heating and supply air to ceiling and perimeter diffusers
2. Air conditioning is provided by a DX refrigerant coil served by a packaged condensing unit. The unit is provided with a hot water coil for heating.





3. The median service life for self-contained rooftop air conditioning units is about 15 years, therefore the unit is in excess of its normal life expectancy and should be considered for replacement within the next 5 years. The unit appears to be in good condition except for some corrosion along the unit base.

#### H. Auditorium

1. The auditorium is served by one rooftop air handling unit mounted on the roof next to the auditorium. The supply duct is exposed above the roof and offsets up next to the exterior wall before entering the building high on the wall. The ductwork is protected by a weatherproof membrane and appears to be in fair condition.



2. The unit has a hot water coil for heating.
3. One of the fans in the unit was not operational. The fan shaft had been removed and appears to be under repair. The condition of the unit appears to be fair to poor. In general, the unit access doors do not seal well, and the casing generally appears to be susceptible to leakage. The median service life for rooftop air handling units is about 15 years, therefore the unit is in excess of its normal life expectancy and should be considered for replacement within the next 5 years.

I. Stage

1. The stage is served by one rooftop air handling unit mounted on the roof next to the stage. The unit is of the same type as the auditorium unit. The supply duct is exposed above the roof for a short distance and offsets horizontally before entering the exterior wall to the stage. The ductwork is protected by a weatherproof membrane and appears to be in fair condition.



2. The unit has a hot water coil for heating.
3. There is a plumbing vent located within 25 feet on the unit air intake, which does not comply with MSBA design guidelines.
4. The condition of the unit appears to be fair to poor. In general, the unit access doors do not seal well, and the casing generally appears to be susceptible to leakage. The median service life for rooftop air handling units is about 15 years, therefore the unit is in excess of its normal life expectancy and should be considered for replacement within the next 5 years.

J. Cafeteria

1. The cafeteria is served by one rooftop air handling unit mounted on the roof adjacent to the cafeteria. The unit is of the same type as the auditorium and stage unit. The

supply duct is exposed above the roof for a short distance and offsets horizontally before entering the exterior wall to the cafeteria. The ductwork is protected by a weatherproof membrane and appears to be in fair condition except for the connection to the unit, which has peeled apart.



2. The unit has a hot water coil for heating.
3. There is a plumbing vent located immediately next to the unit with the air intake. within 25 feet on the unit air intake, which does not comply with MSBA design guidelines.
4. The condition of the unit appears to be fair to poor. In general, the unit access doors do not seal well, and the casing generally appears to be susceptible to leakage. One of the unit access doors is noticeable bent and does not close completely. The casing at the roof of the unit along the edge is also beginning to corrode. The median service life for rooftop air handling units is about 15 years, therefore the unit is in excess of its normal life expectancy and should be considered for replacement within the next 5 years.

K. Kitchen

1. The kitchen hood is exhausted through a roof exhaust fan. There is no direct makeup air for the kitchen hood exhaust. Air is transferred from the cafeteria, which requires that the cafeteria unit provide sufficient outside air to makeup the kitchen exhaust.

L. Gymnasium

1. The gymnasium is heated and ventilated by four interior air handling units. One unit is located in each corner of the gym. Air is discharged directly into the space. The units have hot water for heating. Outside air is taken through an exterior louver.
2. Exhaust relief for the gym is provided by two roof mounted exhaust fans.





3. The median service life for interior air handling units is about 20 years, therefore the units are at their normal life expectancy. The units appear to be in good condition but should be considered for replacement within the next 5 to 10 years.

M. Locker Rooms

1. The locker rooms are heated and ventilated by roof mounted heat recovery air handling units. Exhaust air from the locker rooms goes through a plate heat exchanger recovery section of the unit for preheating of the outside air. The units have a hot water coil for final heating.
2. The median service life for rooftop air handling units is about 15 years, therefore the unit is in excess of its normal life expectancy and should be considered for replacement within the next 5 years. Based on the SMMA report, these units have been reported to have problems for over 15 years.

N. Administration

1. The administration area is heated, air conditioned and ventilated by a self-contained rooftop unit. The unit is variable air volume with supply air distributed to zone variable air volume terminals. The terminal units have hot water coils for heating and supply air to ceiling and perimeter diffusers.
2. Air conditioning is provided by a DX refrigerant coil served by a packaged condensing unit. The unit has a gas-fired furnace for heating.



3. The median service life for self-contained rooftop air conditioning units is about 15 years, therefore the unit is in excess of its normal life expectancy and should be considered for replacement within the next 5 years. There is significant damage to the condenser coils on the unit, which most likely causes a reduction in cooling capacity.

O. Guidance and Special Ed

1. These areas are each served by interior air handling units located in a mezzanine area accessed from a storage room. The units are constant volume and have a DX coil for cooling with a condensing unit on the roof. Heating is provided by a hot water coil. Outside air is taken through an exterior louver.



2. Access for service of these units is extremely difficult next to the access opening. The units are reported to be noisy.
3. The median service life for interior air handling units is about 20 years, therefore the units are at their normal life expectancy. The condensing units on the roof have exceeded their normal life expectancy. The air handling units appear to be in good condition. The units should be replaced within the next 5 years. Due to the difficulty servicing these units and the need to replace the roof mounted condensing units, it is recommended that the units be replaced with self-contained rooftop units.

P. IDF Room

1. A ductless split air conditioning system serves main IT room. The unit appears to be in good condition.

Q. Vestibules and Corridors

1. Entrances, entrance vestibules and corridors are heated by ceiling mounted hot water cabinet unit heaters. The corridors have unit ventilators for outdoor ventilation air.

R. Toilet Rooms

1. Toilet rooms are exhausted with roof mounted exhaust fans. The fans are in good condition.

S. Wastewater Treatment Plant

1. The wastewater treatment plant is served by a 100% outside air gas-fired roof mounted makeup air unit and exhaust fans. It was reported that the makeup air unit is not fully effective and should be replaced.
2. The supply ductwork appears to be exposed on the roof and not provided with a weatherproof covering. It is not known if the ductwork is internally insulated.





T. Emergency Generator

1. The emergency generator is located next to the wastewater treatment plant and near the end of a classroom wing. The discharge of the generator exhaust is terminated near the top of the generator with an up turning up. There is a possibility of down-wash of the exhaust from the generator leading to exhaust pollutants entering a classroom through open windows or through an intake louver.
2. It is recommended that the generator be relocated away from the classroom wing and adding a 10 ft high stack extension, at the least, to comply with Mass DEP guidelines.

# 4.7

## EXISTING PLUMBING & ELECTRICAL ASSESSMENT



## Existing Conditions (Plumbing, Fire Protection, and Electrical)

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### General

This report is based on a September 19, 2018 site visit with Sharon School Facilities personnel, taking into consideration the various systems viewed and current system conditions described by them.

### FIRE PROTECTION

#### General summary

In general, the fire protection and plumbing systems observed, appears to have enough capacity to meet all present and future needs of the school.

#### Service

The school is supplied by a 6" water service that enters the building underground just outside of the gymnasium and extends through the first floor slab in Storage Room A120. A post indicator valve is located outside the building to indicate the status of the valve (open or closed) on this fire water service. In room A120 is a double check valve backflow preventer. This DCVA requires service as a paint spill has filled one of the test ports rendering it inactive. The fire protection service then travels back under the first floor slab and over to the main Mechanical Room C121.

#### Sprinkler Zone Alarm Valves

The 6" service enters through the floor slab of Mechanical Room C121 where a 6" header feeds three (3) wet alarm valves, each protecting separate sprinkler zones throughout the building. Zone 1 appears to serve the gymnasium wing. Zone 2 appears to serve the second floor. Zone 3 appears to serve the rest of the first floor.

#### Exterior Fire Department Connection

An exterior siamese type fire department connection is located on the west exterior wall of the Mechanical Room and feeds each zone riser after the wet alarm valve.

#### Sprinkler System

The school is protected by a wet sprinkler system throughout. Based on the information tags at each of the alarm valves, design densities and layouts are in accordance with NFPA-13 as required. All piping that was visible is black steel with both mechanical and threaded fittings. Sprinkler heads types vary based on the areas they are protecting and the type of ceiling in the area. All ACT ceilings have semi-recessed type sprinkler heads. Areas without ceilings are protected by upright sprinkler heads.

#### Summary

In general, the fire protection system is in good condition. The test port on the backflow preventer should be cleaned and retested to ensure proper working condition. Although some sprinkler head show signs of aging, replacement need only happen if relocation of a head may be required due to space planning changes. Yearly testing of the sprinkler zones and the fire alarm system should allow for early detection of any future problems.

## PLUMBING

### General summary

In general, the fire protection and plumbing systems observed, appears to have enough capacity to meet all present and future needs of the school.

### Plumbing Fixtures

Existing water closets throughout the building are wall mounted, flush valve type fixtures. The water closets viewed during this site inspection appear to be low flow type fixtures. Dual flush technology is present on most water closets currently. All water closets appear to be in fair condition.

Existing urinals throughout the building are wall mounted, manual flush valve type fixtures. The urinals viewed during this site inspection do not appear to be low flow type fixtures. All urinals appear to be in fair condition.

Existing lavatories throughout the building are wall hung type fixtures. Most are equipped with metering type faucets. The lavatories viewed during this site visit do not appear to be provided with individual mixing valves to limit the temperature of water provided at the fixture. It appeared that at least one lavatory in the bathrooms observed, had its trap and piping covered with an approved insulation system. Consideration should be given to replacing the lavatories and providing new low-flow faucets with local mixing valves to limit temperature to 110°F as required by code.

Janitor's service sinks throughout the building are predominantly utility type fixtures on legs, although one floor mounted model was observed. These fixtures appear to be old and in poor condition. These fixtures should be replaced.

Drinking fountains are located throughout the facility. Although most are typically older models, they have also been recently outfitted with modern water bottle filling stations.

### Domestic Cold Water System

The building is currently provided with a 4" domestic water service that enters Storage Room A120 on the first floor, next to the fire protection service noted above. This 4" service includes a main shut-off valve, 2" water meter and main drain, and serves all plumbing fixtures in the building. Backflow prevention is not provided at this location. No problems or issues have been reported with this size of service or the current water pressure in the building.

The cold water piping observed appears to be original to the building and is in fair to poor condition. Valves observed on this system also appeared to be older and in poor condition. The ability of these valves to operate properly if needed appears doubtful.

### Domestic Hot Water System

The domestic hot water system consists of two (2) high-efficiency boilers and a 450 gallon storage tank located in the Mechanical Room. This system supplies hot water to most the school's plumbing fixtures. A master mixing valve is mounted on the wall in the Mechanical Room. The boilers provide 140°F hot water and the mixing valves reduces that temperature to 120°F before distributing to all fixtures on the system.

An electric storage type water heater is in Storage Room B121 outside of the Auditorium and supplies hot water to the fixtures in this area only.

Both systems include a hot water recirculation piping system that includes recirculation pumps to allow for continuous recirculation of hot water.

Like the cold water system, the hot water piping observed appears to be original to the building and is in fair to poor condition. Valves observed on this system also appeared to be older and in poor condition. The ability of these valves to operate properly if needed appears doubtful as well.

All water heaters appear to be in good condition at this time.

### **Sanitary and Vent System**

The original plans indicate the sanitary system is a gravity system. There are several locations throughout the building where the sanitary lines exit to separate septic fields on the site. There are floor drains in the Mechanical Room that discharge into a sump pit in the room. A sump pump in the pit discharges this output via a force main and connects to gravity sanitary waste piping at the Mechanical Room ceiling.

The wastewater treatment plant was constructed in 1996 and treats all effluent from the high school. No problems have been reported on the system according to facilities personnel.

The sanitary piping that could be viewed was cast iron. The existing piping appears to be in fair to poor condition.

### **Storm Drainage**

The building storm drainage system consists of a series of exterior gutters and downspouts. However, there are a couple of areas where roof drains piped to an interior storm water system are present. This piping system runs down below the slab and connects to an underground piping system that exits the building in various locations. Portions of this piping system that were visible are cast iron and appear to be original to the building. They are in fair to poor condition.

All downspouts connect to downspout boots at grade and then discharge to the site storm water system underground.

### **Natural Gas System**

The existing gas service, with meter and pressure regulator, are located just outside of the Boiler Room. An 8" gas main enters the Boiler Room and then distributes to the Boilers in this location, all kitchen equipment, and the science room lab gas turrets. Gas regulators are located at all boilers to regulate the pressure feeding these pieces of equipment. It was stated by facilities personnel that the gas pressure feeding the classrooms in the science wing appears to be inadequate to allow for all labs to be used at the same time.

Any gas piping observed appeared to be in fair condition.

### **Insulation**

Hot and cold water piping insulation that was in view is in fair condition. The pipe insulation appears to be fiberglass. In many locations the insulation is either hanging off the piping or has been completely

removed from portions of the piping. Due to the age of the building, it can reasonably be assumed that the insulation contains asbestos, and should be replaced.

### **Hose Bibbs and Wall Hydrants**

Existing hose bibbs and wall hydrants observed at this time appear to be in fair to poor condition and do not appear to have vacuum breaker included as required by code. Hose bibbs are required in toilet rooms in buildings with two or more water closets or urinals. The toilet rooms that were observed did not appear to have hose bibbs installed.

### **Cross Connection Control**

Currently cross connection control in the form of vacuum breakers for the protection of the domestic water system is not in place. As stated above, the exterior wall hydrants do not have integral vacuum breakers.

### **Locker Rooms**

The existing showers and shower areas are no longer being used. These areas are used solely for storage at this time. Although shower heads, control valves and floor drains exist in these areas, it is not known if any of them are in operable condition. The bathrooms in the locker areas are used, but the water closets and lavatories are older and should be replaced.

### **Kitchen**

All kitchen plumbing fixtures and equipment, although older, appeared to be in good working condition. The three-compartment sink, and the dishwasher, connect to code required grease interceptors located on the floor below each of these pieces of equipment. The interceptors appears to be in fair to poor condition.

The kitchen plumbing fixtures and floor drains do not connect to a separate grease waste system as required by code. They discharge directly to the building's sanitary waste system. There is no evidence of an exterior grease trap as well.

It does not appear that the kitchen exhaust hood is interlocked with the gas piping feeding the equipment in this area. This is a code violation and should be rectified.

### **Science Wing**

The typical science lab classroom is equipped with lab benches that have an integral sink with dual faucets, and deck mounted gas turrets. The sink waste is a code approved polypropylene piping system that discharges to a central lab waste system. This system is located in a storage closet and consists of pH adjustment tanks and central monitoring system. No problems have been reported with this system. The system does not have secondary containment around it, thus giving concern for a possible chemical spill that could not be controlled.

The lab faucets are served by a non-potable hot and cold water system that originates in the storage room that houses the lab waste system. Reduced pressure backflow preventers are mounted along the wall to create each system. The lab faucets and gas turrets all appear to be in fair condition.

Each lab classroom is provided with an emergency shower/eyewash unit. These showers are only served by the domestic cold water system and not by a tempered water system. Currently the state plumbing

code requires emergency showers/eyewashes to be fed with tempered water and to be located adjacent to the entry door. Current locations differ from room to room.

Each lab classroom is also equipped with a master gas shut-off valve typically located near the entry door and behind a hinged door labeled “master gas valve”.

## Electrical

### General summary

In general, the main electrical service was upgraded in 1997 and has enough capacity to meet present and future needs, but many of the branch circuit panels are original to the building and need to be replaced. Lighting is functional and portions have been upgraded as recently as 2007. Modern LED lighting systems would provide improved lighting quality and energy efficiency. The fire alarm system was upgraded in 1997 and has enough capacity to meet all present and future needs of the school. Structured cabling and technology systems are functional and will continue to operate; but will likely require replacement due to classroom technology improvements. Security systems are reaching the end of their useful life and should be replaced.

### Power Distribution

Utility primary feeders are extended underground from a pole on Pond St where to a utility owned pad mounted transformer on the school site. Secondary service conductors are extended underground from the transformer to a 3000A, 120/208V, 3 $\phi$ , 4w switchboard. The switchboard was installed under a 1997 project. The 1997 project also installed two 800amp panels which feed all the original 1950's panelboards. The 1997 project installed approximately 6-10 additional branch panelboards.



Main switchboard Installed 1997



MDP installed 1997



Sample of older original panel

While the switchboard and equipment installed in 1997 project are in good condition and capable of long term operation, the original 1950's panelboards, feeders and circuiting should be replaced.

### Auxiliary Power

The building has a 100kW/125kVA, 208/120V, 3 $\phi$ , natural gas generator system. The system has two automatic transfer switches (ATSs). The life safety ATS is located in a 2hr rated emergency electrical closet. ATS#1 serves life safety loads and feeds a distribution panel, and branch emergency lighting panels ELP-1 thru ELP-5. ATS#2 serves optional standby loads and feeds a 400amp distribution panel located in the boiler room.



Generator

The generator system was installed in the 1997 project and is in good working condition. It has been reported that the generator system was undersized for the loads originally planned so some optional standby loads could not be connected to the generator system.



## Lighting

An energy efficiency project in 2007 replaced approximately 70% of the lighting with new linear fluorescent fixtures with super T8 lamps and electronic ballast. The remaining portions of the building have lighting systems that were replaced in the 1997 project and consist of linear fluorescent systems using early generation T8 lamp and ballast systems. Most areas have occupancy sensor control installed under the 2007 upgrade but there are areas, such as corridors, which use manual switches. The auditorium's original house and theatrical dimming system has been retrofitted in piecemeal fashion over the years.



Example of lighting upgraded in 2007



Some classrooms have older fixtures installed in 1997 upgrade

The existing lighting in the classrooms is in good working condition and will continue to operation in the near future. Lighting from the 1997 upgrade is older and should be replaced. To ensure consistent, quality lighting, all lighting could be replaced with LED lighting to capture the benefits of long life and higher energy efficiency. The existing auditorium dimming system is in poor condition and should be replaced in its entirety.

## Fire Alarm

The building has a fire alarm and voice evacuation system installed in 1997. The fire alarm control panel is manufactured by EST and the system reports to the fire department using an exterior cabled master box. Smoke detectors are installed in corridors and pull stations are provided at exits as required by code. Speaker/strobes are located throughout the building at adequate spacings. The systems are in operable condition and appear to be meet current codes. The building does not have a bidirectional amplifier system for emergency responder radio systems required by current code.





FACP



Masterbox

### Security Systems

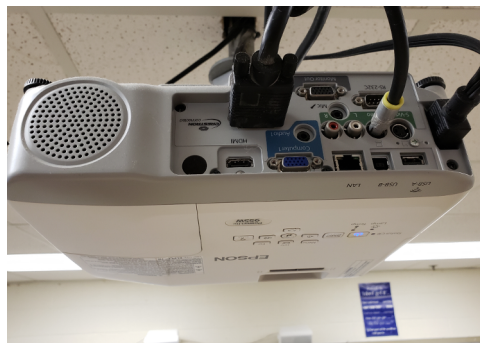
Security systems consist of intrusion detection and CCTV surveillance systems. There is not any door access, card reader system. The main entrance has a video/intercom system with remote door release to supervise entry at the main building entrance. The CCTV system is an analogue type. Video storage could not be confirmed during the site visit. Intrusion detection consists of door contacts at exterior doors and motion detectors in the corridors. There are two keypads for enabling and disabling the system.

Security systems are operational but are reaching the end of their useful life and should be replaced.

### Structured Cabling

Horizontal structured cabling consisting of Category 5 UTP distributed to classroom and workstation outlets. There is a main distribution frame (MDF) and four IDF's distributed throughout the building. M19" racks located in MDF and IDF's contain rack mounted patch panels for structure cabling termination. IDF's are not in dedicated rooms often sharing space with electrical and utility closets. Cabling is functional but is not optimal.

Classrooms either have a ceiling mounted data projector with whiteboard or wall mounted short throw data projector with Smartboard. The equipment was installed within the last 10 years.



# 4.8

## ENVIRONMENTAL BUILDING ANALYSIS

**FINAL REPORT  
FOR  
HAZARDOUS MATERIALS IDENTIFICATION  
STUDY  
AT THE  
HIGH SCHOOL  
SHARON, MASSACHUSETTS**

PROJECT NO: 218 425.00

Survey Dates:  
September 24 – October 10, 2018

CONDUCTED BY:  
**UNIVERSAL ENVIRONMENTAL CONSULTANTS  
12 Brewster Road  
Framingham, MA 01702**

October 15, 2018

Mr. Charlie Hay, Principal  
Tappe' Architects  
6 Edgerly Place  
Boston, MA 02116

Reference: Report for Hazardous Materials Identification Study  
High School, Sharon, MA

Dear Mr. Hay:

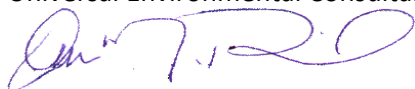
Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

Enclosed please find the report for the hazardous materials identification study at the High School, Sharon, MA.

Please do not hesitate to call should you have any questions.

Very truly yours,

Universal Environmental Consultants



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Ammar M. Dieb  
President

UEC:\218 425.00\Report.DOC

Enclosure

## 1.0 INTRODUCTION:

Universal Environmental Consultants (UEC) has been providing comprehensive asbestos services since 2001 and has completed projects throughout New England. We have completed projects for a variety of clients including commercial, industrial, municipal, and public and private schools. We maintain appropriate asbestos licenses and staff with a minimum of thirty years of experience.

UEC was contracted by Tappe' Architects to conduct the following services at the High School, Sharon, Massachusetts:

- Asbestos Containing Materials (ACM) determination inspection and sampling;
- Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures inspection;
- PCB's Caulking Inspection;
- Lead Based Paint (LBP) inspection;
- Mercury in Rubber Flooring inspection and sampling;
- Airborne Mold inspection and sampling;
- Radon sampling;

The scope of work included the inspection of accessible ACM, collection of bulk samples from materials suspected to contain asbestos, determination and quantities of types of ACM found and cost estimates for remediation. A comprehensive survey per the Environmental Protection Agency (EPA) NESHAP regulation would be required prior to any renovation or demolition activities.

Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) Method in accordance with EPA standard. Bulk samples were collected by a Massachusetts licensed asbestos inspectors Mr. Leonard J. Busa (AI-030673) and analyzed by a Massachusetts licensed laboratory Asbestos Identification Laboratory, Woburn, MA.

Airborne mold samples were analyzed by an EPA approved laboratory EMSL, Woburn, MA.

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Ward Hill, MA.

Samples results are attached.

## 2.0 FINDINGS:

### **Asbestos Containing Materials (ACM):**

The regulations for asbestos inspection are based on representative sampling. It would be impractical and costly to sample all materials in all areas. Therefore, representative samples of each homogenous area were collected and analyzed or assumed.

All suspect materials were grouped into homogenous areas. By definition a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. A homogeneous area shall be determined to contain asbestos based on findings that the results of at least one sample collected from that area shows that asbestos is present in an amount greater than 1 percent in accordance with EPA regulations. Per the Department of Environmental Protection (DEP) any amount of asbestos found must be disposed as asbestos. No additional suspect and accessible ACM were found during this survey.

Hidden ACM may be found during the renovation and demolition activities.

### ***Number of Samples Collected:***

One hundred and twenty three (123) bulk samples were collected from materials suspected of containing asbestos, including:

## **Type and Location of Suspect Material**

### **1956 Construction:**

1. Thick grey asphalt on boiler ribs at boiler room
2. Rope on old metal boiler ribs at boiler room
3. Red/brown mud on old metal boiler ribs at boiler room
4. Grey on face of old metal boiler ribs at boiler room
5. Debris at boiler room
6. Ceiling plaster at boiler room
7. Ceiling plaster at boiler room
8. Mud on old metal boiler ribs at boiler room
9. Glue daub for stored tackboard at boiler room
10. Layered paper pipe insulation at nurse boy's room pipe chase
11. Rough ceiling plaster at boy's locker room
12. Rough ceiling plaster at girl's locker room
13. Red linoleum covering on table at music
14. Adhesive for red linoleum covering on table at music
15. Cork/vertical expansion joint in glazed brick wall at hallway by classroom 400
16. Joint compound at hallway outside Athletic Director office
17. Glazing for panel under window at double door assembly at entrance to 700 wing
18. Vertical window framing caulking at double door assembly at entrance to 700 wing
19. Vertical window framing caulking at double door assembly at entrance to 700 wing
20. Vertical window framing caulking at cafeteria
21. Smooth ceiling plaster at auditorium projector room
22. Smooth ceiling plaster at auditorium
23. Smooth ceiling plaster at auditorium
24. Debris on top of ceiling plaster at auditorium catwalk
25. Tan sealant on old duct system at auditorium catwalk
26. Homosote wall at auditorium catwalk
27. White/light grey 12" x 12" vinyl floor tile at cafeteria
28. Mastic for white/light grey 12" x 12" vinyl floor tile at cafeteria
29. White/light grey 12" x 12" vinyl floor tile at hallway by boy's locker room
30. Mastic for white/light grey 12" x 12" vinyl floor tile at hallway by boy's locker room
31. Slate window sill at room 401
32. Grey sealant on white painted duct at storage room 228
33. Purple sink coating at classroom 310
34. Joint compound at classroom 309
35. Lab table at classroom 309
36. Transite fume hood at classroom 304
37. Pegboard at hallway by classroom 303
38. Cork/mastic under hardwood floor at gymnasium
39. Cork/mastic under hardwood floor at gymnasium
40. Joint compound at administration wing women's room

### **1963 Construction:**

41. Hard joint insulation at storage room by classroom 506
42. White/light grey 12" x 12" vinyl floor tile (top layer) at storage room by classroom 506
43. Mastic for white/light grey 12" x 12" vinyl floor tile (top layer) at storage room by classroom 506
44. 9" x 9" Vinyl floor tile (second layer) at storage room by classroom 506
45. Mastic for 9" x 9" vinyl floor tile (second layer) at storage room by classroom 506
46. Exposed 9" x 9" vinyl floor tile at entrance to sump pit
47. Mastic for exposed 9" x 9" vinyl floor tile at entrance to sump pit
48. White/light grey 12" x 12" vinyl floor tile at work room by classroom 508

49. Mastic for white/light grey 12" x 12" vinyl floor tile at work room by classroom 508
50. White/light grey 12" x 12" vinyl floor tile at classroom 508 closet
51. Mastic for white/light grey 12" x 12" vinyl floor tile at classroom 508 closet
52. Joint compound at hallway by classroom 516
53. Joint compound at room 111
54. Glazing caulking for window in wood door at classroom 108
55. Glazing caulking for window in wood door at classroom 514-A
56. Glazing caulking for interior window at hallway by classroom 111
57. Glazing caulking for interior window at hallway by classroom 516-B
58. Interior slate window sill at classroom 516-B
59. 1' x 1' Acoustical ceiling tile at classroom 207
60. 1' x 1' Acoustical ceiling tile at classroom 207

#### **1997 Construction:**

61. Joint compound at stairs up to roof
62. Joint compound at classroom 605
63. Joint compound at 600 wing workroom
64. White/black 12" x 12" vinyl floor tile at first floor hallway
65. Mastic for white/black 12" x 12" vinyl floor tile at first floor hallway
66. White/black 12" x 12" vinyl floor tile at 600 wing first floor exit hall
67. Yellow mastic for white/black 12" x 12" vinyl floor tile at 600 wing first floor exit hall

#### **2001 Construction:**

68. Dark crème 12" x 12" vinyl floor tile at classroom 706
69. Yellow mastic for dark crème 12" x 12" vinyl floor tile at classroom 706
70. Dark crème 12" x 12" vinyl floor tile at hallway by nurse
71. Black mastic for dark crème 12" x 12" vinyl floor tile at hallway by nurse

#### **2009 Construction:**

72. Crème 12" x 12" vinyl floor tile at classroom 708
73. Mastic for crème 12" x 12" vinyl floor tile at classroom 708
74. Crème 12" x 12" vinyl floor tile at main hallway
75. Mastic for crème 12" x 12" vinyl floor tile at main hallway

#### **1956 Construction:**

76. Grey sealant for new duct system at boiler room
77. Tectum deck at hallway
78. Adhesive for vinyl baseboard at main hallway
79. Adhesive for vinyl baseboard at main hallway
80. Mastic for white/light grey 12" x 12" vinyl floor tile at music
81. White/light grey 12" x 12" vinyl floor tile at music
82. Mastic for white/light grey 12" x 12" vinyl floor tile at music

#### **1963 Construction:**

83. Cork board under horizontal beam above ceiling at small hallway
84. Cork board under horizontal beam above ceiling at small hallway
85. Tectum deck above ceiling at small hallway
86. Light weight cement deck for tectum deck above ceiling at small hallway
87. Grey sealant in seams of duct at workroom by classroom 508
88. Roofing debris on top of ceiling tile at hallway outside classroom 510



- 89. Roofing debris on top of ceiling tile at hallway outside classroom 310
- 90. 2' x 2' Suspended acoustical ceiling tile at hallway

**1956 Construction:**

- 91. 2' x 2' Suspended acoustical ceiling tile at hallway outside auditorium
- 92. Exterior dark grey window caulking under metal sill
- 93. Exterior white window caulking in seams of system
- 94. Exterior white/grey window framing caulking
- 95. Exterior grey window framing caulking
- 96. Exterior white window caulking in seams of system
- 97. Exterior white window framing caulking
- 98. Exterior dark grey window caulking under metal sill
- 99. Framing caulking on exterior old door
- 100. Exterior old caulking on old roll-up door
- 101. Exterior old framing caulking for old window
- 102. Exterior old caulking around old metal pane
- 103. Exterior new unit vent grille caulking
- 104. Exterior old residue caulking on old unit vent grille
- 105. Exterior white sealant in sidewalk
- 106. Exterior flashing protruding from foundation wall
- 107. Debris on cement tunnel floor
- 108. Cork board in seams of tunnel concrete ceiling

**1963 Construction:**

- 109. Exterior new grey window framing caulking
- 110. Exterior new framing caulking on unit vent grille
- 111. Interior glazing caulking for old exterior window
- 112. Exterior old framing caulking for old door/window assembly
- 113. Exterior old caulking in cement below new window
- 114. Exterior old caulking in cement below new window
- 115. Exterior new unit vent grille caulking
- 115A. Exterior old caulking under new unit vent grille caulking
- 116. Exterior old caulking for old door/window assembly
- 117. Exterior old window framing caulking in door assembly
- 118. Exterior old window framing caulking in door assembly
- 119. Exterior window glazing caulking at greenhouse
- 120. Exterior window glazing caulking at greenhouse

**1997 Construction:**

- 121. Exterior white sealant in sidewalk
- 122. Exterior grey window framing caulking

**2010 Construction:**

- 123. Exterior dampproofing on foundation wall

***Sample Results:***

**Type and Location of Suspect Material**

**Sample Result**

**1956 Construction:**

1. Thick grey asphalt on boiler ribs at boiler room	No Asbestos Detected
2. Rope on old metal boiler ribs at boiler room	No Asbestos Detected
3. Red/brown mud on old metal boiler ribs at boiler room	No Asbestos Detected
4. Grey on face of old metal boiler ribs at boiler room	No Asbestos Detected
5. Debris at boiler room	No Asbestos Detected
6. Ceiling plaster at boiler room	No Asbestos Detected
7. Ceiling plaster at boiler room	No Asbestos Detected
8. Mud on old metal boiler ribs at boiler room	10% Asbestos
9. Glue daub for stored tackboard at boiler room	No Asbestos Detected
10. Layered paper pipe insulation at nurse boy's room pipe chase	10% Asbestos
11. Rough ceiling plaster at boy's locker room	No Asbestos Detected
12. Rough ceiling plaster at girl's locker room	No Asbestos Detected
13. Red linoleum covering on table at music	No Asbestos Detected
14. Adhesive for red linoleum covering on table at music	No Asbestos Detected
15. Cork/vertical expansion joint in glazed brick wall at hallway by classroom 400	No Asbestos Detected
16. Joint compound at hallway outside Athletic Director office	No Asbestos Detected
17. Glazing for panel under window at double door assembly at entrance to 700 wing	2% Asbestos
18. Vertical window framing caulking at double door assembly at entrance to 700 wing	2% Asbestos
19. Vertical window framing caulking at double door assembly at entrance to 700 wing	5% Asbestos
20. Vertical window framing caulking at cafeteria	No Asbestos Detected
21. Smooth ceiling plaster at auditorium projector room	No Asbestos Detected
22. Smooth ceiling plaster at auditorium	No Asbestos Detected
23. Smooth ceiling plaster at auditorium	No Asbestos Detected
24. Debris on top of ceiling plaster at auditorium catwalk	30% Asbestos
25. Tan sealant on old duct system at auditorium catwalk	2% Asbestos
26. Homosote wall at auditorium catwalk	No Asbestos Detected
27. White/light grey 12" x 12" vinyl floor tile at cafeteria	No Asbestos Detected
28. Mastic for white/light grey 12" x 12" vinyl floor tile at cafeteria	No Asbestos Detected
29. White/light grey 12" x 12" vinyl floor tile at hallway by boy's locker room	No Asbestos Detected
30. Mastic for white/light grey 12" x 12" vinyl floor tile at hallway by boy's locker room	No Asbestos Detected
31. Slate window sill at room 401	No Asbestos Detected
32. Grey sealant on white painted duct at storage room 228	No Asbestos Detected
33. Purple sink coating at classroom 310	No Asbestos Detected
34. Joint compound at classroom 309	No Asbestos Detected
35. Lab table at classroom 309	No Asbestos Detected
36. Transite fume hood at classroom 304	No Asbestos Detected
37. Pegboard at hallway by classroom 303	No Asbestos Detected
38. Cork/mastic under hardwood floor at gymnasium	No Asbestos Detected
39. Cork/mastic under hardwood floor at gymnasium	No Asbestos Detected
40. Joint compound at administration wing women's room	No Asbestos Detected

#### 1963 Construction:

41. Hard joint insulation at storage room by classroom 506	10% Asbestos
42. White/light grey 12" x 12" tile (top layer) at storage room by classroom 506	No Asbestos Detected
43. Mastic for white/light grey 12" x 12" tile (top layer) at storage room by classroom 506	No Asbestos Detected
44. 9" x 9" Vinyl floor tile (second layer) at storage room by classroom 506	No Asbestos Detected
45. Mastic for 9" x 9" vinyl floor tile (second layer) at storage room by classroom 506	No Asbestos Detected
46. Exposed 9" x 9" vinyl floor tile at entrance to sump pit	3% Asbestos
47. Mastic for exposed 9" x 9" vinyl floor tile at entrance to sump pit	No Asbestos Detected
48. White/light grey 12" x 12" vinyl floor tile at work room by classroom 508	No Asbestos Detected
49. Mastic for white/light grey 12" x 12" vinyl floor tile at work room by classroom 508	No Asbestos Detected
50. White/light grey 12" x 12" vinyl floor tile at classroom 508 closet	No Asbestos Detected
51. Mastic for white/light grey 12" x 12" vinyl floor tile at classroom 508 closet	No Asbestos Detected
52. Joint compound at hallway by classroom 516	No Asbestos Detected

53.	Joint compound at room 111	No Asbestos Detected
54.	Glazing caulking for window in wood door at classroom 108	No Asbestos Detected
55.	Glazing caulking for window in wood door at classroom 514-A	2% Asbestos
56.	Glazing caulking for interior window at hallway by classroom 111	2% Asbestos
57.	Glazing caulking for interior window at hallway by classroom 516-B	2% Asbestos
58.	Interior slate window sill at classroom 516-B	No Asbestos Detected
59.	1' x 1' Acoustical ceiling tile at classroom 207	No Asbestos Detected
60.	1' x 1' Acoustical ceiling tile at classroom 207	No Asbestos Detected

#### 1997 Construction:

61.	Joint compound at stairs up to roof	No Asbestos Detected
62.	Joint compound at classroom 605	No Asbestos Detected
63.	Joint compound at 600 wing workroom	No Asbestos Detected
64.	White/black 12" x 12" vinyl floor tile at first floor hallway	No Asbestos Detected
65.	Mastic for white/black 12" x 12" vinyl floor tile at first floor hallway	No Asbestos Detected
66.	White/black 12" x 12" vinyl floor tile at 600 wing first floor exit hall	No Asbestos Detected
67.	Yellow mastic for white/black 12" x 12" vinyl floor tile at 600 wing first floor exit hall	No Asbestos Detected

#### 2001 Construction:

68.	Dark crème 12" x 12" vinyl floor tile at classroom 706	No Asbestos Detected
69.	Yellow mastic for dark crème 12" x 12" vinyl floor tile at classroom 706	No Asbestos Detected
70.	Dark crème 12" x 12" vinyl floor tile at hallway by nurse	No Asbestos Detected
71.	Black mastic for dark crème 12" x 12" vinyl floor tile at hallway by nurse	No Asbestos Detected

#### 2009 Construction:

72.	Crème 12" x 12" vinyl floor tile at classroom 708	No Asbestos Detected
73.	Mastic for crème 12" x 12" vinyl floor tile at classroom 708	No Asbestos Detected
74.	Crème 12" x 12" vinyl floor tile at main hallway	No Asbestos Detected
75.	Mastic for crème 12" x 12" vinyl floor tile at main hallway	No Asbestos Detected

#### 1956 Construction:

76.	Grey sealant for new duct system at boiler room	No Asbestos Detected
77.	Tectum deck at hallway	No Asbestos Detected
78.	Adhesive for vinyl baseboard at main hallway	No Asbestos Detected
79.	Adhesive for vinyl baseboard at main hallway	No Asbestos Detected
80.	Mastic for white/light grey 12" x 12" vinyl floor tile at music	5% Asbestos
81.	White/light grey 12" x 12" vinyl floor tile at music	No Asbestos Detected
82.	Mastic for white/light grey 12" x 12" vinyl floor tile at music	5% Asbestos

#### 1963 Construction:

83.	Cork board under horizontal beam above ceiling at small hallway	No Asbestos Detected
84.	Cork board under horizontal beam above ceiling at small hallway	No Asbestos Detected
85.	Tectum deck above ceiling at small hallway	No Asbestos Detected
86.	Light weight cement deck for tectum deck above ceiling at small hallway	No Asbestos Detected
87.	Grey sealant in seams of duct at workroom by classroom 508	No Asbestos Detected
88.	Roofing debris on top of ceiling tile at hallway outside classroom 510	<1% Asbestos
89.	Roofing debris on top of ceiling tile at hallway outside classroom 310	2% Asbestos
90.	2' x 2' Suspended acoustical ceiling tile at hallway	No Asbestos Detected

### 1956 Construction:

91.	2' x 2' Suspended acoustical ceiling tile at hallway outside auditorium	No Asbestos Detected
92.	Exterior dark grey window caulking under metal sill	No Asbestos Detected
93.	Exterior white window caulking in seams of system	No Asbestos Detected
94.	Exterior white/grey window framing caulking	No Asbestos Detected
95.	Exterior grey window framing caulking	No Asbestos Detected
96.	Exterior white window caulking in seams of system	No Asbestos Detected
97.	Exterior white window framing caulking	No Asbestos Detected
98.	Exterior dark grey window caulking under metal sill	No Asbestos Detected
99.	Framing caulking on exterior old door	5% Asbestos
100.	Exterior old caulking on old roll-up door	5% Asbestos
101.	Exterior old framing caulking for old window	5% Asbestos
102.	Exterior old caulking around old metal pane	5% Asbestos
103.	Exterior new unit vent grille caulking	No Asbestos Detected
104.	Exterior old residue caulking on old unit vent grille	No Asbestos Detected
105.	Exterior white sealant in sidewalk	No Asbestos Detected
106.	Exterior flashing protruding from foundation wall	No Asbestos Detected
107.	Debris on cement tunnel floor	80% Asbestos
108.	Cork board in seams of tunnel concrete ceiling	No Asbestos Detected

### 1963 Construction:

109.	Exterior new grey window framing caulking	No Asbestos Detected
110.	Exterior new framing caulking on unit vent grille	No Asbestos Detected
111.	Interior glazing caulking for old exterior window	3% Asbestos
112.	Exterior old framing caulking for old door/window assembly	10% Asbestos
113.	Exterior old caulking in cement below new window	10% Asbestos
114.	Exterior old caulking in cement below new window	10% Asbestos
115.	Exterior new unit vent grille caulking	No Asbestos Detected
115A.	Exterior old caulking under new unit vent grille caulking	10% Asbestos
116.	Exterior old caulking for old door/window assembly	15% Asbestos
117.	Exterior old window framing caulking in door assembly	5% Asbestos
118.	Exterior old window framing caulking in door assembly	10% Asbestos
119.	Exterior window glazing caulking at greenhouse	10% Asbestos
120.	Exterior window glazing caulking at greenhouse	10% Asbestos

### 1997 Construction:

121.	Exterior white sealant in sidewalk	No Asbestos Detected
122.	Exterior grey window framing caulking	No Asbestos Detected

### 2010 Construction:

123.	Exterior dampproofing on foundation wall	No Asbestos Detected
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### Observations and Conclusions:

The condition of ACM is very important. ACM in good condition does not present a health issue unless it is disturbed. Therefore, it is not necessary to remediate ACM in good condition unless it will be disturbed through renovation, demolition or other activity.

Refer to the AHERA Management Plan for condition of ACM.

1. Pipe insulation was either assumed or found to contain asbestos per the AHERA report.
2. Hard joint insulation was either assumed or found to contain asbestos per the AHERA report.

3. Mud on old metal boiler ribs at boiler room was found to contain asbestos.
4. Layered paper pipe insulation at nurse boy's room pipe chase was found to contain asbestos.
5. Glazing for panel under window at double door assembly at entrance to 700 wing was found to contain asbestos.
6. Vertical window framing caulking at double door assembly at entrance to 700 wing was found to contain asbestos.
7. Debris on top of ceiling plaster at auditorium catwalk was found to contain asbestos.
8. Tan sealant on old duct system at auditorium catwalk was found to contain asbestos.
9. Hard joint insulation at storage room by classroom 506 was found to contain asbestos.
10. Exposed 9" x 9" vinyl floor tile at entrance to sump pit was found to contain asbestos.
11. Glazing caulking for window in wood door at classroom 514-A was found to contain asbestos.
12. Glazing caulking for interior window at hallway by classroom 111 was found to contain asbestos.
13. Mastic for white/light grey 12" x 12" vinyl floor tile at music was found to contain asbestos.
14. Roofing debris on top of ceiling tile at hallway outside classroom 310 was found to contain asbestos.
15. 1956 Framing caulking on exterior old door was found to contain asbestos.
16. 1956 Exterior old caulking on old roll-up door was found to contain asbestos.
17. 1956 Exterior old framing caulking for old window was found to contain asbestos.
18. 1956 Exterior old caulking around old metal pane was found to contain asbestos.
19. Debris on cement tunnel floor was found to contain asbestos.
20. 1963 Interior glazing caulking for old exterior window was found to contain asbestos.
21. 1963 Interior glazing caulking for old exterior window was found to contain asbestos.
22. 1963 Exterior old framing caulking for old door/window assembly was found to contain asbestos.
23. 1963 Exterior old caulking in cement below new window was found to contain asbestos.
24. 1963 Exterior old caulking under new unit vent grille caulking was found to contain asbestos.
25. 1963 Exterior old caulking for old door/window assembly was found to contain asbestos.
26. 1963 Exterior old window framing caulking in door assembly was found to contain asbestos.
27. 1963 Exterior window glazing caulking at greenhouse was found to contain asbestos.
28. Glue/insulation inside old walk-in freezer was assumed to contain asbestos.
29. Fire curtain was assumed to contain asbestos.
30. Cork/mastic ceiling board was assumed to contain asbestos.
31. Insulation inside wood fire door was assumed to contain asbestos.
32. Glue holding blackboard was assumed to contain asbestos.
33. Underground sewer pipes were assumed to contain asbestos.
34. Dampproofing on foundation walls was assumed to contain asbestos. The demolition contractor will have to segregate the ACM from non-ACM building surfaces for proper disposal in an EPA approved landfill that does not recycle. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
35. Thru-wall flashing was assumed to contain asbestos. The demolition contractor will have to segregate the ACM from non-ACM building surfaces for proper disposal in an EPA approved landfill that does not recycle. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
36. Roofing was assumed to contain asbestos. However, roofing does not have to be removed by a licensed asbestos abatement contractor. Roofing material does not have to be removed by a licensed asbestos contractor. However, the General Contractor must comply with OSHA regulation during demolition and with state regulations for proper disposal. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
37. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during renovation and demolition activities.

### **Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures:**

#### ***Observations and Conclusions***

Visual inspection of various equipments such as light fixtures, thermostats, exit signs and switches was performed for the presence of PCB's and mercury. Ballasts in light fixtures were assumed not to contain PCB's since there were labels indicating that "No PCB's" was found. Tubes in light fixtures, thermostats, signs and switches were assumed to contain mercury. It would be very costly to test those equipments and dismantling would be required to access. Therefore, the above mentioned equipments should be disposed in an EPA approved landfill as part of the demolition project.

**PCB's in Caulking:**

PCB's are manmade chemicals that were widely produced and distributed across the country from the 1950s to 1977 until the production of PCB's was banned by the US Environmental Protection Agency (EPA) law which became effective in 1978. PCB's are a class of chemicals made up of more than 200 different compounds. PCB's are non-flammable, stable, and good insulators so they were widely used in a variety of products including: electrical transformers and capacitors, cable and wire coverings, sealants and caulking, and household products such as television sets and fluorescent light fixtures. Because of their chemical properties, PCB's are not very soluble in water and they do not break down easily in the environment. PCB's also do not readily evaporate into air but tend to remain as solids or thick liquids. Even though PCB's have not been produced or used in the country for more than 30 years, they are still present in the environment in the air, soil, and water and in our food. EPA requires that all construction waste including caulking be disposed as PCB's if PCB's level exceed 50 mg/kg (ppm). An abatement plan might also be required.

**Observations and Conclusions:**

Building materials and caulking were assumed to contain PCB's.

**Lead Based Paint (LBP):****Observations and Conclusions**

LBP was assumed to exist on painted surfaces. A school is not considered a regulated facility. All LBP activities performed, including waste disposal, should be in accordance with applicable Federal, State, or local laws, ordinances, codes or regulations governing evaluation and hazard reduction. In the event of discrepancies, the most protective requirements prevail. These requirements can be found in OSHA 29 CFR 1926-Construction Industry Standards, 29 CFR 1926.62-Construction Industry Lead Standards, 29 CFR 1910.1200-Hazards Communication, 40 CFR 261-EPA Regulations. According to OSHA, any amount of LBP triggers compliance.

**Mercury in Rubber Flooring:****Observations and Conclusions:**

No rubber floor exists in the building.

**Airborne Mold:**

Airborne mold testing was performed utilizing Zefon International Incorporated's Air-O-Cell® sampling device following all manufacturer supplied recommended sampling procedures. Air-O-Cell® is a direct read total particulate air sampling device. It works using the inertial impaction principle similar to other spore trap devices. It is designed for the rapid collection and analysis of airborne particulate including bioaerosols. The particulate includes fibers (e.g. asbestos, fiberglass, cellulose, clothing fibers) opaque particles (e.g. fly ash, combustion particles, copy toner, oil droplets, paint), and bioaerosols (e.g. mold spores, pollen, insect parts, skin cell fragments).<sup>1</sup>

The method involves drawing a known quantity of air through a sterile sampling cassette. Subsequent to sampling, the cassette is sealed and transferred to a microbiology laboratory under chain of custody protocol for microscopic analysis. This method counts both viable and nonviable mold spores.

Outside sample was collected by entrance.

**AIRBORNE MOLD and PARTICULATE**

Lab ID #	Location	Total Mold Counts/M <sup>3</sup>	Pollen	Insect Fragment	Hyphal Fragments
131806855-0001	Main lobby	260	ND	ND	ND
131806855-0002	Classroom 608	340	ND	ND	ND
131806855-0003	Gymnasium	5,760	ND	ND	40

<sup>1</sup> Zefon International Inc. <www.zefon.com>



Lab ID #	Location	Total Mold Counts/M <sup>3</sup>	Pollen	Insect Fragment	Hyphal Fragments
131806855-0004	Stairwell	1,110	20	ND	40
131806855-0005	Cafeteria	1,920	ND	ND	ND
131806855-0006	Auditorium	360	ND	ND	ND
131806855-0007	Bathroom Hall by Room 510-B	1,620	ND	ND	20
131806855-0008	Classroom 310	400	ND	ND	ND
131806855-0009	Storage Room by Classroom 506	17,220	ND	ND	ND
131806855-0010	Outside	39,790	ND	ND	ND

**AIRBORNE MOLD and PARTICULATE  
(Subjective Scales)**

Lab ID #	Location	Skin Fragment Density (SFD)	Fibrous Particulates (FP)	Total Background Particulate (TBP)
131806855-0001	Main lobby	3	1	4
131806855-0002	Classroom 608	1	1	1
131806855-0003	Gymnasium	3	2	4
131806855-0004	Stairwell	3	1	4
131806855-0005	Cafeteria	-	1	1
131806855-0006	Auditorium	2	1	3
131806855-0007	Bathroom Hall by Room 510-B	3	2	4
131806855-0008	Classroom 310	2	1	4
131806855-0009	Storage Room by Classroom 506	3	2	4
131806855-0010	Outside	-	1	2

**Legend:**

ND - Not Detected

**Observations and Conclusions:**

There are currently no guidelines or standards promulgated by a government agency or widely recognized scientific organizations for the interpretation of airborne mold spore levels. The most commonly employed tool used to assess if mold growth is occurring and there is amplification in a structure is to evaluate the indoor levels and species as well as to compare levels and species of mold outdoors to indoors. Typically, if there were more molds indoors, and/or if species were present indoors which were not present outdoors, then growth and amplification is likely occurring and further evaluation and perhaps remediation is recommended.

The indoor airborne mold spore concentrations were found to be lower than the outside sample. Based on comparisons with historical data from projects of similar type, building utilization, geographic location and season, the indoor airborne levels are considered average. Indoor mold spore counts in the fall are typically in the 3,500-5,000-spores/cubic meter range.



Mold concentration in the indoor sample collected in the Storage Room by Classroom 506 indicated the presence of a very high level of Aspergillus/Penicillium. Optical methods were used to identify the airborne mold spores. This method is usually capable of differentiating the genus of mold. Yet, optical methods cannot differentiate Aspergillus from Penicillium genus as the morphology of the two is very similar.

Some species of Aspergillus and Penicillium are known to be potentially toxigenic or pathogenic. The American Conference of Governmental Industrial Hygienists does identify some specific species such as Aspergillus including A. Fumigatus, A. Niger and A. Terreus as potentially pathogenic (disease causing). Yet, the genera Aspergillus and Penicillium are very common in the environment and are commonly found both indoors and outdoors throughout the year.

Recently, hazard classifications for select molds have been developed. Of the mold present which have been classified Aspergillus/Penicillium can be A, B or C depending on species, Cladosporium, Basidiospores and Ganoderma are generally considered Class C, Chaetomium is considered Class B.

**Hazard Class A:** Includes fungi or their metabolic products that are highly hazardous to health. These fungi and their metabolites should not be present inside dwellings. Presence of these fungi in occupied buildings requires immediate attention.

**Hazard Class B:** Includes those fungi which may cause allergic reactions to occupants if present indoors over long periods.

**Hazard Class C:** Includes fungi not known to be hazardous to health. Growth of these fungi indoors, however, may cause economic damage and therefore should not be allowed.

Pollen, insect fragments and Hyphal fragments were either not detected or present in the samples. Hyphal fragment is a non-reproductive part of the mold.

Total background particulate on all samples was assessed as "2-4" on a scale of 1-5 where 1 is low and 5 is high. Skin fragment density on all samples was assessed as "1-3" on a scale of 1-4 where 1 is low and 4 is high. The total background levels are measured to determine airborne dust not related to airborne mold. Skin fragments are measured to determine proper cleaning.

It is recommended that additional investigation and sampling be performed to determine source of mold in the Storage Room.

#### **Radon:**

##### ***Number of Samples Collected***

Ten (10) air samples were collected at the following locations:

##### **Location of Material**

1. Classroom 608
2. Gymnasium
3. Cafeteria
4. Teacher's lounge
5. Auditorium stage
6. Hallway by classroom 508-B
7. Classroom 310
8. Storage room by classroom 506
9. Guidance
10. Nurse

##### **Location of Material**

##### **Sample Result**

- |                  |            |
|------------------|------------|
| 1. Classroom 608 | <0.4 pCi/L |
| 2. Gymnasium     | <0.4 pCi/L |
| 3. Cafeteria     | <0.4 pCi/L |

4. Teacher's lounge	<0.4 pCi/L
5. Auditorium stage	<0.4 pCi/L
6. Hallway by classroom 508-B	0.4 pCi/L
7. Classroom 310	<0.4 pCi/L
8. Storage room by classroom 506	0.8 pCi/L
9. Guidance	<0.4 pCi/L
10. Nurse	<0.4 pCi/L

#### **Observations and Conclusions:**

The measured radon concentrations of the samples were found to be lower than the EPA guideline of 4 picoCuries of radon per liter of air (pCi/L). No further action is required.

### **3.0 COST ESTIMATES:**

The cost includes removal and disposal of all accessible ACM, other hazardous material and an allowance for removal of inaccessible or hidden ACM that may be found during renovation or demolition project

Location	Material	Approximate Quantity	Cost Estimate (\$)
<b>1956 Construction:</b>			
Throughout	Vinyl Floor Tile and Mastic	61,000 SF	244,000.00
	Old Interior Door Caulking	40 Total	8,000.00
	Interior Window Caulking	75 Total	15,000.00
	Vertical Caulking	130 LF	1,300.00
	Fire Doors	6 Total	1,800.00
	Cork/Mastic Board	400 LF	2,000.00
	Sealant on Old Duct	Unknown	25,000.00
	Transite Board	30 Sf	300.00
	Miscellaneous Hazardous Materials	Unknown	25,000.00
	Hidden ACM	Unknown	50,000.00
Kitchen	Walk-In Freezer	1 Total	3,500.00
Stage	Curtain	1 Total	4,500.00
Boiler Room	Old Boiler	1 Total	7,500.00
Cat-Walk	Pipe Insulation	40 LF	4,000.00
	Debris	250 SF	5,000.00
Tunnels	Debris	Unknown	10,000.00
Exterior	Old Windows	8 Total	2,400.00
	Old Doors	1 Total	300.00
	Caulking on Old Roll-up Door and Grille	30 LF	900.00
	Caulking on Metal Plate	15 LF	400.00
	Transite Sewer Pipes	Unknown <sup>1</sup>	25,000.00
	Thru-Wall Flashing	Unknown <sup>1</sup>	15,000.00
	Damproofing on Walls	Unknown <sup>1</sup>	750,000.00
<b>1963 Construction:</b>			
Throughout	Vinyl Floor Tile and Mastic	30,000 SF	120,000.00

Location	Material	Approximate Quantity	Cost Estimate (\$)
	Old Interior Door Caulking	60 Total	12,000.00
	Interior Window Caulking	80 Total	16,000.00
	Roofing Debris on Ceiling Tiles	30,000 SF	90,000.00
	Miscellaneous Hazardous Materials	Unknown	15,000.00
	Hidden ACM	Unknown	25,000.00
Exterior	Old Windows	50 Total	15,000.00
	Old Windows at Greenhouse	40 Total	12,000.00
	Old Doors	8 Total	2,400.00
	Caulking in Cement under Windows	1,000 LF	10,000.00
	Residue Caulking in Grilles	100 LF	1,000.00
	Thru-Wall Flashing	Unknown <sup>1</sup>	15,000.00
	Damproofing on Walls	Unknown <sup>1</sup>	150,000.00
PCB's Remediation <sup>2</sup>			35,000.00
Estimated costs for PCB's Testing and Abatement Plans Services <sup>2</sup>			10,000.00
Estimated costs for NESHAP Inspection and Testing Services			17,500.00
Estimated costs for Design, Construction Monitoring and Air Sampling Services			183,200.00
<b>TOTAL:</b>			<b>\$ 1,930,000.00</b>

<sup>1</sup>: Part of total demolition.

<sup>2</sup>: Should results exceed EPA limit.

#### 4.0 DESCRIPTION OF SURVEY METHODS AND LABORATORY ANALYSES:

##### Asbestos:

Asbestos samples were collected using a method that prevents fiber release. Homogeneous sample areas were determined by criteria outlined in EPA document 560/5-85-030a. Bulk material samples were analyzed using PLM and dispersion staining techniques with EPA method 600/M4-82-020.

Samples analyzed by a Massachusetts licensed laboratory Asbestos Identification Laboratory, Woburn, MA.

##### Airborne Mold:

The samples were analyzed by an EPA approved laboratory EMSL, Woburn, MA.

##### Radon:

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Ward Hill, MA.

## 5.0 LIMITATIONS AND CONDITIONS:

This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified accordingly.

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

Inspected By:



Leonard J. Busa  
Asbestos Inspector (AI-030673)



## Asbestos Identification Laboratory

165 New Boston St., Ste 227  
Woburn, MA 01801  
781-932-9600

Web: [www.asbestosidentificationlab.com](http://www.asbestosidentificationlab.com)  
Email: [mikemanning@asbestosidentificationlab.com](mailto:mikemanning@asbestosidentificationlab.com)

Batch: 36511

NVLAP®  
Lab Code: 200919-0

October 15, 2018

Ammar Dieb  
Universal Environmental Consultants  
12 Brewster Road  
Framingham, MA 01702

**Project Number:**

**Project Name:** Sharon High School, Sharon, MA

**Date Sampled:** 2018-10-10

**Work Received:** 2018-10-11

**Work Analyzed:** 2018-10-11

**Analysis Method:** BULK PLM ANALYSIS EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning  
Owner/Director

Ammar Dieb  
 Universal Environmental Consultants  
 12 Brewster Road  
 Framingham, MA 01702

**Project Number:****Project Name:** Sharon High School, Sharon, MA**Date Sampled:** 2018-10-10**Work Received:** 2018-10-11**Work Analyzed:** 2018-10-11**Analysis Method:** BULK PLM ANALYSIS EPA/600/R-93/116

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
1	Thick Grey on Boiler Body/Ribs as Patch	Old Metal Clad Boiler, Boiler Rm, 1956	gray	Non-Fibrous 100	None Detected
403538					
2	Rope on Ribs	Old Metal Clad Boiler, 1956	brown	Fiberglass 80 Non-Fibrous 20	None Detected
403539					
3	Red/Brown Mud on Ribs	Old Metal Clad Boiler, 1956	brown	Fiberglass 5 Non-Fibrous 95	None Detected
403540					
4	Grey on Face of Boiler	Old Metal Clad Boiler, 1956	gray	Non-Fibrous 100	None Detected
403541					
5	Debris on Boiler	Old Metal Clad Boiler, 1956	multi	Non-Fibrous 100	None Detected
403542					
6	Ceiling Plaster (CP)	1956	gray	Non-Fibrous 100	None Detected
403543					
7	CP	1956	gray	Non-Fibrous 100	None Detected
403544					
8	Mud on Boiler Ribs, Side-II	Old Metal Clad Boiler, 1956	brown	Non-Fibrous 90	Detected Chrysotile 10
403545					
9	Glue Daub for Stored Tackboard(s)	Boiler Rm	yellow	Non-Fibrous 100	None Detected
403546					
10	Layered Paper PI/White Jacketing	Pipe Chase, Boy's Rm Nurse	gray	Cellulose 60 Non-Fibrous 10	Detected Chrysotile 30
403547					
11	Rough CP	Boy's Lockers	white	Non-Fibrous 100	None Detected
403548					
12	Rough CP (Fabric?)	Girl's Lockers	multi	Non-Fibrous 100	None Detected
403549					
13	Red Lino as Tabl Covering	Music	orange	Cellulose 20 Non-Fibrous 80	None Detected
403550					
14	Backings/Adhesive? #13	Music	multi	Cellulose 70 Non-Fibrous 30	None Detected
403551					

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
15	Cork, Verticle x-Joint in Glazed Brick Wall	Hall by C'm 400	multi	Non-Fibrous 100	None Detected
403552					
16	Joint Compound (JC)	Hall Outside AD Office	white	Non-Fibrous 100	None Detected
403553					
17	Glazing for Panel Under Window	DD Ass'y @ Entrance 700 Wing	gray	Non-Fibrous 98	Detected Chrysotile 2
403554					
18	Int Verticle Win Fr Caulk	DD Ass'y @ Entrance 700 Wing	gray	Non-Fibrous 98	Detected Chrysotile 2
403555					
19	Int Verticle Win Fr Caulk	DD Ass'y @ Entrance 700 Wing	gray	Non-Fibrous 95	Detected Chrysotile 5
403556					
20	Verticle Win Fr Caulk	Cafe, From Hall	gray	Cellulose 10 Non-Fibrous 90	None Detected
403557					
21	Smooth Ceiling Plaster (SCP)	Auditorium- Proj Room	white	Non-Fibrous 100	None Detected
403558					
22	SCP	Aud- Rear Right	white	Non-Fibrous 100	None Detected
403559					
23	SCP	Aud- Rear Left	white	Non-Fibrous 100	None Detected
403560					
24	TSI Debris on Top of Clg Pla	Aud @ Catwalk	white	Non-Fibrous 70	Detected Amosite 30
403561					
25	Tan Sealant on Ols Duct System	Aud @ Catwalk	tan	Non-Fibrous 98	Detected Chrysotile 2
403562					
26	Homosite Wall	Aud @ Catwalk	brown	Cellulose 95 Non-Fibrous 5	None Detected
403563					
27	12" VT-I (White w/ DK & Lite Grey)	Cafe	white	Non-Fibrous 100	None Detected
403564					
28	Black Mastic #27	Cafe	black	Non-Fibrous 100	None Detected
403565					
29	VT-I	Hall Between Boy's Lockers & Boiler Rm	gray	Non-Fibrous 100	None Detected
403566					
30	Black M #29	Hall Between Boy's Lockers & Boiler Rm	black	Non-Fibrous 100	None Detected
403567					
31	Slate Window Sill	Rm 401	black	Non-Fibrous 100	None Detected
403568					
32	Grey Sealant on White Painted Duct	Storage Rm 228	gray	Non-Fibrous 100	None Detected
403569					



FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
33	Purple Sink DP	C'rm 310	red	Non-Fibrous 100	None Detected
403570					
34	JC	C'rm 309	white	Non-Fibrous 100	None Detected
403571					
35	Lab Table	C'rm 309	black	Non-Fibrous 100	None Detected
403572					
36	T Fumehood	C'rm 304	gray	Cellulose 15	None Detected
403573				Non-Fibrous 85	
37	Pegboard	Hall by C'rm 303	brown	Cellulose 90	None Detected
403574				Non-Fibrous 10	
38	Cork/Mastic	Gym Under Hdwd on Slab	multi	Cellulose 5	None Detected
403575				Non-Fibrous 95	
39	Cork/Mastic	Gym Under Hdwd on Slab	multi	Non-Fibrous 100	None Detected
403576					
40	JC	Admin Wing Women's Rm	white	Non-Fibrous 100	None Detected
403577					
41	@ Off FG (Small 0)	Storage Rm Access for C'rm 506	gray	Mineral Wool 30	Detected Chrysotile 10
403578				Non-Fibrous 60	
42	Top Layer VT-I (White w. Dark & LT Grey)	Storage Rm Access for C'rm 506	gray	Non-Fibrous 100	None Detected
403579					
43	Mastic #42	Storage Rm Access for C'rm 506	black	Non-Fibrous 100	None Detected
403580					
44	2nd Layer 9" Under #42	Storage Rm Access for C'rm 506	gray	Non-Fibrous 100	None Detected
403581					
45	Mastic for 9" VT #44	Storage Rm Access for C'rm 506	black	Non-Fibrous 100	None Detected
403582					
46	Exposed 9" VT @ Entrance to Sump Pit	Storage Rm Access for C'rm 506	tan	Non-Fibrous 97	Detected Chrysotile 3
403583					
47	Mastic #46	Storage Rm Access for C'rm 506	black	Non-Fibrous 100	None Detected
403584					
48	VT-I	Work Room by 508	gray	Non-Fibrous 100	None Detected
403585					
49	BL M #48	Work Room by 508	black	Non-Fibrous 100	None Detected
403586					
50	VT-I	C'rm 207 Closet	white	Non-Fibrous 100	None Detected
403587					

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
51	BL M #50	C'rm 207 Closet	black	Non-Fibrous 100	None Detected
403588					
52	JC	Hall by 516	white	Non-Fibrous 100	None Detected
403589					
53	JC	Rm 111	white	Non-Fibrous 100	None Detected
403590					
54	Glaze for Window in Wood Door	C'rm 108	multi	Non-Fibrous 100	None Detected
403591					
55	GL for Win in Wood Door	C'rm 514-A	gray	Non-Fibrous 98	Detected Chrysotile 2
403592					
56	GL for Interior Window @ Hall DD Ass'y	Hall by 116	gray	Non-Fibrous 98	Detected Chrysotile 2
403593					
57	GL for Int Win @ Hall DD Ass'y	Hall by 516-B	gray	Non-Fibrous 98	Detected Chrysotile 2
403594					
58	(Int) Slate Window Sill for Exterior Win	516-B	black	Non-Fibrous 100	None Detected
403595					
59	1x1 Clg AT on Tracks	C'rm 207	white	Mineral Wool 65 Non-Fibrous 35	None Detected
403596					
60	1x1 Clg AT on Tracks	C'rm 207	white	Mineral Wool 75 Non-Fibrous 25	None Detected
403597					
61	JC	Stairs up to Roof, 1997	white	Non-Fibrous 100	None Detected
403598					
62	JC	C'rm 605, 1997	white	Non-Fibrous 100	None Detected
403599					
63	JC	600 Wing Work Room, 1997	white	Non-Fibrous 100	None Detected
403600					
64	VT-II White w/ Black Flecks	1st FL Hall by Stairwell, 1997	white	Non-Fibrous 100	None Detected
403601					
65	Black Mastic #64	1st FL Hall by Stairwell, 1997	black	Non-Fibrous 100	None Detected
403602					
66	VT-II	600 Wing 1st FL Exit Hall, 1997	white	Non-Fibrous 100	None Detected
403603					
67	DK Yellow Mastic #66	600 Wing 1st FL Exit Hall, 1997	yellow	Non-Fibrous 100	None Detected
403604					
68	Dark Creme VT	C'rm 706, 2001	white	Non-Fibrous 100	None Detected
403605					

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
69	Yellow M #68	C'rm 706, 2001	yellow	Non-Fibrous 100	None Detected
403606					
70	Dark Creme VT	Hall by Nurse (1956 Connect), 2001	tan	Non-Fibrous 100	None Detected
403607					
71	BL M #70	Hall by Nurse (1956 Connect), 2001	black	Non-Fibrous 100	None Detected
403608					
72	Creme VT	C'rm 708, 2009	white	Non-Fibrous 100	None Detected
403609					
73	Dark M #72	C'rm 708, 2009	gray	Non-Fibrous 100	None Detected
403610					
74	Creme VT	Main Hall, 2009	tan	Non-Fibrous 100	None Detected
403611					
75	Dark M #74	Main Hall, 2009	yellow	Cellulose 3	None Detected
403612				Non-Fibrous 97	
76	Grey Sealant for New Duct System	Boiler Rm, 1956	gray	Non-Fibrous 100	None Detected
403613					
77	Tectum Deck	Hall, Admin Wing, 1956	multi	Cellulose 60	None Detected
403614				Non-Fibrous 40	
78	Adhesive(s) for Vinyl Baseboard	Main Hall Outside Auditorium, 1956	yellow	Non-Fibrous 100	None Detected
403615					
79	Adhesive(s) for VBB	Hall @ Bathrms by Police, 1956	yellow	Non-Fibrous 100	None Detected
403616					
80	Mastic for VT-I	Music @ Lockers, 1956	black	Non-Fibrous 95	Detected Chrysotile 5
403617					
81	VT01	Music by Practice Rm, 1956	white	Non-Fibrous 100	None Detected
403618					
82	Mastic #81	Music by Practice Rm, 1956	black	Non-Fibrous 95	Detected Chrysotile 5
403619					
83	Corkboard Under Horizontal Beam	AC/Small Hall to Bathrooms Across From 510, 1963	black	Cellulose 5	None Detected
403620				Non-Fibrous 95	
84	Corkboard Under Horizontal Beam	AC/Small Hall to Bathrooms Across From 510, 1963	black	Cellulose 5	None Detected
403621				Non-Fibrous 95	
85	Tectum Deck	AC/Small Hall to Bathrooms Across From 510, 1963	multi	Cellulose 75	None Detected
403622				Non-Fibrous 25	
86	Lighweight Cement Assoc w/ #85	AC/Small Hall to Bathrooms Across From 510, 1963	white	Cellulose 5	None Detected
403623				Non-Fibrous 95	

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
87	Grey Sealant in Seams of Duct	Work Room by 508, 1963	multi	Cellulose 5	None Detected
403624				Non-Fibrous 95	
88	Roofing Debris on Top of SAT	Hall by 510	multi	Fiberglass 3	Detected Chrysotile < 1
403625				Cellulose 5 Non-Fibrous 92	
89	Roofing Debris on Top of SAT	Hall by 310	black	Cellulose 2	Detected Chrysotile 2
403626				Non-Fibrous 96	
90	SAT-I (2x2 Sm Hash Marks)	Hall by 108	gray	Mineral Wool 30	None Detected
403627				Cellulose 60 Non-Fibrous 10	
91	SAT-I	Main Hall Outside Auditorium, 1956	gray	Mineral Wool 30	None Detected
403628				Cellulose 60 Non-Fibrous 10	
92	Dark Grey Window Caulk Under Metal Sill	Music, Exterior, 1956	gray	Non-Fibrous 100	None Detected
403629					
93	White Window Caulk in Seams of System	Music, Exterior, 1956	gray	Non-Fibrous 100	None Detected
403630					
94	White-Grey Window Frame Caulk	Kitchen, Exterior, 1956	gray	Non-Fibrous 100	None Detected
403631					
95	Grey Win Fr Caulk	Facing WW Treatment Bldg, Exterior, 1956	gray	Non-Fibrous 100	None Detected
403632					
96	White Win Grey Caulk in Seams of System	By Door #19, Exterior, 1956	multi	Non-Fibrous 100	None Detected
403633					
97	White Win Fr Caulk	Aud/Cafe Courtyard, Exterior, 1956	multi	Non-Fibrous 100	None Detected
403634					
98	DK Win Grey Under Sill	By Door #19, Exterior, 1956	multi	Non-Fibrous 100	None Detected
403635					
99	Interior Door Frame Caulk	Exit Hall by C'm 412, Exterior, 1956	gray	Non-Fibrous 95	Detected Chrysotile 5
403636					
100	Old Caulk @ Old Roll-Up Door	Boiler Rm, Exterior, 1956	multi	Non-Fibrous 95	Detected Chrysotile 5
403637					
101	Old Fr Caulk for Old Window	At Door #20, Exterior, 1956	gray	Non-Fibrous 95	Detected Chrysotile 5
403638					
102	Old Caulk Around Old Metal Panel in Brick	@ Boiler Rm, Exterior, 1956	gray	Non-Fibrous 95	Detected Chrysotile 5
403639					
103	New Grille Caulk	Aud/Cafe Courtyard, Exterior, 1956	gray	Non-Fibrous 100	None Detected
403640					
104	Residue Old Grille Caulk on Brick	Kitchen, Exterior, 1956	gray	Non-Fibrous 100	None Detected
403641					

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
105	White Sealant in Side Walk	Outside Gym Lobby, Exterior, 1956	multi	Non-Fibrous 100	None Detected
403642					
106	Flashing Protruding for From Foundation	Facing WW Bldg, Exterior, 1956	black	Non-Fibrous 100	None Detected
403643					
107	TSI Debris on Cement Tunnel Floor	From Storage Rm 205, Exterior, 1956	gray	Non-Fibrous 20	Detected Chrysotile 40 Amosite 40
403644					
108	Corkboard in Seam of Tunnel Concrete Clg	Exterior, 1956	multi	Cellulose 80 Non-Fibrous 20	None Detected
403645					
109	New Gray Win Fr Caulk	2009 Side, Exterior, 1963	gray	Non-Fibrous 100	None Detected
403646					
110	New Grille Fr	By Door #16, 1963	gray	Non-Fibrous 100	None Detected
403647					
111	Interior GL for Old Ext Window	Exit Door Ass'y by Door #16, 1963	gray	Non-Fibrous 97	Detected Chrysotile 3
403648					
112	Old Fr Caulk for Old Doors/Window Ass'y	Courtyard Connector Hall, 1963	tan	Non-Fibrous 90	Detected Chrysotile 10
403649					
113	Old Caulk in Cement Below New Window	Rear of Bldg, 1963	green	Non-Fibrous 90	Detected Chrysotile 10
403650					
114	Old Caulk in Cement Below New Window	2009 Side, 1963	green	Non-Fibrous 90	Detected Chrysotile 10
403651					
115	New Grille Frame Caulk	By Door #19, 1963	gray	Non-Fibrous 100	None Detected
403652					
115A	Old Caulk Under #115	By Door #19, 1963	tan	Non-Fibrous 90	Detected Chrysotile 10
403653					
116	Old Caulk for Old Door/Win Ass'y	1963	tan	Non-Fibrous 85	Detected Chrysotile 15
403654					
117	Old Win Fr @ Door Ass'y	By Door #16, 1963	multi	Non-Fibrous 95	Detected Chrysotile 5
403655					
118	Old Win Fr @ Door Ass'y	By Door #18, 1963	multi	Non-Fibrous 90	Detected Chrysotile 10
403656					
119	Glaze for Green House Window	C'yd, 1963	gray	Non-Fibrous 90	Detected Chrysotile 10
403657					
120	GL for Green House Win	C'yd, 1963	gray	Non-Fibrous 90	Detected Chrysotile 10
403658					
121	White Sealant in Sidewalk	Exterior, 1997	gray	Non-Fibrous 100	None Detected
403659					

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
122	Grey Win Fr	Random, Exterior, 1997	gray	Non-Fibrous 100	None Detected
403660					
123	DP on Foundation	Exterior, 2010	black	Non-Fibrous 100	None Detected
403661					

Monday 15 October

Analyzed by:

*Michael Thumming*

End of Report

Batch: 36511

Page 8 of 8

# CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

107  
1956  
This sheet, all bulks = 1956

Town/City: Sharon, ma Building Name: Sharon High School (1956)

Sample	Result	Description of Material	Sample Location
1		thick grey on boiler body/ribs asphalt?	Boiler Rm
2		rope on ribs	old metal clad Boiler
3		red/brown mud on ribs	
4		grey on face of Boiler	
5		debris on Boiler	
6		ceiling plaster (cp)	
7		cp	
8		mud on Boiler ribs, side-IT	old metal clad boiler
9		glue dash for stored tack boards	Boiler rm
10		layered paper (P) / white jacketing	pipe chase, Boys rm, Nurse
11		rough cp	Boys Lockers
12		rough cp (fabric?)	Girls Lockers
13		red line as table covering	MUSIC
14		Backings/adhesive? # 4	MUSIC
15		cork, verticle x-joint in glazed brick wall	hall by gym 400
16		Joint Compound (JC)	hall outside AD office
17		glazing for panel under window	dd assy entrance to 700 wing
18		verticle winfr caulk	" " " "
19		verticle winfr caulk	" " " "
20		verticle winfr caulk	cote, from hall

Reported By: Sharon B. Brown Date: 10/10/18 Due Date: 48 hr  
Received By: Amur Date: 10/11/18



# CHAIN OF CUSTODY

<b>Universal Environmental Consultants</b>
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

This sheet All <sup>1956</sup>  
1958

Town/City: Sharon, MA Building Name: Sharon H.S.

Sample	Result	Description of Material	Sample Location
21		smooth ceiling plaster (SCP)	Auditorium - Proj. Room
22		SCP	Aud. - rear right
23		SCP	Aud. - rear left
24		TSI debris on top of cly pla	Aud. @ CATWALK
25		TAN SEALANT on old duct system	↓
26		Homosite wall	↓
27		12" VT-I (white w/dk. Lt grey)	gate
28		Black mastic # 27	gate
29		VT-I	hall between Boys lockers & Boiler rm
30		Black @ # 29	" " " "
31		slate window sill	rm 401
32		grey sealant on white painted duct	STORAGE rm 228
33		purple sink dp	cim 310
34		JC	cim 309
35		LAB TABLE	cim 309
36		ITP fine hood	cim 304
37		pegboard	hall by cim 303
38		cork/mastic	Gym under hdd on LAB
39		cork/mastic	" " " "
40		JC	Admin wing women's rm

Reported By: [Signature] Date: 10-10-18 Due Date: 48 hr

Received By: \_\_\_\_\_ Date: \_\_\_\_\_

# CHAIN OF CUSTODY

307

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

This sheet A11 = 1963

Town/City: Sharon, MA Building Name: Sharon H.S.

Sample	Result	Description of Material	Sample Location
41		© OFF FG (small Ø)	storage rm across from c'm 506
42		Top Layer VT-I (white w/ dark Lt grey)	↓
43		mastic #42	
44		2 <sup>nd</sup> Layer 9" under #42	
45		mastic for 9" VT #44	
46		exposed 9" VT @ entrance to sump pit	
47		mastic #46	↓
48		VT-I	work room by 508
49		BL @ #48	
50		VT-I	c'm 207 closet
51		BL @ #50	" " "
52		JC	hall by 516
53		JC	rm 111
54		glaze for window in wood door	c'm 108
55		gl for win in wood door	c'm 514-A
56		gl for interior window @ hall dd ass'y	hall by 116
57		gl for int. win @ hall dd ass'y	hall by 516-B
58		(int) slate window sill for exterior win	516-B
59		1x1 <sup>ch</sup> [177] out tracks	c'm 207
60		1x1 <sup>ch</sup> [177] out tracks	c'm 207

Reported By: Thomas R. B... Date: 10-10-18 Due Date: 48hr

Received By: \_\_\_\_\_ Date: \_\_\_\_\_

407

# CHAIN OF CUSTODY

<b>Universal Environmental Consultants</b>
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Sharon, MA Building Name: Sharon, <sup>HS</sup> ~~MA~~

Sample	Result	Description of Material	Sample Location
61		IC	STAIRS up to ROOF 1997
62		IC	cim 605
63		IC	600 wing work room
64		VT-II white w/ black flcks) 1 <sup>st</sup>	FL hall by stairwell
65		Black mastic # 64	" " "
66		VT-II	600 wing 1 <sup>st</sup> FL exit hall
67		DK yellow mastic # 66	" " " "
68		Dark creme VT	cim 706 2001
69		yellow @ # 68	" "
70		Dark creme VT	hall by advise (1956 connect)
71		BL @ # 70	" " "
72		creme VT	cim 708 2009
73		Dark @ # 72	" "
74		creme VT	main hall
75		Dark @ # 74	" "
76		grey sealant for new duct system	Boiler rm 1956
77		Tectum deck	hall, Admin. wing
78		adhesive(s) for vinyl baseboard	main hall outside auditorium
79		adhesive(s) for VBB	hall & bathrms by Police
80		mastic for VT-I	Music & Lockers

Reported By: [Signature] Date: 10-10-18 Due Date: 48-hr  
 Received By: \_\_\_\_\_ Date: \_\_\_\_\_

# CHAIN OF CUSTODY

<b>Universal Environmental Consultants</b>
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

Town/City: Sharon, MA Building Name: Sharon H.S.

Sample	Result	Description of Material	Sample Location
81		VT-I	Music by Practice Rm 1956
82		Mastic #81	" " " 1956
83		cork board under horizontal beam	ac/small hall to Bathrooms across from 510 1963
84		" " " "	" " " 1963
85		Tectum deck	
86		Lightweight cement assoc. w/ #85	
87		grey sealant (in seams) at duct	workroom by 508
88		roofing debris on top of SAT hall	by 510
89		roofing debris on top of SAT hall	by 310
90		SAT-I (22 smush marks)	hall by 108
91		SAT-I	main hall outside Auditorium 1956
92		Dark grey caulk under metal sill	music (EXTERIOR) 1956
93		white caulk in seams of system	music
94		white-grey window frame caulk	Kitchen
95		grey win fr caulk	facing w w treatment Bldg
96		white-grey win caulk in seams of system	by door #19
97		white win fr caulk	add/cate courtyard
98		DK grey win under sill	by door #19
99		interior door frame caulk - old door	ext hall by room 412
100		old caulk & old roll-up door	Boiler-Rm

Reported By: [Signature] Date: 10-10-18 Due Date: 48 hr

Received By: \_\_\_\_\_ Date: \_\_\_\_\_

6.7

# CHAIN OF CUSTODY

<b>Universal Environmental Consultants</b>
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

1956 #101 - #108

1963 #109 - 120

Town/City: Sharon, MA Building Name: Sharon High School

Sample	Result	Description of Material	Sample Location
101		old caulk for old window	by 17 Door #20 Exterior 1956
102		old caulk around old metal panel in brick boiler room	
103		new grille caulk	and/cate courtyard
104		residue old grille caulk on brick	Kitchen
105		white sealant insidewalk	outside gym lobby
106		flashing protruding from foundation facing w.e. Rdg	
107		T&E debris on cement tunnel floor	from storage rm 205
108		cork board in seam of tunnel concrete cly	
109		new grey win fr caulk	2009 side Exterior 1963
110		new grille fr	by door #16
111		interior gl for old ext. window	ext door assy by door #16
112		old fr caulk for door/window assy	courtyard concrete hall
113		old caulk in cement below new window	rear of Bldg
114		old caulk in cement below new window	2009 side
115/115-A		new grille frame caulk & old caulk under #115	by door #19
116		old caulk for old door/win assy	
117		old win fr & door assy	by door #16
118		old win fr & door assy	by door #18
119		glaze for greenhouse window	cyl
120		gl for greenhouse win	cyl

Reported By: [Signature] Date: 10-10-18 Due Date: 48 hr

Received By: \_\_\_\_\_ Date: \_\_\_\_\_

## CHAIN OF CUSTODY

<b>Universal Environmental Consultants</b>
<b>12 Brewster Road</b>
<b>Frammingham, MA 01702</b>
<b>Tel: (508) 628-5486 - Fax: (508) 628-5488</b>
<b><a href="mailto:adieb@uec-env.com">adieb@uec-env.com</a></b>

Town/City: Sharon, MA Building Name Sharon H.S.

[illegible]

Reported By: Frank Buse Date: 10-10-18 Due Date: 48-hr

Received By: \_\_\_\_\_ Date: \_\_\_\_\_



131806855  
**CHAIN OF CUSTODY**

<b>Universal Environmental Consultants</b>
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
<a href="mailto:adieb@uec-env.com">adieb@uec-env.com</a>

AIR-O-CELLS 48 hr. TAT  
-PF 10/3

Town/City: Sharon, MA Building Name: Sharon H.S.

[illegible]

Reported By: John B. [Signature] Date: 10-1-18 Due Date: \_\_\_\_\_

Received By: \_\_\_\_\_ Date: \_\_\_\_\_

REC'D SS 9:21  
EMSL-BOSTON OCT 02 2018  
Fx 8071 5217 0613





# EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com / bostonlab@emsl.com>

EMSL Order: 131806855

Customer ID: UEC63

Customer PO:

Project ID:

Attn: Ammar Dieb

Universal Environmental Consultants

12 Brewster Road

Framingham, MA 01702

Phone: (617) 984-9772

Fax: (508) 628-5488

Collected: 10/02/2018

Received: 10/02/2018

Analyzed: 10/04/2018

Project: Sharon, MA / Sharon H.S.

## Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location	131806855-0001 2658 0230 150 Main Lobby- Copy Room			131806855-0002 2658 0269 150 Classroom 60B			131806855-0003 2658 0556 150 Gym (by Score Board)		
Spore Types	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	2	40	0.7
Aspergillus/Penicillium	5	100	38.5	2	40	11.8	3	60	1
Basidiospores	5	100	38.5	13	280	82.4	240	5120	88.9
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	2	40	0.7
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	2	40	0.7
Myxomycetes++	1	20	7.7	1	20	5.9	6	100	1.7
Pithomyces++	-	-	-	-	-	-	1	20	0.3
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	2	40	0.7
Zygomycetes	-	-	-	-	-	-	-	-	-
Periconia	2	40	15.4	-	-	-	14	300	5.2
Torula-like	-	-	-	-	-	-	-	-	-
Trichoderma	-	-	-	-	-	-	-	-	-
Total Fungi	13	260	100	16	340	100	272	5760	100
Hyphal Fragment	-	-	-	-	-	-	2	40	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	3	-	-	1	-	-	3	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	2	-
Background (1-5)	-	4	-	-	1	-	-	4	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Steve Grise, Laboratory Manager  
or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. \*\*\* Denotes particles found at 300X. \* Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA-LAP, LLC --EMLAP Accredited #180179

Initial report from: 10/04/2018 09:03:57



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Tel/Fax: (781) 933-8411 / (781) 933-8412

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EMSL Order: 131806855

Customer ID: UEC63

Customer PO:

Project ID:

Attn: Ammar Dieb

Universal Environmental Consultants

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Framingham, MA 01702

Phone: (617) 984-9772

Fax: (508) 628-5488

Collected: 10/02/2018

Received: 10/02/2018

Analyzed: 10/04/2018

Project: Sharon, MA / Sharon H.S.

## Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location	131806855-0004 2658 0286 150 Stairs up to C'yd From Gym Lobby			131806855-0005 2658 0543 150 Café (by Store)			131806855-0006 2658 0194 150 Auditorium~ CTP		
Spore Types	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	1	20	1	-	-	-
Aspergillus/Penicillium	8	200	18	-	-	-	3	60	16.7
Basidiospores	34	730	65.8	78	1700	88.5	12	260	72.2
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	3	60	5.4	5	100	5.2	1	20	5.6
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	1	20	1	-	-	-
Myxomycetes++	1	20	1.8	1	20	1	1	20	5.6
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	2	40	3.6	2	40	2.1	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Periconia	3	60	5.4	1	20	1	-	-	-
Torula-like	-	-	-	-	-	-	-	-	-
Trichoderma	-	-	-	-	-	-	-	-	-
Total Fungi	51	1110	100	89	1920	100	17	360	100
Hyphal Fragment	2	40	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	20	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	3	-	-	-	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	4	-	-	1	-	-	3	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Steve Grise, Laboratory Manager  
or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. \*\*\* Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

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Initial report from: 10/04/2018 09:03:57



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Fax: (508) 628-5488

Collected: 10/02/2018

Received: 10/02/2018

Analyzed: 10/04/2018

Project: Sharon, MA / Sharon H.S.

## Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location	131806855-0007 2658 1031 150 Bathroom Hall by 510-B			131806855-0008 2658 0132 150 Classroom 310			131806855-0009 2658 0548 150 Storage Room by C'rm (Lab sink) 506		
Spore Types	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	6	100	0.6
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	56	1200	74.1	6	100	25	765	16300	94.7
Basidiospores	14	300	18.5	14	300	75	27	580	3.4
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	2	40	2.5	-	-	-	1	20	0.1
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	1	20	0.1
Myxomycetes++	2	40	2.5	-	-	-	3	60	0.3
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	2	40	0.2
Zygomycetes	-	-	-	-	-	-	-	-	-
Periconia	2	40	2.5	-	-	-	1	20	0.1
Torula-like	-	-	-	-	-	-	1	20	0.1
Trichoderma	-	-	-	-	-	-	3	60	0.3
Total Fungi	76	1620	100	20	400	100	810	17220	100
Hyphal Fragment	1	20	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	3	-	-	2	-	-	3	-
Fibrous Particulate (1-4)	-	2	-	-	1	-	-	2	-
Background (1-5)	-	4	-	-	3	-	-	4	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Steve Grise, Laboratory Manager  
or other approved signatory

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Initial report from: 10/04/2018 09:03:57



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Phone: (617) 984-9772

Fax: (508) 628-5488

Collected: 10/02/2018

Received: 10/02/2018

Analyzed: 10/04/2018

Project: Sharon, MA / Sharon H.S.

## Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	131806855-0010				
Client Sample ID:	2658 0204				
Volume (L):	150				
Sample Location	Outside Bldg, Courtyard from Teacher's				
Spore Types	Raw Count	Count/m³	% of Total		
Alternaria (Ulocladium)	-	-	-		
Ascospores	36	770	1.9		
Aspergillus/Penicillium	14	300	0.8		
Basidiospores	1760	37500	94.2		
Bipolaris++	-	-	-		
Chaetomium	-	-	-		
Cladosporium	48	1000	2.5		
Curvularia	-	-	-		
Epicoccum	-	-	-		
Fusarium	-	-	-		
Ganoderma	1	20	0.1		
Myxomycetes++	9	200	0.5		
Pithomyces++	-	-	-		
Rust	-	-	-		
Scopulariopsis/Microascus	-	-	-		
Stachybotrys/Memnoniella	-	-	-		
Unidentifiable Spores	-	-	-		
Zygomycetes	-	-	-		
Periconia	-	-	-		
Torula-like	-	-	-		
Trichoderma	-	-	-		
<b>Total Fungi</b>	<b>1868</b>	<b>39790</b>	<b>100</b>		
Hyphal Fragment	-	-	-		
Insect Fragment	-	-	-		
Pollen	-	-	-		
Analyt. Sensitivity 600x	-	21	-		
Analyt. Sensitivity 300x	-	7*	-		
Skin Fragments (1-4)	-	-	-		
Fibrous Particulate (1-4)	-	1	-		
Background (1-5)	-	2	-		

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Steve Grise, Laboratory Manager  
or other approved signatory

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Initial report from: 10/04/2018 09:03:57

NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

EPA Method #402-R-92-004  
Liquid Scintillation  
NRPP Device Code 8088  
NRSB Device Code 12193

Laboratory Report for:

Property Tested: Project # 218425

Ammal Dieb- Universal Environmental  
12 Brewster Road  
Framingham MA 01702

Sharon High School  
Not Indicated 3667261  
Sharon MA 02067

Log Number	Device Number	Test Exposure Duration:		Area Tested		Result pCi/L
2364314	3667261	10/01/2018 9:33 am	10/03/2018 11:44 am	Floor 1 Classroom 608		< 0.4
2364315	3667239	10/01/2018 9:43 am	10/03/2018 11:55 am	Floor 1 Gym		< 0.4
2364316	3667270	10/01/2018 9:48 am	10/03/2018 11:51 am	Floor 1 Café Lockers		< 0.4
2364317	3667247	10/01/2018 9:54 am	10/03/2018 11:53 am	Floor 1 Teachers Lounge		< 0.4
2364318	3667240	10/01/2018 10:01 am	10/03/2018 11:58 am	Floor 1 Auditorium Stage		< 0.4
2364319	3667279	10/01/2018 10:06 am	10/03/2018 12:02 pm	Floor 1 Hall by 508B Marsengold		0.4
2364320	3667280	10/01/2018 10:12 am	10/03/2018 12:05 pm	Floor 1 cim310		< 0.4
2364321	3667281	10/01/2018 10:21 am	10/03/2018 12:11 pm	Floor 1 storage room by cim506		0.8
2364322	3667259	10/01/2018 10:25 am	10/03/2018 12:14 pm	Floor 1 Guidance by Florida		< 0.4
2364323	3667249	10/01/2018 10:31 am	10/03/2018 11:48 am	Floor 1 Nurse by med cabinets		< 0.4

**Comment:** Universal Environmental Consultant was emailed a copy of this report.

Test Performed By: Leonard J. Busa

Distributed by: Universal Environmental Consultant

Date Received: 10/04/2018 Date Logged: 10/04/2018 Date Analyzed: 10/05/2018 Date Reported: 10/05/2018

Report Reviewed By: Michelle Cleveland

Report Approved By: Shawn Price

**Disclaimer:**

The uncertainty of this radon measurement is  $\pm 10\%$ . Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

Shawn Price, Director of Laboratory Operations, AccuStar Labs

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

# 4.9

## METHODS & ASSUMPTIONS

## 4.9 METHODS & ASSUMPTIONS

### Existing Conditions Information

For the purposes of the PDP submission the existing conditions materials available about the building consist of various original blue prints from some of the building phases although there is not a comprehensive collection of documents for every building. These drawings were supplemented by an on-site walk through by the design team for confirmation of certain field conditions. In addition, a report completed in 2013 on the building prepared by SMMA was consulted to supplement the existing conditions investigation.

Building systems were also inspected by the applicable engineering trades and supplemented by discussions with on-site personnel who operate the building and have a working understanding of facility operations.

The site is available as satellite images and there are original construction drawings of some of the phases of construction including the utilities associated with those phases. In addition, a detailed survey is currently underway to establish site existing conditions including property meets and bounds, topography and physical characteristics. The survey will also identify wetlands as flagged by a botanist. For the purposes of preliminary planning, existing record information is being used to generally establish all wetland locations with associated setbacks.

Preliminary test borings have been completed at the Sharon High School site. These borings were located near the existing high school as well as in the area that is most suitable for a replacement building if that option is selected. This information is included in the PDP submission as an appendix item. Soils have been analyzed for bearing capacity. Ground water levels have been monitored to establish general parameters for scope around construction dewatering and required construction measures that may be necessary. A preliminary geo-environmental report has also been prepared to identify any considerations around the reuse of existing materials or the handling of soils if export off of the site is ultimately required.

Field testing for ACM's within the building has also been completed including laboratory confirmation. The ACM report is included as part of the PDP along with projected costs for potential future abatement of the existing high school.

The Designer anticipates making further recommendations on testing and field investigation based on the preferred option that is selected by the District in the PSR phase. At a minimum the team expects that supplementary investigations will occur for geo-technical engineering once the final location of construction is established. It is also possible that supplementary survey work may be required once a more detailed scope of work is defined. If the project proceeds beyond Schematic Design a more detailed scope of services may also be required for traffic if signals or modifications to roadways are part of the scope of work. The ACM consultant will also have added services during the construction phase and will need to complete additional onsite survey work to further clarify abatement scope and anticipated costs.

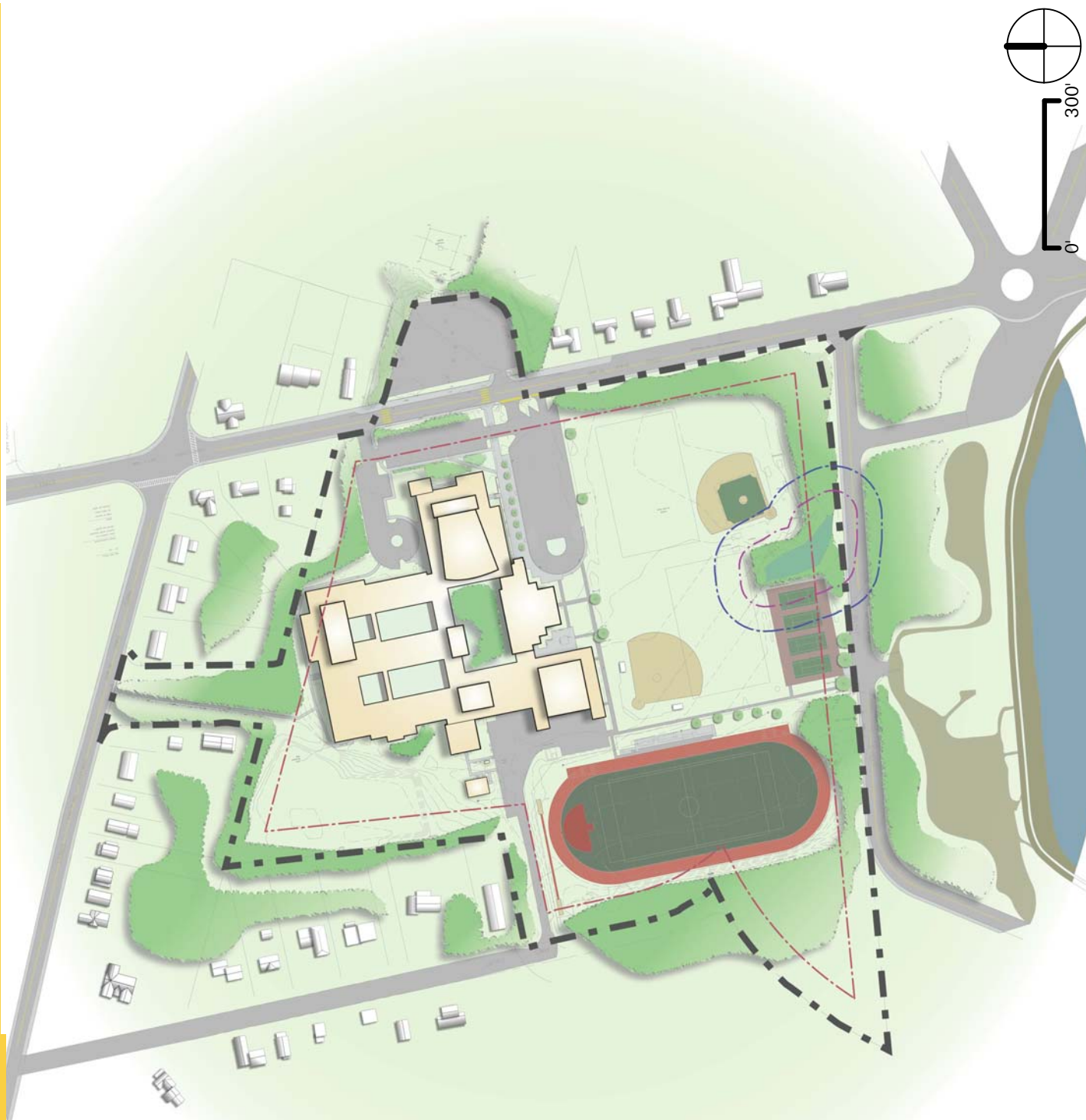


# SECTION 5

## SITE DEVELOPMENT REQUIREMENTS

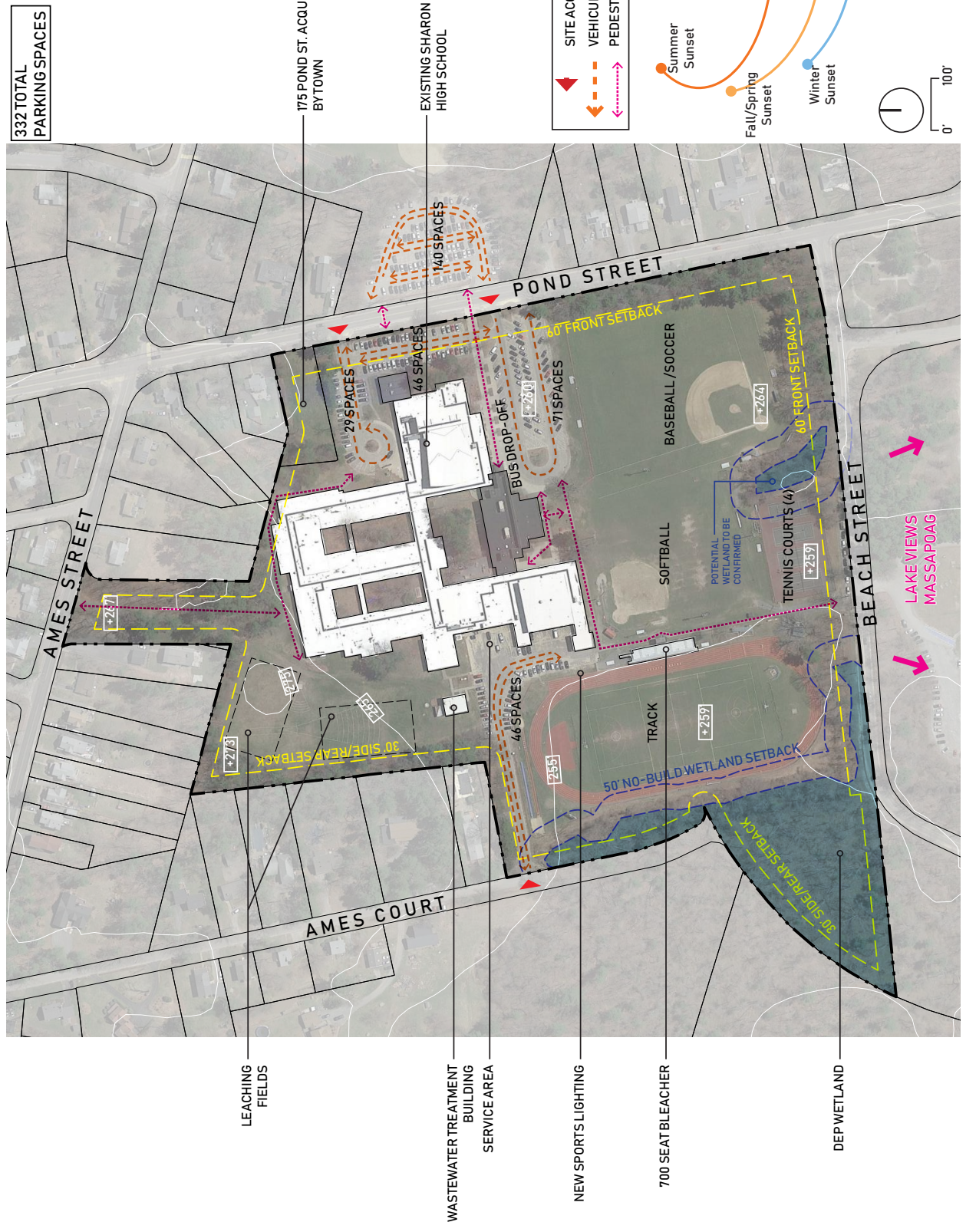
# 5.1

## EXISTING SITE PLAN



# 5.2

## SITE ANALYSIS PLAN



# 5.3

## SITE & ZONING ANALYSIS



November 12, 2018

**Sharon High School, Sharon, MA**

Landscape Existing Conditions Report & Site Development Requirements

**3.1.4 Evaluation of Existing Conditions**

**Property Description**

Parcel ID: 81124000

Parcel Size: 28.5 acre (21.5 acres developable)

Zoning District: Rural 2

Address: 181 Pond Street, Sharon, MA

**Site Configuration**

The existing 28.5-acre Sharon High School site is bordered by residential properties to the east, north and northwest. South of the property is Beach Street and beyond, Memorial Park and Lake Massapoag. The mostly one-story existing school building is located on the northern half of the site. The southern half of the site contains the sports fields. The west and southwest part of the site contains wooded areas with wetlands abutting conservation land.





### **Physical Conditions Summary**

The existing school building is oriented toward Pond Street where two driveways access the site serving two drop-off areas with associated parking. A parking lot connects the two drop off loops across the front of the school. The student parking lot is located on the opposite side of Pond Street with two designated crosswalks to the school site.

The property's highest point is the northwest corner and generally slopes to the south, dropping in elevation approximately 16 feet from end to end. The property ends at Beach Street, but there is an important visual connection to Lake Massapoag.

A wetland area extends from abutting conservation land onto the southwest corner of the site. A potential isolated wetland was observed east of the tennis court that will need to be confirmed with the Sharon Conservation Commission. The northwest corner of the site is used for leaching fields from the on-site waste water treatment plant serving both on and off-site sewer sources. Refer to separate WWTP narrative by Nitsch Engineering.

### **3.1.5 Site Development Requirements**

The items described within this section identify existing conditions and programmatic or regulatory requirements to be considered in the development and evaluation of alternative site designs, and are further depicted on the existing site plans.

#### **Structures and Fences**

Fencing will be provided to separate pedestrian and athletic facilities from vehicular areas. Netting systems may be required for ball control due to site spatial constraints. Fencing will also be provided to buffer service/mechanical areas as required.

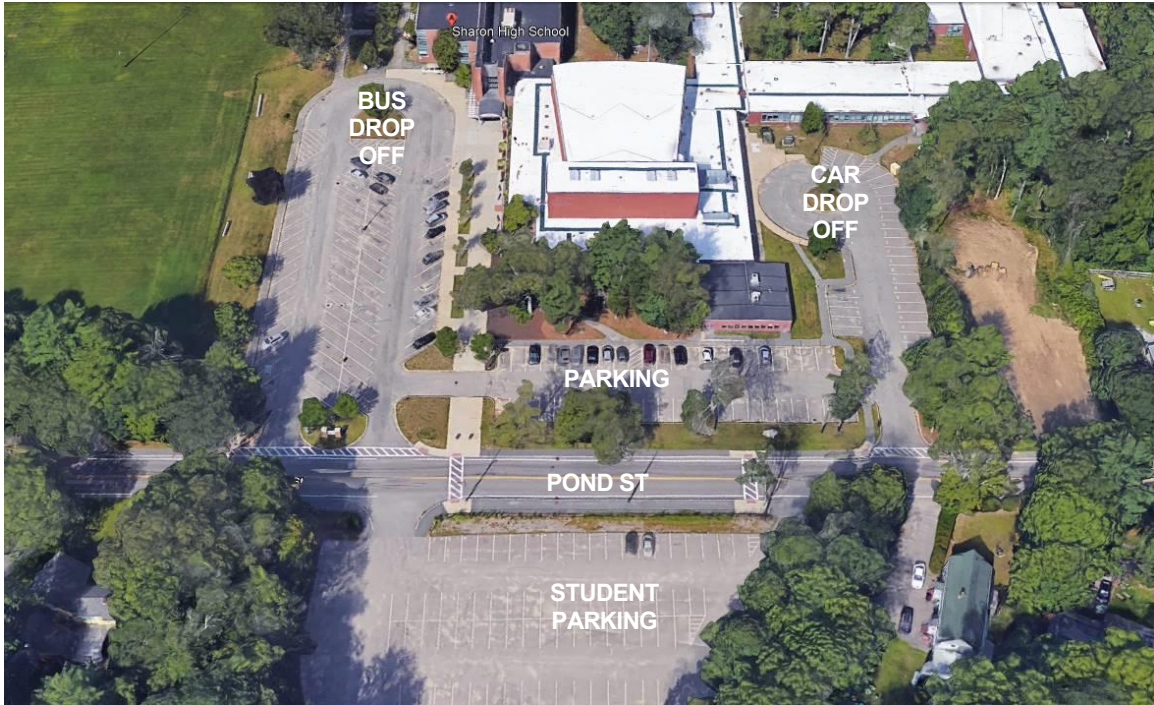
Retaining walls will be incorporated as required by the proposed building and site design to negotiate grade changes and provide accessibility.

#### **Site Access and Circulation**

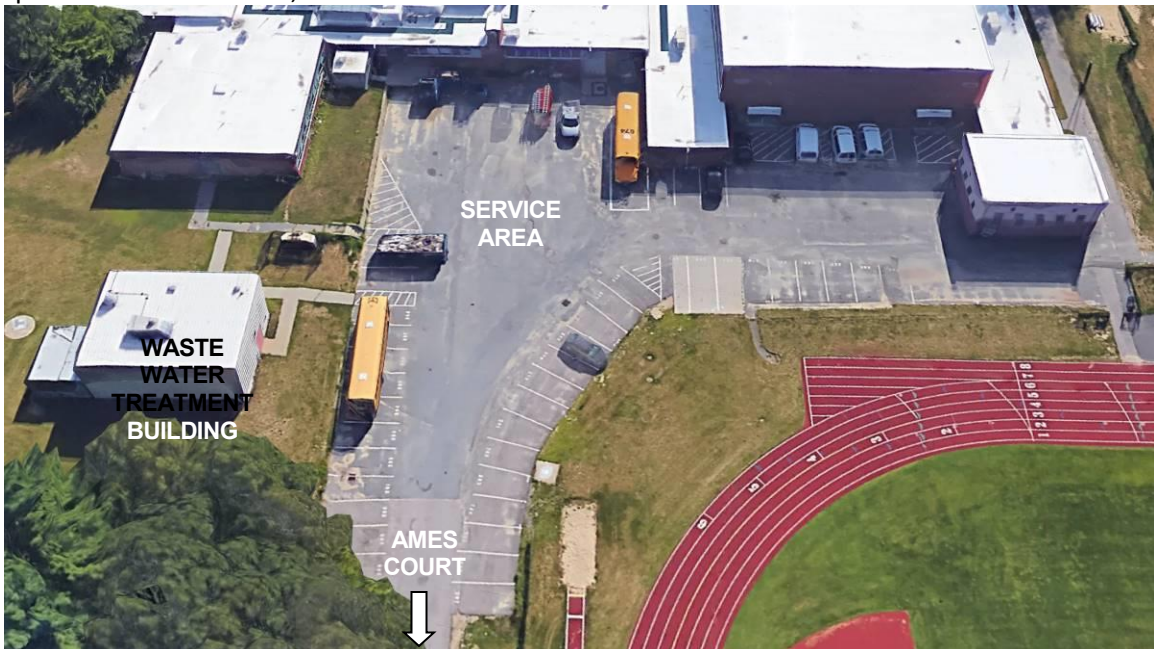
Pedestrian access is provided to the site from surrounding neighborhoods via sidewalks on the south side of Ames Street, the west side of Pond Street and on the north side of Beach Street. A paved asphalt walkway connects the Ames Street frontage with a paved walkway at the back of the school. A portion of this walkway slopes greater than 5%, exceeding the maximum accessible slope.

There are 2 drop-off loops off Pond Street that serve the existing school. The northern loop is 350 feet in length and designed for cars. The bus loop southeast of the school is 700 feet in overall length and has capacity for up to 14 buses. Both loops are shared with parking, which restricts access to parking spaces during drop-off and pick up periods.

### Pond Street Site Access



The service area is accessed from Ames Court and includes adequate paved space for large vehicle maneuvering and access to the waste water treatment building. There are approximately 40 parking spaces in the service area, that are also convenient to the bleachers at the stadium.



## **Parking**

There are about 332 parking spaces at the existing high school. This includes a student parking lot with approximately 140 spaces east of Pond Street accessed via two crosswalks on Pond Street. An unknown number of student drivers also use the Memorial Park Beach lot accessed via a single crosswalk that connects to a walkway between the track and softball field. There is a 71-space parking lot with angled parking to the south of the building that is shared with the bus drop off loop. A single parking lot with 90-degree parking along both sides connects the car and bus drop off loops across the front of the building. There are about 40 additional staff parking spaces by the service area.

The Town's Zoning By-Laws require public educational institutions to provide one parking space per 600 SF gross floor area. There is also provision for places of assembly which require one space per 5 fixed seats.

Zoning requires 9' x 20' parking spaces with 24' wide aisles. The existing parking space and aisle dimensions vary, but in general are less than required by zoning. The 20' depth is larger than many communities and will require substantially more pavement to accommodate the same amount of parking. It may be advisable to consider seeking a variance for more typical 18' deep parking spaces, which we have found acceptable in other communities with similar regulations when a 2-foot overhang is provided at the curb line.

Parking abutting residential districts located within a setback is required to be screened with landscaping per article 3117, which includes densely planted shrubs at least 4' high at time of planting.

One loading bay is required per 40,000 SF of gross floor area for institutional use. Loading bays are required to be 12'x 65'.

## **Paving and Curbing**

Paving and curbing will be specified per applicable Town of Sharon and/or state standards. Asphalt paving of vehicular driveways and parking is typical. Walkway paving will include different materials such as asphalt, concrete and unit pavers based on location and use.

Existing driveway curbing is precast concrete in poor condition with granite at intersections with Pond Street. New curbing will include vertical granite at walkways and high impact areas and possibly Cape Cod asphalt berm at low impact areas along landscaping.

## **Code Requirements**

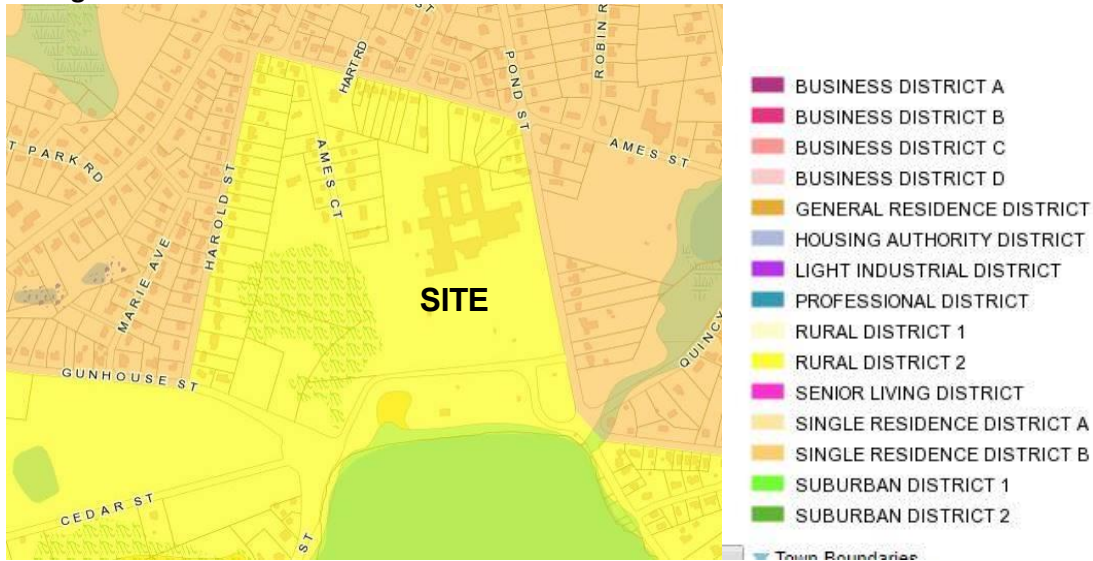
The preferred building solution and site design will fully meet current accessibility regulations and building code requirements. This includes compliant accessible parking, pedestrian routes, curb ramps, stairs and ramps with associated handrails as well as compliant guard railings along pedestrian routes located above walls greater than 30-inches high.



November 12, 2018

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### Zoning Setbacks and Limitations



The site is located in the Rural 2 zoning district with the following dimensional requirements:

#### TABLE OF DIMENSIONAL AND DENSITY REGULATIONS

Minimum Lot Area (ft.)	80,000 SF
Minimum Lot Width (ft.)	200' if fronts state or county street, 175' otherwise
<u>Minimum Yard Size</u>	
Front (ft.)	60' if fronts state or county street, or 80' to CL (whichever is more restrictive)
Side (ft.)	30' to principal bldg
Rear (ft.)	30' to principal bldg
Maximum Bldg Height (ft.)	35'
Maximum Stories (no.)	2.5
Maximum Lot Coverage(%)	15%
Min Vegetation coverage	50%
Maximum impervious	15% (includes structures)

Under 2312 Educational uses are permitted in a Rural District.

Adjacent properties to the east, west and north are zoned residential B and attention should be paid to any specific buffer or screening requirements of which are outlined below.

In addition to the Mass DEP 25' wetland setback, the Town Conservation Commission identifies a 50' no-build wetland setback which restricts most new development. Any work within the 100' wetland

jurisdictional buffer will require permitting with the Sharon Conservation Commission. Refer to the separate permitting narrative by Nitsch Engineering.

### **Article VII Additional Landscaping Requirements**

The Zoning By-Law should be referenced for more detailed requirements. Several applicable landscape standards are summarized below:

- Shall be context sensitive primarily of drought-resistant, non-invasive native species.
- Landscaping shall be provided along the entire street frontage. Trees spaced min. 40' on center
- Screening shall be provided for dumpsters and mechanical equipment. Fencing shall also be provided.
- At time of planting, trees shall be 2.5" caliper minimum. Evergreen trees 10' ht. minimum. Shrubs 18" minimum.
- Landscaping shall be provided for all parking lots containing 10 or more parking spaces. A minimum of 1 shade tree shall be provided for every 8 parking spaces. Shade trees shall be located in a manner to provide shade to the pavement in order to reduce heat gain in the parking lots.

### **Accessibility**

The site is relatively flat with walkways connecting sidewalks and parking areas to the building with flush conditions at building doors. The three existing courtyards have limited accessibility with compliance issues. Two courtyards appear to function primarily as natural open space, but one courtyard has outdoor classroom and dining spaces that require improvements to surfacing materials, flush transitions between materials and inclusive seating.

Accessible curb ramps on Pond Street include detectable warnings, but the curb ramps on site and at the Beach Street crosswalk do not. Accessible parking spaces in both drop off loops are located near building entrances.

There are no accessible walkways to the softball or baseball fields; however, an accessible route exists to the bleachers at the track and field.

### **Emergency Vehicle Access**

Emergency access is provided to the building from all 4 surrounding streets; however, access from Ames Street and Beach Street is restrictive in width and is paved as walkways.

### **Safety and Security Requirements**

Access from all four adjacent streets should be maintained and improved to accommodate the largest emergency vehicles. The design of the site and landscape is an important component to

providing a safe educational environment and ability for building occupants to egress safely during emergencies.

Strategies including providing transition zones between vehicular and pedestrian areas with barriers to stop vehicles while allowing free pedestrian egress. Clear sightlines at eye level and from security cameras and adequate site lighting are also critical factors that allow time to see and respond to dangers.

### **Athletic Facilities**

The existing red rubber 6-lane track with 8-lane straightway and irrigated natural grass field is positioned in the optimal north-south orientation. The west facing bleachers accommodate approx. 700 spectators.

The bleachers are aluminum deck and seats on steel structure and are ADA accessible except for handrails at stairs and ramps which do not meet handrail design requirements. The wooden press box only has stair access.





LED sports lighting and 4-foot high black vinyl coated chain link fencing were recently installed.



A wooden shed for storage and concessions is located behind the softball backstop. This concession building has code compliance issues, and replacement is anticipated with the school project.



A dated (and faded) scoreboard with incandescent bulbs is located adjacent to a flagpole outside the northwest corner of the track. Multiple storage containers, sheds and an electrical cabinet are located along the access from Beach Street between the bleachers and Beach Street.





Track events include shot put and javelin located on the leaching field above the wastewater treatment building, resilient long and triple jump runways with sand pits north of the track, resilient high jump in the north “D” zone within the track and discus within the south “D” zone. Portable netting separating the field from the “D” zones is visible in some aerial photos.

There is southeast oriented softball field that overlaps with a natural grass multipurpose field used for football practice. The northeast oriented baseball field has a shortened right field, approximately 275 feet to the outfield fence and enclosed dugouts. A 200' x 300' multipurpose rectangular natural grass field overlaps left and center field of the baseball outfield. These fields have an in-ground irrigation system. The water source for the irrigation systems originates from the west side of the existing school building.



A bronze memorial plaque is mounted to one of the enclosed dugouts.





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The softball field has HID sports lighting. The baseball field does not have sports lighting. There is minimal spectator seating for these fields.



There is a chain link fence in poor condition around the perimeter of this combined field area, but no permanent outfield fence for softball or baseball.



Four unlighted tennis courts exist in north-south orientation adjacent to the Beach St access.



The court pavement has substantial thermal cracking through the full depth of the asphalt in several locations, and the perimeter chain link fencing is a light gauge in moderate to poor condition.



The long-term value of post-tensioned concrete pavement should be considered with the court renovation or replacement. Five tennis courts is the recommended minimum number of courts.

### **Outdoor Educational Spaces**

The south courtyard, the largest of the three, has several outdoor spaces that appear to be used for education and dining. The west end has several composite lumber picnic tables and a wood swing set on crushed stone.





A paved patio bordered by a stone wall with a concrete cap inlaid with mosaics is located along the north side.



A circular wall made out of stacked precast concrete pieces is located within the tree grove, and includes openings into the framed center space.





The southeast corner is an outdoor classroom enclosed by a low concrete block wall with movable benches and podium set on precast concrete pavers.



A crushed stone pathway with concrete pavers inlaid with stamped ceramic pieces connect some of these spaces, and 4x4 wood posts topped with plastic identification labels are located within the courtyard for a self-guided tour.



Raised planters with tools and watering hoses exist in multiple locations. We observed bird and bat houses within this space as well.



The south-facing plaza adjacent to the gym foyer is another gathering/activity space for large groups of people. A memorial bench is located here.



#### **Site Lighting Design Standards (page 148 Zoning By-Law)**

Site lighting shall be designed with the lower illumination levels consistent with good design practice and IESNA recommendations. Maximum illumination levels shall not exceed 5 foot-candles at any location. Light trespass shall be limited to 0.25 foot-candles at all property lines, except at curb cuts. Fixtures and poles shall be compatible in style with on-site buildings.

Maximum pole height shall be 24 feet in parking lots and 16 feet along pedestrian walkways and in pedestrian areas. Maximum height for building mounted fixtures shall be 10 feet above finished grade of properties directly abutting offsite residences, except for balcony fixtures and as required by State Building Code.

Fixtures shall avoid upward projection of light consistent with “dark skies” principals and shall avoid point sources of light visible from off-site locations. All exterior lighting shall be energy efficient and shall incorporate zones and timers to reduce lighting levels at non-peak times.

#### **Landscape Character and Other Location Considerations**

A wooded conservation area and wetland exists west of the stadium track and narrow wooded areas exist between the athletic fields and adjacent Pond and Beach Streets.

Considerable invasive species such as oriental bittersweet, glossy buckthorn and Japanese knotweed were observed in these narrow wooded areas.



A vegetation management plan to remove invasive species (which are mostly undergrowth) is in keeping with the zoning landscape requirements. In addition, the removal of poor quality and competing trees will improve lake views and enhance the public appearance of the school.



A donor brick wall exists along the main entrance walkway.





Painted graphics on asphalt pavement around storm drains both on and off campus are an artistic expression of environmental stewardship.



Lake Massapoag to the south is an environmental, educational and recreational resource for the high school students. This connection is important to any proposed design. The Town sign exemplifies the community's values with its motto, "A Better Place to Live Because It's Naturally Beautiful"



End of Report

# 5.4

## SITE INFRASTRUCTURE & PERMITTING ANALYSIS

**Sharon High School**  
**Sharon, Massachusetts**  
**Nitsch Project #12950**

**Utility Infrastructure Narrative**

October 22, 2018

**Project Description:**

The Town of Sharon is proposing to construct a new High School building and/or renovate the existing High School building located on the existing Sharon High School site. Nitsch Engineering has reviewed existing site documentation, Mass GIS information, and performed a site visit to observe the existing school site. This narrative outlines existing utility infrastructure that serves the existing school site and highlights any concerns or issues that will need to be considered if the site is redeveloped.

**EXISTING UTILITY INFRASTRUCTURE)**

**Water Systems:**

The existing school site is fed from a single 6-inch water service. The feed extends along the south side of the high school, running from the 8-inch water main located in Pond Street. The 6-inch service line, after running more or less parallel to the school on the opposite side of the southern entrance drive and parking lot, enters the school – after splitting – as a 6-inch CLDI fire protection service and a 4-inch CLDI domestic water service. There do not appear to be irrigation lines for the athletic fields in the record plans or visible during Nitsch's site visit, though some may exist. The material and condition of the water service is unknown at this time.

There are multiple fire hydrants located at various points around the existing school building. There is likely adequate fire protection volume and pressures in the area, however, a hydrant flow test will need to be performed to confirm pressures and flow volume at the school site. The fire hydrant located at the rear of the school building is fed by a small service line that extends from the building, rather than the main service line, based on available record plans and observed infrastructure on-site.

New construction at this site may require upgrades to the existing water service to ensure the reliability of the proposed project's water supply needs. Water to the existing high school site will need to be maintained during any construction activities.

**Sanitary Sewer:**

Sewerage effluent from the existing High School building is conveyed to a wastewater treatment plant and ultimately to a subsurface disposal system located at the rear of the building. Based on record plans for the site, the existing 6-inch sewer service (unknown material and condition) extends from the building to an existing pretreatment tank, located adjacent to the track & football field at the rear of the school. Overflow from the pretreatment tank flows to a flow equalization tank and ultimately to the treatment building located at the rear of the site.

Martnage Engineering Inc. (MEA) was retained as part of the project team to do an existing conditions analysis of the Waste Water Treatment Plant and its equipment and overall condition. A memorandum from MEA outlining their findings is attached to this narrative. The memorandum includes observations made from MEA's site visit, review of existing materials provided by the Town and discussions with the treatment plant operators.

### **Site Drainage:**

The site topography generally slopes from East to West, largely draining to on-site structures and the wetlands located at the 'rear' / eastern property line. It generally flows in the north-south direction, with the notable exception of the mound associated with the subsurface disposal system for the treatment plant. Grading around the High School generally directs water away from the building foundation.

There is existing drainage infrastructure for runoff conveyance surrounding the existing high school building and within the parking lot areas. The majority of the impervious area is collected in a system of underground pipes, drainage structures, and oil/gas separators that eventually drains to the 21-inch drainage main located in Pond Street. The roof drains from the existing building are mainly daylighted to splash pads; and runoff is encouraged to drain to nearby drainage inlets via overland flow. There is little to no runoff rate mitigation in the form of detention/infiltration located on-site, though a small recharge system appears to be located near a recent building addition along the south side of the school. Generally, any treatment provided appears to be from oil/water separators located at various points around the site (record plans show a total of five, with various sizes). No water quality hoods were noted on inlets during Nitsch's site inspection.

Runoff from the rear of the site and from the athletic fields does not connect to the onsite infrastructure that connects to the Town infrastructure located in Pond Street.

Runoff from the baseball field and tennis courts to the south of the school are collected by a series of underdrains and catch basins. The runoff is then conveyed to an existing catch basin located on Beach Street; no material or size of the drainage main located in Beach Street is provided on the record plans. No mitigation for water quality or runoff rate is apparent for this area.

Additionally, there are three discharges from other drainage collection systems at the school and surrounding athletic fields that daylight in the wetlands systems located along the rear of the site. A small series of catch basins in the rear parking lot and the grassed areas surrounding the wastewater treatment plan collect runoff from these areas and discharge to a 12" drain that runs along the rear entrance to the school (from Ames Court). Near the property line, this 12" trunk line turns south and discharges to the adjacent wetlands area. No flow or quality mitigation is apparent in this area. The underdrain system for the track/football field and a small series of catch basins collecting runoff from grassed areas east of the track/football field discharges to a flared-end section adjacent to the wetlands at the rear of the site. Finally, at a low point of the track/football field at the southwest corner, a basin and small pipe (6-inch) drain a small area of the track to the wetlands areas. Pretreatment is not noted for any of these systems prior to discharge, though it is noted only one system collects runoff from an appreciable amount of impervious area.

Redevelopment of the school site will likely require upgrading the existing and installing new stormwater management infrastructure to ensure compliance with current MassDEP standards. This will require reductions in both stormwater discharge rates and volumes for the 2-year, 10-year, 25-year, and 100-year

24-hour rainfall events and water quality treatment mitigation prior to discharge of stormwater to the municipal system or the surrounding wetlands.

Required stormwater mitigation can be achieved by retrofitting existing and installing new closed drainage systems incorporating deep sump catch basins, with hoods, directing runoff to grassed swales, porous pavement, and biofiltration BMPs (if appropriate). A retention/detention element will most likely be required as part of the proposed stormwater design. This could be in the form of underground pipes/arch chambers or a surface detention basin should conditions allow. Water Quality will also need to be addressed as part of the stormwater design. Proprietary Units such as Stormceptor or Vortechics could be used along with other site integrated water quality options.

### **Gas/Oil:**

The High School currently uses a gas boiler in the building to provide heat and hot water. A gas service of unknown size runs from Pond Street along the edge of the athletic fields adjacent to the southern entrance drive/parking lot before entering the building at the meter located on the rear (west side) of the existing building. Columbia Gas provides gas service for the Town of Sharon.

There is at least one underground oil tank on site located in the parking lot area, labelled on record utility plans as an underground diesel oil tank. This tank is located at the rear of the building, near the gas penetration into the school. It is unknown at this time if this tank is still active or if it has been abandoned and properly “retired” per MA DEP regulations. If the tank is still active and will not be reused as part of any new construction on the site, it will need to be abandoned or removed per MA DEP regulations.

Refer to the Mechanical/Electrical/Plumbing engineer’s narrative for more information.

### **Other Utilities**

Electric and Tel-Com services feed the building from underground lines extending from a utility pole next to the northern/front entrance drive for the high school. The electric service connects to a transformer located adjacent to the entrance of the school from the ‘north’ parking lot/dropoff area on Pond Street. There appears to be an electric service that extends from the rear of the school building to the wastewater treatment plant. A generator provided adjacent to the wastewater treatment plant is for emergencies/backup. Site lighting around the school appears to be adequate in some areas and limited in other areas. The site lighting would likely require upgrading as part of any proposed redevelopment of the site.

Electric Service is provided by Eversource. Telephone service is provided by Verizon and cable services by Comcast for this area of Sharon.

Refer to the Mechanical/Electrical/Plumbing engineer’s narrative for more information.



**SHARON HIGH SCHOOL  
NARRATIVE  
EXISTING CONDITIONS & RECOMMENDATIONS  
WASTEWATER TREATMENT PLANT**

This narrative addresses the existing conditions Wastewater Treatment Plant (WWTP) serving the existing Sharon High School. The existing WWTP for the High School was built in the 1990's. At some point of time (unknown) the Sharon Middle School (Mountain Street) wastewater flow was connected by a Pump Station to the Sharon High WWTP. In addition, the Sharon Municipal Beach House on Beach Street (adjacent to the Sharon High School) was also connected to the Sharon High WWTP.

On October 4, 2018 MEA discussed the existing WWTP operations with Mr. James Wilson, WWTP operator, as well as with Mr. George (Skip) Malonson, the lead WWTP operator, via telephone. In addition, we have reviewed available plans and reports related to the existing treatment facility which is approximately 20 years old. Both WWTP operators indicated to us during the visit that overall, the mechanical equipment such as pumps and blowers are reaching their useful life and need to be replaced in the near future. The operators noted and we observed during our visit that the major tankage, etc. were in reasonable condition for their age with no significant obvious issues noted.

Both operator's noted that due to Influent flow characteristics of the incoming waste stream that the Influent is very high in Ammonia-Nitrogen which is extremely difficult to control in order to produce a completely nitrified waste which is critical to proper treatment and meeting the DEP Groundwater Permit Discharge limitations. See attached summary of DEP monthly reports showing results supporting this equipment process issue.

Upon further review of the original design plans and discussions with both operators, the existing Flow Equalization Tank (FET) is not sized large enough to handle the existing flows from the High and Middle Schools. The working capacity of the existing FET is approximately 6,335 gallons storage. The working volume should be at least 10,000 gallons or greater in order to handle the incoming flow from the Middle and High Schools with proper recycle within the WWTP to produce Total Nitrification. Expansion of the working volume of the FET, an additional below grade tank is required. For the present time the operator recycles 300% of the forward flow in order to try to obtain nitrification, which is not always successful. The major process equipment including the Rotating Biological Contactor, Clarifier and Denitrification Filter appear to be in good working order based on discussion with the operators. The sand in the Denitrification Filter was replaced two to four years ago.

We noted the following during our inspection:



- A. Investigations of the existing Final Leach Area to verify the existing condition of the twenty year old leach field is necessary. At the present time there are no readily available inspection manholes to evaluate the working condition of the final leach area. We did not see any obvious signs of pending issues, but this must be confirmed by actual soil tests. **CRITICAL**
- B. Our firm reviewed the original design plans and noted that the working volume in the FET is too small, as previously noted, but in addition also noted that the method of pumping from the FET to the main process equipment does not correctly control “forward” flow to the WWTP. Controlling “forward” flows to the treatment process is critical to improve the ability of the WWTP to properly nitrify the incoming waste.
- C. The existing methanol storage room does not have the required sump area to contain accidental spills, etc. as required by today’s regulations. Recommend that this area be converted to an Odor Control Room with Activated Carbon absorption and fan by today’s standard. Vent lines from the existing Primary Tanks and FET tanks would be required. This will reduce odors from the existing wastewater tankage. Methanol will be stored in a prefabricated methanol storage locker.
- D. Operator noted poor ventilation within the existing WWTP building, especially during the spring, summer and fall. Recommend HVAC design provide exhaust fan with temperature and humidity sensors and controls. (DEP guideline requirement).
- E. Noted that there are inactive sensors for explosive gas, etc. within the building. Operator says the safety sensors do not work. HVAC designer needs to address.
- F. Replace mechanical equipment such as pumps, blowers etc., as required for all mechanical equipment not replaced in last five (5) years. Final inventory to be determined.

It is our opinion that with the suggested modifications noted (A-F above) that the existing WWTP would be capable of handling the existing sewage flows from the High and Middle Schools. The average discharge flow today from both schools is approximately 6,500 gpd while the permitted flow and design flow were based on a maximum day flow of 20,400 gpd.

MEA has evaluated the estimated construction cost to upgrade the existing WWTP as outlined above and suggest the following budget costs at this time for planning purposes subject to more detailed investigation during the design process.

		ESTIMATE BUDGET (4)
A	Replace final leach area (if required)	TBD (see note below)*
B	FET upgrade and “Forward Flow” upgrade	150,000
C	Replace Methanol Storage with Prefabricated Locker	50,000
D/E	HVAC designer to determine required modifications (By others)	

F	Replace mechanical process equipment as needed (Allowance)	<u>250,000</u>
	<b>PRELIMINARY BUDGET FOR B, C &amp; F ONLY</b>	<b>450,000*</b>

\*This estimate assumes NO construction cost to reconstruct the existing leach area subject to additional investigation. However, it is our opinion that if the existing leaching field needs to be rebuilt that the budget would be approximately \$400,000 in additional costs.

# SHARON HIGH SCHOOL DMR SUMMARY

## Treatment Quality

### FINAL TREATED EFFLUENT

			BOD <sub>5</sub>	TSS	Nitrate-N	Total-N
		<b>Permit Limit</b>	<b>30</b>	<b>30</b>	<b>10</b>	<b>10</b>
			BOD <sub>5</sub>	TSS	Nitrate-N	Total-N
		<b>Monthly Test Results</b>				
<b>2017</b>	Nov		12	19	<b>**ND</b>	4.1
			20	13	<b>**ND</b>	6.2
<b>2018</b>	Jan		16	9	2.1	7.2
	Feb		<b>***60</b>	<b>62</b>	<b>**ND</b>	9.2
	Mar		<b>***240</b>	<b>44</b>	<b>**ND</b>	4.4
	Apr		<b>***90</b>	<b>39</b>	<b>**ND</b>	7.4
	May		<b>***ND</b>	20	0.69	<b>***10.09</b>
	June		<b>***114</b>	<b>57</b>	<b>**ND</b>	<b>***12</b>
	July		19	28	<b>**ND</b>	4
	Aug		<b>***31</b>	<b>41</b>	<b>**ND</b>	<b>**11.79</b>
	Sept		7.8	14	<b>**ND</b>	<b>***40</b>
	Oct		5.7	9.7	1.4	<b>***19.4</b>

**\*\*ND** Indicates issue of WWTP to Nitrify

**\*\*\*** Indicates issue controlling forward flow through WWTP  
for proper nitrification and denitrification

**Sharon High School**  
**Sharon, Massachusetts**  
**Nitsch Project #12950**

**Permitting Narrative**

October 22, 2018

**Project Description:**

The Town of Sharon is proposing to construct a new High School building and/or renovate the existing High School building located on the existing Sharon High School site. Nitsch Engineering has reviewed existing site documentation, Mass GIS information, and performed a site visit to observe the existing school site. This narrative outlines the anticipated environmental permitting and other approvals that will likely be needed to redevelop the project site.

**Wetlands:**

There is an existing wetland resource area located within the proposed limits of work for the project. It is directly adjacent to the football field & track, classified as a ‘wooded swamp, deciduous’ wetland area. Additionally, there appears to be an intermittent stream that flows south from the wetland area west of the high school site – and based on MassGIS mapping, there may be an additional tributary to this same stream that runs south toward Lake Massapoag behind the football field. A full survey of the site, including wetland flagging, will be necessary to determine the full extent of wetlands located on the property.

The Sharon Conservation Commission has a 25-to 50-foot no-disturb boundary associated with all resource areas on previously developed sites, protected under their rules and regulations. This is expanded to a 75-foot no disturb area in areas determined to be of higher value, including water resource protection overlay districts – and the Sharon High School is located within the Surface Water Protection District. This is above and beyond standard MA DEP restrictions and should be considered when reviewing potential siting options for new buildings, parking lots and roadways. Within the Town of Sharon Wetlands Rules and Regulations, there are additional limitations placed on development in the outer 25-to 50-feet of the resource area buffer zones. In a conversation Nitsch Engineering had with Gregory Meister, the Conservation Administrator for the Sharon Conservation Commission, the specific standards may be relaxed in certain cases like the Sharon High School site, which has largely already been developed to this point. However, in considering all potential site development options, all buffers zones, protection areas, and existing vegetation near wetlands should be maintained, to the maximum extent practicable.

The wetland resource areas should be flagged by a wetland scientist and an Abbreviated Notice of Resource Area Delineation (ANRAD) should be filed with the Conservation Commission to have the resource area delineation approved. Additionally, development/redevelopment options that impact wetland resource areas, their buffer zones and protection areas as defined by the Mass DEP and Sharon by-laws will require filing either an Request for Determination of Applicability (RDA) or a Notice of Intent (NOI) depending on the extent of the impacts.

**Town of Sharon Stormwater Permit**

The Town of Sharon has a local stormwater regulation that requires all land disturbances of more than one-acre to submit an application for a stormwater permit. The Town's Stormwater Manager will refer this permit to the Planning Board, Zoning Board of Appeals, Conservation Commission, or Board of Selectman (depending on the scope of the project). Due to the size of this project, it should be anticipated that this permit will need to be filed as part of the permitting process for the project.

**Town of Sharon Special Permit (Earthwork / Impervious Coverage)**

The Town of Sharon has a water resource protection overlay district in the Town that includes the High School site. Per the Town's zoning bylaws, a Special Permit is required from the Board of Appeals for any site proposing impervious coverage over 15% of the lot area or natural vegetation covering less than 40% of the lot area. The site as currently configured would require a special permit if being constructed today, due to the amount of impervious coverage on the site and the size of the building. It is anticipated the reconfigured site would also exceed the 15% lot area threshold and require a Special Permit for development in the water resource protection overlay district.

**Environmental Protection Agency (NPDES program)**

Construction activities that disturb more than one acre are regulated under the United States Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) Program. In Massachusetts, the USEPA issues NPDES permits to operators and owners of regulated construction sites. Regulated projects are required to develop and implement stormwater pollution plans (SWPPP) to obtain permit coverage.

**Massachusetts Environmental Protection Act (MEPA):**

Development/Redevelopment of this site is not anticipated to trigger any MEPA thresholds and will likely not require an ENF or EIR to be filed with MEPA.

**Site Plan Review (Town of Sharon):**

The applicability of site plan review will be determined once a preferred option is identified.

**Massachusetts Historical Commission (MHC):**

A project notification form will be submitted to the MHC as part of this project, however, it is not anticipated that any historical structures or properties being impacted as part of this project.

**Massachusetts Department of Environmental Protection (MADEP) Discharge Permit:**

A modification of the existing MADEP discharge permit associated with the on-site Waste Water Treatment Plant (WWTP) will be required assuming the redevelopment of the site does not increase sewerage flows over and above what the current MADEP discharge permit allows. It is not anticipated that the redevelopment of the project site would exceed the current allowable limits of the active discharge permit but a new permit would be required if that occurs.

Table 1 – Permitting Schedule

Permit	Permitting Authority	Anticipated Filing Date	Anticipated Approval Date
ANRAD (IF REQUIRED)	Town of Sharon Conservation Commission	During Schematic Design Phase	30-60 Days after submission of the application
RDA or NOI (IF REQUIRED)	Town of Sharon Conservation Commission	During Design Development Phase	Prior to Construction Documents Phase
Town of Sharon Stormwater Permit	Town of Sharon Planning Board, Conservation Commission, or Board of Selectmen	During Design Development Phase	Prior to Construction Documents Phase
Town of Sharon Special Permit (Water Resource Protection District)	Town of Sharon Board of Appeals	During Design Development Phase	Prior to Construction Documents Phase
Site Plan Review (IF REQUIRED)	Town of Sharon Planning Board	During Design Development Phase	Prior to Construction Documents Phase
Project Notification Form	Massachusetts Historical Commission	During Schematic Design Phase	Prior to Design Development Phase
Sewer Discharge Permit (Modification)	MADEP	During Design Development Phase	6-7 months after filing
NPDES Notice of Intent	NPDES/EPA	2 weeks prior to Construction	Start of Construction

### Massachusetts Collaborative for High Performance Schools (CHPS):

The following is a list of the site civil related points for 2015 NE-CHPS and a quick analysis of whether it will be possible to achieve the point (Nitsch is assuming that all pre-requisites will be met, and any site points not discussed herein require the input from other disciplines to determine achievability):

- **Credit SS.1.1: Site Selection: 2 points** - This credit is **Achievable** because the project preliminarily appears to meet the siting requirements (no noted hazards, site is self-draining) in the pre-requisites listed in the CHPS guidelines.
- **Credit SS.2.1: Environmentally Sensitive Land / Preserve Greenspace & Parklands: 3 points**  
This credit **may be partially Achievable** because of the present of wetlands on the site. The site contains wetlands, and it may be impossible to avoid disturbing any land within 100 feet of the flagged wetlands. Credits are available for the site even if the buffer to the wetlands is disturbed, however.
- **Credit SS.3.1: Minimize Site Disturbance: 1 point** - This credit is **may be Achievable**, but would depend on restricting floor area ratio (at least 1.4) and parking (maximum of 2.25 spaces per classroom) per the criteria listed in the CHPS guidelines.



- **Credit SS.4.1: Construction Site Runoff Control/Sedimentation: 1 point** - This credit is **Achievable** because a Soil Erosion and Sedimentation Control and Stormwater Pollution Prevention Plan will likely be prepared in the course of permitting efforts.
- **Credit SS.5.1 Post Construction Stormwater Management: 1 point** - This credit is **Achievable** because the stormwater design for the site, including water quality and flow improvements, is likely to exceed the requirements listed in the CHPS guidelines.
- **Credit SS.6.1 Central Location: 2 points** - This credit is **most likely Not Achievable (1 point)** because of the site's proximity to a commercial corridor in Sharon (more than a half mile) and will not be within ½ mile of 8 of the basic services required in the CHPS guidelines.
- **Credit SS.7.1 Located Near Public Transportation: 1 point** - This credit is **most likely Not Achievable** because there are no noted bus stops or subway stations within close proximity to the school.
- **Credit SS.8.1 Joint-Use of Facilities: 1 point** - This credit is **may be Achievable** but would depend on including publicly available facilities, in accordance with the CHPS guidelines, on the site.
- **Credit SS.9.1 Human Powered Transportation: 2 points** - This credit **may be partially Achievable** with the inclusion of sidewalks from the school entrance to the end of the property, as well as storage for securing bicycles/scooters outside and skates, skateboards, and helmets indoors.
- **Credit SS.10.1 Reduce Heat Islands – Landscaping / Sites: 1 point** - This credit **may be Achievable** with a combination of shade provided by landscaping and high albedo materials for non-roof impervious areas.

# SECTION 6

## PRELIMINARY EVALUATION OF ALTERNATIVES

# 6.1

## INTRODUCTION

## 6.1 INTRODUCTION

The following considerations are included within the preliminary evaluation:

### **Analysis of school district assignment practices**

The Sharon School District operates six schools.

Sharon High School  
Sharon Middle School  
Cottage Street School  
East Elementary School  
Heights Elementary School  
The Children's Center

Each of the District schools is close to or at student capacity. There is no location that is underutilized among these facilities that would allow for a district wide reconfiguration of grades to relocate students and lower the number of grades at the high school to reduce overcrowding. In addition, a grade 9 – 12 school is the desired high school grade configuration for the District and consistent with the overall educational master plan for Sharon.

### **Tuition agreements with adjacent school systems**

Sharon Public Schools does not have tuition agreements with any other districts. Students are able to attend choice schools or charter schools out of district. The issues identified in the SOI related to overcrowding and infrastructure issues could not be addressed by initiating a tuition agreement with any other District and no local Districts have excess capacity within their facilities to accept a large number of Sharon High School students.

### **Rental or acquisition of existing buildings**

The Town of Sharon has considered the potential for leased, rented or alternative spaces in Town and there is no property that is available that could accommodate 1,250 students and exceeds 220,000 GSF. There was previously a school building in the center of Town but it has been converted to condominiums. Therefore, there is no existing location that could be considered either as a permanent home for the high school or as temporary swing space during the construction phase.

### **Evaluation of Potential Alternative Locations**

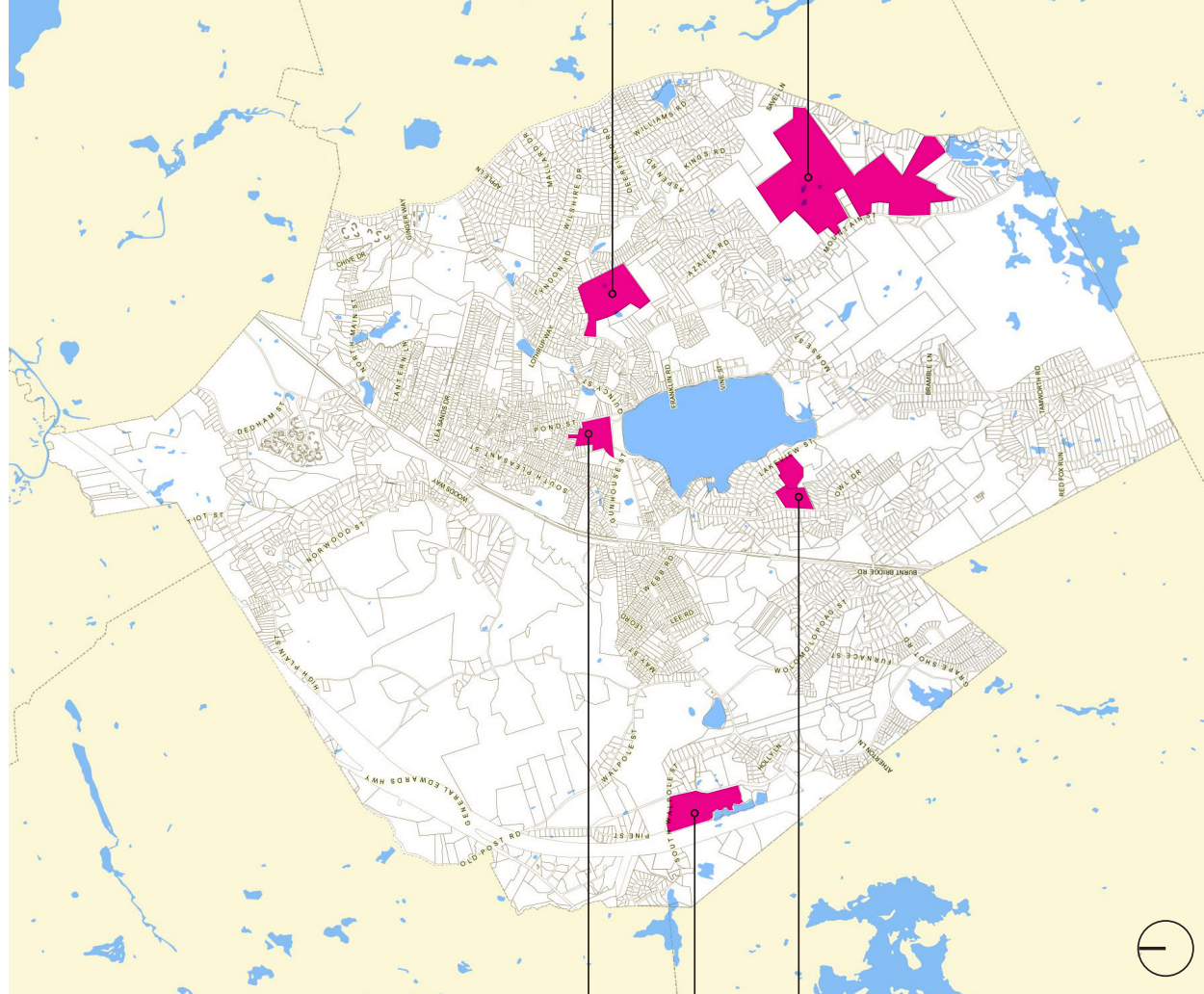
At the request of the Building Committee, the Town of Sharon provided a list of available sites for development that exceed 28 acres which is the size of the current high school parcel. These properties also do not have conservation restrictions or other open space limitations that would prohibit development. The properties are:

144 Old Post Road	59.8 acres
250 E. Foxboro Street	63.1 acres
149 East Street	71.7 acres
400 Mountain Street	317 acres

An evaluation matrix is included within the PDP that examines the four alternative locations. None of these four justify further exploration in the PSR phase given that they require extensive site development, legal and acquisition costs and would cause delays in the anticipated project schedule to acquire and secure any of the properties in question for Town use. Only one location, 149 East Street which is an operating golf course, has any utility infrastructure. None of the properties are currently under town control or ownership and therefore readily available.



# ALTERNATIVE SITE OPTIONS





OPTION 1 - SHARON HIGH SCHOOL SITE

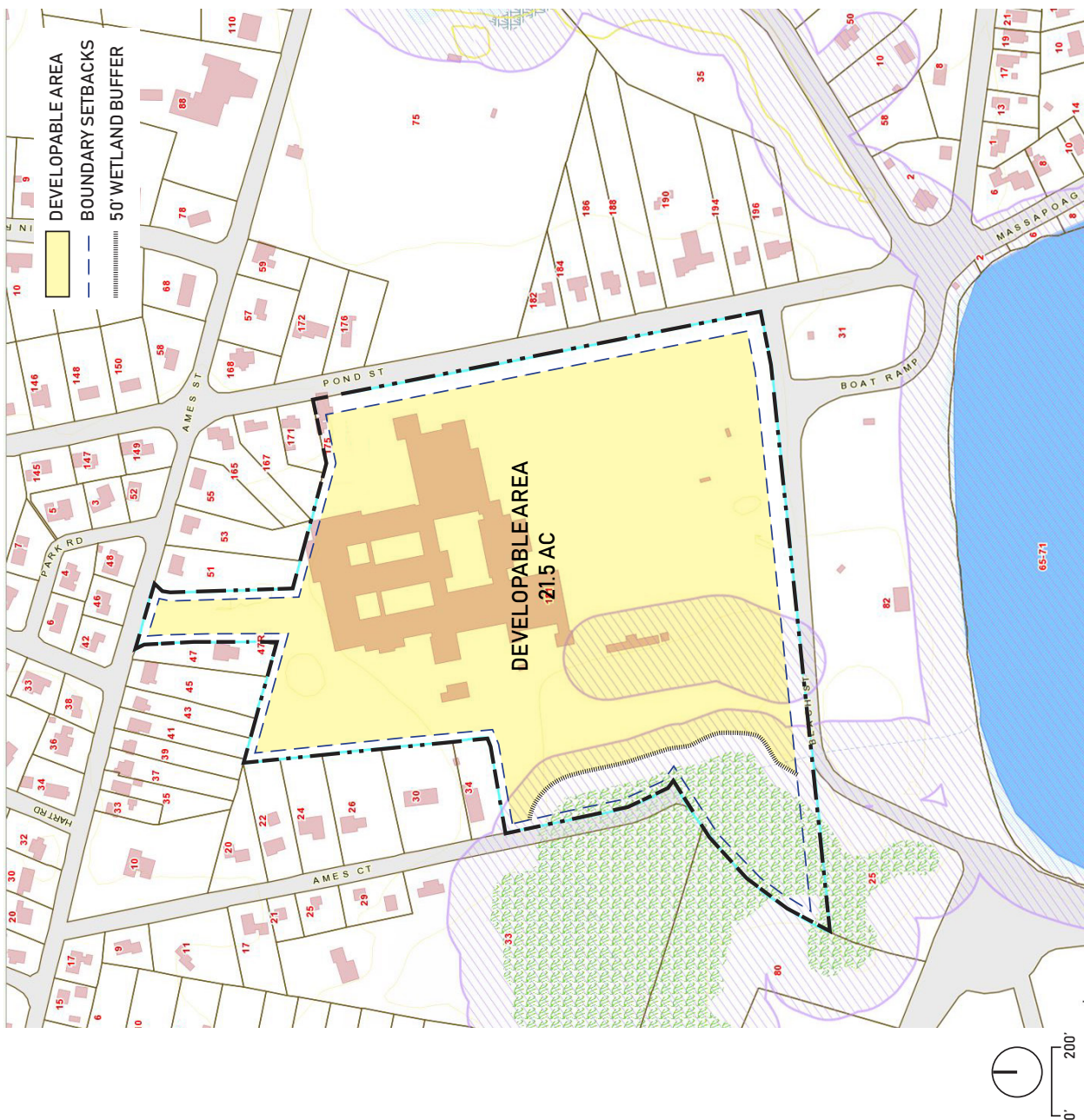
SITE: SHARON HIGH SCHOOL  
ADDRESS: 181 POND STREET  
OWNER: TOWN OF SHARON SCHOOL DEPT.  
ZONE: RURAL DISTRICT 2  
PARCEL SIZE: 29.0 AC  
DEVELOPABLE AREA: 21.8 AC

PROS

- Close to town center
- Established existing High School use
- Town-owned parcel
- Existing infrastructure/utilities
- Existing Football stadium to remain
- Re-uses developed site
- Flat site
- Known traffic patterns
- Proximity to Lake

CONS

- Site construction phasing
- Tight Site/limited future growth



OPTION 2 - SHARON GALLERY SITE

SITE: SHARON GALLERY  
ADDRESS: 144 OLD POSTROAD  
OWNER: NINETY FIVE, LLC.  
ZONE: BUSINESS DISTRICT D  
PARCEL SIZE: 59.8 AC  
DEVELOPABLE AREA: 35.9 AC

PROS

- Undeveloped land
- Room for growth

CONS

- Far from town center
- Land acquisition costs
- Proximity to I-95
- Traffic to/from site





OPTION 3 - SHARON COUNRTY CLUB

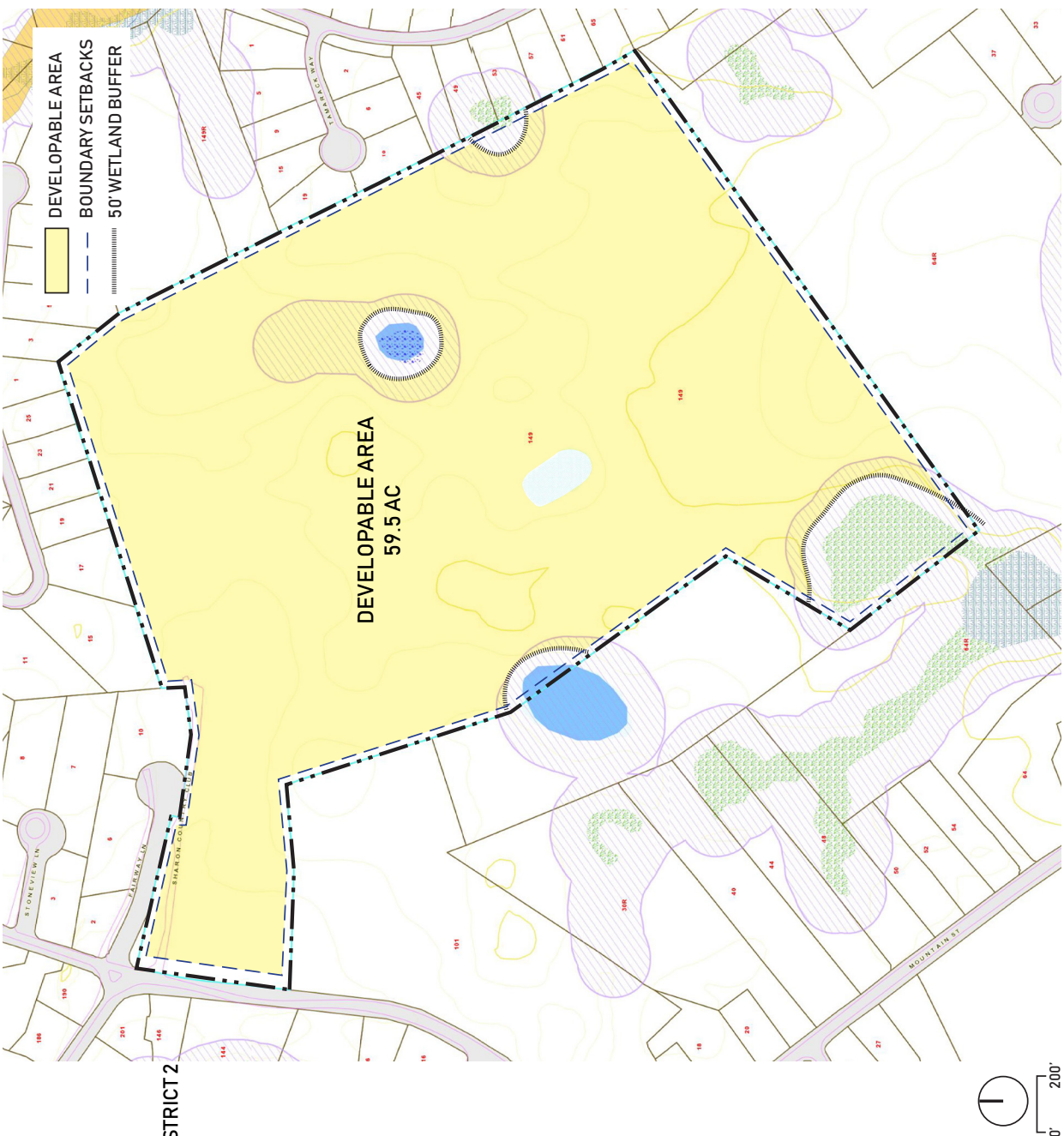
SITE: SHARON COUNTRY CLUB  
ADDRESS: 149 EAST STREET  
OWNER: SHARON COUNTRY CLUB  
ZONE: SINGLE RESIDENCE A / RURAL DISTRICT 2  
PARCEL SIZE: 71.7 AC  
DEVELOPABLE AREA: 59.5 AC

PROS

- Undeveloped land (no substantial structures)
- Proximity to middle school and town center

CONS

- Existing golf course use displaced
- Land acquisition costs
- Limited access points



OPTION 4 - 250 E FOXBORO STREET

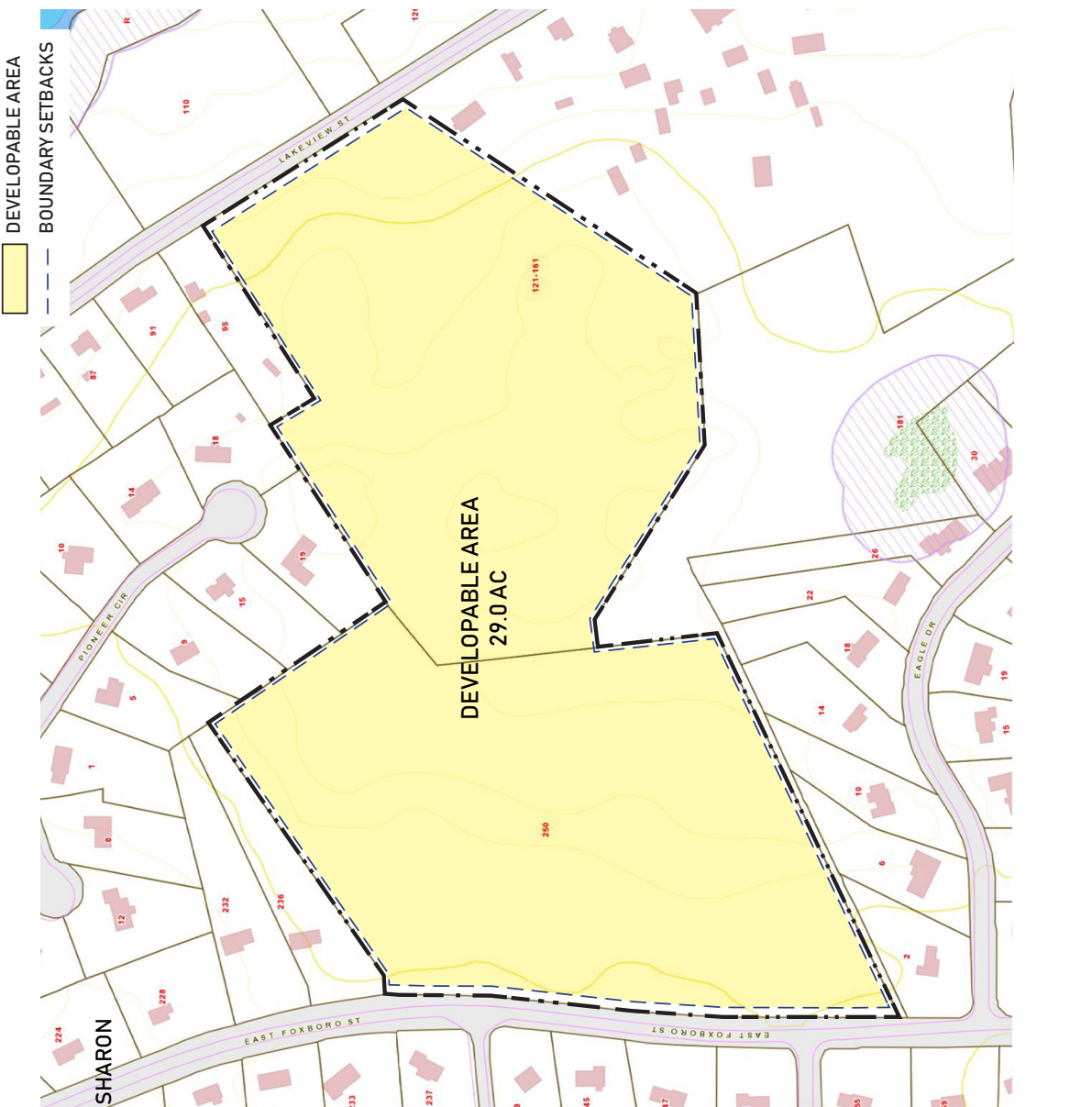
SITE: CAMP EVERWOOD / 250 E FOXBORO  
ADDRESS: 250 E FOXBORO  
OWNER: EVERWOOD CAMP PARTNERS LLC / TOWN OF SHARON  
ZONE: SINGLE RESIDENCE A / RURAL DISTRICT 2  
PARCEL SIZE: 33.3 AC  
DEVELOPABLE AREA: 29.0 AC

PROS

- School dept. owned property (250 E Foxboro site)
- Undeveloped land
- Access from 2 sides

CONS

- Land acquisition costs (renegotiation of long term lease at Camp Everwood).
- Lot shape is difficult for efficient campus use
- New traffic patterns
- Further from town center





## OPTION 5 - RATTLESNAKE HILL

SITE: RATTLESNAKE HILL  
ADDRESS: 400 MOUNTAIN STREET  
OWNER: BRICKSTONE SHARON, LLC.  
ZONE: RURAL DISTRICT 2

PARCEL SIZE: 317 AC

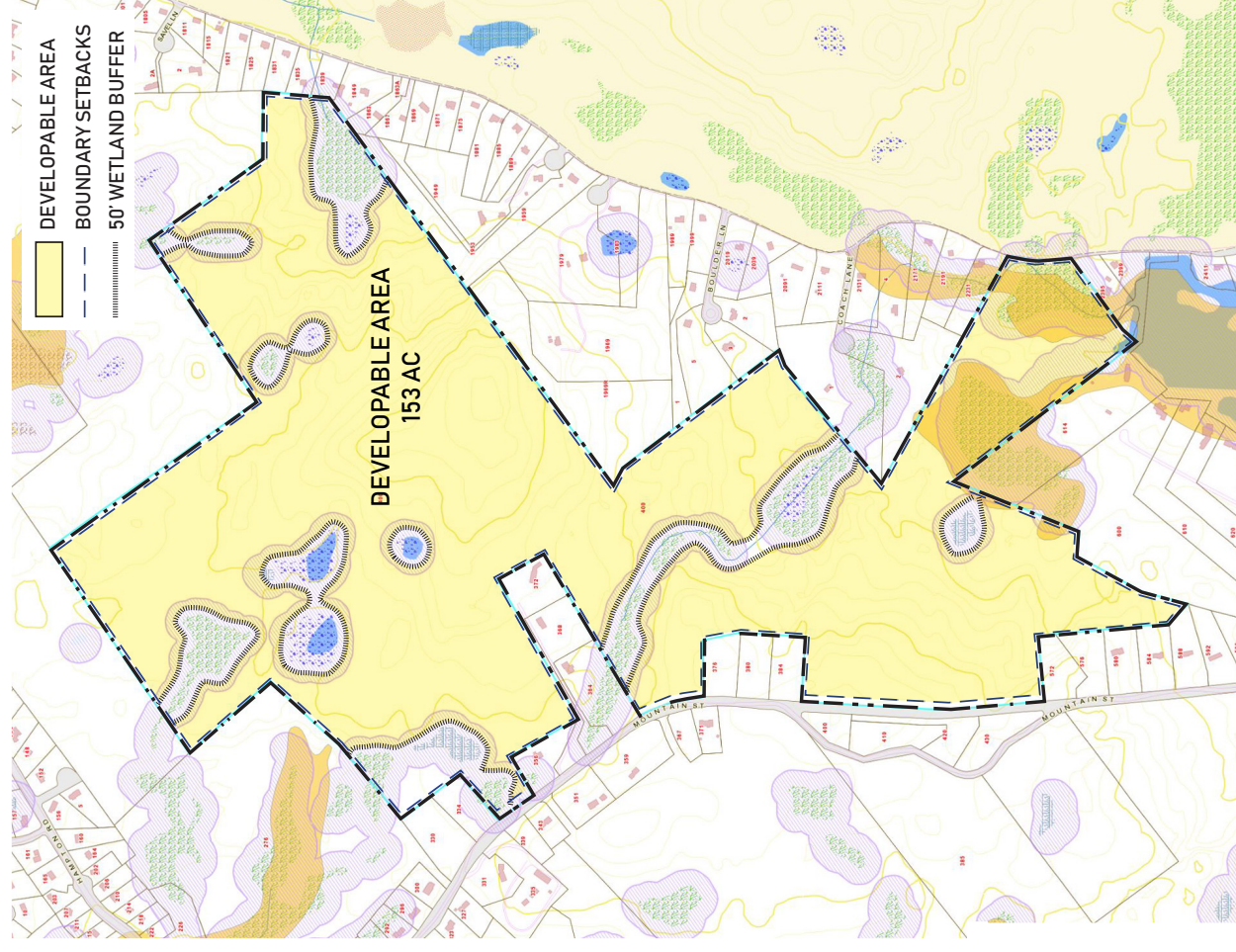
DEVELOPABLE AREA: 153 AC

PROS

- Undeveloped land
- Plenty of Space

CONS

- Land acquisition costs
- Far from town center
- Development plans
- Edge of Town
- Access and wetland crossings
- Earthwork (may be a lot of ledge)



# 6.2

## PRELIMINARY OPTIONS



## 6.2 PRELIMINARY OPTIONS

### Introduction to Options

The general goals of the Town of Sharon for a High School project include selecting an alternative that supports the following:

- District goals for current and future 9 – 12 curriculum and the Districts educational program
- Flexibility that will accommodate future change in education
- A cost effective solution that limits future life cycle cost
- Integration of sustainable design strategies
- Universal design and a fully accessible school environment
- Improved vehicular traffic and parking
- A high school in the center of the community
- A facility that supports community programs and community use
- Limiting disruption to existing operations and teaching and learning during construction
- A learning environment that is supportive, easy to navigate and not intimidating

The process for developing the options to date included three visioning sessions held with school faculty, staff and administration as well as parents, students and residents. These sessions were facilitated by educational planner Frank Locker and included a discussion of 21st century educational practices as well as specific goals for organizing the Sharon High School. A series of meetings with senior District staff have also informed goals for the project. Presentations to the Sharon School Committee and multiple presentations to the Building Committee were also part of this process.

The alternatives fall into four categories:

**Alternative sites:** As noted, four sites were examined as possible alternative locations for a replacement school. Given that all four would have acquisition costs, these are not considered to be cost effective alternatives. In addition, each would require the development of a high school campus from scratch, which increases costs over costly using the existing school location that already has established infrastructure. Therefore, no alternative site is being recommended for further evaluation in the PSR stage.

**Code upgrade to existing school:** While this option will upgrade the building in terms of life safety codes and accessibility codes, it does not solve one of the fundamental goals noted by the Sharon School District in the SOI which is overcrowding. The existing building does not have extra room that can be re-purposed to increase areas for learning. The existing gross to net of 1.53 does not allow for increasing program areas and in fact, aspects of the building such as corridors are already noted as severely restricted.

**Renovation and Addition:** Two options have been developed for a possible renovation and addition, AR-1 and AR-2. This approach would entail a comprehensive renovation to the existing school with selective demolition and new additions. The challenge to this approach is accommodating ongoing school activities during construction. One option demolishes a large portion of the existing school (AR-1) to create a large enough addition to accommodate all the students during a subsequent renovation while the other (AR-2) renovates large parts of the existing building, forcing the need for temporary classrooms during construction.

**Replacement Options:** Five options, N-1 – N-5, were prepared as replacement options. There is only one location on site that can reasonably accommodate a new school while keeping the existing school operational during construction so all the alternatives are in the same general location. It is clearly feasible to build a replacement school as there is room for either a two story or three story building. This location would displace two fields, softball and baseball, during construction. The District will study all of these options in greater depth to understand which best

## **Option R-1**

### **“No Build” Code Upgrade**

This alternative maintains the existing Sharon High School in its current configuration without any expansion. It is assumed for the purpose of analysis that in order to bring the building into compliance with current energy codes significant scope will be required for the building envelope including but not limited to removal and re-installation of masonry to accommodate new insulation, replacement of all fenestration, supplemental roof insulation, replacement of all exterior doors. Systems in the existing building are of various vintages. The school has undergone electrical upgrades and boiler replacements so some of the MEPFP systems are salvageable. However, lighting should be replacement in many locations as well as code compliant plumbing fixtures in many locations. In addition, the building is not accessible and will require reconstruction and expansion of existing interior ramps as well as exterior ramps at exits and entrances. Full abatement of the existing building would also be a requirement of this alternative along with potential consideration being given to the removal of existing below slab utility trenches which currently allow infiltration of moisture into the building.

Construction phasing for this option is challenging. The Town of Sharon has not identified any available swing space to temporarily house students during construction. Therefore temporary classrooms would be required in order to allow for areas of the school to be unoccupied for construction. There is no excess space available within the existing building to move students into during an occupied construction process. It is anticipated that modular classrooms adequate to accommodate 450 students might be located on the existing leaching field.

The existing school is more than 70,000 GSF smaller than the proposed MSBA space template for a school of 1,250 students. Because of this there is no clear way to serve the proposed student enrollment projection within the existing school without an expansion.

# SHARON HIGH SCHOOL

11/21/18

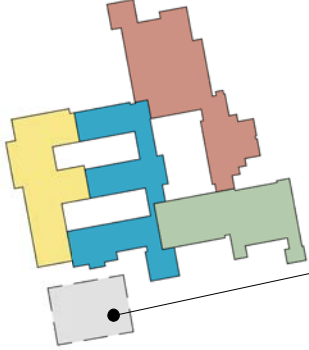
## PRELIMINARY DESIGN PROGRAM

### OPTION R1

#### CONFIGURATION OPTIONS

- GRADES
- ACADEMIES
- DEPARTMENTS

#### PHASING DIAGRAM



MODS, PHASE 1 + 2.  
450 STUDENTS

PHASE 1 - 1 YEAR, FALL OF 2020.	CORE ACADEMIC	HEALTH / GYM
PHASE 2 - 1 YEAR, FALL OF 2021.	SCIENCE	MEDIA / LIBRARY
PHASE 3 - 1 YEAR, FALL OF 2022.	SPED	ADMIN., & MED.
PHASE 4 - 9 MONTHS, FALL OF 2023, END SUMMER OF 2024, FINAL SITE WORK 2025.	ART / MUSIC	DINING / FOOD
	AUDITORIUM	COMMUNITY
	VOC / TECH	BOH



**Option AR-1****Renovation / Addition**

This alternative constructs a large two story classroom addition onto the south side of the existing school. The addition would replace the current 1963 and 1965 classroom wings. By using this strategy, the existing school can remain completely open during the construction of the addition and then students would move into this new two story wing and the old classrooms would be demolished.

This approach avoids the need for temporary swing space. The new addition would be located on the existing softball field which could be reconstructed later in construction to the north once existing classrooms were removed. Two additional phases of construction would entail the infill of the existing courtyard and renovation and expansion of existing major program spaces such as gym and arts which would be accomplished both in summers and during the school year. This renovation phase would lead to the loss of various programs on a temporary basis over a school year. The option will lead to significant disruptions to current school programs and will generate considerable noise and activity directly adjacent to school operations throughout the construction phase.

This alternative should accommodate the proposed space template. The plan creates a single long classroom wing connected to the core. One drawback is that a goal of the District is to develop smaller learning communities within the high school and create a compact building to increase the integration of programs like wellness, arts, and technology. The single classroom wing connected to the rest of the building does not necessarily accomplish these educational goals as there will still be long travel distances and a somewhat isolated wing for core academic classrooms. The plan includes a central media and tech zone that will tie community functions like theater, gym and cafeteria together along a circulation spine at the entrance. The plan does not meet all the District goals established in the Educational Program and poses significant construction challenges.





# ADD/RENO SITE PLAN 1

# SHARON HIGH SCHOOL

11/21/18

## PRELIMINARY DESIGN PROGRAM

### OPTION ART

#### CONFIGURATION OPTIONS

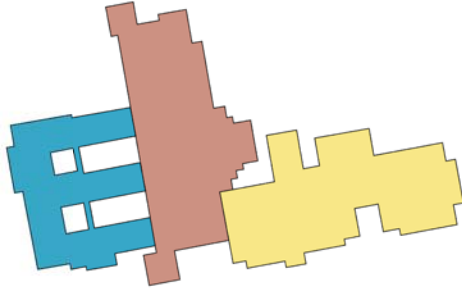
- GRADES
- ACADEMIES
- DEPARTMENTS

#### CORE ACADEMIC WINGS (2) - TWO FLOORS

- 21 CLASSROOMS
- 6 SCIENCE CLASSROOMS

STUDENTS PER WING - 625

#### PHASING DIAGRAM



PHASE 1 - 1.5 YEARS. NEW CONSTRUCTION OF CLASSROOM WING. GYM ADD/RENO. FALL OF 2020 - SPRING 2022. OCCUPANCY SEPT. 2022

PHASE 2 - 6 MONTHS. DEMOLISH OLD CLASSROOM WING. SPRING 2022 - FALL 2022.

PHASE 3 - 1 YEAR. ADD/RENO KITCHEN / CAFE, ARTS / MUSIC / DRAMA / COMM ED., MEDIA /STEAM / TV/ ENTRY/ ADMIN. FALL 2022 - FALL 2023. FINAL SITE WORK SPRING 2023.

- CORE ACADEMIC
- SCIENCE
- SPED
- ART / MUSIC
- AUDITORIUM
- VOC / TECH
- HEALTH / GYM
- MEDIA / LIBRARY
- ADMIN., & MED.
- DINING / FOOD
- COMMUNITY
- BOH

INDICATES NEW CONSTRUCTION





## **Option AR-2**

### **Renovation / Addition**

This option also anticipates a new classroom wing but in this case it is on the northern part of the building at the location of the 1963 classroom wing. Because demolition has to proceed before new construction, it is assumed that temporary modular classrooms are required for about 450 students to vacate this part of the existing building.

The first construction phase would be demolition, followed by the construction of the new classroom wing. A second phase would infill some of the existing courtyard. A final phase would renovate and expand the arts, the gym and the cafeteria. As is the case in AR-1, these areas would be completed over the course of a year and would require the dislocation of programs during that time period. The option will lead to significant disruptions to current school programs and will generate considerable noise and activity directly adjacent to school operations throughout the construction phase.

This alternative should accommodate the proposed space template. Like AR-1 it locates all of the core academic classrooms on one side of the building. While the classrooms are organized around courtyards and are slightly less linear, there are still long travel distances to get to the core of the school. By renovating the center of the existing school a core of tech and media space connects classrooms to an academic hub. A café commons connects arts to wellness and administration at the front of the building. This option does not fully satisfy the goals of the District Educational Program as it does not create smaller learning communities and the construction phasing challenges appear to be more disruptive than option AR-1.

# SHARON HIGH SCHOOL

11/21/18

## PRELIMINARY DESIGN PROGRAM

### OPTION AR2

#### CONFIGURATION OPTIONS

- GRADES
- ACADEMIES
- DEPARTMENTS

#### CORE ACADEMIC WINGS (2) - TWO FLOORS

- 21 CLASSROOMS
- 6 SCIENCE CLASSROOMS

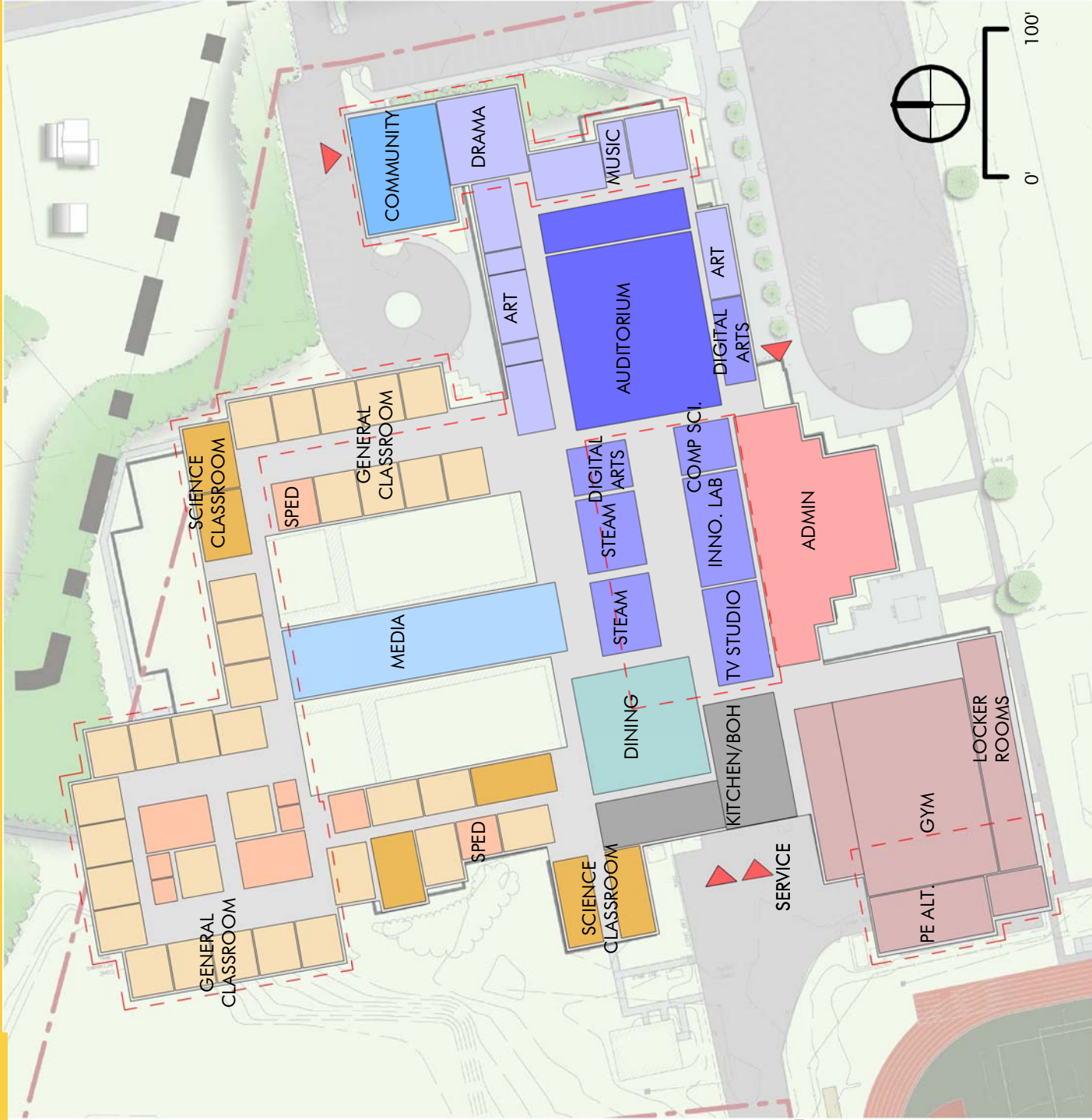
STUDENTS PER WING - 625

#### PHASING DIAGRAM



MODS, PHASE 1 ONLY.  
450 STUDENTS

- PHASE 1 - 1.5 YEARS. DEMOLITION AND NEW ADDITION OF CLASSROOM WING. FALL OF 2020 - SPRING 2022. OCCUPANCY SEPT. 2022
- PHASE 2 - 1 YEAR. DEMO/RENO/INFILL OF COURTYARD, RENOVATION FOR MEDIA. SPRING 2022 - SPRING 2023. SUMMER SLAMMER- KITCHEN
- PHASE 3 - 1 YEAR. DEMO/ADD/RENO GYM / AUDITORIUM / ART / MUSIC / DRAMA FALL 2023 - FALL 2024. FINAL SITE WORK SPRING 2025.
- CORE ACADEMIC
- SCIENCE
- SPED
- ART / MUSIC
- AUDITORIUM
- VOC / TECH
- HEALTH / GYM
- MEDIA / LIBRARY
- ADMIN., & MED.
- DINING / FOOD
- COMMUNITY
- BOH
- INDICATES NEW CONSTRUCTION

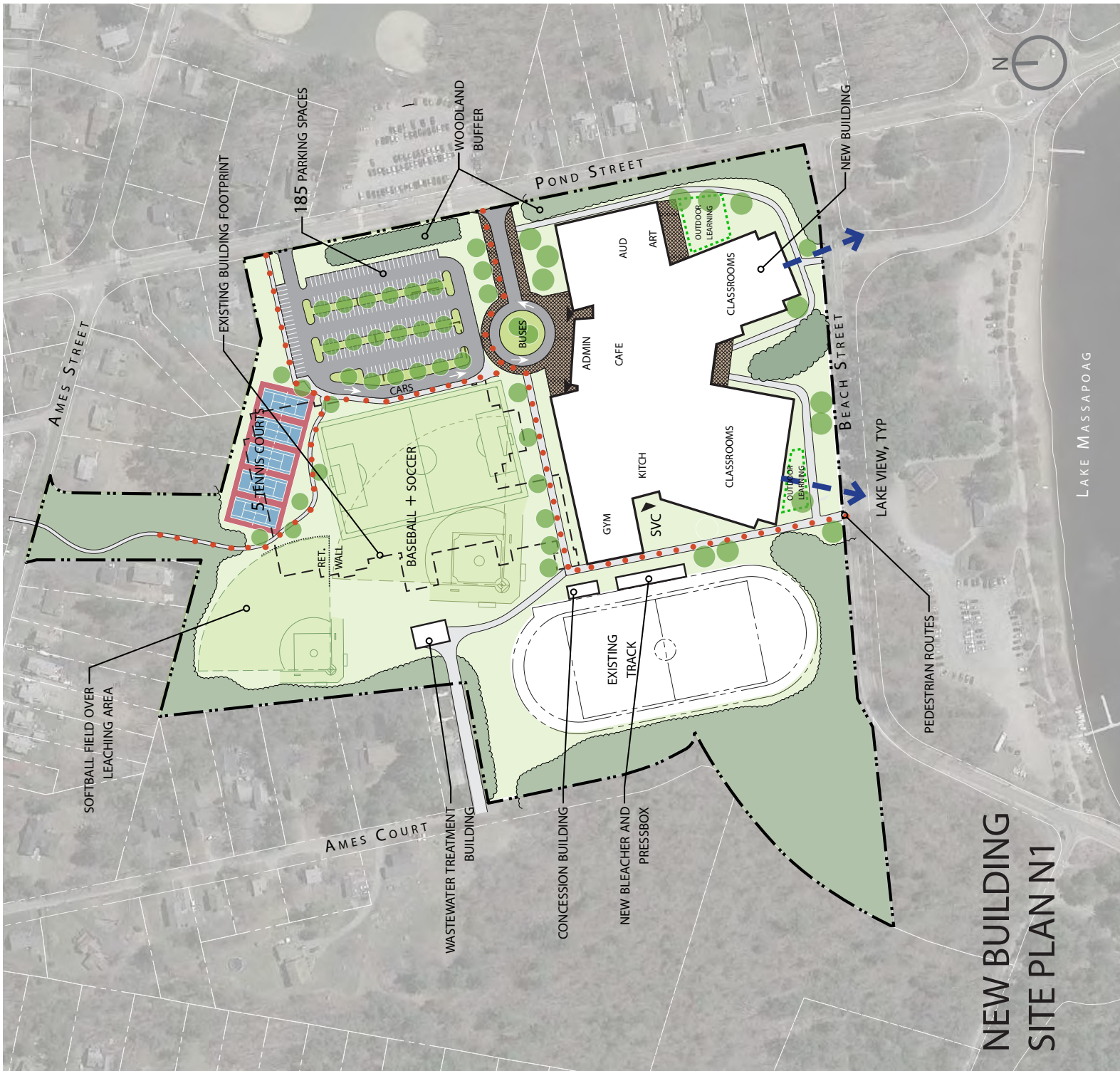


## **Option N-1 Building Replacement**

All the building replacement options locate a new school on the existing softball and baseball fields. The buildable area has the existing football field and track to the west. The area is large enough to construct a new building without impacting the existing high school parking and drop off areas during construction. A temporary arrangement would be required for softball and baseball and field hockey for the duration of construction and for a growing season after completion of replacement fields. The proposed site can have its own construction entrances to separate school traffic from construction traffic. Once the new building is complete, the old school can be removed and site work completed including new fields and parking. The existing football field and track could remain open during construction and it is anticipated that the waste water treatment plant on site would be used to serve the new school.

This two story option is organized with major public functions at the front of the school near parking areas and the main entrance. The gym is located on the western side of the building near the track and football stadium. Two classroom wings are located on each floor resulting in four learning communities in total. Each classroom wing would have three science labs along with technology spaces and special education spaces. There is an arts wing to the eastern side of the building with administration in the center creating controlled and limited access to the school.

This option meets the proposed space template for 1,250 students. Based on the four academic wings the school could be divided by grade or into four academies or as general or departmental classrooms. The learning communities would each exceed 300 students in terms of population within these zones. The plan generally meets the District's educational program although the four classroom communities may be larger than desired. Locating the public functions to the north responds to the Towns desire for a school that engages and serves the community.



# NEW BUILDING SITE PLAN N1



# SHARON HIGH SCHOOL

11/21/18

## PRELIMINARY DESIGN PROGRAM

### OPTION N1

#### CONFIGURATION OPTIONS

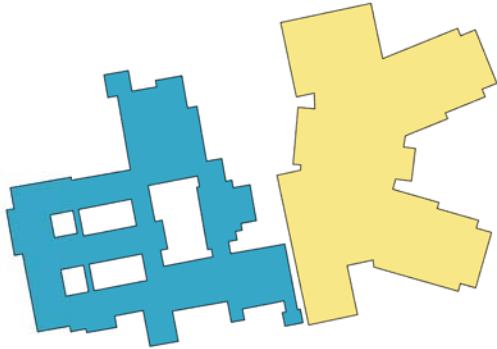
- GRADES
- ACADEMIES
- DEPARTMENTS

#### CORE ACADEMIC WINGS (4) - TWO FLOORS

- 11 CLASSROOMS
- 3 SCIENCE CLASSROOMS

STUDENTS PER WING - 315

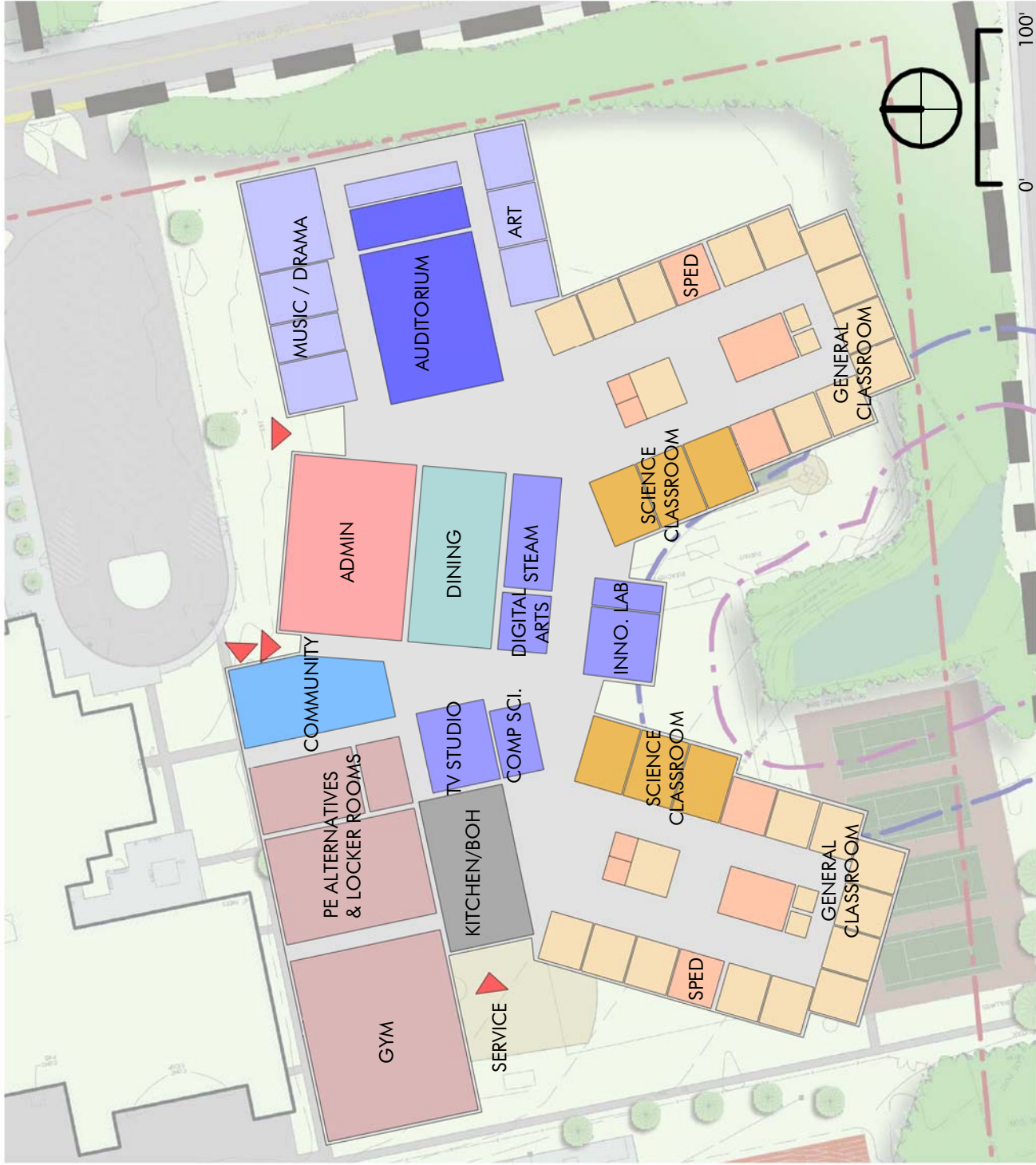
#### PHASING DIAGRAM



PHASE 1 - NEW CONSTRUCTION OF REPLACEMENT SCHOOL. FALL OF 2020 - SPRING 2022. OCCUPANCY SEPT. 2022

PHASE 2 - EXISTING HIGH SCHOOL REMAINS OPEN DURING CONSTRUCTION. DEMOLITION OF EXISTING BUILDING FOLLOWING REPLACEMENT BUILDING CONSTRUCTION. DEMOLITION - SUMMER/FALL 2022. FINAL SITE WORK AS REQUIRED 2023.

CORE ACADEMIC	HEALTH / GYM
SCIENCE	MEDIA / LIBRARY
SPED	ADMIN., & MED.
ART / MUSIC	DINING / FOOD
AUDITORIUM	COMMUNITY
VOC / TECH	BOH



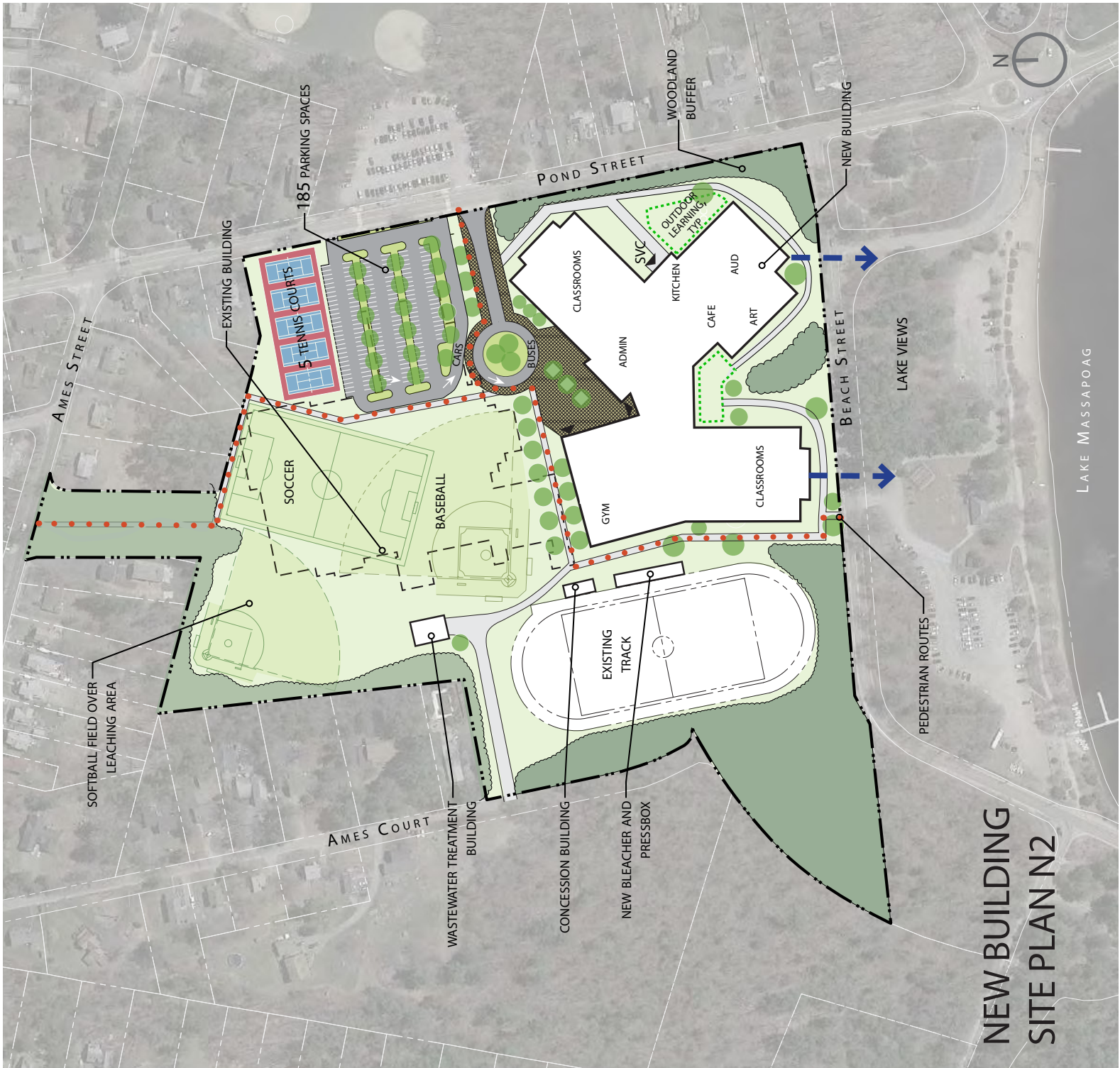
## **Option N-2 Building Replacement**

All the building replacement options locate a new school on the existing softball and baseball fields. The buildable area has the existing football stadium and track to the west. The area is large enough to construct a new building without impacting the existing high school parking and drop off areas during construction. A temporary arrangement would be required for softball and baseball and field hockey for the duration of construction and for a growing season after completion of replacement fields. The proposed site can have its own construction entrances to separate school traffic from construction traffic. Once the new building is complete, the old school can be removed and site work completed including new fields and parking. The existing football field and track could remain open during construction and it is anticipated that the waste water treatment plant on site would be used to serve the new school.

This two story option is organized with the gym located on the western side of the building near the track and football stadium and near the main entrance. Two classroom wings are located on each floor resulting in four learning communities in total. One classroom wing is located to the south west and one to the north east. Each classroom wing would have three science labs along with technology spaces and special education spaces. The arts wing including the auditorium and music classrooms is on the southern side of the building. Administration is in the center creating controlled and limited access to the school.

This option meets the proposed space template for 1,250 students. Based on the four academic wings the school could be divided by grade or into four academies or as general or department classrooms. The learning communities would each exceed 300 students in terms of population within these zones. The plan generally meets the Districts educational program although the four classroom communities may be larger than desired. Locating the auditorium to the south in this option makes it somewhat isolated from the public entrance which could be a draw back for community use.





# SHARON HIGH SCHOOL

11/21/18

## PRELIMINARY DESIGN PROGRAM

### OPTION N2

#### CONFIGURATION OPTIONS

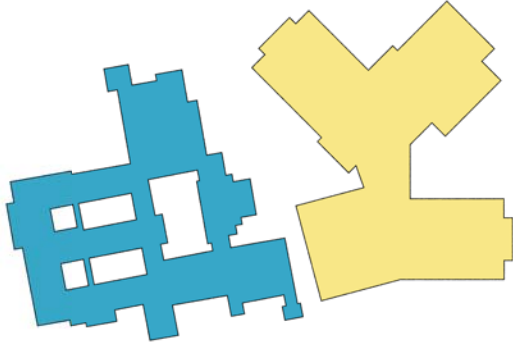
- GRADES
- ACADEMIES
- DEPARTMENTS

#### CORE ACADEMIC WINGS (4) - TWO FLOORS

- 11 CLASSROOMS
- 3 SCIENCE CLASSROOMS

STUDENTS PER WING - 315

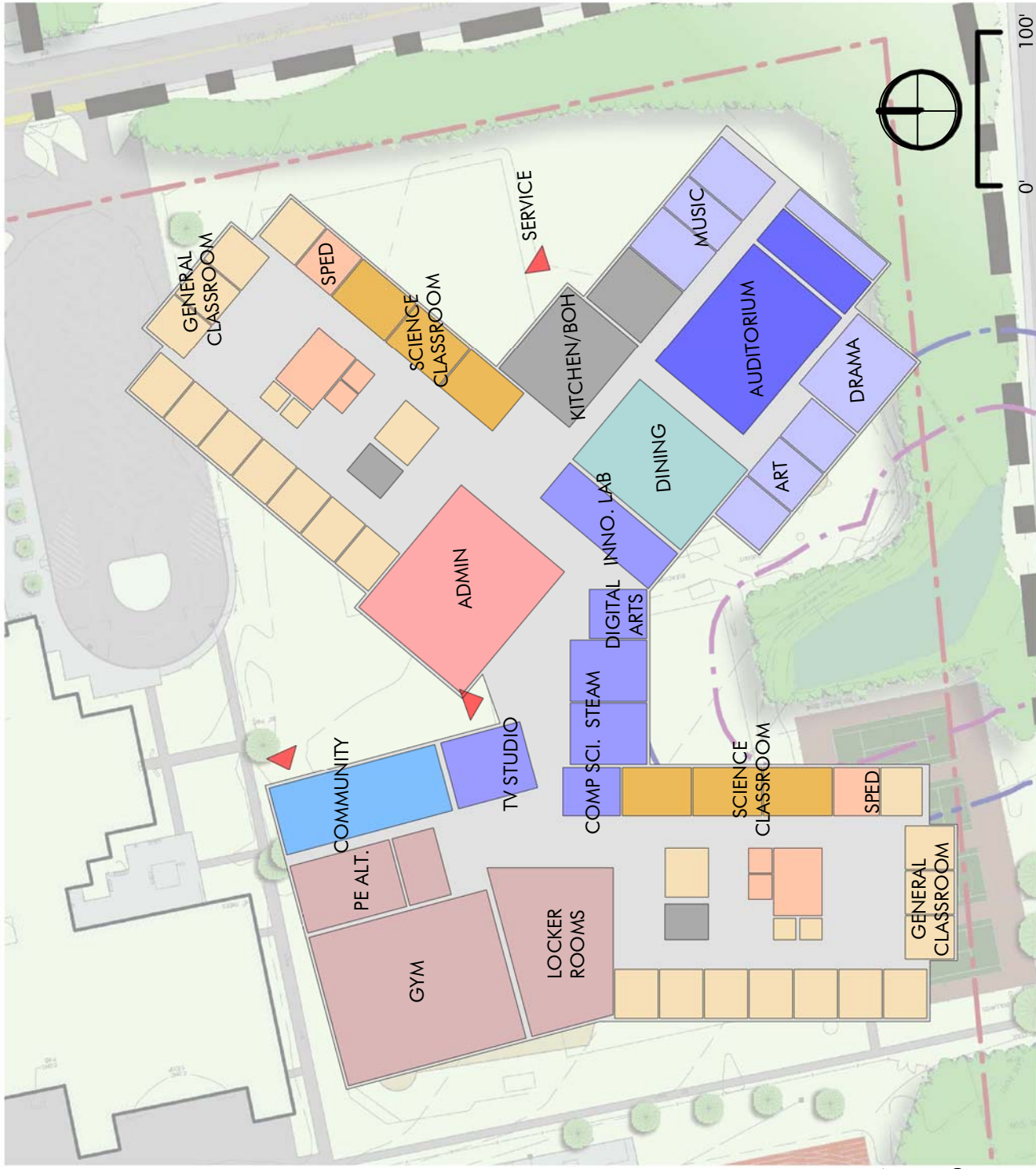
#### PHASING DIAGRAM



PHASE 1 - NEW CONSTRUCTION OF REPLACEMENT SCHOOL. FALL OF 2020 - SPRING 2022. OCCUPANCY SEPT. 2022

PHASE 2 - EXISTING HIGH SCHOOL REMAINS OPEN DURING CONSTRUCTION. DEMOLITION OF EXISTING BUILDING FOLLOWING REPLACEMENT BUILDING CONSTRUCTION. DEMOLITION - SUMMER/FALL 2022. FINAL SITE WORK AS REQUIRED 2023.

- |               |                 |
|---------------|-----------------|
| CORE ACADEMIC | HEALTH / GYM    |
| SCIENCE       | MEDIA / LIBRARY |
| SPED          | ADMIN., & MED.  |
| ART / MUSIC   | DINING / FOOD   |
| AUDITORIUM    | COMMUNITY       |
| VOC / TECH    | BOH             |



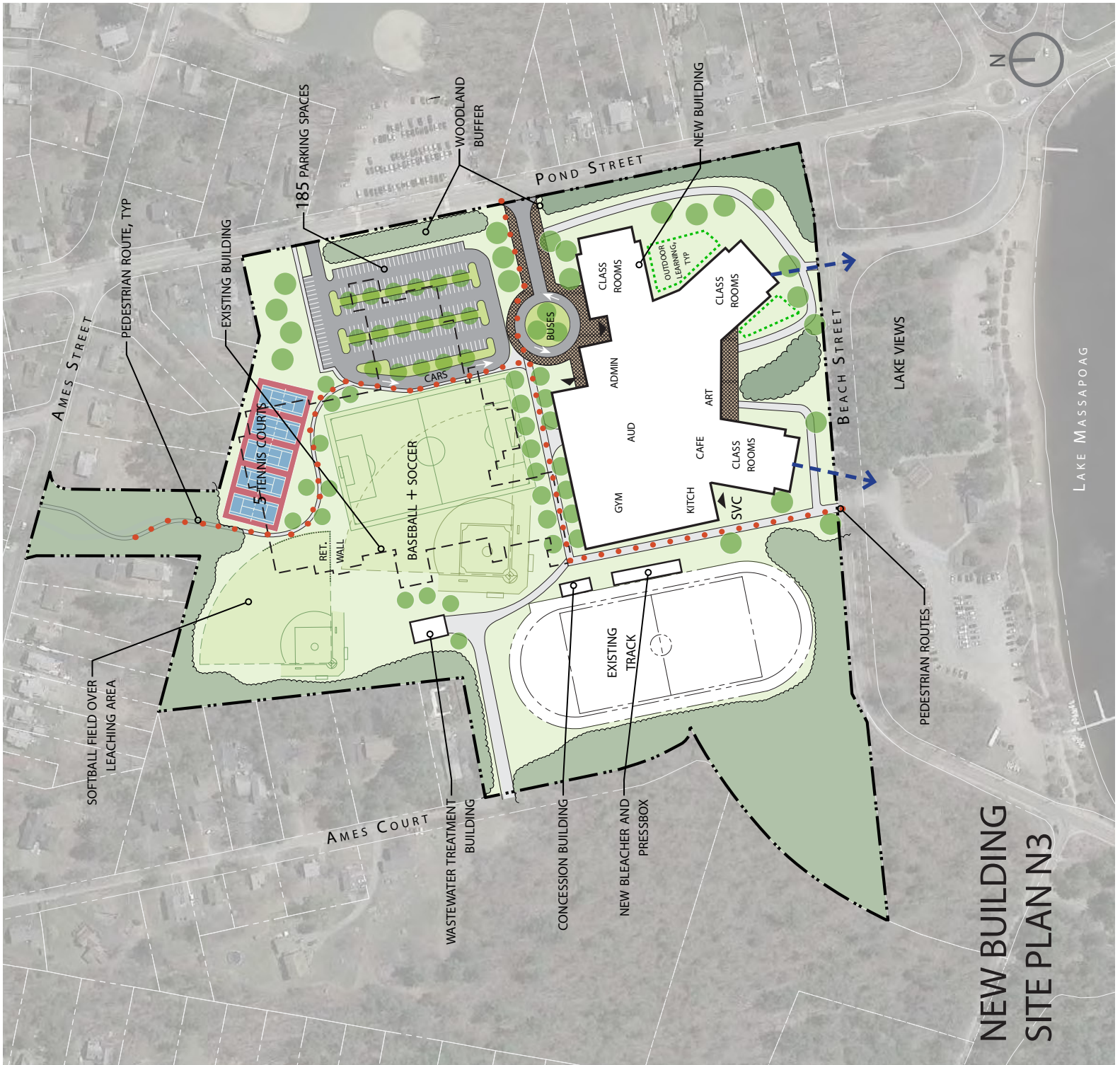
### **Option N-3 Building Replacement**

All the building replacement options locate a new school on the existing softball and baseball fields. The buildable area has the existing football stadium and track to the west. The area is large enough to construct a new building without impacting the existing high school parking and drop off areas during construction. A temporary arrangement would be required for softball and baseball and field hockey for the duration of construction and for a growing season after completion of replacement fields. The proposed site can have its own construction entrances to separate school traffic from construction traffic. Once the new building is complete, the old school can be removed and site work completed including new fields and parking. The existing football field and track could remain open during construction and it is anticipated that the waste water treatment plant on site would be used to serve the new school.

This two story option is organized with the gym located on the western side of the building near the track and football stadium and near the main entrance. Three classroom wings are located on each floor resulting in six learning communities in total. The classroom wings are located along the east and south side. Each classroom wing would have two science labs along with technology spaces and special education spaces. The arts wing including the auditorium and music classrooms is adjacent to the gym on the north western side of the building. Administration is in the center creating controlled and limited access to the school.

This option meets the proposed space template for 1,250 students. Based on the six academic wings the school could be divided into six academies or departmental classrooms. The learning communities would each be about 200 students in terms of population within these zones. The plan meets the goal of smaller communities of students that abut spaces for the arts and wellness. This plan also locates public functions near the entrance creating a public zone for the community. Science, technology and art spaces are arrayed around the circulation that connects the classroom wings.





NEW BUILDING  
SITE PLAN N3

# SHARON HIGH SCHOOL

11/21/18

## PRELIMINARY DESIGN PROGRAM

### OPTION N3

#### CONFIGURATION OPTIONS

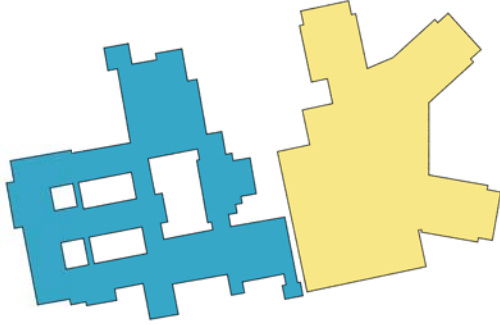
- GRADES
- ACADEMIES
- DEPARTMENTS

#### CORE ACADEMIC WINGS (6) - TWO FLOORS

- 7 CLASSROOMS
- 2 SCIENCE CLASSROOMS

STUDENTS PER WING - 210

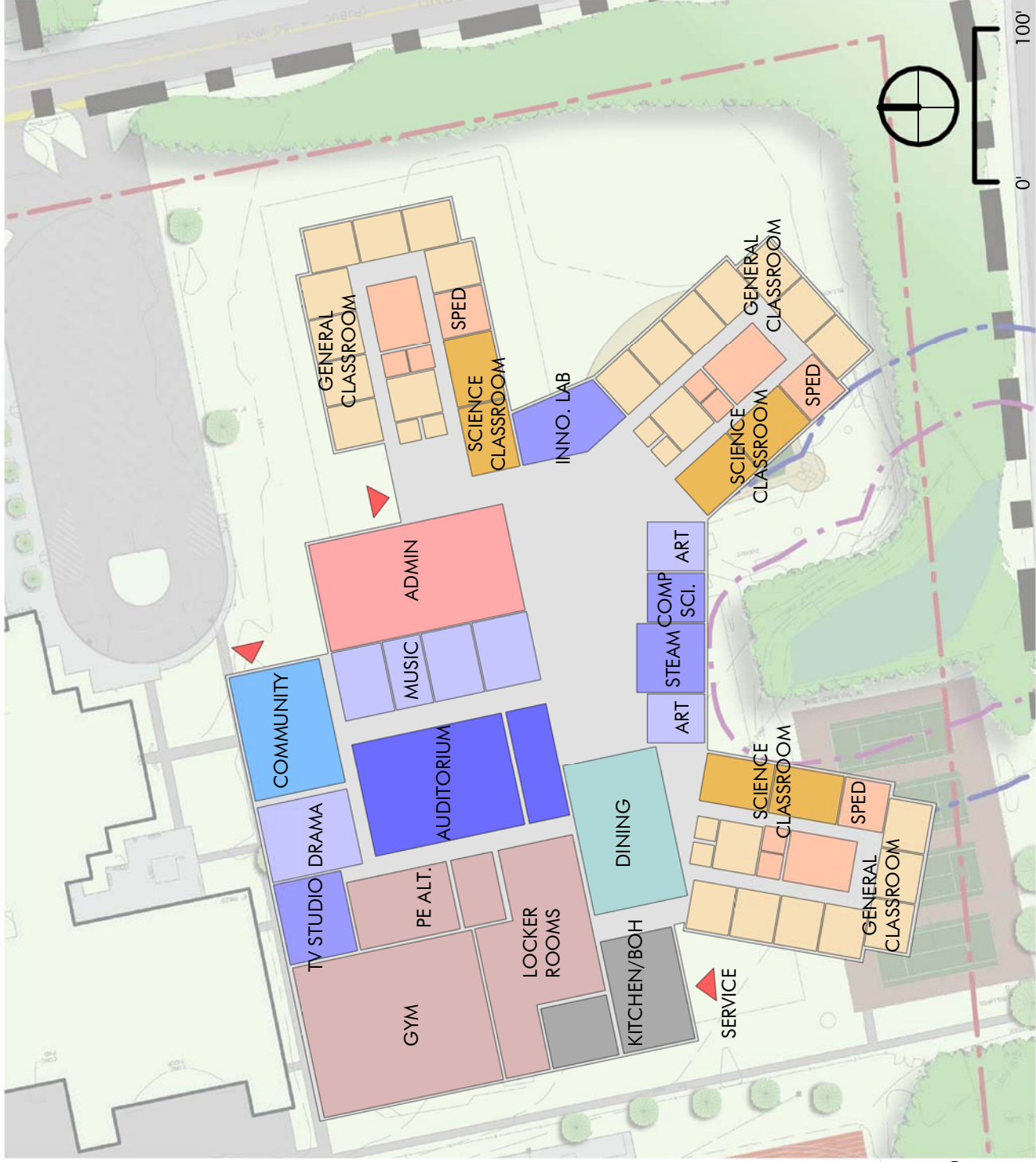
#### PHASING DIAGRAM



PHASE 1 - NEW CONSTRUCTION OF REPLACEMENT SCHOOL. FALL OF 2020 - SPRING 2022. OCCUPANCY SEPT. 2022

PHASE 2 - EXISTING HIGH SCHOOL REMAINS OPEN DURING CONSTRUCTION. DEMOLITION OF EXISTING BUILDING FOLLOWING REPLACEMENT BUILDING CONSTRUCTION. DEMOLITION - SUMMER/FALL 2022. FINAL SITE WORK AS REQUIRED 2023.

CORE ACADEMIC	HEALTH / GYM
SCIENCE	MEDIA / LIBRARY
SPED	ADMIN., & MED.
ART / MUSIC	DINING / FOOD
AUDITORIUM	COMMUNITY
VOC / TECH	BOH



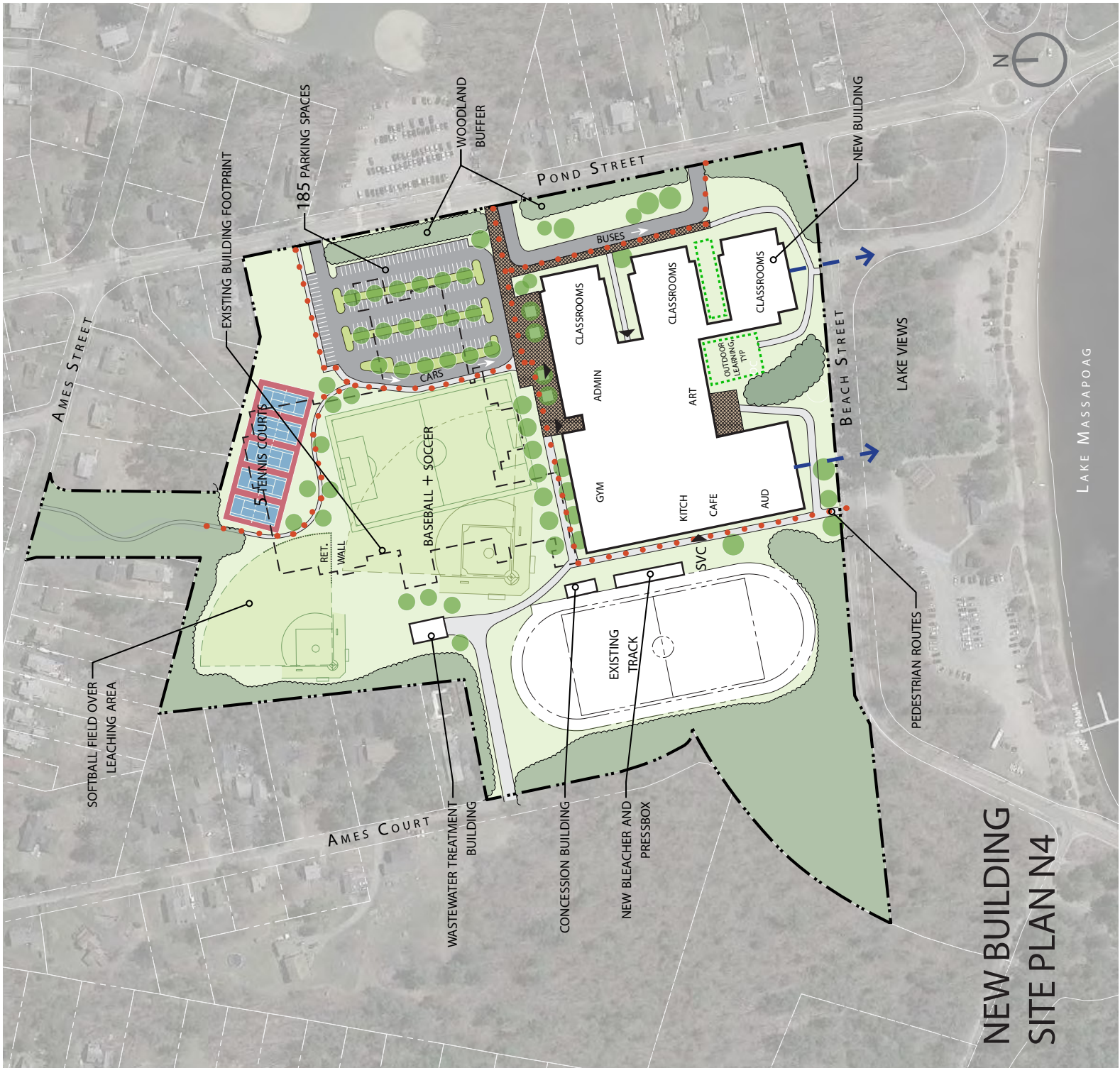
## **Option N-4 Building Replacement**

All the building replacement options locate a new school on the existing softball and baseball fields. The buildable area the existing football stadium and track to the west. The area is large enough to construct a new building without impacting the existing high school parking and drop off areas during construction. A temporary arrangement would be required for softball and baseball and field hockey for the duration of construction and for a growing season after completion of replacement fields. The proposed site can have its own construction entrances to separate school traffic from construction traffic. Once the new building is complete, the old school can be removed and site work completed including new fields and parking. The existing football field and track could remain open during construction and it is anticipated that the waste water treatment plant on site would be used to serve the new school.

This two story option is organized with the gym located on the western side of the building near the track and football stadium and near the main entrance in combination with the cafeteria and auditorium. Three classroom wings are located on each floor resulting in six learning communities in total. The classroom wings are located along the east side of the site and public functions are along the western side of the site. Each classroom wing would have two science labs along with technology spaces and special education spaces. Administration is in the center creating controlled and limited access to the school.

This option meets the proposed space template for 1,250 students. Based on the six academic wings the school could be divided into six academies or departments. The learning communities would each be about 200 students in terms of population within these zones. This option also achieves the goal of smaller learning communities. These wings are less integrated with other program spaces than N-3 and in particular the classroom wing to the south is somewhat isolated. The auditorium is also not close to the classroom wing and it is removed from the main community entrance to the north.





# NEW BUILDING SITE PLAN N4

# SHARON HIGH SCHOOL

11/21/18

## PRELIMINARY DESIGN PROGRAM

### OPTION N4

#### CONFIGURATION OPTIONS

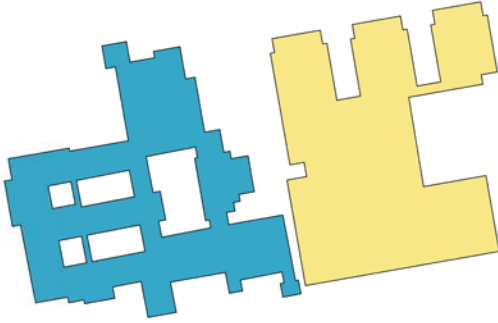
- GRADES
- ACADEMIES
- DEPARTMENTS

#### CORE ACADEMIC WINGS (6) - TWO FLOORS

- 7 CLASSROOMS
- 2 SCIENCE CLASSROOMS

STUDENTS PER WING - 210

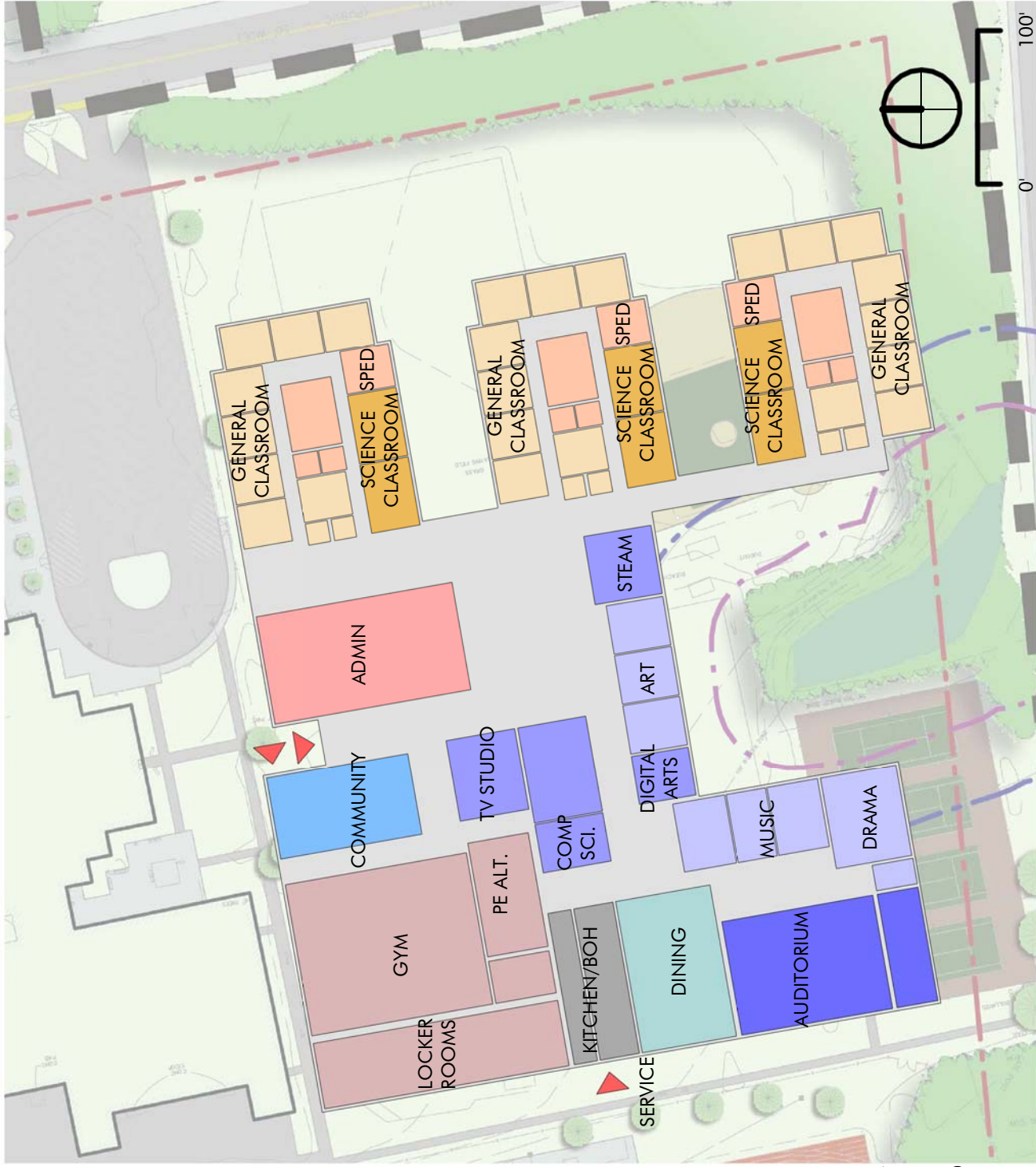
#### PHASING DIAGRAM



PHASE 1 - NEW CONSTRUCTION OF REPLACEMENT SCHOOL. FALL OF 2020 - SPRING 2022. OCCUPANCY SEPT. 2022

PHASE 2 - EXISTING HIGH SCHOOL REMAINS OPEN DURING CONSTRUCTION. DEMOLITION OF EXISTING BUILDING FOLLOWING REPLACEMENT BUILDING CONSTRUCTION. DEMOLITION - SUMMER/FALL 2022. FINAL SITE WORK AS REQUIRED 2023.

- |                 |                   |
|-----------------|-------------------|
| ■ CORE ACADEMIC | ■ HEALTH / GYM    |
| ■ SCIENCE       | ■ MEDIA / LIBRARY |
| ■ SPED          | ■ ADMIN., & MED.  |
| ■ ART / MUSIC   | ■ DINING / FOOD   |
| ■ AUDITORIUM    | ■ COMMUNITY       |
| ■ VOC / TECH    | ■ BOH             |



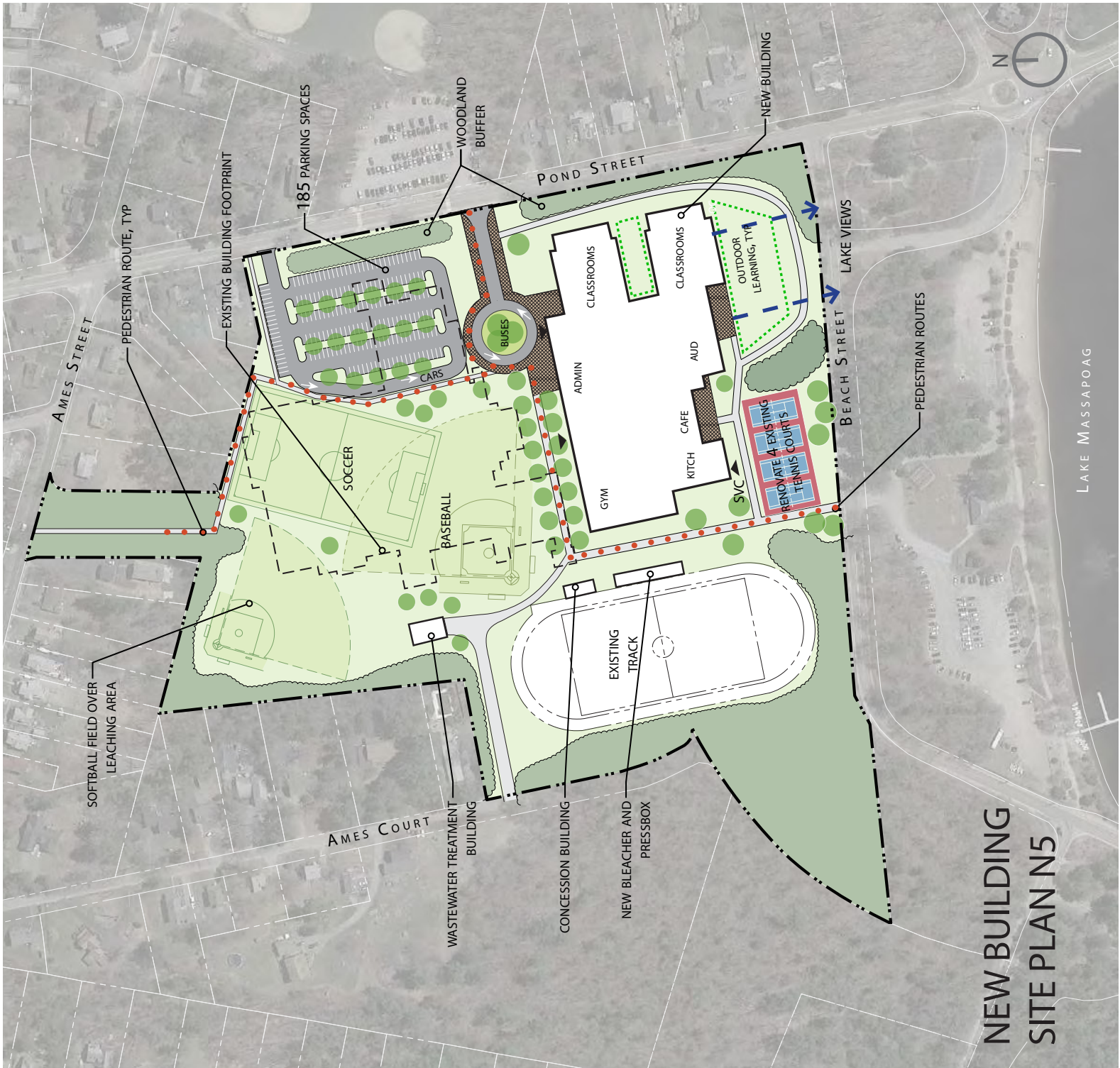
### **Option N-5 Building Replacement - Three Floors**

All the building replacement options locate a new school on the existing softball and baseball fields. The buildable area has the existing football stadium and track to the west. The area is large enough to construct a new building without impacting the existing high school parking and drop off areas during construction. A temporary arrangement would be required for softball and baseball and field hockey for the duration of construction and for a growing season after completion of replacement fields. The proposed site can have its own construction entrances to separate school traffic from construction traffic. Once the new building is complete, the old school can be removed and site work completed including new fields and parking. The existing football field and track could remain open during construction and it is anticipated that the waste water treatment plant on site would be used to serve the new school.

This is a three story option organized to have the gym located on the western side of the building near the track and football stadium. The auditorium is on the south side in the center of the building below the entrance. Because it is three stories there are two classroom wings on each floor resulting in six learning communities in total. The classroom wings are both located along the east side. Each classroom wing would have two science labs along with technology spaces and special education spaces. Administration is in the center creating controlled access to the school. The cafeteria is at the south west corner of the building below the gymnasium.

This option meets the proposed space template for 1,250 students. Based on the six academic wings the school could be divided into six academies or departments. The learning communities would each be about 200 students in terms of population within these zones. This option also achieves the goal of smaller learning communities. A three story building however may create longer vertical travel distances and may isolate the third floor classrooms as the core spaces will not have upper floors that would be adjacent to those classrooms. The smaller footprint does not appear to open up a large enough area of site to add a significant site element that is not possible with the two story options.





NEW BUILDING  
SITE PLAN N5

# SHARON HIGH SCHOOL

11/21/18

## PRELIMINARY DESIGN PROGRAM

### OPTION N5

#### CONFIGURATION OPTIONS

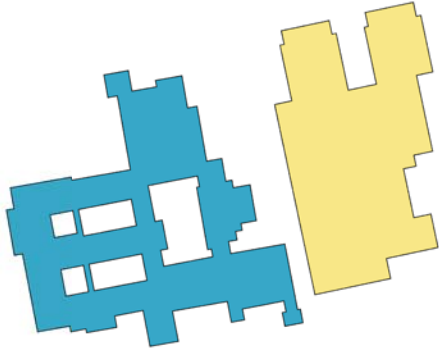
- GRADES
- ACADEMIES
- DEPARTMENTS

#### CORE ACADEMIC WINGS (6) - THREE FLOORS

- 7 CLASSROOMS
- 2 SCIENCE CLASSROOMS

STUDENTS PER WING - 210

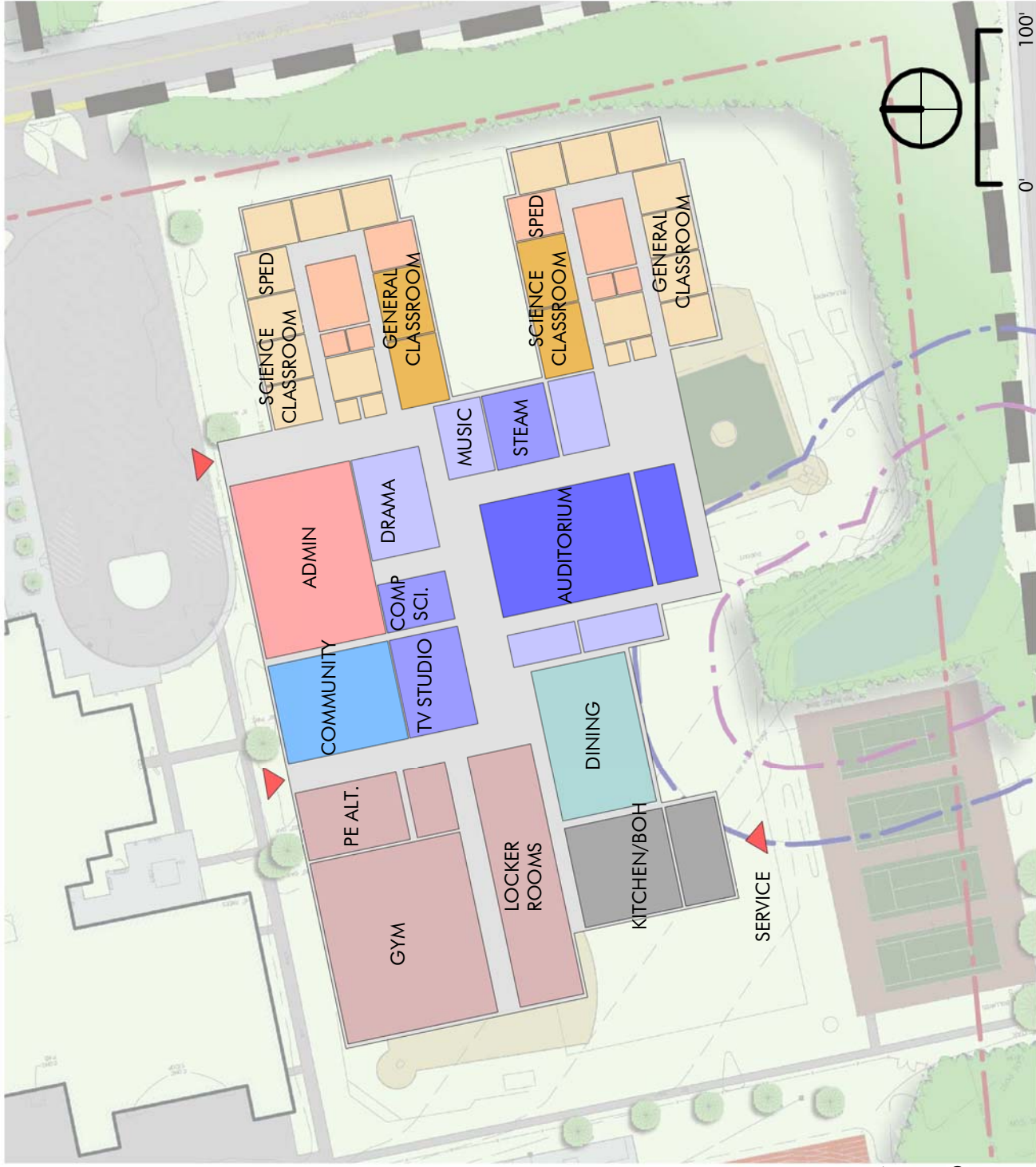
#### PHASING DIAGRAM



PHASE 1 - NEW CONSTRUCTION OF REPLACEMENT SCHOOL. FALL OF 2020 - SPRING 2022. OCCUPANCY SEPT. 2022

PHASE 2 - EXISTING HIGH SCHOOL REMAINS OPEN DURING CONSTRUCTION. DEMOLITION OF EXISTING BUILDING FOLLOWING REPLACEMENT BUILDING CONSTRUCTION. DEMOLITION - SUMMER/FALL 2022. FINAL SITE WORK AS REQUIRED 2023.

■ CORE ACADEMIC	■ HEALTH / GYM
■ SCIENCE	■ MEDIA / LIBRARY
■ SPED	■ ADMIN., & MED.
■ ART / MUSIC	■ DINING / FOOD
■ AUDITORIUM	■ COMMUNITY
■ VOC / TECH	■ BOH



# 6.3

## BUDGET & COST COMPARISON



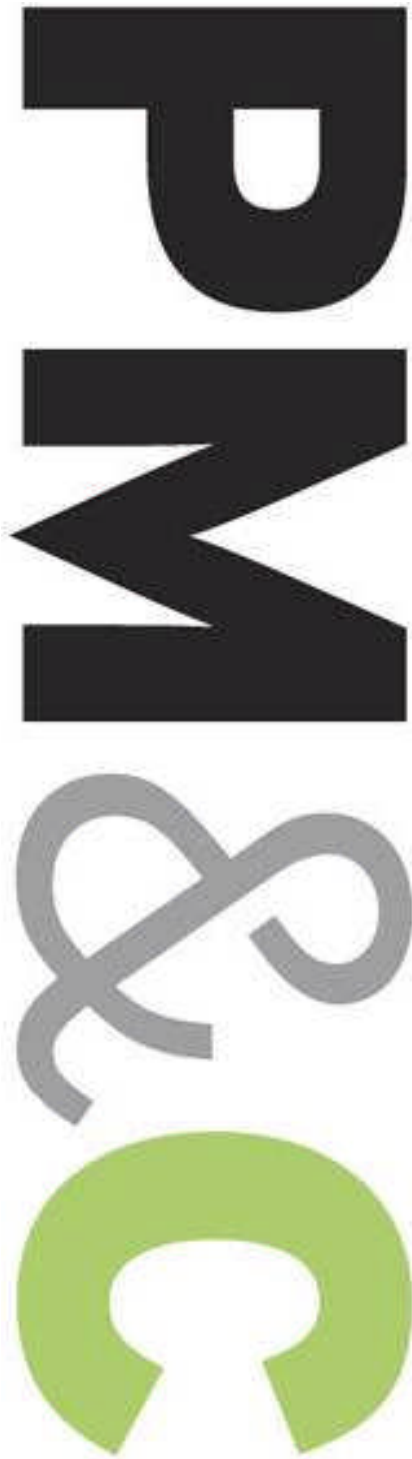
CONCEPT	ED. PROGRAM	PHASING ISSUES	COST ISSUES	SF	CONST. OPINION	PROJECT OPINION
<b>Renovation R-1</b>	No build code upgrade. Does not satisfy District Ed Program goals or MSBA template for 1,250 students	Renovation would require temporary modular classrooms in order to allow for two construction phases of the existing classroom wings.	Includes comprehensive renovation, systems upgrades plus reconstruction of exterior envelope to meet code.	168,422 GSF	\$68.8m ***	\$86 m *** Add \$2.4m = \$89m
<b>Add – Reno AR-1</b>	Meets MSBA space template requirements. Educational program goals are significantly compromised. Long travel.	Students are relocated from existing to new addition during renovation. Significant disruption to core programs in second phase is anticipated.	Extended construction duration w/ three phases. Occupied construction. Inefficient plan increases GSF.	268,175 GSF	\$128m	\$160m
<b>Add – Reno AR-2</b>	Meets MSBA space template requirements. Educational program goals are significantly compromised. Long travel.	Students relocated to temporary modular classrooms during classroom wing reconstruction. Significant disruption to core programs in each phase is anticipated.	Extended construction duration w/ four phases. Temp. classrooms to allow demolition. Occupied construction. Inefficient plan increases GSF.	264,987 GSF	\$126m ***	\$157.5m *** Add \$2.4m = \$159.9m
<b>New N-1</b>	Satisfies space template, meets many educational program goals but larger classroom wings.	Location on baseball / softball displaces those programs. Limited disruption to ongoing school. Separate const. entry.	Two story option two wing option. Slightly more perimeter.	241,618 GSF	\$125.6m	\$157m
<b>New N-2</b>	Satisfies space template, meets many educational program goals but larger classroom wings.	Location on baseball / softball displaces those programs. Limited disruption to ongoing school. Separate const. entry.	Two story two wing option. Slightly more perimeter.	241,618 GSF	\$125.3m	\$156.6m
<b>New N-3</b>	Satisfies space template, meets educational program goal of small learning communities.	Location on baseball / softball displaces those programs. Limited disruption to ongoing school. Separate const. entry.	Two story three wing option. Slightly less perimeter.	241,618 GSF	\$124m	\$155m
<b>New N-4</b>	Satisfies space template, meets educational Program goal of small learning communities.	Location on baseball / softball displaces those programs. Limited disruption to ongoing school. Separate const. entry.	Two story three wing option, slightly more perimeter envelope than N-3.	241,618 GSF	\$125.4m	\$156.8m
<b>New N-5</b>	Satisfies space template. Three story option may add internal travel and limit integration of programs.	Location on baseball / softball displaces those programs. Limited disruption to ongoing school. Separate const. entry.	Three story option reduces footprint but increases vertical circulation.	241,618 GSF	\$123.2m	\$153.7m

\*\*\* Budget does not include cost of temporary modular classrooms to be used as swing space – Assume \$150,000 per classroom x 16 classrooms = add \$2.4m

**PDP Report**

**Sharon High School  
Design Options**

Danvers, MA



**PM&C LLC**

20 Downer Ave, Suite 1C  
Hingham, MA 02043  
(T) 781-740-8007  
(F) 781-740-1012

Prepared for:

**Tappe Architects, Inc.**

November 14, 2018



**Sharon High School**  
Design Options  
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**PDP Report**

**MAIN CONSTRUCTION COST SUMMARY**

	<b>Construction Start</b>	<b>Gross Floor Area</b>	<b>\$/sf</b>	<b>Estimated Construction Cost</b>
<b>OPTION R1 RENOVATION ONLY</b>				
	Sep-20			
RENOVATIONS TO EXISTING SCHOOL		168,422	\$242.03	\$40,763,987
REMOVE HAZARDOUS MATERIALS				\$1,719,300
WWTP Modifications/upgrades				\$450,000
SITEWORK				\$3,150,718
SUB-TOTAL		168,422	\$273.62	\$46,084,005
ESCALATION	6.7%			\$3,087,628
DESIGN AND PRICING CONTINGENCY	15.0%			\$7,375,745
SUB-TOTAL		168,422	\$335.75	\$56,547,378
GENERAL CONDITIONS	6.0%			\$3,392,843
GENERAL REQUIREMENTS	4.0%			\$2,261,895
BONDS	1.25%			\$706,842
INSURANCE	1.80%			\$1,132,361
PERMIT				Waived
FEE	3.0%			\$1,921,240
GMP CONTINGENCY	2.0%			\$1,130,948
PHASING PREMIUM				\$1,696,421
MODULAR CLASSROOMS				By Others
<b>TOTAL OF ALL CONSTRUCTION</b>		168,422	\$408.44	<b>\$68,789,928</b>



**Sharon High School**  
Design Options  
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**PDP Report**

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION AR-1 RENOVATION + ADDITION</b>				
	Sep-20			
RENOVATIONS TO EXISTING SCHOOL		97,380	\$271.86	\$26,474,156
ADDITIONS		170,795	\$293.64	\$50,152,856
PARTIAL DEMOLITION		71,042	\$8.00	\$568,336
REMOVE HAZARDOUS MATERIALS				\$1,719,300
WWTP Modifications/upgrades				\$450,000
SITework				\$7,565,363
SUB-TOTAL		268,175	\$324.15	\$86,930,011
ESCALATION - (assumed 3% PA)	6.7%			\$5,824,311
DESIGN AND PRICING CONTINGENCY	15%			\$13,913,148
SUB-TOTAL		268,175	\$397.75	\$106,667,470
GENERAL CONDITIONS	36	MTHS	\$160,000	\$5,760,000
GENERAL REQUIREMENTS	4.0%			\$4,266,699
BONDS	1.25%			\$1,333,343
INSURANCE	1.80%			\$2,124,495
PERMIT				Waived
FEE	3.0%			\$3,604,560
GMP CONTINGENCY	2.0%			\$2,133,349
PHASING PREMIUM	2.00%			\$2,133,349
MODULAR CLASSROOMS				NR
<b>TOTAL OF ALL CONSTRUCTION</b>		268,175	\$477.39	<b>\$128,023,265</b>



**Sharon High School**  
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**PDP Report**

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION AR-2 RENOVATION + ADDITION</b>				
	Sep-20			
RENOVATIONS TO EXISTING SCHOOL		129,220	\$261.30	\$33,764,914
ADDITIONS		135,767	\$318.84	\$43,287,666
PARTIAL DEMOLITION		39,202	\$8.00	\$313,616
REMOVE HAZARDOUS MATERIALS				\$1,719,300
WWTP Modifications/upgrades				\$450,000
SITework				\$5,283,673
SUB-TOTAL		264,987	\$320.09	\$84,819,169
ESCALATION - (assumed 3% PA)	6.7%			\$5,682,884
DESIGN AND PRICING CONTINGENCY	15%			\$13,575,308
SUB-TOTAL		264,987	\$392.76	\$104,077,361
GENERAL CONDITIONS	42	MTHS	\$160,000	\$6,720,000
GENERAL REQUIREMENTS	4.0%			\$4,163,094
BONDS	1.25%			\$1,300,967
INSURANCE	1.80%			\$2,092,706
PERMIT				Waived
FEE	3.0%			\$3,550,624
GMP CONTINGENCY	2.0%			\$2,081,547
PHASING PREMIUM	2.00%			\$2,081,547
MODULAR CLASSROOMS				By Others
<b>TOTAL OF ALL CONSTRUCTION</b>		264,987	\$475.75	<b>\$126,067,846</b>





**Sharon High School**  
Design Options  
Danvers, MA

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**PDP Report**

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION N-1 NEW BUILDING</b>				
	Sep-20			
NEW BUILDING		241,618	\$310.73	\$75,078,765
DEMOLISH EXISTING SCHOOL		168,422	\$7.00	\$1,178,954
REMOVE HAZARDOUS MATERIALS				\$1,719,300
WWTP Modifications/upgrades				\$450,000
SITEWORK				\$8,987,064
SUB-TOTAL		241,618	\$361.79	\$87,414,083
ESCALATION - (assumed 3% PA)	6.7%			\$5,856,744
DESIGN AND PRICING CONTINGENCY	15%			\$13,990,624
SUB-TOTAL		241,618	\$443.93	\$107,261,451
GENERAL CONDITIONS	30	MTHS	\$160,000	\$4,800,000
GENERAL REQUIREMENTS	4.0%			\$4,290,458
BONDS	1.25%			\$1,340,768
INSURANCE	1.80%			\$2,118,468
PERMIT				Waived
FEE	3.0%			\$3,594,334
GMP CONTINGENCY	2.0%			\$2,145,229
MODULAR CLASSROOMS				NR
PHASING PREMIUM				Not Required
<b>TOTAL OF ALL CONSTRUCTION</b>		241,618	\$519.62	<b>\$125,550,708</b>



**Sharon High School**  
Design Options  
Danvers, MA

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**PDP Report**

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION N-2 NEW BUILDING</b>				
	Sep-20			
NEW BUILDING		241,618	\$310.11	\$74,927,835
DEMOLISH EXISTING SCHOOL		168,422	\$7.00	\$1,178,954
REMOVE HAZARDOUS MATERIALS				\$1,719,300
WWTP Modifications/upgrades				\$450,000
SITEWORK				\$8,987,064
SUB-TOTAL		241,618	\$361.16	\$87,263,153
ESCALATION - (assumed 3% PA)	6.7%			\$5,846,631
DESIGN AND PRICING CONTINGENCY	15%			\$13,966,468
SUB-TOTAL		241,618	\$443.16	\$107,076,252
GENERAL CONDITIONS	30	MTHS	\$160,000	\$4,800,000
GENERAL REQUIREMENTS	4.0%			\$4,283,050
BONDS	1.25%			\$1,338,453
INSURANCE	1.80%			\$2,114,960
PERMIT				Waived
FEE	3.0%			\$3,588,381
GMP CONTINGENCY	2.0%			\$2,141,525
MODULAR CLASSROOMS				NR
PHASING PREMIUM				Not Required
<b>TOTAL OF ALL CONSTRUCTION</b>		241,618	\$518.76	<b>\$125,342,621</b>



**Sharon High School**  
Design Options  
Danvers, MA  
**PDP Report**

14-Nov-18

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION N-3 NEW BUILDING</b>				
	Sep-20			
NEW BUILDING		241,618	\$305.87	\$73,903,081
DEMOLISH EXISTING SCHOOL		168,422	\$7.00	\$1,178,954
REMOVE HAZARDOUS MATERIALS				\$1,719,300
WWTP Modifications/upgrades				\$450,000
SITEWORK				\$8,987,064
SUB-TOTAL		241,618	\$356.92	\$86,238,399
ESCALATION - (assumed 3% PA)	6.7%			\$5,777,973
DESIGN AND PRICING CONTINGENCY	15%			\$13,802,456
SUB-TOTAL		241,618	\$437.96	\$105,818,828
GENERAL CONDITIONS	30	MTHS	\$160,000	\$4,800,000
GENERAL REQUIREMENTS	4.0%			\$4,232,753
BONDS	1.25%			\$1,322,735
INSURANCE	1.80%			\$2,091,138
PERMIT				Waived
FEE	3.0%			\$3,547,964
GMP CONTINGENCY	2.0%			\$2,116,377
MODULAR CLASSROOMS				NR
PHASING PREMIUM				Not Required
<b>TOTAL OF ALL CONSTRUCTION</b>		241,618	\$512.92	<b>\$123,929,795</b>



**Sharon High School**  
Design Options  
Danvers, MA

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**PDP Report**

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION N-4 NEW BUILDING</b>				
	Sep-20			
NEW BUILDING		241,618	\$310.29	\$74,972,176
DEMOLISH EXISTING SCHOOL		168,422	\$7.00	\$1,178,954
REMOVE HAZARDOUS MATERIALS				\$1,719,300
WWTP Modifications/upgrades				\$450,000
SITEWORK				\$8,987,064
SUB-TOTAL		241,618	\$361.35	\$87,307,494
ESCALATION - (assumed 3% PA)	6.7%			\$5,849,602
DESIGN AND PRICING CONTINGENCY	15%			\$13,973,564
SUB-TOTAL		241,618	\$443.39	\$107,130,660
GENERAL CONDITIONS	30	MTHS	\$160,000	\$4,800,000
GENERAL REQUIREMENTS	4.0%			\$4,285,226
BONDS	1.25%			\$1,339,133
INSURANCE	1.80%			\$2,115,990
PERMIT				Waived
FEE	3.0%			\$3,590,130
GMP CONTINGENCY	2.0%			\$2,142,613
MODULAR CLASSROOMS				NR
PHASING PREMIUM				Not Required
<b>TOTAL OF ALL CONSTRUCTION</b>		241,618	\$519.02	<b>\$125,403,752</b>



**Sharon High School**  
Design Options  
Danvers, MA

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**PDP Report**

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
<b>OPTION N-5 NEW BUILDING</b>				
	Sep-20			
NEW BUILDING		241,618	\$303.71	\$73,382,735
DEMOLISH EXISTING SCHOOL		168,422	\$7.00	\$1,178,954
REMOVE HAZARDOUS MATERIALS				\$1,719,300
WWTP Modifications/upgrades				\$450,000
SITework				\$8,987,064
SUB-TOTAL		241,618	\$354.77	\$85,718,053
ESCALATION - (assumed 3% PA)	6.7%			\$5,743,110
DESIGN AND PRICING CONTINGENCY	15%			\$13,719,174
SUB-TOTAL		241,618	\$435.32	\$105,180,337
GENERAL CONDITIONS	30	MTHS	\$160,000	\$4,800,000
GENERAL REQUIREMENTS	4.0%			\$4,207,213
BONDS	1.25%			\$1,314,754
INSURANCE	1.80%			\$2,079,041
PERMIT				Waived
FEE	3.0%			\$3,527,440
GMP CONTINGENCY	2.0%			\$2,103,607
MODULAR CLASSROOMS				NR
PHASING PREMIUM				Not Required
<b>TOTAL OF ALL CONSTRUCTION</b>		241,618	\$509.95	<b>\$123,212,392</b>



**PDP Report**

This PDP cost estimate was produced from drawings, narratives and other documentation prepared by Tappe Architects, Inc. and their design team dated November 6, 2018. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, Construction Manager's fee and design contingency. Cost escalation assumes start dates indicated.

Bidding conditions are expected to be public bidding under Chapter 149a of the Massachusetts General Laws to pre-qualified construction managers, and pre-qualified sub-contractors, open specifications for materials and manufactures. If a CM at risk C149a procurement is used costs will increase from the costs presented in this report.

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

**ITEMS NOT CONSIDERED IN THIS ESTIMATE**

Items not included in this estimate are:

- Land acquisition, feasibility, and financing costs
- All professional fees and insurance
- Site or existing conditions surveys investigations costs, including to determine subsoil conditions
- All Furnishings, Fixtures and Equipment
- Items identified in the design as Not In Contract (NIC)
- Items identified in the design as by others
- Owner supplied and/or installed items as indicated in the estimate
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)
- Construction contingency
- Contaminated soils removal

# 6.4

## CONCLUSION

## 6.4 CONCLUSION

Based on the preliminary analysis of options and review and discussion with the District and the Building Committee the following conclusions have been reached during the PDP phase of project development:

### **Alternative Sites:**

As noted previously, there is no compelling argument for moving the Sharon High School off of the current site. The site has an operational waste water treatment plant with adequate capacity. It has parking and roadways and a football field and track with new sports lighting. It has fully installed utility infrastructure. None of the alternative sites are entirely owned by the Town. None of the parcels are as centrally located in the town geographically. The purchase of any parcel would add significant project costs and would delay the project schedule. Therefore, the Town does not intend to pursue any alternate location.

### **Code Upgrade Renovation:**

The design team will continue to analyze a code upgrade option during the PSR phase. However, in light of the overall crowding at the location currently, it does not appear that the existing building can readily accommodate an anticipated student enrollment of 1,250 students.

### **Addition Renovation – Options AR1 and AR2**

The design team will further explore these two options in the PSR stage and will prepare a recommendation to the District on the preferred option based on the educational goals developed in the Educational Program. There are significant costs and dislocation associated with temporary swing space classrooms proposed to support renovations in the AR2 option. This suggests that this may be a less desirable outcome than AR1. AR1 could allow much of the student population to move over into new construction during the course of construction. However, AR1 as currently envisioned, while accommodating the space template, does not meet the intent of the educational program which is to create small learning communities that integrate with arts and wellness. Given the length and size of the proposed classroom wing, this is not achieved in the current configuration shown.

### **New Construction – Options N1 – N2 & N3 – N5**

These five new construction options represent two approaches to the organization of the school. One option has four classroom wings of about 300 students each. The other has six classroom wings of about 200 students each. The District needs to take time during the Preferred Schematic phase to analyze the benefits of these two organization strategies before selecting an approach to recommend to the Building Committee. Once this organizational approach is clarified, the final disposition of the plan can be resolved based on desired building adjacencies and site constraints and opportunities.

It is evident from the analysis that has been completed to date that there are multiple approaches and configurations that can be pursued for a replacement school that will fit on the available site. It is also clear that the phasing and logistics associated with a replacement school are much more straightforward than a renovation. This would result in a shorter construction duration and less disruption to students and existing operations during the construction phase.

At the conclusion of the PDP phase, the Design Team recommends keeping all the new options that have been developed to date for further study by the Town. The project team will work with the town to quickly narrow down the options in the PSR phase so that a preferred replacement option and preferred renovation/addition option can be brought forth for review and consideration along with the renovation option. This will allow the Town to select from the three alternatives during the PSR phase with adequate time to develop the preferred option during PSR and in advance of proceeding into Schematic Design.

# SECTION 7

## LOCAL ACTIONS & APPROVALS TEMPLATE

# 7.1

## LOCAL ACTIONS & APPROVALS TEMPLATE

**November 2018**

**Appendix 3D**

**Module 3 Local Actions and Approval Certification**

**Sharon High School Project**



11/21/18

Ms. Mary Pichetti  
Director of Capital Planning  
40 Broad Street  
Boston, Massachusetts 02109

Dear Ms. Pichetti:

The Town of Sharon School Building Committee ("SBC") has completed its review of the Feasibility Study Preliminary Design Program for the Sharon High school project, and on November 20<sup>th</sup>, 2018, the SBC voted to approve and authorize the Owner's Project Manager to submit the Feasibility Study related materials to the MSBA for its consideration. A certified copy of the SBC meeting minutes, which includes the specific language of the vote and the number of votes in favor, opposed, and abstained, are attached.

Since the MSBA's Board of Directors invited the District to conduct a Feasibility Study on February 15<sup>th</sup>, 2018 the SBC has held fourteen (14) meetings regarding the proposed project, in compliance with the state Open Meeting Law.

In addition to the SBC meetings listed above, the District held two (2) public meetings, which were posted in compliance with the state Open Meeting Law, at which the Project was discussed.

The tables on the next three pages summarize all of the SBC meetings and School Committee meetings since February 15<sup>th</sup>, 2018. Starting on page 5, all meetings are summarized in narrative form.



Sharon High School Local Actions and Approvals				
When/Where	Members Present	Agenda/ Description of Presentation Material	Additional Notes	
<b>School Building Committee</b> Tuesday, February 20, 2018, 6:30 PM Sharon Public Safety Building	Gordon Gladstone, Chair, Robert Atwood, Richard Slater Colleen Tuck, Steve Smith Deb Benjamin, Rick Rice, Roger Thibault, Sara Winthrop	1. Administration 2. Public Safety Building 3. Town Hall Project 4. Sharon High School RFS 5. Approve Minutes from 2/6/18	1) Sharon High School RFS was issued. Chair Gladstone discussed the HS OPM Short list and asked that a series of uniform questions be compiled. All will work on the template. 3/20 shortlist. 3/27 Interviews.	
<b>School Building Committee</b> Tuesday, March 06, 2018, 6:30 PM Sharon Public Safety Building	Gordon Gladstone, Chair, Robert Atwood, Richard Slater Colleen Tuck, Steve Smith Deb Benjamin, Rick Rice Roger, Sara Winthrop	1. Administration 2. Town Hall Renovation Project 3. Public Safety Building 4. Sharon High School RFS 5. Approve Minutes from 2/20/19 6. Invoices	1) Sharon High School RFS 2) 9 responses to the HS OPM were received. Mr. Gladstone created a rubric that he will share with the committee. 3) Some firms have presented financials in confidence to Mr. Gladstone. He will create a spreadsheet that Ms. Tuck will work on preparing the questions for the OPM position.	
<b>School Building Committee</b> Tuesday, March 14, 2018, 6:30 PM Sharon Public Safety Building	Gordon Gladstone, Chair, Robert Atwood, Richard Slater, Steve Smith Deb Benjamin, Rick Rice, Roger Thibault Sara Winthrop	1. Administration 2. Town Hall Renovation Project 3. Public Safety Building 4. Sharon High School RFS 5. Approve Minutes from 3/06/19 6. Invoices	1) Sharon High School RFS 2) Rubric to review and score the OPMs for the High School. 3) RFS reviews 1-5 as grade points. 0 will not be considered.	
<b>School Building Committee</b> Tuesday, March 20, 2018, 6:30 PM Sharon Public Safety Building	Gordon Gladstone, Chair, Robert Atwood, Richard Slater Colleen Tuck, Steve Smith Deb Benjamin, Rick Rice, Roger Thibault, Sara Winthrop, Tilden Kaufman, Matthew Baldassari, Jim Wright, Fire Chief Ken Wertz, Joe Sullivan DPI, Kevin Paton KBA Architects, Mary Bulso DPI	1. Administration 2. Public Safety Building 3. Town Hall Project 4. Sharon High School RFS 5. Approve Minutes from 3/14/18 6. Invoices	1) Sharon High School RFS 2) Scoring of respondents by committee members was totaled and averaged. The top 4 firms to be interviewed are Daedalus, Colliers, NV5 and PMA. A discussion ensued. 3) 4 SSBC members to call 3 references for the selected firms. Mr. Rice will provide questions for reference. 10 questions were generated.	
<b>School Building Committee</b> Tuesday, March 27, 2018, 6:30 PM Sharon Public Safety Building	Gordon Gladstone, Chair, Robert Atwood, Richard Slater, Steve Smith, Deb Benjamin, Rick Rice, Roger Thibault, Sara Winthrop, Ken Wertz, PMA, Colliers, DPI, NV5	1. Administration 2. Sharon High School OPM Interviews	This evening's meetings purpose was to interview the 4 shortlisted candidates for the Owner's Project Management Services (OPM) position for the Sharon High School Project.  2) Colliers, Daedalus, NV5 and PMA presented to the Committee. Each addressed the questions provided by the SSBC in advance as well as questions at the meeting. Each team presented their staffing model for the project as well as sample approaches to take, reporting of data, their experience working with MSBA and an overview of projects completed that may be similar in nature. They also discussed their communicating options for the community and proponent.  3) Each SSBC member scored the candidates and the Sharon Standing Building Committee - OPM Scoping Totals for the Selection Committee Short List of OPM Scoring Summary is summarized as follows: Colliers - 18.55, Daedalus -19.55, NV5-15.77 and PMA - 12.77.  4) PMA was selected by the SSBC as the OPM candidate. Chair Gladstone will email PMA to advise and begin contract negotiations.	
<b>School Building Committee</b> Tuesday, April 03, 2018, 6:30 PM Sharon Public Safety Building	Gordon Gladstone, Chair, Robert Atwood, Colleen Tuck, Steve Smith, Rick Rice, Roger Thibault, Sara Winthrop, Matthew Baldassari, DPW Tilden Kaufman, Jim Wright, Fire Chief Ken Wertz, Sharon Public Schools, PMA Chris Carroll, DPI Joe Sullivan	1) Administration 2) Sharon High School OPM Interviews 3) Town Hall Project 4) Public Safety Building 5) Meeting Minutes 6) Invoices	1) PMA was selected by the SSBC as the OPM candidate at the last meeting. Chair Gladstone commented that through telephone negotiations, the contract was reduced from \$457,000 to \$414,000 rounded to a not to exceed \$410,000. A discussion ensued between the Committee and PMA to review the proposed contract fee further. The Committee needs to target attending an October 2019 meeting of MSBA.  2) The building will be a five year process once the project gets rolling. They project a September 2023 opening.  3) Mr. Carroll stated that he provided a fee reflective of the level of effort proposed. It is for 19 months, at a cost not to exceed \$410,000.  4) Mr. Rice moved to accept the fee proposal for PMA as described. Mr. Smith seconded the motion and the Committee voted unanimously in favor of approval. New documents will be prepared.	

<p><b>School Building Committee</b> Tuesday, May 15, 2018, 6:30 PM Sharon Public Safety Building</p>	<p>Gordon Gladstone, Chair, Robert Atwood, Colleen Tuck, Steve Smith Deb Benjamin, Sara Winthrop, Ken Wertz, Matthew Baldassari, Jim Wright, Fire Chief Joe Sullivan, Paul Queeney PMA, Kevin Paton, Chris Powers Colantonio, Nick Bean Colantonio, George Willwerth Colantonio, Bob Zalatan Colantonio</p>	<p>1) Administration 2) Public Safety Building 3) Sharon High School Project 4) Town Hall 5) Approve Meeting Minutes from 5/1/18 6) Invoices</p>	<p>1) Paul Queeney stated that PMA was approved by MSBA as the OPM for the High School. 2) Mr. Queeney stated that he received comments back from MSBA for the solicitation of the architect. Revisions have to be accepted by 5/23 and the RFS will be advertised in the Central Register by 5/23/18. 3) Mr. Queeney stated that a briefing session will be scheduled at the High School to allow interested design firms to visit the school. 6/13/18 is the deadline for submission of proposals. 4) Chair Gladstone moved that the Committee authorize him to approve the changes that the MSBA wants to be made to the RFS. Ms. Benjamin seconded the motion and the Committee voted unanimously in favor of approval. 5) Chair Gladstone commented that we are on track to get this done as quickly as possible. 6) The ad will be placed in the Sharon Advocate and Patriot Ledger 1) Chair Gladstone began the discussion by stating that the MSBA requires that Communities create an SBC - School Building Committee. MSBA dictates that the members will include: the superintendent, principal and school committee members. 2) Chair Gladstone also stated that the OPM, PMA Consultants help us go through the MSBA process of choosing an architect. It is extremely important that non-voting members participate in the process of choosing an architect. 3) Mr. Nigro of PMA discussed the MSBA Architect Selection Committee. The MSBA Designer Selection Panel consists of 16 members; 13 standing members plus 3 from Sharon. The MSBA approves the RFS which was released to the architect community on 5/23/18. On 7/10 there will be a meeting with the MSBA to rank and the top three choices who will be interviewed. There will be 3 representatives from Sharon in attendance at the meeting: Dr. Greer or her designee, Amy Garcia and Bill Heitin or his designee. It is an open meeting for all to attend. 1) Chair Gladstone stated that July 10th is the MSBA meeting to review all proposals. July 24th is the meeting with the respondents for interviews. 2) The SSBC held a discussion and reviewed their scoring of each of the three candidates. A discussion ensued as to pros and cons for each candidate. 3) PMA stated they will list pros and cons about the three proposals and circulate a guide for talking points at the DSP meeting. They will suggest proposed questions to submit for the 7/24 interviews. 1) MSBA meeting with the designer selection panel. Process- Two meetings for architects. Review proposals and short list to and two weeks later the short listed architects have 30 mins to present. 2) Although there were three proposals we would not have to interview three. Voted 7 to 5 to interview all three. Therefore, the committee did not have to rank the three. 3) Discussion regarding what should be in the content of the presentations. MSBA gave Kevin a few example questions. We revisited this to determine that we should try to incorporate these questions. The committee discussed these questions further.</p>
<p><b>School Building Committee</b> Tuesday, June 12, 2018, 6:30 PM Sharon Public Safety Building</p>	<p>Gordon Gladstone, Chair, Richard Slater, Colleen Tuck, Deb Benjamin, Rick Rice, Roger Thibault, Matthew Baldassari, Jim Wright, Fire Chief, Chris Powers Colantonio, Victoria Greer, Kevin Paton, John Marcus, Mary Bulso, Emily Burke, Jose Libano, Amy Garcia, Judy Crosby, Ken Wertz, Kevin Nigro PMA, Matt Gulino PMA</p>	<p>1) Administration 2) Public Safety Building 3) Sharon High School Project 4) Town Hall 5) Approve Meeting Minutes from 5/26/18 6) Invoices</p>	<p>1) Chair Gladstone stated that July 10th is the MSBA meeting to review all proposals. July 24th is the meeting with the respondents for interviews. 2) The SSBC held a discussion and reviewed their scoring of each of the three candidates. A discussion ensued as to pros and cons for each candidate. 3) PMA stated they will list pros and cons about the three proposals and circulate a guide for talking points at the DSP meeting. They will suggest proposed questions to submit for the 7/24 interviews. 1) MSBA meeting with the designer selection panel. Process- Two meetings for architects. Review proposals and short list to and two weeks later the short listed architects have 30 mins to present. 2) Although there were three proposals we would not have to interview three. Voted 7 to 5 to interview all three. Therefore, the committee did not have to rank the three. 3) Discussion regarding what should be in the content of the presentations. MSBA gave Kevin a few example questions. We revisited this to determine that we should try to incorporate these questions. The committee discussed these questions further.</p>
<p><b>School Building Committee</b> Tuesday, June 26, 2018, 6:30 PM Sharon Public Safety Building</p>	<p>Gordon Gladstone, Chair, Richard Slater, Steve Smith, Deb Benjamin, Rick Rice, Roger Thibault, Matthew Baldassari, Jim Wright Fire Chief, Chris Powers Colantonio, Victoria Greer, Kevin Paton, John Marcus, Mary Bulso, Emily Burke, Jose Libano, Amy Garcia, Judy Crosby, Ken Wertz, Kevin Nigro PMA, Paul Queeney PMA, Matt Gulino PMA</p>	<p>1) Administration 2) Public Safety Building 3) Sharon High School Project 4) Town Hall 5) Approve Meeting Minutes from 6/12/18 6) Invoices</p>	<p>1) Chair Gladstone stated that July 10th is the MSBA meeting to review all proposals. July 24th is the meeting with the respondents for interviews. 2) The SSBC held a discussion and reviewed their scoring of each of the three candidates. A discussion ensued as to pros and cons for each candidate. 3) PMA stated they will list pros and cons about the three proposals and circulate a guide for talking points at the DSP meeting. They will suggest proposed questions to submit for the 7/24 interviews. 1) MSBA meeting with the designer selection panel. Process- Two meetings for architects. Review proposals and short list to and two weeks later the short listed architects have 30 mins to present. 2) Although there were three proposals we would not have to interview three. Voted 7 to 5 to interview all three. Therefore, the committee did not have to rank the three. 3) Discussion regarding what should be in the content of the presentations. MSBA gave Kevin a few example questions. We revisited this to determine that we should try to incorporate these questions. The committee discussed these questions further.</p>
<p><b>School Building Committee</b> Tuesday, July 10, 2018, 6:30 PM Sharon Public Safety Building</p>	<p>Gordon Gladstone, Chair, Richard Slater, Colleen Tuck, Steve Smith, Deb Benjamin, Matthew Baldassari, Jim Wright Fire Chief, Victoria Greer, Kevin Paton, John Marcus, Mary Bulso, Jose Libano, Judy Crosby, Kevin Nigro PMA, Matt Gulino PMA, Amy Garcia, Todd Costa, Joe Sullivan, Marty Richards</p>	<p>1) Administration 2) Public Safety Building 3) Sharon High School Project 4) Town Hall 5) Approve Meeting Minutes from 6/26/18 6) Invoices</p>	<p>1) Chair Gladstone said that the second meeting with the MSBA regarding the designer selection panel was held. KBA and Tappe made a presentation. SMMA chose to withdraw due to other commitments. Tappe was chosen through unanimous decision to be the architect for the High School Project. 2) It is PMA's job now to negotiate Tappe's fees, support and review their proposals, help keep to the design schedule and keep the designer on track.</p>
<p><b>School Building Committee</b> Tuesday, July 24, 2018, 6:30 PM Sharon Public Safety Building</p>	<p>Gordon Gladstone, Chair, Colleen Tuck, Deb Benjamin, Rick Rice, Roger Thibault, Sara Winthrop, Matthew Baldassari, Jim Wright Fire Chief, Chris Powers Colantonio, Kevin Paton, Mary Bulso, Paul Queeney PMA, Todd Costa, Joe Sullivan, Marty Richards</p>	<p>1) Administration 2) Public Safety Building 3) Sharon High School Project 4) Town Hall 5) Approve Meeting Minutes from 7/10/18 6) Invoices</p>	<p>1) Chair Gladstone said that the second meeting with the MSBA regarding the designer selection panel was held. KBA and Tappe made a presentation. SMMA chose to withdraw due to other commitments. Tappe was chosen through unanimous decision to be the architect for the High School Project. 2) It is PMA's job now to negotiate Tappe's fees, support and review their proposals, help keep to the design schedule and keep the designer on track.</p>

<p><b>School Building Committee</b> Tuesday, August 7, 2018, 6:30 PM Sharon Public Safety Building</p>	<p>Gordon Gladstone, Chair, Richard Slater, Colleen Tuck, Marty Richards, Deb Benjamin, Sara Winthrop, Matthew Baldassari, Chris Powers Colantonio, Kevin Paton, Mary Bulso, Mike Gleason Sharon Advocate, Paul Queeney PMA, Amy Garcia, Charlie Hay - Tappe, Joe Sullivan, Chris Blessen - Tappe, David Warne - Tappe, Frank Locker - Tappe, Heather Zelevinsky</p>	<ol style="list-style-type: none"> <li>1) Administration</li> <li>2) Public Safety Building</li> <li>3) Sharon High School Project</li> <li>4) Town Hall</li> <li>5) Approve Meeting Minutes from 7/24/18</li> <li>6) Invoices</li> </ol>	<ol style="list-style-type: none"> <li>1) Tappe provided a walk-through of their presentation which had been provided to the MSBA previously. Tappe reviewed their team members, experience, construction estimating, controlling costs, approach to security and future flexibility. They stated that security is first priority and embedded within the basis of design.</li> <li>2) Chris Blessen will be the face of Tappe. He said they must consider all alternatives for locating a new HS in the Town per MSBA guidelines.</li> <li>3) Tappe and PMA need to work out a three-day visioning session with school administration. Frank Locker is the educational consultant.</li> <li>4) Paul Queeney stated he has reviewed Tappe's fees and feels they are competitive; in the lower range. He stated certain extra services are out of the base contract such as site survey, geotechnical, traffic, preliminary hazard material testing and reporting.</li> <li>5) Ms. Benjamin moved and Ms. Tuck seconded a motion to authorize the Chair to sign the contract with Tappe in the total amount of \$1,229,940.00. All voted in favor of approval.</li> <li>1) Mr. Queeney said three visioning sessions will be set with the architect and educational planners and school personnel.</li> <li>2) Chair Gladstone asked Mr. Queeney to work out visiting schools designed by Tappe with Frank Lockers input. He wants to see the result of educational visioning sessions and how they get formulated into a building.</li> <li>3) Mr. Queeney said a kickoff meeting with MSBA is this Thursday 8/23/18.</li> <li>4) Mr. Queeney reviewed the supplemental narrative about hazmat and geotech/geo-environmental sub-consultants proposals from Tappe architects.</li> <li>5) Mr. Queeney said the MSBA mandates that the architect looks at renovation, addition/renovation, new building and no building options to exhibit due diligence. The architect needs to submit to MSBA to review the PDP submittal on 11/21.</li> </ol>
<p><b>School Building Committee</b> Tuesday, August 21, 2018, 6:30 PM Sharon Public Safety Building</p>	<p>Gordon Gladstone, Chair, Richard Slater, Colleen Tuck, Marty Richards, Rick Rice, Roger Thibault, Sara Winthrop, Matthew Baldassari, Jim Wright Fire Chief, Chris Powers Colantonio, Kevin Paton, Mary Bulso, Paul Queeney PMA, Heather Zelevinsky</p>	<ol style="list-style-type: none"> <li>1) Administration</li> <li>2) Public Safety Building</li> <li>3) Sharon High School Project</li> <li>4) Town Hall</li> <li>5) Approve Meeting Minutes from 8/07/18</li> <li>6) Invoices</li> </ol>	<ol style="list-style-type: none"> <li>1) Mr. Queeney said three visioning sessions will be set with the architect and educational planners and school personnel.</li> <li>2) Chair Gladstone asked Mr. Queeney to work out visiting schools designed by Tappe with Frank Lockers input. He wants to see the result of educational visioning sessions and how they get formulated into a building.</li> <li>3) Mr. Queeney said a kickoff meeting with MSBA is this Thursday 8/23/18.</li> <li>4) Mr. Queeney reviewed the supplemental narrative about hazmat and geotech/geo-environmental sub-consultants proposals from Tappe architects.</li> <li>5) Mr. Queeney said the MSBA mandates that the architect looks at renovation, addition/renovation, new building and no building options to exhibit due diligence. The architect needs to submit to MSBA to review the PDP submittal on 11/21.</li> </ol>
<p><b>School Building Committee</b> Tuesday, September 04, 2018, 6:30 PM Sharon Public Safety Building</p>	<p>Gordon Gladstone, Chair, Marty Richards, Steve Smith, Deb Benjamin, Rick Rice, Sara Winthrop, Ken Wertz, Matthew Baldassari, Kevin Paton, Mary Bulso, Kim Joyce Colantonio, Matt Gulino PMA, Amy Garcia</p>	<ol style="list-style-type: none"> <li>1) Administration</li> <li>2) Public Safety Building</li> <li>3) Sharon High School Project</li> <li>4) Town Hall</li> <li>5) Approve Meeting Minutes from 8/21/18</li> <li>6) Invoices</li> </ol>	<ol style="list-style-type: none"> <li>1) Matt Gulino provided a brief update on upcoming visioning workshops. Tappe is working towards PDP submission in Nov 21st. Tappe will be at the next SBC meeting to provide a more detailed update on progress.</li> <li>1) Dr. Greer and Ms. Garcia updated the committee on the visioning sessions that have take place over the last few weeks.</li> <li>2) Mr. Blessen presented the current status of the high school building project and the three phases that are upcoming: PDP, PSR and Schematic. Mr. Blessen also reviewed the preliminary space template and the Ed Plan</li> <li>3) Mr. Queeney discussed the design module points for SHPS and incentive categories.</li> </ol>
<p><b>School Committee</b> Wednesday, October 10, 2018, 7:00 PM Sharon Middle School</p>	<p>Jon Hitter, Amy Garcia, Judy Crosby, and Heather Zelevinsky, Dr. Victoria Greer, John Marcus, Melissa Bryant, Ken Wertz, Christopher Blessen, Lead Architect with Tappe Architects, Paul Queeney with PMA Consultants, Chris Carrol with PMA Consultants</p>	<ol style="list-style-type: none"> <li>1) Approve of School Committee Minutes for 9.26.18</li> <li>2) Approve of Community Education Homeschool Enrollments</li> <li>3) Approval of Out of State Field Trip - Sharon High School - Brown University, Providence, RI</li> </ol>	<ol style="list-style-type: none"> <li>1) Dr. Greer gave an update on the SHS building project. Discussed the current status of the PDP submission which is currently reviewing alternative sites that could potentially serve as a new high school site. The school committee will have the opportunity to review these options. Dr. Greer also discussed the potential partnership with the Sharon Community Television staff and Board members.</li> </ol>
<p><b>School Committee</b> Wednesday, October 23, 2018, 7:00 PM Sharon Middle School</p>	<p>Jon Hitter, Katie Curru-Dykeman, Marcy Kaplan, Mena Meshia, Heather Zelevinsky and Amy Garcia, Victoria Greer, Elizabeth Murphy, Melissa Bryant and Ken Wertz</p>	<ol style="list-style-type: none"> <li>1) Approval of Open Session Minutes of October 10, 2018</li> <li>2) Approval of high school overnight field trip - Boston Marriott Copley - Model UN Conference at Boston University</li> </ol>	<ol style="list-style-type: none"> <li>1) Dr. Greer gave an update on the SHS building project. Discussed the current status of the PDP submission which is currently reviewing alternative sites that could potentially serve as a new high school site. The school committee will have the opportunity to review these options. Dr. Greer also discussed the potential partnership with the Sharon Community Television staff and Board members.</li> </ol>
<p><b>Board of Selectmen</b> Tuesday, October 16, 2018, 7:00 PM Sharon Community Center</p>	<p>Chairman William A. Heitin, Clerk Walter B. Roach, Jr., Selectwoman Emily E. Smith-Lee, Town Administrator Frederic E. Turkington, Jr. and Assistant to the Town Administrator Lauren Barnes</p>	<ol style="list-style-type: none"> <li>1) Sharon Police Department - Approval of Recommendations for a Police Officer</li> <li>2) Sharon Police Department - K9 Officer Presentation</li> <li>3) Update from Energy Advisory Committee</li> <li>4) Consent Calendar</li> </ol>	<ol style="list-style-type: none"> <li>1) Vote to authorize SSBC Chairman Gordon Gladstone as designee to sign the Local Actions and Approval Certification letter for the High School Feasibility Study Project.</li> </ol>

**November 2018**

**Sharon High School Building Committee Meetings  
February 20, 2018 – 06:30 PM – Sharon Public Safety Building**

**Sharon High School RFS**

The RFS was issued.

Chair Gladstone discussed the HS OPM Short list and asked that a series of uniform questions be compiled. All will work on the template. 3/20 shortlist, 3/27 interviews.

**Sharon High School Building Committee Meetings  
March 06, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) Sharon High School RFS
- 2) 9 responses to the HS OPM were received. Mr. Gladstone created a rubric that he will share with the committee.
- 3) Some firms have presented financials in confidence to Mr. Gladstone. He will create a spreadsheet to share during executive session.
- 4) Ms. Tuck will work on preparing the questions for the OPM position.

**Sharon High School Building Committee Meetings  
March 14, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) Sharon High School RFS
- 2) Rubric to review and score the OPMs for the High School.
- 3) RFS states 1-5 as grade points. 0 will not be considered.

**Sharon High School Building Committee Meetings  
March 20, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) Sharon High School RFS
- 2) Scoring of respondents by committee members was totaled and averaged. The top 4 firms to be interviewed are Daedalus, Colliers, NV5 and PMA. A discussion ensued.
- 3) 4 SSBC members to call 3 references for the selected firms. Mr. Rice will provide questions for reference. 10 questions were generated.

**November 2018**

**Sharon High School Building Committee Meetings  
March 27, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) This evening's meetings purpose was to interview the 4 shortlisted candidates for the Owner's Project Management Services (OPM) position for the Sharon High School Project.
- 2) Colliers, Daedalus, NV5 and PMA presented to the Committee. Each addressed the questions provided by the SSBC in advance as well as questions at the meeting. Each team presented their staffing model for the project as well as sample approaches to take, reporting of data, their experience working with MSBA and an overview of projects completed that may be similar in nature. They also discussed their communicating options for the community and proponent.
- 3) Each SSBC member scored the candidates and the Sharon Standing Building Committee - OPM Scoping Totals for the Selection Committee Short List of OPM Scoring Summary is summarized as follows: Colliers - 18.55, Daedalus -19.55, NV5 -15.77 and PMA - 12.77.
- 4) PMA was selected by the SSBC as the OPM candidate. Chair Gladstone will email PMA to advise and begin contract negotiations.

**Sharon High School Building Committee Meetings  
April 03, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) PMA was selected by the SSBC as the OPM candidate at the last meeting. The Committee reviewed the contract presented by PMA. Chair Gladstone commented that through telephone negotiations, the contract was reduced from \$457,000 to \$414,000 rounded to a not to exceed \$410,000. A discussion ensued between the Committee and PMA to review the proposed contract fee further. Based on a November Town Meeting date to support the project, the process could be shortened but this cannot be confirmed until an architect is selected. The Committee needs to target attending an October 2019 meeting of MSBA.
- 2) The building will be a five year process once the project gets rolling. They project a September 2023 opening.
- 3) Mr. Carroll stated that he provided a fee reflective of the level of effort proposed. It is for 19 months, at a cost not to exceed \$410,000. If we can get an architect on board with an aggressive schedule he said he will come back to the Committee with a credit memo for one month or two months of difference. A one-month reduction would bring the fees to \$391,380 and a two-month reduction would bring it to \$373,300.

**November 2018**

**Sharon High School Building Committee Meetings  
May 15, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) Paul Queeney stated that PMA was approved by MSBA as the OPM for the High School.
- 2) Mr. Queeney stated that he received comments back from MSBA for the solicitation of the architect. Revisions have to be accepted by 5/23 and the RFS will be advertised in the Central Register by 5/23/18.
- 3) Mr. Queeney stated that a briefing session will be scheduled at the High School to allow interested design firms to visit the school. 6/13/18 is the deadline for submission of proposals.
- 4) Chair Gladstone moved that the Committee authorize him to approve the changes that the MSBA wants to be made to the RFS. Ms. Benjamin seconded the motion and the Committee voted unanimously in favor of approval.
- 5) Chair Gladstone commented that we are on track to get this done as quickly as possible.
- 6) The ad will be placed in the Sharon Advocate and Patriot Ledger

**Sharon High School Building Committee Meetings  
June 12, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) Chair Gladstone began the discussion by stating that the MSBA requires that Communities create an SBC - School Building Committee. MSBA dictates that the members will include: the superintendent, principal and school committee members.
- 2) Chair Gladstone also stated that the OPM, PMA Consultants help us go through the MSBA process to engage an architect. It is extremely important that non-voting members participate in the process of choosing an architect.
- 3) Mr. Nigro of PMA discussed the MSBA Architect Selection Committee. The MSBA Designer Selection Panel consists of 16 members; 13 standing members plus 3 from Sharon. The MSBA approves the RFS which was released to the architect community on 5/23/18. On 7/10 there will be a meeting with the MSBA to rank and the top three choices who will be interviewed. There will be 3 representatives from Sharon in attendance at the meeting: Dr. Greer or her designee; Amy Garcia and Bill Heitin or his designee. It is an open meeting for all to attend.

**Sharon High School Building Committee Meetings  
June 26, 2018 – 06:30 PM – Sharon Public Safety Building**



## **November 2018**

- 1) Chair Gladstone stated that July 10th is the MSBA meeting to review all proposals. July 24th is the meeting with the respondents for interviews.
- 2) The SSBC held a discussion and reviewed their scoring of each of the three candidates. A discussion ensued as to pros and cons for each candidate.
- 3) PMA stated they will list pros and cons about the three proposals and circulate a guide for talking points at the DSP meeting. They will suggest proposed questions to submit for the 7/24 interviews.

### **Sharon High School Building Committee Meetings July 10, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) MSBA meeting with the designer selection panel. Process- Two meetings for architects. Review proposals and short list to and two weeks later the short listed architects have 30 mins to present.
- 2) Although there were three proposals we would not have to interview three. Voted 7 to 5 to interview all three. Therefore, the committee did not have to rank the three.
- 3) Discussion regarding what should be in the content of the presentations. MSBA gave Kevin a few example questions. We revisited this to determine that we should try to incorporate these questions. The committee discussed these questions further.

### **Sharon High School Building Committee Meetings July 24, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) Chair Gladstone said that the second meeting with the MSBA regarding the designer selection panel was held. KBA and Tappe made a presentation. SMMA chose to withdraw due to other commitments. Tappe was chosen through unanimous decision to be the architect for the High School Project.
- 2) It is PMA's job now to negotiate Tappe's fees, support and review their proposals, help keep to the design schedule and keep the designer on track.

### **Sharon High School Building Committee Meetings August 07, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) Tappe provided a walk-through of their presentation which had been provided to the MSBA previously. Tappe reviewed their team members, experience, construction estimating, controlling costs, approach to security and future flexibility. They stated that security is first priority and embedded within the basis of design.
- 2) Chris Blessen will be the face of Tappe. He said they must consider all alternatives for locating a new HS in the Town per MSBA guidelines.

## **November 2018**

- 3) Tappe and PMA need to work out a three-day visioning session with school administration. Frank Locker is the educational consultant.
- 4) Paul Queeney stated he has reviewed Tappe's fees and feels they are competitive; in the lower range. He stated certain extra services are out of the base contract such as site survey, geotechnical, traffic, preliminary hazard material testing and reporting.
- 5) Ms. Benjamin moved and Ms. Tuck seconded a motion to authorize the Chair to sign the contract with Tappe in the total of amount of \$1,229,940.00. All voted in favor of approval.

### **Sharon High School Building Committee Meetings August 21, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) Mr. Queeney said three visioning sessions will be set with the architect and educational planners and school personnel.
- 2) Chair Gladstone asked Mr. Queeney to work out visiting schools designed by Tappe with Frank Lockers input. He wants to see the result of educational visioning sessions and how they get formulated into a building.
- 3) Mr. Queeney said a kickoff meeting with MSBA is this Thursday 8/23/18.
- 4) Mr. Queeney reviewed the supplemental narrative about hazmat and geotech/geo-environmental sub-consultants proposals from Tappe architects.
- 5) Mr. Queeney said the MSBA mandates that the architect looks at renovation, addition/renovation, new building and no building options to exhibit due diligence. The architect needs to submit to MSBA to review the PDP submittal on 11/21.

### **Sharon High School Building Committee Meetings September 04, 2018 – 06:30 PM – Sharon Public Safety Building**

- 1) Matt Gulino provided a brief update on upcoming visioning workshops. Tappe is working towards PDP submission in Nov 21st. Tappe will be at the next SBC meeting to provide a more detailed update on progress.

### **Sharon School Committee Meeting October 10, 2018 – 7:00 PM – Sharon Middle School**

- 1) Dr. Greer gave a background on the Sharon High School project and discussed the visioning sessions that were held over the past couple of weeks. These visioning meetings were with the community, parents/families, educators and students. Ms. Garcia is the liaison to the Sharon Standing Building Committee (SSBC). Ms. Garcia discussed the visioning process and attended some meetings and shared that it was good start to the educational programming.

## **November 2018**

2) Mr. Blessen from Tappe Architects presented the status of the high school project and the process of the three phases that the Massachusetts School Building Authority (MSBA) requires.

- a. Preliminary design program (PDP) is the first phase and we are scheduled to submit the education program to the MSBA on November 21, 2018.
- b. Second Phase is Preferred Schematic Report (PSR)
- c. Third Phase is the Schematic Design

3) Dr. Greer gave an overview of what led the district to this process with a potential high school project and explained that this process began almost three years ago.

4) Mr. Blessen described the Preliminary design process (PDP). Mr. Blessen discussed the MSBA conceptual and preliminary space template that generates the amount of space you are allocated depending on the enrollment numbers.

5) Mr. Blessen discussed the District Education Program and that it is the work of Dr. Greer, Administration and Curriculum leaders. The education program should state what you are currently doing and what you want to change with the education plan going forward.

6) Paul Queeney discussed the design module points, CHIPS certification points and incentive categories.

### **Sharon School Committee Meeting**

**October 23, 2018 – 7:00 PM – Sharon Middle School**

1) Dr. Greer gave an update regarding the SHS building project. There was a Standing Building Committee meeting tonight and the Tappe Architects gave an update to Standing Building Committee. Right now we are looking at alternative site options for the building project. One of the MSBA requirements is that we look at alternative sites within the town of Sharon that could possibly be a new sight for the high school project. Tappe has done the preliminary work and are bringing those decisions to the Standing Building Committee tonight. Dr. Greer said that the School Committee will be able to review these sights and give input regarding the site options that will be shared with the Standing Building Committee so they can vote on a site location for SHS.

2) Dr. Greer had discussions regarding the high school project and a potential partnership with the Sharon Community Television staff and Board Members.

### **Board of Selectmen Meeting**

**October 16, 2018 - 7:00 PM - Sharon Community Center**

1) Vote to authorize SSBC Chairman Gordon Gladstone as designee to sign the Local Actions and Approval Certification Letter for the High School Feasibility Study Project.

**November 2018**

The presentation materials for each meeting, meeting minutes, and summary materials related to the Project are available locally for public review at:

<https://www.townofsharon.net/node/2044/minutes/2018>

To the best of my knowledge and belief, each of the meetings listed above complied with the requirements of the Open Meeting Law, M.G.L. c. 30A, §§ 18-25 and 940 CMR 29 *et seq.*

If you have any questions or require any additional information, please contact Matthew Gulino, PMA Consultants. Phone: 781-794-1404 , email: [mgulino@pmaconsultants.com](mailto:mgulino@pmaconsultants.com)

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

  
By:

**Title: Gordon Gladstone,  
School Building  
Committee Chairman,  
Chief Executive Officer  
Designee**

**Date:** 11/20/18

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

  
By:

**Title: Dr. Victoria Greer,  
Superintendent of  
Schools**

**Date:** 11/20/18

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

  
By:

**Title: Jonathan Hitter,  
Chair of the School  
Committee**

**Date:** 11/20/18

# 7.2

## MEETINGS, AGENDAS, MINUTES & ATTENDEES

# Sharon Standing Building Committee Meeting Minutes 2/20/18

## **SSBC Members**

Gordon Gladstone, Chair	Robert Atwood <b>absent</b>	Richard Slater
Colleen Tuck	open	Steve Smith <b>absent</b>
Deb Benjamin	Rick Rice	Roger Thibault
Sara Winthrop		

## **Special Members**

Tilden Kaufman, Police Chief absent	Matthew Baldassari	Jim Wright, Fire Chief
Ken Wertz		

## **Additional Attendees**

Joe Sullivan DPI absent	Chandler Rudert Consigli
Kevin Paton BKA Architects	Todd Costa KBA absent
Pete Gaudreau KBA	Mary Bulso DPI

## **Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Future scheduled meetings: 3/6, 3/13, 3/20 (HS Short list), 3/27 (interviews), 4/3, 4/10, 4/17, 5/1
- The Consigli requisition # 28 was approved unanimously by the committee but at a reduced amount of \$175,000. Ms. Benjamin moved to approve and Ms. Winthrop seconded the motion. All voted in favor of approval.

## **Town Hall Renovation Project**

- Ms. Bulso requested that the Committee authorize Daedalus to engage Andrew T. Johnson to do printing of drawings and bid documents at Town Hall at a price of \$4,920.00. Ms. Benjamin moved and Ms. Winthrop seconded the motion to authorize. All voted in favor of approval.
- DPI worked with Mr. Gladstone to finalize the RFQ and score sheets for CM@R at TH. Qualifications are due 2/28/18.
- Ms. Bulso stated that Daedalus is working with BKA to create a bid package for hazardous material abatement and demolition of the existing station. This is contractually independent of the CM. The Committee agreed the process should move ahead. Chief Wright said that the civil defensive equipment that is in the station needs to be moved. Mr. Paton suggested 7/5/18 as a target date for removal.
- Mr. Paton said that Mr. Turkington liked the idea of the electronic message board and said his department will manage it.
- Mr. Paton said that regarding the security system the new Town Hall should be adapted to the Public Safety Building system which can be expanded to other buildings in the future for card readers and security systems. He suggested the security cameras on the outside could be the same as that of



the Public Safety building but a different camera on the inside would be needed.

- Mr. Paton said that after discussion with the DPW they determined that storm water in a catch basin system was a more user friendly methodology. The proposed design reduces impervious properties by 20% and will be a big help to storm water management. This is a less expensive method. They will forgo the roof run off systems to irrigate landscaping which was a maintenance concern expressed by the DPE. Plantings will be drought tolerant.
- Mr. Paton said he wants to meet with the Planning Board to review the signage package.
- Mr. Paton said that two test pit locations have been identified to be tested at on 3/2.

### **Public Safety Building**

- Mr. Rudert provided the change order# 21 for \$32,256.00 to credit back excess budget for the Consigli payment and performance bond for the Sharon Public Safety Project. Ms. Benjamin moved and Ms. Tuck seconded the motion to accept change order #21.
- Mr. Rudert discussed the ongoing heating issues in the dormitory and apparatus bay of the fire station resolution. He stated that the insulation deficiencies have been sealed. They opened up the dry wall at the apparatus bay and resealed flutes and then drywall. He stated that the warranty kicked off at the end of August at substantial completion. He said you need to wait for colder weather to ensure fixes are sufficient.
- Commissioning agent agrees that equipment is installed as specified
- ACTION to be taken is for Mr. Rudert, since Mr. Costa and Sullivan are not here, will reach out to BER and keep the others informed as to the estimated cost to install the supplemental heating that they have proposed. Ms. Benjamin asked for pricing to correct the heating situation in its entirety in order to gather the order of magnitude.
- Chair Gladstone referenced an email from Mr. Costa which contained the summary of the heating issues. It stated that KBA and BER would suggest the reason for the heating issues at the fire station is because of open apparatus doors. Mr. Gladstone stated he wants more discussion and wants Joe Sullivan to be present so that design issues can be discussed. Chief Wright said that there have been small changes in the heat and it is functioning well in current weather conditions. The Adtech proposal for microphone installation in the amount of \$9,935.68 was discussed and voted upon. Ms. Benjamin moved and Ms. Winthrop seconded the motion to approve this project. All voted in favor of approval.
- Ms. Benjamin moved and Mr. Rice seconded a motion for \$2,361 for Araujo Bros. This is the price that Mr. Baldassari received to extend concentric vents on the police and fire side from the back of the mechanical room due to snow drifts. All voted in favor of approval.
- 

### **Sharon High School RFS**

- The RFS was issued.

- Chair Gladstone discussed the HS OPM Short list and asked that a series of uniform questions be compiled. All will work on the template. 3/20 shortlist, 3/27 interviews.

### **Minutes**

Ms. Benjamin moved to approve the minutes of 12/20/17 as amended and Ms. Winthrop seconded the motion. The Committee voted unanimously in favor of approval.

Ms. Benjamin moved to approve the minutes of 1/23/18 Mr. Slater seconded the motion. The Committee voted unanimously in favor of approval.

Ms. Benjamin moved to approve the minutes of 2/6/18 and Mr. Rice seconded the motion. The Committee voted unanimously in favor of approval

### **Invoices**

Ms. Benjamin moved and Ms. Winthrop seconded the motion to approve all invoices. The Committee voted unanimously in favor of approval.

Anderson \$2910.00 - PS  
Dorchester Awning - \$10,218.00 - PS  
Gelerman - \$1579 - HS Feasibility  
Gelerman - \$214.50 TH

TR \$2,977  
Daedalus \$8,000

### **Adjournment**

Through unanimous consent, the meeting adjourned at 8:15 PM.

### **Attachments**

Consigli Report  
Daedalus progress Report  
Questions for OPM HS short list  
Fire station Demolition Schedule  
Samiotes storm water management memorandum  
Daedalus Printing quotes

Submitted:  
Rachelle Levitts  
Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone) Signature of Chair

\_\_\_\_\_  
Date of Acceptance

NOTE: All Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

# Sharon Standing Building Committee Meeting Minutes 3/6/18

## **SSBC Members**

Gordon Gladstone, Chair	Robert Atwood	Richard Slater
Colleen Tuck	open	Steve Smith
Deb Benjamin	Rick Rice	Roger Thibault absent
Sara Winthrop		

## **Special Members**

Tilden Kaufman, Police Chief	Matthew Baldassari	Jim Wright, Fire Chief
Ken Wertz		

## **Additional Attendees**

Joe Sullivan DPI	Chandler Rudert Consigli
Kevin Paton BKA Architects	Todd Costa KBA
Pete Gaudreau KBA	Mary Bulso DPI absent

## **Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Future scheduled meetings:, 3/13, 3/20 (HS Short list), 3/27 (interviews), 4/3, 4/10, 4/17, 5/1

## **Town Hall Renovation Project**

- There are three qualified CM candidates to provide proposals for the Town Hall Renovation Project. Chair Gladstone stated that when we do interviews we will have stock questions. Some will go out with the RFP. Mr. Rice volunteered to help develop questions we want to issue with the RFP and those to hold for the meeting.
- A brief conversation ensued regarding the underground raceway placement of pipes for the irrigation system. Additionally the color plan provided for the lawn areas was reviewed. Chair Gladstone will reach out to JJ McGrath regarding the memorial trees.
- The project is at 50% design development.
- 3 test pits were done. They are doing redesign/shift of the septic system based on test pits which suggest that the landscaping and septic locations should be reconsidered. Ground water was not an issue but soil density is..
- All 3 CM responses were prequalified. Daedalus will complete the RFP.
- The 3/13 meeting will be a discussion of the questions. The RFP will be sent out on 3/14. Responses are due back on 3/29.
- It was asked if we can go back out to ask for Design Bid Build. The response was no as the minimum requirement is 2 so, we will move ahead with the process. Per DPI we have the ability to not select any of these bidders.
- Preconstruction meetings should start as soon as the CM is onboard.
- The design in the infrastructure is to have a sprinkler system, if decided to add later, a fully functioning system costs \$40K-50K.

## **Public Safety Building**

- Mr. Costa discussed the KBA heating memo and Chief Wright's response to their findings. The crux of the issue is that they need to look at an alternative to add heat. They are in the process of obtaining a cost for a radiant heat unit to heat the air space. This process would tap into the boiler and the Chief is concerned how the boilers will be affected. Can the existing boilers support the new heaters too? Or tap into the existing heating lines? The initial price from Consigli is \$75,000.
- Chair Gladstone stated that we have a design deficiency and have paid the consultants' lots of money to preclude these design deficiencies. He stated he is outraged at this situation.
- Mr. Costa stated that part of the issue was a number of areas were not completed by design but have now been rectified. KBA is unable to explain why the system is not recovering. Other stations do not experience the same issues.
- Chair Gladstone said that in March you probably cannot replicate the situation. You cannot properly test and evaluate until November, December or January.
- Chief Wright was in agreement and stated that the issues are a combination of several factors.
- Mr. Sullivan stated the living space had envelope issues which are rectified. The apparatus bay had more issues. Deficiencies in the exterior envelope have been identified which can attribute to heat loss. The issue is when it's below certain temperatures how to accommodate the heating system and volume of radiant heat and the way it heats over a long period of time. Supplemental heat needs to be solicited. The point is why they didn't know the heat loss when doors are open in very cold weather.
- Ambulances require the temperature to be maintained at 65 degrees.
- The Chief said the building operates very well up to 15 or 20 degrees. In zero degree weather, the apparatus bay never reached over 55 degrees.
- Mr. Sullivan stated that his responsibility is to figure out why there is a deficiency and get the architects and engineers on board. It was not properly anticipated in the design calculation the number of times ambulances would be coming and going.
- Mr. Rice stated that we have a ballpark estimate for what a solution could be perceived based on a few parameters but do not know the ramifications. The ballpark calculation is 75K. The fix needs to be engineered thoroughly when its zero degrees and the ambulance leaves the apparatus bay is not at the intended temperature. A solution needs to be identified and why it's necessary.
- Mr. Costa said that BER is to provide drawings of the solution. KBA to forward the engineering calculations and user needs for the heat requirements and eventual load on the FD building to DPI.
- Mr. Sullivan said a solution needs to be reached which mitigates and resolves the situation for the town. If there is added scope of work there's a cost. There is also held responsibility as to why it was not included by the designer.
- Mr. Rice said who are the players responsible for preconstruction? It's important to understand how it was calculated and why it's not working. He would like a peer review performed of the original design.
- Mr. Sullivan will come to next meeting with names of peer reviewers to see if design meets the needs of the space.

- Mr. Baldassari suggested the need to have a formal understanding regarding conditions in the next winter.

### **Sharon High School RFS**

- 9 responses to the HS OPM were received. Mr. Gladstone created a rubric that he will share with the committee.
- Some firms have presented financials in confidence to Mr. Gladstone. He will create a spreadsheet to share during executive session.
- Ms. Tuck will work on preparing the questions for the OPM position.

### **Minutes**

Mr. Slater moved to approve the minutes of 2/20/18 and Ms. Tuck seconded the motion. The Committee voted unanimously in favor of approval.

### **Invoices**

Ms. Benjamin moved and Mr. Smith seconded the motion to approve all invoices. The Committee voted unanimously in favor of approval.

Gilmore - \$1150.80- PS

### **Adjournment**

Through unanimous consent, the meeting adjourned at 8:30 PM.

### **Attachments**

Existing Tree Diagram

BKA Architects New Town Hall request for qualifications and CM@Risk comparison sheet

CM at Risk Interviews Sample Questions

Submitted:

Rachelle Levitts

Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone) Signature of Chair

\_\_\_\_\_  
Date of Acceptance

NOTE: All Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

Will the newly announced “tariffs” affect the bidding on the Town Hall? DPI- no!

ACTION-

. Coming up in April is a page by page with the CM to go over the design.

We are collecting questions for review and selection on 3/13. (Rick Rice to consolidate questions)

HS

# Sharon Standing Building Committee Meeting Minutes 3/14/18

## **SSBC Members**

Gordon Gladstone, Chair	Robert Atwood	Richard Slater
Colleen Tuck absent	open	Steve Smith
Deb Benjamin	Rick Rice	Roger Thibault
Sara Winthrop		

## **Special Members**

Tilden Kaufman, Police Chief Absent	Matthew Baldassari	Jim Wright, Fire Chief
Ken Wertz Absent		

## **Additional Attendees**

Joe Sullivan DPI Absent	Chandler Rudert Consigli Absent
Kevin Paton BKA Architects Absent	Todd Costa KBA Absent
Pete Gaudreau KBA Absent	Mary Bulso DPI

## **Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Future scheduled meetings:, 3/20 (HS Short list), 3/27 (interviews), 4/3, 4/10, 4/17, 5/1
- The SSBC voted unanimously to enter into Executive Session to discuss the heating issues on the PSB. The SSBC left Executive Session via unanimous vote.

## **Town Hall Renovation Project**

- Reviewed questions for Town Hall.
- 4-6 questions will be asked during interviews, all others will be given to the respondents in advance.
- ACTION- Steve Smith to send edited questions to Chair Gladstone.
- ACTION- DPI to add details to the RFP to include % involvement, time with firm, and previous project involvement for proposed staffing.
- Continued ACTION - Gordon to reach out to JJ McGrath regarding the memorial trees.
- RFP going out to 3 respondents today. Questions will be sent out as an addendum in order for respondents to be prepared for the interviews.

## **Public Safety Building**

- Proposals for peer review (GGD G & B) - the scope includes what we need to review for the HVAC documents and conditions to resolve the heating issues for the fire station side of the PSB.
- ACTION- DPI to request written proposals with details from both Engineering firms.



**Sharon High School RFS**

- Rubric to review and score the OPMs for the High School.
- RFS states 1-5 as grade points. 0 will not be considered.

**Minutes**

Ms. Benjamin moved to approve the minutes of 3/6/18 Mr. Smith seconded the motion. The Committee voted unanimously in favor of approval.

**Invoices**

None

**Adjournment**

Through unanimous consent, the meeting adjourned at 8:30 PM.

**Attachments**

None

Submitted:  
Rachelle Levitts  
Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone)    Signature of Chair

\_\_\_\_\_  
Date of Acceptance

NOTE: All Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

# Sharon Standing Building Committee

## Meeting Minutes

### 3/20/18

#### **SSBC Members**

Gordon Gladstone, Chair	Robert Atwood	Richard Slater
Colleen Tuck	open	Steve Smith
Deb Benjamin	Rick Rice	Roger Thibault
Sara Winthrop		

#### **Special Members**

Tilden Kaufman, Police Chief Absent	Matthew Baldassari	Jim Wright, Fire Chief
Ken Wertz		

#### **Additional Attendees**

Joe Sullivan DPI	Chandler Rudert Consigli Absent
Kevin Paton BKA Architects	Todd Costa KBA Absent
Pete Gaudreau KBA Absent	Mary Bulso DPI

#### **Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Future scheduled meetings: 3/27(interviews), 4/3, 4/10, 4/17, 5/1

#### **Public Safety Building**

- Detailed proposals for peer review of the HVAC were received. DPI reports that the proposals are identical in scope and that either will confirm/deny that the systems were designed appropriately for the FD use and size. Ms. Benjamin moved and Mr. Smith seconded the motion to award the contract to GGD for \$2,500.00 to perform the peer review and for Chair Gladstone to sign the contract. All voted unanimously in favor of approval.
- The SSBC requests that the third party also be available to come to present their findings. The written report will include a summary as well as recommendations.

#### **Town Hall Project**

- Revised estimates include features that were not included in the original budget. New estimates are still coming in within or below the original budget. Mr. Paton stated they are at 50% design development budget and reconciliation at 9.75 million dollars. This includes 50K for the copula, \$50K for the media budget and a covered entry and walkway at the rear door. These items were not in the original budget.
- The architect will meet with the Planning Board on April 12<sup>th</sup> for a site plan review to include the electronic sign. DPI will take responsibility to monitor the integration of TH that fits into existing systems.
- DPI to make sure that the energy management system is integrated with other buildings and to work with DPW.

- Early package to demo the old FD is being sent out for low bid. Mr. Sullivan will put together a revised budget.
- The energy commission check report stated the envelope performed 23.2% more than expected.
- Mr. Smith asked if we can report efforts towards LEED and Mr. Paton said yes we could.
- ACTION- confirm the demo date with Chief and Civil Defense.
- Continued-ACTION- Gordon to reach out to JJ McGrath regarding the memorial trees.

### **Sharon High School RFS**

- Scoring of respondents by committee members was totaled and averaged. The top 4 firms to be interviewed are Daedalus, Colliers, NV5 and PMA. A discussion ensued.
- 4 SSBC members to call 3 references for the selected firms. Mr. Rice will provide questions for references.
- Questions to ask the references included :
  - If you did not have to abide by statutory and regulatory process and could just choose an OPM, would you hire this firm? If, yes or no, please state the primary two or three reasons for your response. Are you basing your response on the team with whom you worked or the firm?
  - Did you have a satisfactory relationship?
  - Were you happy with the Key personnel?
  - How was the Management approach?
- Gordon is calling references for NV5
- Rick is calling references for DPI
- Ken is calling references for Colliers
- Sara is calling references for PMA
- ACTION- Interview Rubric- Roger to edit and send along to Deb to clean and send to Gordon to distribute
- Questions- OPM sends to respondents immediately. Keep the second set for the time of the interview.
- NOTE – the MSBA will be at the table to select the architect – there will be three members of the Town at the selection process
- Questions to be shared with firms in advance of the interview. Please incorporate the question into the presentation or discussion. Please point out to the committee when a question is being addressed.
  - 1. This project involves the ultimate selection of an option from several significantly different capital project approaches: renovations only, renovations and additions, and full new construction. What skills, methodologies and experience does your firm bring to assist with this decision? Please describe your specific approach to developing and communicating to the School Committee and SSBC the 3 different schemes/levels of re-development to support the town's decision-making process.
  - a. School Committee and the SSBC will be looking to the team for a recommendation from the alternatives. Please list the three most significant criteria which will guide your decision.
  - 2. Please describe your specific approach to communicating to the stakeholders, the abutters, and the town at large the design schemes and supporting information.

- 3. Explain your process and success for getting projects approved by the school stakeholders and town residents, and funded by Town Meeting & ballots?
- 4. Who are the key personnel and what is the expected time commitment for each on this project during each phase?
- 5. Based on this team, what % of jobs in the past 5 years have been CM@R and what is number of projects and their \$ value?
- Questions to be asked AT the interview
  - 6. Provide an example of a project where they encountered a serious problem. Describe the problem and how it was resolved.
  - 7. If hired, one of your first tasks will be to assist us in hiring a designer and their team. Explain your process in identifying the school district's and town's needs so the issues pertinent to the designer selection can be properly included in the RFS for the work?
  - 8. Explain how you help settle differences between the designer and contractors. How do you make recommendations to the SBC on how to resolve them? What is your overall philosophy/approach to resolving conflicts or anticipated disputes (whether between Owner and CM, Owner and Architect, etc.)?
  - 9. Please describe a plan that you have successfully implemented and can manage for workers on or near school grounds.
  - 10. What do you consider the three most important contributions your firm makes to a successful project.

### **Minutes**

Ms. Benjamin moved to approve the minutes of 3/14/18 Mr. Smith seconded the motion. The Committee voted unanimously in favor of approval.

### **Invoices**

Mr. Rice moved and Mr. Smith seconded approval for all invoices. The Committee voted unanimously in favor of approval.

Daedalus \$14,000  
 Clean Cut Solutions \$629.23  
 Andrew T. Johnson \$52.70

### **Adjournment**

Through unanimous consent, the meeting adjourned at 9:30 PM.

### **Attachments**

None

Submitted:  
 Rachelle Levitts  
 Sharon Standing Building Committee

\_\_\_\_\_  
 (Gordon Gladstone) Signature of Chair

\_\_\_\_\_  
 Date of Acceptance

NOTE: All Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

# Sharon Standing Building Committee Meeting Minutes 3/27/18

## **SSBC Members**

Gordon Gladstone, Chair	Robert Atwood	Richard Slater
Colleen Tuck absent	open	Steve Smith
Deb Benjamin	Rick Rice	Roger Thibault
Sara Winthrop		

## **Special Members**

Tilden Kaufman, Police Chief absent	Matthew Baldassari absent	Jim Wright, Fire Chief absent
Ken Wertz		

## **Additional Attendees**

PMA	Colliers
DPI	NV5

### **Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:00 PM at the Public Safety Building.
- Future scheduled meetings: 4/3, 4/10, 4/17, 5/1

### **Sharon High School OPM Interviews**

- This evening's meetings purpose was to interview the 4 shortlisted candidates for the Owner's Project Management Services (OPM) position for the Sharon High School Project.
- Colliers, Daedalus, NV5 and PMA presented to the Committee. Each addressed the questions provided by the SSBC in advance as well as questions at the meeting. Each team presented their staffing model for the project as well as sample approaches to take, reporting of data, their experience working with MSBA and an overview of projects completed that may be similar in nature. They also discussed their communicating options for the community and proponent.
- Each SSBC member scored the candidates and the Sharon Standing Building Committee - OPM Scoping Totals for the Selection Committee Short List of OPM Scoring Summary is summarized as follows:  
Colliers - 18.55, Daedalus -19.55, NV5 -15.77 and PMA - 12.77.
- PMA was selected by the SSBC as the OPM candidate. Chair Gladstone will email PMA to advise and begin contract negotiations.

### **Adjournment**

Through unanimous consent, the meeting adjourned at 11:30 PM.

### **Attachments**

Packets from each of the four OPM candidates

Submitted:  
Rachelle Levitts



Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone)      Signature of Chair

\_\_\_\_\_  
Date of Acceptance

NOTE: All Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

# Sharon Standing Building Committee Meeting Minutes 4/3/18

## **SSBC Members**

Gordon Gladstone, Chair	Robert Atwood	Richard Slater absent
Colleen Tuck	open	Steve Smith
Deb Benjamin absent	Rick Rice	Roger Thibault
Sara Winthrop		

## **Special Members**

Matthew Baldassari, DPW	Tilden Kaufman, Police Chief absent	Jim Wright, Fire Chief
Ken Wertz, Sharon Public Schools		

## **Additional Attendees**

PMA Chris Carroll	DPI Joe Sullivan

## **Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Future scheduled meetings: 4/17, 5/1

## **Sharon High School OPM Interviews**

- PMA was selected by the SSBC as the OPM candidate at the last meeting. The Committee reviewed the contract presented by PMA. Chair Gladstone commented that through telephone negotiations, the contract was reduced from \$457,000 to \$414,000 rounded to a not to exceed \$410,000. A discussion ensued between the Committee and PMA to review the proposed contract fee further. Based on a November Town Meeting date to support the project, the process could be shortened but this cannot be confirmed until an architect is selected. The Committee needs to target attending an October 2019 meeting of MSBA.
- The building will be a five year process once the project gets rolling. They project a September 2023 opening.
- Mr. Carroll stated that he provided a fee reflective of the level of effort proposed. It is for 19 months, at a cost not to exceed \$410,000. If we can get an architect on board with an aggressive schedule he said he will come back to the Committee with a credit memo for one month or two months of difference. A one month reduction would bring the fees to \$391,380 and a two month reduction would bring it to \$373,300.
- Mr. Rice moved to accept the fee proposal for PMA as described. Mr. Smith seconded the motion and the Committee voted unanimously in favor of approval. New documents will be prepared.

### **Town Hall Project**

- On 4/17 the Committee will interview the short list of perspective CM's for Town Hall.
- Chief Wright had several comments regarding the old fire station demolition.
  - The demo project was put out requiring a general contractor with DCAM certification. This is therefore the same costs the CM for the project would receive no savings.
  - The demo project requires installing a fence around the building during the demo process. This will now be paying for the fence install and removal twice. It would only have to be done once if it was under the CM as they would demo the building and move into the new building process.
  - The demo project will require excavating the old station footprint and filling it back in to make it safe. The CM will then have to excavate it a second time to prep the site for the new building footprint. Having the CM do it also allows them to see the below grade soil conditions so they can better prepare for the new building.
- Mr. Sullivan commented that taking the building down makes it easier for the CM. It is better to determine what is on the site now as part of the early package he stated. It also saves costs for markup. For the CM, it is good to have a clean flat site.
- The real issue with respect to the demo was determined to be timing. The start date was pushed out to mid-May – early June. Chief Wright was happy with this change.

### **Public Safety Building**

- Mr. Sullivan stated that he anticipates having the peer review of the heat loss in the fire station in about a week.
- Mr. Sullivan said that KBA is doing an infrared review of the walls to determine potential inconsistencies.

### **Meeting Minutes**

Mr. Rice moved and Ms. Tuck seconded the motion to approve the minutes of 3/20/17. The Committee voted unanimously in favor of approval.

Ms. Winthrop moved and Mr. Smith seconded the motion to approve the minutes of 3/27/17. The Committee voted unanimously in favor of approval.

### **Invoices**

Dorchester Awning - \$11,690

### **Adjournment**

Through unanimous consent, the meeting adjourned at 9:55 PM.

### **Attachments**

Contract for Project Management Services.

Submitted:

Rachelle Levitts  
Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone)      Signature of Chair

\_\_\_\_\_  
Date of Acceptance

NOTE: All Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

**Sharon Standing Building Committee  
Sharon Town Hall  
90 South Main Street  
Sharon, Massachusetts 02067**

**SSBC Meeting Minutes  
5/15/18**

**SSBC Members**

Gordon Gladstone, Chair	Robert Atwood	Richard Slater absent
Colleen Tuck	open	Steve Smith
Deb Benjamin	Rick Rice absent	Roger Thibault absent
Sara Winthrop		

**Special Members**

Ken Wertz	Matthew Baldassari	Jim Wright, Fire Chief

**Additional Attendees**

Joe Sullivan	Paul Queeney PMA
Kevin Paton	Chris Powers Colantonio
Mary Bulso absent	Nick Bean Colantonio
George Willwerth Colantonio	Bob Zalatan Colantonio

**Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:40 PM at the Public Safety Building.
- Future scheduled meetings: 5/29, 6/12, 6/26, 7/10, 7/24, 8/7, 8/21
- The SSBC voted unanimously to authorize the Chair to sign the contract for project management services with PMA for the High School not to exceed \$410,000.
- The SSBC voted unanimously to authorize the Chair to sign the contract for Vinagro for demolition services of the old fire station.
- The SSBC voted unanimously to award the Commissioning proposal for hazardous materials abatement monitoring and air sampling to Fitzmeyer and Tocci in an amount not to exceed \$44,200 as per the recommendation of Daedalus.

**Public Safety Building**

- With reference to the heating issue, recommendations were received from Garcia, Galuska and Desousa regarding the dormitory and apparatus bay heating issues. An extended warranty is needed from BKA, as architects for the project as the time is not adequate to evaluate the deficiencies of the dormitory heat given the warmer weather. Mr. Sullivan will get all parties to review the GGD report and get a solution in writing for a path to a clear solution. They suggested slight changes in the uses and recommend the

building envelope be inspected. If we wait for the next season, will we be covered under warranty? KBA and BER will request that they extend the warranty into the next season in writing.

- Apparatus Bay- GGD had a number of concerns- design docs vary from submittals, some components in radiant heating and pumps need to be changed, pumps are a low expense to be increased, manifold to monitor heat coming and going, piping size differs from submittal and pump size may need to be increased to accommodate the difference, retest and balance again. Need to define if we will still need the supplemental heat. Added costs- bigger pumps, mixing valves.

### **Sharon High School**

- Paul Queeney stated that PMA was approved by MSBA as the OPM for the High School.
- Mr. Queeney stated that he received comments back from MSBA for the solicitation of the architect. Revisions have to be accepted by 5/23 and the RFS will be advertised in the Central Register by 5/23/18.
- Mr. Queeney stated that a briefing session will be scheduled at the High School to allow interested design firms to visit the school. 6/13/18 is the deadline for submission of proposals.
- Chair Gladstone moved that the Committee authorize him to approve the changes that the MSBA wants to be made to the RFS. Ms. Benjamin seconded the motion and the Committee voted unanimously in favor of approval.
- Chair Gladstone commented that we are on track to get this done as quickly as possible.
- The ad will be placed in the Sharon Advocate and Patriot Ledger.

### **Town Hall**

- Mr. Paton provided a thorough review of the plans for Town Hall.
- Some of the interiors and exterior finishes were reviewed as well.
- There is a granite surface selected for the porch walk surface and it will also go wherever there is an exposed foundation. Need to determine what is the cost of this, broken down foundation and walk surface. There are only 3 materials on the exterior of the building, not including the roof and cupola. We talked about the cost for the various materials as well.
- One of the windows near the porch top will be operable. There is an option for the roof surface to hide the white surface from those that look out from the meeting room. Should the windows in the meeting room be that tall? Can the sill come up a bit... 8"? Mr. Paton will take review.
- There is a snow melt system on the roof deck to allow critical areas to drain to the roof drain.
- Dumpster- we do not need removable ballards. They can be permanent between the dumpster and the generator.
- Need to determine Town Medallion locations.
- As we reviewed the interior finishes generically a question arose regarding the cost of glass doors vs wood doors with glass inserts. Mr. Paton will review for costs.
- Need to determine if we need a display area for certificates and awards.
- Reviewed budget management log from Colantonio. They provided a schedule for potential changes to reduce the estimated 10million dollar cost.



Some items can be made as add alternates but, we would have to prioritize them and accept them in order. If we choose to accept #3 then we would have to accept #1 and #2. They stated the estimate is 10 million to build the building.

- Granite pavers vs concrete and how does that work for DPW and disabilities dept. Kevin Paton would like to see continuation of granite until project pricing is tighter. In the meantime, will check for alternates. Granite cladding to cover foundation. Reduce quantity or eliminate= reduce.
- Discussed how to handle what we value out of the budget. Can we break out some of the costs that were recently added (front porch, back roof overhang).
- Generator discussion regarding how to provide back up once the existing Town Hall generator is moved to the new Town Hall.
- The new budget number (without the add alternates) after value managing is within and acceptable range of the proposed budget and owner's contingency to continue to move forward and keep a close eye on the costs.
- Demolition vendor- Vinagro is the low bidder for the contract.
- Mr. Sullivan of DPI stated the HVAC design meets the previous discussions. DPI says that this system has worked well in the past. It is an efficient unit and the energy use is exceptional. Zoning is critical. It should work exceptionally well in this use for this building. Colantonio agrees that it should work well. Let's make sure that the correct office occupants have the control over their respective spaces.

### **Minutes**

Ms. Winthrop moved to approve the minutes of 5/1/18. Ms. Tuck seconded the motion and the Committee voted unanimously in favor of approval.

### **Invoices**

Mr. Smith moved to approve all invoices and Ms. Winthrop seconded the motion. The Committee voted unanimously in favor of approval.

Gordon Gladstone \$8.25

WB Mason \$131.99

Gelerman \$273.00

### **Adjournment**

Through unanimous consent, the meeting adjourned at 9:45 PM.

### **Attachments**

PMA Designer RFS Timeline for High School

PMA Contract for Project Management Services

Daedalus Report Town Hall Hazardous materials Abatement Monitoring and Air Sampling

Daedalus progress summary

Architectural Engineers Inc. review of heating, ventilation and air conditioning narrative

BKA Proposed interior finishes package

BKA Design development drawings

Colantonio Budget management log

Colantonio design development estimate

Garcia, Galuska and Desousa apparatus bay and dormitory heating system review summary

Submitted:  
Rachelle Levitts  
Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone) Signature of Chair

\_\_\_\_\_  
Date of Acceptance

NOTE: Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

**Sharon Standing Building Committee  
Sharon Town Hall  
90 South Main Street  
Sharon, Massachusetts 02067**

**SSBC Meeting Minutes  
6/12/18**

**SSBC Members**

Gordon Gladstone, Chair	Robert Atwood	Richard Slater
Colleen Tuck	open	Steve Smith absent
Deb Benjamin	Rick Rice	Roger Thibault
Sara Winthrop		

**Special Members**

Ken Wertz	Matthew Baldassari	Jim Wright, Fire Chief absent

**Additional Attendees**

Chris Powers Colantonio	Victoria Greer
Kevin Paton	John Marcus
Mary Bulso	Emily Burke
Jose Libano	Amy Garcia
Judy Crosby	Ken Wertz
Kevin Nigro PMA	Matt Galerno PMA

**Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Future scheduled meetings: 6/26, 7/10, 7/24, 8/7, 8/21

**Public Safety Building**

- No discussion.

**Town Hall**

- Mr. Atwood commented on a hazmat issue at the old fire station, He stated that when the hazmat inspection was performed last year, caulking in the building was tested. There is an issue as there might be PCB's in the caulking used to make it more pliable. Screening samples are now being looked at. They do not want the soil contaminated with possible PCB's so the soil will be taken off site. Mr. Atwood states that digging and doing confirmation is logical given there is private property that abuts the area. He said they should dig out the property line, protect the soil and ship it off site. He said that LSP makes a recommendation and provides an opinion statement submitted to DEP when it is all done.
- Mr. Atwood suggests the action now is to authorize Lord and Associates to proceed to dig and then do confirmation afterwards. LSP provided a

proposal through UEC for PCB monitoring/removal for a budget of \$5,000. Ms. Benjamin moved and Ms. Tuck seconded the motion to authorize entering into contract with UEC for an estimated \$5,000 to deal with the PCB issues and additionally, retain the services of LSP to provide services regarding PCBs. All voted in favor of approval.

- Ms. Benjamin moved and Ms. Winthrop seconded the motion to authorize the Chair or Vice Chair to approve a change order up to \$10,000 for Vinagro. All voted in favor of approval.
- Chris Powers of Colantonio stated the early bid packages for site, concrete and steel will hit the street on 7/5.
- The Committee discussed the Town Hall budget and additional costs suggested after approval of the budget at Town Meeting. These included the cupola for \$50,000, \$15,000 for additional bathrooms and \$75,000 for a rear covered entry and porch. The budget is affecting the contingency so a discussion of these items ensued. We now have 60% CDs so all parties are reviewing and updating the budget figures. DPI will request the proposal be updated in the language and then they will move it ahead for approval under DPI. There are a large number of subcontractors requesting to be prequalified. That will start happening tomorrow at DPI.
- Ms. Bulso stated that Chair Gladstone needs to sign the Colantonio contract.
- DPI will handle the UEC contract for \$7,500.
- Mr. Paton will provide the furniture budget for next meeting.

### **Sharon High School**

- Chair Gladstone began the discussion by stating that the MSBA requires that Communities create an SBC - School Building Committee. MSBA dictates that the members will include: the superintendent, principal and school committee members. The responsibility falls to the SSBC so only the SSBC are voting members. The SBC are not voting members.
- Chair Gladstone also stated that the OPM, PMA Consultants help us go through the MSBA process to engage an architect. It is extremely important that non-voting members participate in the process of choosing an architect.
- Mr. Nigro of PMA stated that the MSBA Architect Selection Committee is unique. The MSBA Designer Selection Panel consists of 16 members; 13 standing members plus 3 from Sharon. The MSBA approves the RFS which was released to the architect community on 5/23/18. He said there was an answer period and the proposals are due tomorrow 6/13. 13 firms have requested the proposal. Once received PMA will prepare packets and drop them off to the Committee on 6/14. On 6/26 the proposals will be discussed and score sheets tabulated. On 7/10 there will be a meeting with the MSBA to rank and the top three choices who will be interviewed. There will be 3 representatives from Sharon in attendance at the meeting: Dr. Greer or her

designee; Amy Garcia and Bill Heitin or his designee. It is an open meeting for all to attend.

**Minutes**

Approval of 5/29/18 minutes deferred to next meeting.

**Invoices**

The Committee voted unanimously in favor of approval of all invoices.

Daedalus \$15,000

BKA \$105,133.20

**Adjournment**

Through unanimous consent, the meeting adjourned at 8:35 PM.

**Attachments**

PMA handout for review of designer selection process for Sharon High School  
Daedalus progress summary

Submitted:  
Rachelle Levitts  
Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone) Signature of Chair

\_\_\_\_\_  
Date of Acceptance

NOTE: Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

**Sharon Standing Building Committee  
Sharon Town Hall  
90 South Main Street  
Sharon, Massachusetts 02067**

**SSBC Meeting Minutes  
6/26/18**

**SSBC Members**

Gordon Gladstone, Chair	Robert Atwood absent	Richard Slater
Colleen Tuck absent	open	Steve Smith
Deb Benjamin	Rick Rice	Roger Thibault
Sara Winthrop absent		

**Special Members**

Ken Wertz absent	Matthew Baldassari	Jim Wright, Fire Chief

**Additional Attendees**

Chris Powers Colantonio	Victoria Greer
Kevin Paton	John Marcus
Mary Bulso	Emily Burke
Jose Libano	Joe Sexton
Judy Crosby	Paul Queeney PMA
Kevin Nigro PMA	Matt Galerno PMA

**Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Chair Gladstone noted that the SSBC has an opening and is looking for a member with construction experience. Interested parties should contact the BOS.
- Mr. Smith moved and Ms. Benjamin seconded a motion to have the Chair sign the Colantonio contract. All voted in favor of approval. Chair Gladstone commented that Town Counsel had reviewed the contract and fee structure and it is in accordance with the Town Meeting vote.
- Future scheduled meetings: 7/10, 7/24, 8/7, 8/21

**Public Safety Building**

- Chair Gladstone reported that the cost report for this project shows that the project is approximately 1.4 million dollars under budget.
- With respect to the heating problem Joe Sullivan via email stated that KBA has some information but is waiting for the final design from BER. This will be discussed at the next meeting.



### **Town Hall**

- Chair Gladstone reported that there is over a 1-million-dollar contingency within the current budget. The contingency is adequate for projected work for a “NEW” building.
- Ms. Bulso stated that the Colantonio contract needs to be signed this evening. She also commented that we have the 60% construction documents estimate 6/21/ reconciliation.
- With reference to the abatement, Ms. Bulso stated that the abatement is complete except for any possible surface items. 60 bulbs and batteries were located and must be disposed of properly. Vinagro is moving ahead on T&M with a \$10K NTE approval on the extra work. Vinagro has a time deadline to do the work and is on schedule to complete by deadline.
- John Feely of Daedalus will be on site. Chief Wright requested that Daedalus inform the neighbors of what is going on at the site. Ms. Bulso said they are in process of getting the site characterizations of the soil. Vinagro will do the scraping.
- Chris Powers commented that the early site packages will be going out in July. Construction is to begin approximately August 29, 2018 with substantial completion by November 12, 2019. The July 5<sup>th</sup> early package will consist of concrete, steel, and abatement which is 25% of the contract.
- Mr. Paton commented that the next major task is the furniture. The next milestone is the 90% drawings on 7/25. He is also preparing the building permit application.

### **Sharon High School**

- Chair Gladstone stated that July 10<sup>th</sup> is the MSBA meeting to review all proposals. July 24<sup>th</sup> is the meeting with the respondents for interviews.
- The SSBC held a discussion and reviewed their scoring of each of the three candidates. The representatives of the schools scores were tallied and reviewed as well. A discussion ensued as to pros and cons for each candidate. The OPM stated its important to go to the SSBA meeting with one united Sharon voice.
- PMA stated they will list pros and cons about the three proposals and circulate a guide for talking points at the DSP meeting. They will suggest proposed questions to submit for the 7/24 interviews. PMA will prep the three town representatives: Dr. Greer, Amy Garcia or Judy Crosby and Gordon Gladstone.

### **Minutes**

Mr. Rice moved to approve the minutes of 5/29/18. Mr. Slater seconded the motion and the Committee voted unanimously in favor of approval.

Mr. Rice moved to approve the minutes of 6/12/18. Ms. Benjamin seconded the motion and the Committee voted unanimously in favor of approval.

**Invoices**

Ms. Benjamin moved and Mr. Smith seconded a motion to approve all invoices.  
The Committee voted unanimously in favor of approval of all invoices.

Colantonio - \$15,317 and \$15,317  
Gelerman - \$643.50 and \$136.50  
Adtech \$9,935.68  
PMA Consultants - \$20,263.00

**Adjournment**

Through unanimous consent, the meeting adjourned at 8:30 PM.

**Attachments**

Daedalus progress summary

Submitted:  
Rachelle Levitts  
Sharon Standing Building Committee

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(Gordon Gladstone) Signature of Chair

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Date of Acceptance

NOTE: Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

**Sharon Standing Building Committee  
Sharon Town Hall  
90 South Main Street  
Sharon, Massachusetts 02067**

**SSBC Meeting Minutes  
7/10/18**

**SSBC Members**

Gordon Gladstone, Chair	Robert Atwood absent	Richard Slater
Colleen Tuck	open	Steve Smith
Deb Benjamin	Rick Rice absent	Roger Thibault absent
Sara Winthrop		

**Special Members**

Ken Wertz absent	Matthew Baldassari	Jim Wright, Fire Chief

**Additional Attendees**

Chris Powers Colantonio absent	Victoria Greer
Kevin Paton	John Marcus
Mary Bulso	Emily Burke absent
Jose Libano	Joe Sexton absent
Judy Crosby	Paul Queeney PMA absent
Kevin Nigro PMA	Matt Galerno PMA
Amy Garcia	Todd Costa
Joe Sullivan	Marty Richards

**Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Future scheduled meetings: 7/24, 8/7, 8/21

**Public Safety Building**

Heating issues were updated by Todd Costa and Joe Sullivan. Todd reviewed the past discussions and shared that the design engineer at BER has retired. BER is struggling to provide specifications for the supplemental heat system so, as a result we will move forward with completing the outstanding balancing reports and the few directed adjustments that require a proposal from Consigli. Increasing the heat output to 145 degrees was investigated and determined will not harm the flooring. We will not really know whether any of this will resolve the situation until the next cold season. The design is to 7 degrees. The supplemental heat is being designed so that the cost is ready and we are prepared in case it is needed. DPI is requesting pricing direct from known vendors for comparison prices against Consigli's proposal.

## **Town Hall**

- With reference to the Colantonio contract- one signature is required from the accountant to confirm the funds. Mary will check with Rachelle for the contract and take it to get is signed.
- The sub contract proposals are in and being reviewed for qualifications. Only a few were questionable. Those qualified will be notified to be able to bid as of the drawings on the 25th. Two subs were re-advertised due to low response.
- Discussions related to the soil removals and an email with details from Roger. The results will determine where the soil can be sent. The levels look to be low enough to go to landfill without added costs.
- Eversource letter- pricing their work ~\$2,700 cost to the Town. There will likely be more costs from Comcast and other wiring going/coming from the pole. Transformer location will be at South Main St. It must be serviceable and cannot be concealed. Sara suggested that there may be a decorative shrink wrap.
- Audio enhancements- Ken W made some suggestions related to what is already being used in the schools. The building structure may impact the audio enhancements. There are systems (FM Systems) that are being used that will work well as per the consultant. FM system is standalone and can be tied into the speakers. It is not tied into the building systems so troubleshooting will be easier. This will only be installed into the meeting room but can be extended to the lobby to listen in to the meeting audio.
- Chief- Generator transfer switch. Are we using both? Yes. Taking down the switches should be in the bid spec so that everyone is prepared for the changeover. The unit is heavy so, plan on specialty equip to remove it from the basement.

## **Sharon High School**

- MSBA meeting with the designer selection panel. We were well represented. Process- Two meetings for architects. 1) review proposals and short list to ~ 3. 2) two weeks later the short listed architects have 30 mins to present. Town of Millbury was first on the agenda today to have their architect presentations. We were able to observe the process. The three town representatives do not have the opportunity to discuss anything before the votes. A formal vote was taken immediately at the end of the presentations.
- Although there were three proposals we would not have to interview three. Voted 7 to 5 to interview all three. Therefore, the committee did not have to rank the three. There was discussion as to why any of them did not want to interview or rank all three.
- PMA met with the group on Friday 7/6. Drafted questions which have been passed around. Ask MSBA to send to firms prior to the interviews. During the meeting designer selection members heard that there are 8 criteria for Sharon and noted that only one of the firms addressed them specifically.

- Discussion regarding what should be in the content of the presentations. MSBA gave Kevin a few example questions. We revisited this to determine that we should try to incorporate these questions. 5 of the 6 of our questions can be found in the MSBA 6 bullets. #3 for Sharon and the last bullet for MSBA are very different. Firms will be given all questions in advance but there could be a few extra questions from the committee. There was discussion related to the question about square foot costs and how that relates to the reimbursement back to the Town and if this will make the list of final questions. It is suggested that we prioritize the questions to be able to meet the needs of Sharon. Overall we want to know- How is the architect going to help us to make the right decision for the Town to present back to the MSBA?
- How many times has MSBA not chosen a new school? PMA said that they have not been denied the preferred option for Town School projects. The Towns usually are approved for the type of building they want/need. Renovate or new or add/reno.
- Note\* we do not want to be on the cutting edge. Some technology is too complicated. Computers and computer run equipment is complicated. We have to expect that there will be challenges along the way and that systems will have issues. However, we do not need to be the first to deal and troubleshoot with the newest technology. Simple is ok too.
- Gordon- give us an example of a true innovation. This might be a good bull pen question.
- Plan to keep our questions in the order as listed. What about community involvement? Expect that this will be incorporated due to the discussions at the first meeting. Can incorporate it into question #1.
- Question about if any of the firms had been granted a project in the recent past. SMMA had been granted an elementary school last month.

### **Minutes**

Mr. Smith moved to approve the minutes of 6/26/18. Ms. Benjamin seconded the motion and the Committee voted unanimously in favor of approval.

### **Invoices**

None

### **Adjournment**

Through unanimous consent, the meeting adjourned at 8:10 PM.

### **Attachments**

Submitted:  
 Rachelle Levitts  
 Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone) Signature of Chair

\_\_\_\_\_  
Date of Acceptance

NOTE: Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

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**Sharon Standing Building Committee  
Sharon Town Hall  
90 South Main Street  
Sharon, Massachusetts 02067**

**SSBC Meeting Minutes  
7/24/18**

**SSBC Members**

Gordon Gladstone, Chair	Robert Atwood absent	Richard Slater absent
Colleen Tuck	open	Steve Smith absent
Deb Benjamin	Rick Rice	Roger Thibault
Sara Winthrop		

**Special Members**

Ken Wertz absent	Matthew Baldassari	Jim Wright, Fire Chief

**Additional Attendees**

Chris Powers Colantonio	Victoria Greer absent
Kevin Paton	John Marcus absent
Mary Bulso	Emily Burke absent
Jose Libano absent	Joe Sexton absent
Judy Crosby absent	Paul Queeney PMA
Kevin Nigro PMA absent	Matt Galerno PMA absent
Amy Garcia absent	Todd Costa
Joe Sullivan	Marty Richards

**Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Chair Gladstone commented that there will be a meeting of the Selection Committee to appoint/reappoint members to the SSBC on 7/25/18.
- Future scheduled meetings: 8/7, 8/21, 9/4

**Public Safety Building**

- Both Joe Sullivan and Todd Costa discussed the supplemental heating issue for the apparatus bay and living quarters at the new Public Safety Building.
- Mr. Sullivan said he put together a schedule after his conversation with Consigli regarding the needed work for the apparatus bay and living quarters. He is putting together a timeline for obtaining costs for the apparatus bay. He said Mr. Rudert is going to meet with Snowden, the vendor who installed the heat to work on the living quarters by September 1<sup>st</sup>. Mr. Sullivan is obtaining competitive pricing for supplemental heat. The new plan includes heat being diverted from the apron boiler system. The system will operate either apron or supplemental, not both. There was a

brief discussion of timing needed to recover the temperatures in the apparatus bay during the extreme winter low temperatures. The Commissioning Agent will come back as part of the contract.

- Chief Wright stated he likes this methodology that BER created. Will there be a warranty issue if a new vendor is brought in for the supplemental is a question that needs to be addressed.

### **Town Hall**

- Ms. Bulso said that the old fire station has been demolished. PCB's had been found in the soil during the demo of the station and now the soil under the excavation is being tested. We are waiting for the testing results.
- There have not been any complaints from neighbors or reported to the Town.
- Sub-qualifications are wrapping up.
- Mr. Paton said part of the storm water drains need to be kept to add an easy connection to use the existing pipe.
- Mr. Paton stated that we are hitting the 90% permit set. Colantonio can then get their permits.
- Mr. Paton said he is relooking at the glass above the transaction stations on the first floor for both the Town Clerk and Treasurer/Collector after several concerns for safety were expressed. The new open environment is a "change" from what currently exists so, the change may be driving the discussion. There are panic buttons designed at all of the lobbies for security. It was suggested that names be provided of other Town Halls so that the occupants can check their lobby areas or call to ask to discuss how their environment works.
- Mr. Powers said that they are going out to bid for site, demo and concrete, abatement and steel. They are gathering numbers for each and will report on this at the next meeting. 18 filed Sub Bids under the contractor are coming in... these include self performing bids from Colantonio. The original deadline was 7/20 but, they will still be coming and accepted. There will be bid review and leveling. The low bids will be selected and asked to refine their bids based on 90% drawings.
- Early GMP- partial release of early trade packages of work that will be required to meet the schedule between now and the GMP date of 10/2/18. Mobilization, rebar, steel, early site activities. The filed sub bid date falls between so, the exposure (affecting the final GMP) will be minimized.
- Early GMP- partial release of the overall value of the full contract. First amendment to the contract for early bid package and work to be done to keep the project on a somewhat tight schedule. The commitment will be to buy the shop drawings to hold the price. There is volatility in the sub markets so, this will hold the prices. There will be an out clause if the project does not

move forward. Chris Powers states that we have good subs and that the market should relax and that numbers will be good.

- Mr. Sullivan said a few of his projects bidding now are coming in over budget. Supplies and manpower. This is a concern so, this shop drawing with opt out is a good option to get to the budget and release the packages with a good comfort.
- Mr. Powers reviewed the schedule and Mr. Gladstone asked that Mr. Powers create a "short schedule" of important milestones.

### **Sharon High School**

- Chair Gladstone said that the second meeting with the MSBA regarding the designer selection panel was held. KBA and Tappe made a presentation. SSMA chose to withdraw due to other commitments. Tappe was chosen through unanimous decision to be the architect for the High School Project. It is now up to the OPM (PMA) to reach an agreement with Tappe regarding fees. Tappe will present to the SSBC at the next meeting.
- Paul Queeney from PMA stated it was a good day for the Town of Sharon. It is PMA's job now to negotiate Tappe's fees, support and review their proposals, help keep to the design schedule and keep the designer on track.

### **Minutes**

Mr. Rice moved to approve the minutes of 7/10/18. Ms. Benjamin seconded the motion and the Committee voted unanimously in favor of approval.

### **Invoices**

PV Roofing \$1,175.00 (PS)  
Araujo Brothers \$2,361.00 (PS)  
Gordon Gladstone \$17.61 (HS)  
Gelerman \$721.50 (HS)  
PMA Consultants \$20,263.00 (HS)  
Andrew T. Johnson \$439.45 (TH)  
Daedalus \$17,000.00 (TH)

### **Adjournment**

Through unanimous consent, the meeting adjourned at 8:00 PM.

### **Attachments**

Colantonio Schedule

Submitted:  
Rachelle Levitts  
Sharon Standing Building Committee

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(Gordon Gladstone) Signature of Chair

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Date of Acceptance

NOTE: Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

**Sharon Standing Building Committee  
Sharon Town Hall  
90 South Main Street  
Sharon, Massachusetts 02067**

**SSBC Meeting Minutes  
8/7/18**

**SSBC Members**

Gordon Gladstone, Chair	Robert Atwood absent	Richard Slater
Colleen Tuck	Marty Richards	Steve Smith absent
Deb Benjamin	Rick Rice absent	Roger Thibault absent
Sara Winthrop		

**Special Members**

Ken Wertz absent	Matthew Baldassari	Jim Wright, Fire Chief absent

**Additional Attendees**

Chris Powers Colantonio	Victoria Greer absent
Kevin Paton	John Marcus absent
Mary Bulso	Emily Burke absent
Jose Libano absent	Mike Gleason Sharon Advocate
Judy Crosby absent	Paul Queeney PMA
Kevin Nigro PMA absent	Matt Galerno PMA absent
Amy Garcia	Charlie Hay - Tappe
Joe Sullivan	Chris Blessen - Tappe
David Warne - Tappe	Frank Locker - Tappe
Heather Zelevinsky	

**Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Future scheduled meetings: 8/21, 9/4, 9/25, 10/9, 10/23

**Public Safety Building**

- Mr. Sullivan said he spoke with Chandler Rudert and Snowden will be providing a cost estimate to correct the living quarter heat issue to Mr. Rudert. Mr. Sullivan should receive this shortly. Work is to begin on 9/1. There will be no markup on the change order.
- Mr. Sullivan said he will receive pricing for supplemental heat in the apparatus bay after September 1<sup>st</sup> and decisions can be made at that point. They intend to use the rear apron boiler as a heat source for the supplemental heat. He assured all participants that they will be here for warranty through the winter.

- Mr. Sullivan stated he is researching the ability for cable TV to broadcast live from the Public Safety Building.

### **Town Hall**

- Ms. Bulso said that the last PCB testing was done and there are no results yet.
- Unit pricing is favorable.
- There was one abutter concern regarding trees that will be removed but, Mary Bulso will talk to them to show that they will be replaced. Also there is an area that has not been mowed or taken care of. Matt Baldassari will let the DPW know.
- Briggs proposal for testing will be brought to the next meeting at an amount not to exceed \$18,000.
- Elevator and resilient flooring RFQ's were re-advertised. Responses were received from 4 floor contractors and 2 elevator subs which are all qualified and acceptable. Prequalification did not eliminate any bidders.
- Mr. Paton discussed the transaction windows on the first floor. He visited multiple other town halls to see what they had installed. He is trying to address a level of daytime security and off hour security. He finds the preference is to treat all departments on the first floor the same. He showed a drawing of a combination of frosted glass panel to provide privacy and security while counting cash. He is working on a solution.
- Mr. Paton stated 90% sets are out. They are gearing up to review estimates and anticipate 100% sets on 8/23.
- Chris Powers said that 90% docs are in. They have gone out to bid on non-trade contracts. They are developing the non-trade contractors scope of work and the trade contractors scope of work. They are nearing the end of completing early trade bidding.
- Chris Powers provided the Committee with two options for early release packages. After much discussion the Committee chose by consensus to early release structural steel shops, rebar shops, mobilization and initial site items that will incur cost prior to final GMP. It also identifies costs incurred prior to filed sub bid results at which time GMP costs will be known.

### **Sharon High School**

- Tappe provided a walk-through of their presentation which had been provided to the MSBA previously. They reviewed such areas of Community engagement and educational planning. They want to create an environment of growth and help put together a vision. They plan for future flexibility and developments in education, programs, spaces and relationships. They want the school to be a kid magnet. Tappe reviewed their team members, experience, construction estimating, controlling costs, approach to security and future flexibility. They stated that security is first priority and embedded within the basis of design.



- Chris Blessen will be the face of Tappe. He said they must consider all alternatives for locating a new HS in the Town per MSBA guidelines.
- Tappe says that they will request meetings and PMA will organize them. Tappe and PMA need to work out a three-day visioning session with school administration. Frank Locker is the educational consultant.
- Paul Queeney stated he has reviewed Tappe's fees and feels they are competitive; in the lower range. He stated certain extra services are out of the base contract such as site survey, geotechnical, traffic, preliminary hazard material testing and reporting. The OPM and architect fees are well within the Town Meeting money that was appropriated for the study.
- Ms. Benjamin moved and Ms. Tuck seconded a motion to authorize the Chair to sign the contract with Tappe in the total of amount of \$1,229,940.00. All voted in favor of approval.

#### **Minutes**

Ms. Benjamin moved to approve the minutes of 7/24/18. Ms. Tuck seconded the motion and the Committee voted unanimously in favor of approval.

#### **Invoices**

Vinagro \$30,569.29 and \$33,272.94 (TH)

Daedalus \$15,000.00 (TH)

#### **Adjournment**

Through unanimous consent, the meeting adjourned at 8:55 PM.

#### **Attachments**

Colantonio Memorandum/Schedule

Daedalus status report

Tappe estimate of hours feasibility/schematic design

Submitted:

Rachelle Levitts

Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone) Signature of Chair

\_\_\_\_\_  
Date of Acceptance

NOTE: Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

**Sharon Standing Building Committee  
Sharon Town Hall  
90 South Main Street  
Sharon, Massachusetts 02067**

**SSBC Meeting Minutes  
8/21/18**

**SSBC Members**

Gordon Gladstone, Chair	Open	Richard Slater
Colleen Tuck	Marty Richards	Steve Smith absent
Deb Benjamin absent	Rick Rice	Roger Thibault
Sara Winthrop		

**Special Members**

Ken Wertz absent	Matthew Baldassari	Jim Wright, Fire Chief

**Additional Attendees**

Chris Powers Colantonio	Victoria Greer absent
Kevin Paton	John Marcus absent
Mary Bulso	Emily Burke absent
Jose Libano absent	Paul Queeney PMA
Judy Crosby absent	Heather Zelevinsky
Kevin Nigro PMA absent	
Amy Garcia absent	
Joe Sullivan absent	

**Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:40 PM at the Public Safety Building.
- Future scheduled meetings: 9/4, 9/25, 10/9, 10/23, 11/6, 11/20, 12/18

**Public Safety Building**

No discussion

**Town Hall**

- Chris Powers provided amendment #1 early bid package GMP to the committee. This includes early release of structural steel shop drawings, reinforcing steel shop drawings, mobilization and initial site work. This will reduce costs associated with general conditions and winter concrete work and allow for project completion in November, 2019 including all landscaping. The expenditure for this limited scope release will not exceed the previously estimated cost of \$180,500 without prior authorization from the SSBC.

- Slater/Tuck moved and seconded the motion to have the Chair sign the early release authorization in the amount of \$3,768,072 with a limit of expenditure of \$180,500 without approval of the committee so Colantonio can give the order to proceed. All voted in favor of approval.
- Proposed. Construction starts 9/4/18. A discussion ensued about moving certain allowances to holds. The estimate is \$9,944,028 for construction without the cupola and without cost for demolition of the old fire station.
- A determination needs to be made as where soils will be taken to. The debris pile at the site needs to be removed as well. The PCB testing came back below limit.
- File subcontractors will be in the Central Register for bidding tomorrow.
- Briggs contract needs signature. To be done at next meeting.
- Mr. Paton stated that the entire set of drawings will be posted by Thursday. 2 glazing design firms can accomplish the window design for the first floor transaction windows approved by Mr. Turkington so they are moving forward.
- Mr. Gladstone asked if granite floors are still being proposed for the lobby at a cost of \$60,000 and asked that a comparison be performed to determine cost for concrete instead.

### **Sharon High School**

- Mr. Queeney said three visioning sessions will be set with the architect and educational planners and school personnel. As we proceed updates to the committee will be received from the architect. The architect will schedule community forums. The architect is gathering existing plans for the building.
- Chair Gladstone asked Mr. Queeney to work out visiting schools designed by Tappe with Frank Lockers input. He wants to see the result of educational visioning sessions and how they get formulated into a building.
- Mr. Queeney said a kickoff meeting with MSBA is this Thursday.
- Mr. Queeney reviewed the supplemental narrative about hazmat and geotech/geo-environmental sub-consultants proposals from Tappe architects.
- Mr. Queeney said the MSBA mandates that the architect looks at renovation, addition/renovation, new building and no building options to exhibit due diligence. The architect needs to submit to MSBA to review the PDP submittal on 11/21.

### **Minutes**

Mr. Slater moved to approve the minutes of 8/7/18. Ms. Tuck seconded the motion and the Committee voted unanimously in favor of approval.

**Invoices**

An omnibus motion was made by Mr. Rice and seconded by Mr. Thibault  
Eversource - \$2,756 (TH)  
Universal Environmental - \$7,580 (TH)  
BKA Architects - \$98,479.20 and \$103,802.40 and \$737(TH)  
PMA Consultants \$20,263 (HS)  
Murphy Specialties \$7829 (PS)

**Adjournment**

Through unanimous consent, the meeting adjourned at 8:55 PM.

**Attachments**

Colantonio Amendment #1 Early Bid Package GMP  
Tappe HS supplemental narrative about hazmat and geotech/geo-environmental  
subconsultants proposals

Submitted:

Rachelle Levitts

Sharon Standing Building Committee

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(Gordon Gladstone) Signature of Chair

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Date of Acceptance

NOTE: Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

**Sharon Standing Building Committee  
Sharon Town Hall  
90 South Main Street  
Sharon, Massachusetts 02067**

**SSBC Meeting Minutes  
9/4/18**

**SSBC Members**

Gordon Gladstone, Chair	Open	Richard Slater absent
Colleen Tuck absent	Marty Richards	Steve Smith
Deb Benjamin	Rick Rice	Roger Thibault absent
Sara Winthrop		

**Special Members**

Ken Wertz	Matthew Baldassari	Jim Wright, Fire Chief absent

**Additional Attendees**

Chris Powers Colantonio absent	Victoria Greer absent
Kevin Paton	John Marcus absent
Mary Bulso	Emily Burke absent
Jose Libano absent	Paul Queeney PMA absent
Judy Crosby absent	Kim Joyce Colantonio
Kevin Nigro PMA absent	Matt Gulino PMA
Amy Garcia	
Joe Sullivan absent	

**Administration**

- The meeting of the Sharon Standing Building Committee was called to order by Chair Gladstone at 6:56 PM at the Public Safety Building at the conclusion of the SBC meeting.
- Future scheduled meetings: 9/25, 10/9, 10/23, 11/6, 11/20, 12/18

**Public Safety Building**

No discussion

**Town Hall**

- Chair Gladstone signed the Briggs contract.
- Ms. Bulso said that bids are due at 2 pm on September 12th for file sub trade bids.
- Abatement is complete. It needs to be determined where soils will be shipped to. Vinagro may hire a licensed hauler to take the soils to Alabama.

- Ms. Bulso stated DEP standards are being met and the site is secured.
- Kim Joyce of Colantonio stated that two-way signage will be installed at the site. The mailbox is being relocated. The CVS lot is being marked for TH use only. Ms. Bulso will discuss with CVS tomorrow. On Friday, the fence will be installed. Ms. Bulso will also notify the abutters.
- With reference to the armed services trees Mr. Paton said they are being handled. Mr. Turkington and Mr. McGrath are reaching out to particular residents regarding a particular tree.
- Town Hall is setting up a webcam of the site with a time lapse camera. Chair Gladstone said he will look into the issue of putting the webcam on the town website.
- Ms. Joyce will provide a weekly update to be put on the Towns website.
- Mr. Smith asked that milestones be added to the project update sheet.
- Ms. Joyce will issue instructions to all building committee members with instructions for Procore.
- Chair Gladstone asked Mr. Paton the cost for concrete versus granite flooring at the new Town Hall. Mr. Paton stated \$60,000.
- Mr. Paton said he would be meeting with Ms. Chused and an archiving company for evaluating the vault documents. He said they already worked on long term storage and it has been incorporated into the program.
- Mr. Paton said the FFE package for furniture is being put together to go out to bid and he said he feels it will be close to budget.
- Mr. Paton stated that IT/Don Hiligass said additional computer equipment is not needed.
- The majority of the current Town Hall furniture will not be used. A few pieces will be saved for the Historic Commission. It is up to Mr. Turkington to surplus the excess furniture.

### **Minutes**

Ms. Benjamin moved to approve the minutes of 8/21/18. Ms. Winthrop seconded the motion and the Committee voted unanimously in favor of approval.

### **Invoices**

No invoices

### **Adjournment**

Through unanimous consent, the meeting adjourned at 7:25 PM.



**Attachments**

Daedalus 9/4 progress summary

Colantonio Site Mobilization 9/5 – 9/12

Colantonio TH Phase 1 Enabling

Colantonio Phase 2 Town Hall and Septic System and traffic signage

Submitted:

Rachelle Levitts

Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone) Signature of Chair

\_\_\_\_\_  
Date of Acceptance

NOTE: Standing Building Committee minutes and attachments will be available for the public to read at the Standing Building Committee office located at the Community Center upon request.

## **Open Forum**

**Sharon Public Schools  
School Committee Meeting  
Wednesday, October 10, 2018  
Sharon Middle School  
75 Mountain Street  
Sharon, MA 02067**

**Present:** Jon Hitter, Amy Garcia, Judy Crosby, and Heather Zelevinsky

**Absent:** Katie Curral-Dykeman, Marcy Kaplan, Mena Mesiha, and Elizabeth Murphy

**Also Present:** Dr. Victoria Greer, John Marcus, Melissa Bryant, Ken Wertz, Christopher Blessen, Lead Architect with Tappe Architects, Paul Queeney with PMA Consultants, Chris Carrol with PMA Consultants and members of the community

### **PUBLIC FEEDBACK**

#### **Correspondence**

The following correspondence were received:

1. An email from Faize Khan, junior at the Sharon High School, requesting that the Eid-Islamic Holiday be granted as one of the holidays for school closure in the FY19/20 School Calendar year. Dr. Greer will set up a meeting to discuss this with Faize Khan and Amy Garcia will follow up with an email.
2. Email from a parent concerned about the lunch time and lack of recess and movement time for the elementary students. Dr. Greer mentioned that this is an ongoing discussion at the schools and administration is looking at the school's schedule. At this time the teachers at the elementary levels are incorporating movement breaks in their instruction.
3. Email from Zachary Snow asking to be invited to a future school committee policy subcommittee meeting to discuss proposal of Less Testing. Judy Crosby will invite Zachary Snow to the next meeting of the policy subcommittee meeting.

### **SHS STUDENT REPRESENTATIVE**

None

### **DESCISION ITEMS**

#### **Consent Agenda**

1. Approve of School Committee Minutes for 9.26.18
2. Approve of Community Education Homeschool Enrollments
3. Approval of Out of State Field Trip – Sharon High School –Brown University, Providence, RI

J. Hitter asked for a motion to approve the consent agenda items as presented. **MOTION:** (Garcia/Crosby) moved to approve consent agenda items as presented. Yes vote: Hitter, Crosby, Garcia, Zelevinsky

## **SUPERINTENDENT ITEMS**

None

## **DISCUSSION ITEMS**

### **PMA Consultants (Owner Project Managers)/Tappe Architect Update**

Dr. Greer gave a background on the Sharon High School project and discussed the visioning sessions that were held over the past couple of weeks. These visioning meetings were with the community, parents/families, educators and students.

Ms. Garcia is the liaison to the Sharon Standing Building Committee (SSBC). Ms. Garcia discussed the visioning process and attended some meetings and shared that it was good start to the educational programming.

Mr. Blessen from Tappe Architects presented the status of the high school project and the process of the three phases that the Massachusetts School Building Authority (MSBA) requires.

1. Preliminary design program (PDP) is the first phase and we are scheduled to submit the education program to the MSBA on November 21, 2018
2. Second Phase is Preferred Schematic Report (PSR)
3. Third Phase is the Schematic Design

Dr. Greer gave an overview of what led the district to this process with a potential high school project and explained that this process began almost three years ago.

Mr. Blessen described the Preliminary design process (PDP).

Mr. Blessen discussed the MSBA conceptual and preliminary space template that generates the amount of space you are allocated depending on the enrollment numbers.

Mr. Blessen discussed the District Education Program and that it is the work of Dr. Greer, Administration and Curriculum leaders. The education program should state what you are currently doing and what you want to change with the education plan going forward.

Paul Queeney discussed the design module points, CHIPS certification points and incentive categories.

## **DRAFT BUDGET CALENDAR**

Dr. Greer reviewed the draft budget calendar with the committee. There was an additional two-hour open forum meeting that has been added for the community.

## **FY20 CAPITAL REQUEST-1<sup>st</sup> DRAFT**

Dr. Greer would like to have a Budget Subcommittee meeting before we present the capital draft report. Dr. Greer requested that this item be moved to the School Committee agenda on Wednesday, October 24<sup>th</sup>.

J. Hitter asked for a motion to move the FY20 Capital Request – 1<sup>st</sup> Draft discussion to the Agenda for Wednesday, October 24, 2018. **MOTION:** (Garcia/Crosby) moved to approve moving the FY20 Capital Request – 1<sup>st</sup> Draft to the agenda for Wednesday, October 24, 2108. Yes vote: Hitter, Garcia, Crosby, Zelevinsky

### **DRAFT SCHOOL COMMITTEE GOALS (FY18/19)**

J.Hitter reviewed the school committee goals for FY18/19 school year. The following goals are target items for the School Committee to focus on this year going forward.

1. MSBA-SHS Building Project
2. Strategic Plan
3. Enrollment
4. Budget

J. Hitter would like to move this item to the agenda for the School Committee meeting on Wednesday, October 24<sup>th</sup> for further discussion.

### **ANNOUCEMENTS and UPDATES**

Dr. Greer shared that she met with Dr. Libano and Dr. Schlieff and they are going to conduct community and student family sessions to discuss athletic fees and garner input from families and the athletes. They are planning to present to the School Committee in November.

J. Crosby shared that the Halloween parade in Sharon is on Sunday, October 28<sup>th</sup> starts at Ames street playground and ends at the beach with a Trunk or Treat.

Recreation basketball registration is open. Over 800 kids participate. The early bird rate expires on October 31<sup>st</sup>.

### **OTHER BUSINESS**

None

J. Hitter asked for a motion to adjourn open forum.

**MOTION:** (Garcia/Crosby) Moved to adjourn Open Forum. Yes vote: Hitter, Garcia, Crosby, Zelevinsky.

Open Session was adjourned at 8:50pm.

Respectfully Submitted,  
Melissa Bryant  
Executive Assistant  
Superintendent and School Committee



## OPEN SESSION

**SHARON PUBLIC SCHOOLS  
School Committee Meeting  
Tuesday, October 23, 2018  
Sharon Middle School  
75 Mountain Street  
Sharon, MA 02067**

**Present:** Jon Hitter, Katie Currul-Dykeman, Marcy Kaplan, Mena Mesiha, Heather Zelevinsky and Amy Garcia (8:00pm)

**Absent:** Judy Crosby, John Marcus

**Also Present:** Victoria Greer, Elizabeth Murphy, Melissa Bryant and Ken Wertz

J.Hitter asked for a motion to cancel executive session and move directly into open session. **MOTION:**(Currul-Dykeman/Kaplan) move to cancel executive session. Yes vote: Hitter, Currul-Dykeman, Kaplan, Mesiha, Zelevinsky

Open Session was called or order at 7:05pm.

### **PUBLIC FEEDBACK:**

Correspondence:

The following correspondence were received:

1. There were several emails regarding the robotics club being held at the Sharon Middle School. The concern was that it changed from being a coed club to girls only. Dr. Greer has followed up with families and school administration and the administration is working to address these concerns. Parents will be notified when an advisor is identified.

### **SHS Student Representative**

None

### **DECISION ITEMS**

Consent Agenda

1. Approval of Open Session Minutes of October 10, 2018
2. Approval of high school overnight field trip – Boston Marriott Copley – Model UN Conference at Boston University

J. Hitter asked for a motion to move the Approval of the Open Session Minutes of October 10, 2018 to the School Committee Agenda for November 7, 2018. **MOTION** (Currul-Dykeman/Kaplan) move the Open Session Minutes of the October 10, 2018 to the School Committee Agenda for November 7, 2018. Yes vote: Currul-Dykeman, Kaplan, Mesiha, Zelevinsky, Hitter

J. Hitter asked for a motion to approve the consent agenda item to approve the High School Overnight Field Trip – Boston Marriott Copley – Model UN Conference at Boston University. **MOTION** (Currul-Dykeman/Kaplan) moved to approve the High School Overnight field trip to Boston Marriott Copley – Model UN Conference at Boston University. Yes vote: Currul-Dykeman, Kaplan, Mesiha, Zelevinsky, Hitter

## **SUPERINTENDENT ITEMS**

### **Enrollment**

Dr. Greer discussed the Enrollment Committee there will be a meeting on Monday, October 29<sup>th</sup>. Dr. Greer shared that the committee will be meet a couple of times and plan a community forum for December. Dr. Greer will give periodic updates on the progress of the committee. Dr. Greer presented the number of students enrolled in each school for this school year. She mentioned that Cottage Elementary School is on a flexible freeze, currently they have 520 students enrolled. There are 3595 students currently enrolled in Sharon Public Schools.

Dr. Greer discussed that we are currently certifying a report to the Department of Elementary and Secondary Education (DESE) which is called the October 1 report. It includes student, teacher, course, enrollment by course, class information and etc. Once sent and certified with DESE, we will share this information at a future meeting.

### **SHS Project**

Dr. Greer gave an update regarding the SHS building project. There was a Standing Building Committee meeting tonight and the Tappe Architects gave an update to Standing Building Committee. Right now we are looking at alternative site options for the building project. One of the MSBA requirements is that we look at alternative sites within the town of Sharon that could possibly be a new sight for the high school project. Tappe has done the preliminary work and are bringing those decisions to the Standing Building Committee tonight. Dr. Greer said that the School Committee will be able to review these sights and give input regarding the site options that will be shared with the Standing Building Committee so they can vote on a site location for SHS.

Dr. Greer had discussions regarding the high school project and a potential partnership with the Sharon Community Television staff and Board Members.

### **Caught Looking Good**

The East PTO and East Community held a “student fun run” on Friday, October 19<sup>th</sup>. It was a fun and wonderful community event that raised \$36, 400 for the PTO.

### **Robotics Program**

Dr. Greer wanted to take a moment to publically apologize on behalf of the middle school regarding the sudden change in the robotics program.



## **DISCUSSION ITEMS:**

### **FY20 Capital Requests – 1<sup>st</sup> Drafts**

Mr. Ken Wertz, Director of Facilities/Operations presented the FY Capital Request to the committee. Mr. Wertz discussed some of the line items; some of these items will be carried over for next couple of years depending on the length of the project.

- Safety Camera's
- Cottage front roof
- Heights elementary AC units/generator
- Heights parking lot

### **Draft School Committee Goals (FY18/19)**

J. Hitter asked for a motion to move the Draft School Committee Goals to School Committee Agenda on November 7, 2018. **MOTION** (Curral-Dykeman/Kaplan) move the Draft School Committee Goals to the School Committee Agenda for November 7, 2018. Yes vote: Currul-Dykeman, Kaplan, Mesiha, Zelevinsky, Hitter

### **FY18 End of the Year Fiscal Report**

Ms. Nerlande Minton, Business Manager presented the FY18 End of the Year Fiscal Report to the committee. Ms. Minton discussed the FY18 expenditures, the largest expenditures identified were staff salaries, special education including out-of-district tuition.

Ms. Minton shared the process to develop the FY'20 budget which will be a zero base budget process.

## **ANNOUNCEMENTS & UPDATES**

None

## **OTHER BUSINESS**

None

**MOTION:** (Currul-Dykeman/Kaplan) moved to adjourn Open Session. Yes vote: Hitter, Currul-Dykeman, Kaplan, Garcia, Mesiha, Zelevinsky.

Open Session was adjourned at 8:50pm.

Respectfully Submitted,  
Melissa Bryant  
School Committee Recording Secretary/  
Administrative Assistant to the Superintendent

**MINUTES**  
**SHARON BOARD OF SELECTMEN**  
*October 16, 2018*

The meeting of the Sharon Board of Selectmen was called to order at 7:00 p.m. in the Town Hearing Room at the Sharon Community Center with Chairman William A. Heitin, Clerk Walter B. Roach, Jr., Selectwoman Emily E. Smith-Lee, Town Administrator Frederic E. Turkington, Jr. and Assistant to the Town Administrator Lauren Barnes. The meeting commenced with the recitation of the Pledge of Allegiance.

**Sharon Police Department – Approval of Recommendations for a Police Officer**

Chief Ford explained that an entry level exam took place in June. He reviewed the test and found it to be very challenging. Of the 80 candidates who applied, the review committee brought 22 candidates for second interview. These 22 candidates were narrowed down to 6 quality finalists. Of these finalists, two are being presented this evening. Both candidates are Sharon residents.

The Police Department anticipates a retirement in the near future. As it takes about a year to replace a candidate, this evening the Board will have a first look at a second candidate. It is Chief Ford's hope that the Board will consider having the second position filled in advance of January, 2020.

The first candidate is Kris Demeris. Kris was born and raised in Sharon and carries on the family tradition of law enforcement. Both his father and brother are police officers. Kris is currently a full time student at UMass Boston. He is pursuing degrees in Criminology and Political Science. He is scheduled to graduate this December. Kris is a graduate of the Army Basic Training and Infantry School where he received a Distinguished Honor for top GPA in the Basic Leader Class. He is currently active as a member of the Massachusetts Army National Guard. Kris is also a graduate of the South Suburban Police Institute and currently serves the town of Sharon as both a police special officer and as a part-time dispatcher.

The second candidate is Peter Canuto. Peter was born and raised in Sharon and currently resides in Town with his family. He currently works for the MBTA as a Foreman and supervises fleet management. Peter is a skilled carpenter and has utilized his practical skills in volunteer work throughout the Town of Sharon for those in need. Peter has taken two semesters in Law Enforcement and Business Management at Massasoit Community College and intends to continue toward earning his degree. Peter volunteers as a coach for Pop Warner and High School Football. He is also an auxiliary member of the United States Coast Guard and an active member of Sharon Rotary.

Both candidates scored in the top tier of the entry exam and their psychological profiles indicate strong ethical and work related success as they relate to a potential law enforcement career. Both candidates also excelled in the interview process.

**MOTION:** That both candidates be appointed to the Police Department conditionally pending medical background.

(Roach-Smith-Lee) 3-0 **PASSES**

**Sharon Police Department –K9 Officer Presentation**

Chief Ford explained that there is a need for a K9 Officer in town. Other neighboring communities such as Stoughton, Foxboro, and Canton have K9 Officers. Recently the Department has had increasing call outs for dogs from another community or the state, for tracking. Tracking is vital in getting a quick resolution in locating missing persons or in cases of robbery.

George Demeris is passionate and committed which is integral in developing a successful program. This would be an expensive program but Chief Ford feels that the benefit is worth the expense. There is Grant opportunity with the Stanton Grant. The cost for training could come from drug forfeiture.

Officer Demeris has been with Sharon PD for 3 years. He started as a dispatcher and then moved on to special officer. He explained that having a K9 Officer is another option for diffusing situations and would decrease the Department's reliance on outside agencies. The implementation of a canine program was found to be 33 percent more effective than officers without narcotics trained dogs when calculating the number of arrests. They reduce issues in Fourth Amendment cases where searches are warranted and are pre-emptive in narcotics trafficking in the area. Narcotics dogs can be additionally trained to track humans from suspects to dementia patients or special needs community members. Having a canine program can also bridge gaps with the community and can be effective ice-breakers with youths when talking about narcotics.

The Stanton Grant is a non-competitive grant in the amount of \$25,000 which covers the cost of a dog, handler training, retrofitting an existing cruiser, kennel construction and the first three years of food and veterinary care. It may also help to defray the costs of Overtime Help in the way of up to \$14,000 at \$1,000 per week to cover K9 Patrol School; and up to \$4,000 total at \$1,000 per week to cover 4-week Narcotics Detection School. The funds would be awarded upon completion of each school. In order to qualify, the dog must be dual-purpose. The foundation will make arrangements for, and help with, dog selection. Grant money must be placed in a separate account to track expenses. Quarterly reports are required for the first year then annually from years two through five. The program must run for a minimum of five years. A kennel must also be constructed at the officer's home.

Additional statistics and a cost breakdown were presented. Officer Demeris would love to talk cost offset. Tonight, the Department is looking for support from the Board of Selectmen. The Police Department is sensitive to the negative connotation associated with canine breeds, German Shepards in particular. Chief Ford believes the budget funding is available and Officer Demeris is the right person to get this program up and running. Both Officer Demeris and Chief Ford appreciate the Board's consideration.

The Board unanimously expressed their support.

#### **Update from Energy Advisory Committee**

Energy Advisory Committee Chairman, George Aronson, and member Silas Fyler presented a brief update to the Board. The Committee has met four or five times and has drafted an RFP for a Community Aggregation Broker. Proposals are scheduled to be received on November 1.

Mountain Street landfill was also discussed. Mr. Turkington mentioned there is a possibility of a partnership with the Town of Norwood with respect to a part-time energy manager.

The Board expressed that they look forward to the next update in November.

#### **Consent Calendar**

- I. Vote to approve regular and executive session minutes of October 2, 2018.
- II. Vote to approve the following banner request:
  - a. One Book One Town (March 25, 2019-April 1, 2019, 1<sup>st</sup> Position)
  - b. One Book One Town (April 8, 2019- April 14, 2019, 1<sup>st</sup> Position)
- III. Vote to authorize SSBC Chairman Gordon Gladstone as designee to sign the Local Actions and Approval Certification Letter for the High School Feasibility Study Project.

**MOTION:** To approve the October 2, 2018 consent calendar

**Town Administrator's Report**

The Town Administrator reported the following:

- Continue to work on Capital Improvement.
- Updates every other week from Lauren on Town Hall project.
- Remainder of discussion will be given in Executive Session.

**Topics not reasonably anticipated forty-eight (48) hours in advance of the meeting**

There was a brief discussion on parking issues experienced at Town Hall.

**Executive Session**

**MOTION:** At 7:55 pm to enter into Executive Session for the purposes of discussing strategy with respect to pending litigation with regard to real property – Mountain Street, LLC v. Sharon Zoning Board of Appeals Housing Appeals Court Docket # 04-01; Leslie Myatt, et al. v. Board of Appeals of the Town of Sharon and Mountain Street, LLC Norfolk Superior Court Civil Action No.: 0382CV02377. The Board will not return to open session.

**Discussion of this item in open session may have a detrimental effect on the bargaining position of the Town.**

**Roll Call Vote**            3-0        **PASSES**

Heitin: Aye

Roach: Aye

Smith-Lee: Aye

**Adjournment**

**MOTION:** To adjourn at 8:12 p.m.

**Roll Call Vote**            3-0        **PASSES**

Heitin: Aye

Roach: Aye

Smith-Lee: Aye

List of Documents

- Candidate Biographies – Recommendations for Hiring of Two Entry Level Police Positions
- Banner Request Forms – One Book One Town
- Minutes
- Email from Gordon Gladstone

**Sharon School Building Committee  
Sharon Town Hall  
90 South Main Street  
Sharon, Massachusetts 02067**

**SBC Meeting Minutes  
11/20/18**

**SSBC Members**

Gordon Gladstone, Chair	Richard Slater	Sara Winthrop
Deb Benjamin, Vice Chair	Steve Smith	
Rick Rice	Roger Thibault absent	
Marty Richards	Colleen Tuck absent	Matthew Baldassari (TH)

**Special Members**

Ken Wertz		Jim Wright, Fire Chief absent
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**SBC Attendees and Others**

Joe Sullivan - DPI absent	Emily Burke SBC
Kim Joyce - Colantonio	Amy Garcia SBC
Kevin Paton - BKA	Victoria Greer SBC
Anne Castelnovo - BKA	Jose Libano SBC
Chris Blessen - Tappe	John Marcus SBC absent
Paul Queeney - PMA	Judy Crosby (alternate)
Matt Gulino - PMA	

**Administration**

- The meeting of the SBC was called to order by Chair Gladstone at 6:30 PM at the Public Safety Building.
- Future scheduled meetings: 12/4, 12/18

**High School**

- Mr. Blessen reviewed highlights from the finalized PDP Report to be submitted to MSBA on 11/21/18.
- Mr. Blessen reviewed the renovation option, the add/reno options and the new options. Preliminary costs were indicated for each option along with the associated square footage. Reno is approximately 86 million dollars, add/reno averages 160 million dollars for 268,175 GSF and a new option averages 157 million at approximately 241,618 GSF. Each project concept will have a different effect on the budget and what is reimbursed verses what is paid by the Town.
- Next week will begin the process to drill down into the various options within each category to then develop 3 schemes in full by the end of March. At the Preferred Schematic Report phase it will be narrowed to three options.

- Mr. Slater moved and Mr. Smith seconded the motion to approve the signing of the document for the PDP Report to be submitted to MSBA tomorrow by Tappe and PMA. The Committee voted unanimously in favor of approval. The Chair of the Sharon Standing Building Committee, Superintendent of Sharon Public Schools and the Chair of the School Committee each signed the local actions and approval certification document.
- Dr. Greer stated that the School Committee agrees by consensus that it is acceptable to sign the document.
- Next steps include the 12/4 SBC meeting and proceeding into the Preferred Schematic Report (PSR) phase. The District then reviews the options to develop the preferred approach based on the District Educational Program and recommends 3 choices to the SBC to come up with a final option for selection: Reno, Add/Reno and Replacement.
- The next part of the project will involve more outreach to the public.

#### **Minutes**

Mr. Smith moved to approve the minutes of 11/6/18. Ms. Winthrop seconded the motion and the Committee voted unanimously in favor of approval.

#### **Invoices**

Ms. Winthrop moved and Mr. Rice seconded the motion to approve all invoices. The Committee voted unanimously in favor of approval.

#### **High School**

PMA - \$20,263.00

#### **Adjournment**

Through unanimous consent, the meeting adjourned at 6:53 PM.

#### **Attachments**

None

Submitted:

Rachelle Levitts

Sharon Standing Building Committee

\_\_\_\_\_  
(Gordon Gladstone) Signature of Chair

\_\_\_\_\_  
Date of Acceptance



# SECTION 8

## APPENDIX

# 8.1

## STATEMENT OF INTEREST

# Massachusetts School Building Authority

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## Next Steps to Finalize Submission of your FY 2016 Statement of Interest

Thank you for submitting your FY 2016 Statement of Interest (SOI) to the MSBA electronically. **Please note, the District's submission is not yet complete.** The District is required to print and mail a hard copy of the SOI to the MSBA along with the required supporting documentation, which is described below.

Each SOI has two Certification pages that must be signed by the Superintendent, the School Committee Chair, and the Chief Executive Officer\*. Please make sure that **both** certifications contained in the SOI have been signed and dated by each of the specified parties and that the hardcopy SOI is submitted to the MSBA with **original signatures**.

### **SIGNATURES: Each SOI has two (2) Certification pages that must be signed by the District.**

In some Districts, two of the required signatures may be that of the same person. If this is the case, please have that person sign in both locations. Please do not leave any of the signature lines blank or submit photocopied signatures, as your SOI will be incomplete.

*\*Local chief executive officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated as the chief executive office under the provisions of a local charter.*

**VOTES: Each SOI must be submitted with the proper vote documentation.** This means that (1) the required governing bodies have voted to submit each SOI, (2) the specific vote language required by the MSBA has been used, and (3) the District has submitted a record of the vote in the format required by the MSBA.

- **School Committee Vote:** Submittal of all SOIs must be approved by a vote of the School Committee.
  - For documentation of the vote of the School Committee, Minutes of the School Committee meeting at which the vote was taken must be submitted with the original signature of the Committee Chairperson. The Minutes must contain the actual text of the vote taken which should be substantially the same as the MSBA's SOI vote language.
- **Municipal Body Vote:** SOIs that are submitted by cities and towns must be approved by a vote of the appropriate municipal body (e.g., City Council/ Aldermen/Board of Selectmen) in addition to a vote of the School Committee.
  - Regional School Districts do not need to submit a vote of the municipal body.
  - For the vote of the municipal governing body, a copy of the text of the vote, which shall be substantially the same as the MSBA's SOI vote language, must be submitted with a certification of the City/Town Clerk that the vote was taken and duly recorded, and the date of the vote must be provided.

**CLOSED SCHOOLS: Districts must** download the report from the "Closed School" tab, which can be found on the District Main page. Please print this report, which then must be signed by the Superintendent, the School Committee Chair, and the Chief Executive Officer. A signed report, with original signatures must be included with the District's hard copy SOI submittal. **If a District submits multiple SOIs, only one copy of the Closed School information is required.**

**ADDITIONAL DOCUMENTATION FOR SOI PRIORITIES #1 AND #3:** If a District selects Priority #1 and/or Priority #3, the District is required to submit additional documentation with its SOI.

- If a District selects Priority #1, Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of the school children, where no alternative exists, the MSBA requires a hard copy of the engineering or other report detailing the nature and severity of the problem and a written professional opinion of how imminent the system failure is likely to manifest itself. The District also must submit photographs of the problematic building area or system to the MSBA.
- If a District selects Priority #3, Prevention of a loss of accreditation, the MSBA requires the full accreditation report(s) and any supporting correspondence between the District and the accrediting entity.

**ADDITIONAL INFORMATION:** In addition to the information required with the SOI hard copy submittal, the District may also provide any reports, pictures, or other information they feel will give the MSBA a better understanding of the issues identified at a facility.

If you have any questions about the SOI process please contact Diane Sullivan at 617-720-4466 or [Diane.Sullivan@massschoolbuildings.org](mailto:Diane.Sullivan@massschoolbuildings.org).

## Massachusetts School Building Authority

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School District Sharon

District Contact Rory Marty TEL: (781) 784-1548

Name of School Sharon High

Submission Date 4/7/2016

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### SOI CERTIFICATION

To be eligible to submit a Statement of Interest (SOI), a district must certify the following:

- ☒ The district hereby acknowledges and agrees that this SOI is NOT an application for funding and that submission of this SOI in no way commits the MSBA to accept an application, approve an application, provide a grant or any other type of funding, or places any other obligation on the MSBA.
- ☒ The district hereby acknowledges that no district shall have any entitlement to funds from the MSBA, pursuant to M.G.L. c. 70B or the provisions of 963 CMR 2.00.
- ☒ The district hereby acknowledges that the provisions of 963 CMR 2.00 shall apply to the district and all projects for which the district is seeking and/or receiving funds for any portion of a municipally-owned or regionally-owned school facility from the MSBA pursuant to M.G.L. c. 70B.
- ☒ The district hereby acknowledges that this SOI is for one existing municipally-owned or regionally-owned public school facility in the district that is currently used or will be used to educate public PreK-12 students and that the facility for which the SOI is being submitted does not serve a solely early childhood or Pre-K student population.
- ☒ After the district completes and submits this SOI electronically, the district must sign the required certifications and submit one signed original hard copy of the SOI to the MSBA, with all of the required documentation described under the "Vote" tab, on or before the deadline.
- ☒ The district will schedule and hold a meeting at which the School Committee will vote, using the specific language contained in the "Vote" tab, to authorize the submission of this SOI. This is required for cities, towns, and regional school districts.
- ☒ Prior to the submission of the hard copy of the SOI, the district will schedule and hold a meeting at which the City Council/Board of Aldermen or Board of Selectmen/equivalent governing body will vote, using the specific language contained in the "Vote" tab, to authorize the submission of this SOI. This is not required for regional school districts.
- ☒ On or before the SOI deadline, the district will submit the minutes of the meeting at which the School Committee votes to authorize the Superintendent to submit this SOI. The District will use the MSBA's vote template and the vote will specifically reference the school and the priorities for which the SOI is being submitted. The minutes will be signed by the School Committee Chair. This is required for cities, towns, and regional school districts.
- ☒ The district has arranged with the City/Town Clerk to certify the vote of the City Council/Board of Aldermen or Board of Selectmen/equivalent governing body to authorize the Superintendent to submit this SOI. The district will use the MSBA's vote template and submit the full text of this vote, which will specifically reference the school and the priorities for which the SOI is being submitted, to the MSBA on or before the SOI deadline. This is not required for regional school districts.
- ☒ The district hereby acknowledges that this SOI submission will not be complete until the MSBA has received all of the required vote documentation and certification signatures in a format acceptable to the MSBA. If Priority 1 is selected, your Statement of Interest will not be considered complete unless and until you provide the required engineering (or other) report, a professional opinion regarding the problem, and photographs of the problematic area or system.

<b>Chief Executive Officer *</b>	<b>School Committee Chair</b>	<b>Superintendent of Schools</b>
Fred Turkington	Veronica Wiseman	Timothy Farmer
Town Manager		
(signature)	(signature)	(signature)
Date	Date	Date

\* Local chief executive officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated to the chief executive office under the provisions of a local charter. Please note, in districts where the Superintendent is also the Local Chief Executive Officer, it is required for the same person to sign the Statement of Interest Certifications twice. Please do not leave any signature lines blank.



## Massachusetts School Building Authority

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School District Sharon

District Contact Rory Marty TEL: (781) 784-1548

Name of School Sharon High

Submission Date 4/7/2016

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### Note

This is the district's Priority SOI. The SOI for Heights Elementary for the Accelerated Repair Program was inadvertently listed as the Priority SOI and now I can't make that change to this one.

The hard copy, along with the certifications and an architectural study is included as a reference is being mailed.

Sincerely,  
Rory D. Marty  
Director of Maintenance and Operations

### The following Priorities have been included in the Statement of Interest:

1. ☐ Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of school children, where no alternative exists.
2. ☒ Elimination of existing severe overcrowding.
3. ☒ Prevention of the loss of accreditation.
4. ☒ Prevention of severe overcrowding expected to result from increased enrollments.
5. ☒ Replacement, renovation or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility.
6. ☐ Short term enrollment growth.
7. ☒ Replacement of or addition to obsolete buildings in order to provide for a full range of programs consistent with state and approved local requirements.
8. ☐ Transition from court-ordered and approved racial balance school districts to walk-to, so-called, or other school districts.

### SOI Vote Requirement

☒ I acknowledge that I have reviewed the MSBA's vote requirements for submitting an SOI which are set forth in the Vote Tab of this SOI. I understand that the MSBA requires votes from specific parties/governing bodies, in a specific format using the language provided by the MSBA. Further, I understand that the MSBA requires certified and signed vote documentation to be submitted with the SOI. I acknowledge that my SOI will not be considered complete and, therefore, will not be reviewed by the MSBA unless the required accompanying vote documentation is submitted to the satisfaction of the MSBA.

**Potential Project Scope:** Potential New School

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**Is this SOI the District Priority SOI?** NO

**School name of the District Priority SOI:** 2016 Heights Elementary

**Is this part of a larger facilities plan?** YES

**If "YES", please provide the following:**

**Facilities Plan Date:** 10/1/2001

**Planning Firm:** Strekalovsky and Hoit Inc., Architects

**Please provide an overview of the plan including as much detail as necessary to describe the plan, its goals and how the school facility that is the subject of this SOI fits into that plan:**

The facilities plan for the Sharon Public schools includes staged additions and renovations to several schools in the district and the addition of an Early Childhood facility. The Town of Sharon has performed additions/renovations to two Elementary Schools during 2001-2003 as detailed in the facilities plan. The Sharon Middle School has just undergone major addition/renovation project that includes a new Early Childhood Center as mentioned in the 2001 facilities plan.

**Please provide the current student to teacher ratios at the school facility that is the subject of this SOI:** 13 students per teacher

**Please provide the originally planned student to teacher ratios at the school facility that is the subject of this SOI:** 12 students per teacher

**Does the District have a Master Educational Plan that includes facility goals for this building and all school buildings in District?** YES

**If "YES", please provide the author and date of the District's Master Educational Plan.**

Facilitated and Prepared by Future Management Systems William H. Garr, Senior Consultant Richard Warren Ph.D., Senior Consultant

**Is there overcrowding at the school facility?** YES

**If "YES", please describe in detail, including specific examples of the overcrowding.**

There are currently 1,142 students enrolled at SHS in a building designed for 950 students. Overcrowding is evident in numerous ways. Public spaces such as hallways, the cafeteria, the gymnasium, and the auditorium do not safely or adequately accommodate the existing or anticipated enrollment. Hallway traffic between classes is uncomfortable for all, especially at intersections where there is not enough room to move without infringing on others' personal space and delays in waiting for traffic jams to clear. During lunches, students often sit on the floor or on radiators in the hallways that abut the cafeteria. Lunch lines also reduce the amount of time students have to eat and socialize. The gym and auditorium are also not capable of hosting meetings or events for the entire school without exceeding occupational limits. Classroom space and availability is also a problem. Few if any teachers are able to use the same classroom all day. This forces the vast majority of teachers to travel between classes with carts of materials, which only further crowds the hallways, adds to the number of teachers who have to share a single room, and creates issues around the security of personal and school belongings. The auditorium, cafeteria, and library are also forced into use as classroom spaces. None of them are ideal spaces to facilitate instruction, but other options are often unavailable. In the classrooms themselves, the lack of adequate space has negatively impacted the ability to differentiate instructional and assessment practices, the ideal placement of technology, the kind of furniture that is used/purchased, and opportunities for students to collaborate with each other. In certain disciplines, such as science, art, and music the negative impact is even greater. Most of the current rooms used for science are traditional classrooms that have been converted. Space to conduct labs is significantly insufficient and unsafe. In art, space limitations have also resulted in contractual limitations on class size, which has negatively impacted student opportunities for exposure and pursuit of the visual arts. In music, the lack of storage and space often results in musical equipment being stored in hallways, as well as rehearsals being conducted in spaces that aren't big enough or acoustically proper. The lack of conference rooms and other forms of meeting space has also been problematic for parent meetings, committee gatherings, professional development/collaboration, special educational testing, faculty meetings, and student record storage. Spaces that are currently used for these purposes often compromise privacy, confidentiality, timing/scheduling, learning conditions, and opportunities for students to take

advantage of available resources. Outside and around the school, the lack of parking space is an annual concern for students and staff, as are the number of fields that are available for practices and sporting events. The former creates almost daily issues, reducing time that can be spent on educational matters. The latter results in practice times and schedules that negatively impact personal well-being, social/family time, and homework. These issues and more are the direct result of overcrowding at the current complex.

**Has the district had any recent teacher layoffs or reductions?** NO

**If "YES", how many teaching positions were affected?** 0

**At which schools in the district?**

**Please describe the types of teacher positions that were eliminated (e.g., art, math, science, physical education, etc.).**

**Has the district had any recent staff layoffs or reductions?** NO

**If "YES", how many staff positions were affected?** 0

**At which schools in the district?**

**Please describe the types of staff positions that were eliminated (e.g., guidance, administrative, maintenance, etc.).**

**Please provide a description of the program modifications as a consequence of these teacher and/or staff reductions, including the impact on district class sizes and curriculum.**

Does Not Apply

**Please provide a detailed description of your most recent budget approval process including a description of any budget reductions and the impact of those reductions on the district's school facilities, class sizes, and educational program.**

The budget approval process includes: development of the districts goals and mission statement and the need for highly qualified staff teaching within the established student/teacher ratio guidelines as established by school committee policy and in comparison to current levels, our efforts to retain students "In-District" and provide appropriate programs and services whenever possible, the ongoing refinement and improvement of curriculum, instruction and assessment practices. This includes professional development, curriculum review, development of new programs and the purchase and replacement of instructional materials and supplies. Other priorities in he need to maintain and improve our technology, educational and infrastructure needs. Schedule for the Development of the FY17 Budget: The following represent key data associated with the various aspects of the budget process to date: September 16 FY17 Budget Guidelines and calendar distributed to School Committee October 1. FY17 Budget Packets distributed to Program (Cost Centers) October 1 – 15. Principals, Directors Develop Budget Requests October 28. Budget Subcommittee Meeting – areas of the budget concerns discussed. October 28 School Committee Budget-Related Requests Finalized. November 4 – 18 Superintendent's Budget Requests Developed. November 18 Initial FY17 Budget/Proposal/Discussion with SC. January 6 Preliminary FY17 Budget Presentation to School Committee. January 27 Budget Forum. February 24 School Committee votes FY17 Preliminary Budget. March 7 Preliminary Budget presented to the Finance Committee. First week in May Town Meeting Considers Budget and Votes. June School Committee Votes Final Budget. There have not been any budget reductions which have impacted class size, educational programs or school facilities.

## General Description

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**BRIEF BUILDING HISTORY: Please provide a detailed description of when the original building was built, and the date(s) and project scopes(s) of any additions and renovations (maximum of 5000 characters).**

The Sharon High School was first constructed in 1956. An addition was made to the building in 1963 that added 33,500 square foot of building space. Most of this space consisted of classrooms, support offices, and additional restrooms. In 1997 the High School underwent an addition/renovation project. The renovation portion of this project included an upgrade to the heating and electrical systems for the building. The addition portion was a new two-story structure that consists of classrooms, media center, and an elevator that measures approximately 25,000 sq.ft. The site work included a new waste treatment facility, new athletic fields, revised traffic patterns, and additional parking spaces.

Project Architect: Symmes Maini and McKee Associates

General Contractor: A. Bonfatti and Co.

In 2001 (2) 1,000 sq.ft. modular classrooms with a connecting corridor were added to the front of the building.

In 2009 (2) classroom modular additions also included significant classroom reconfiguration; existing art rooms converted to (2) science labs, (2) existing classrooms converted to new art rooms.

In 2010 a 1,200 sq. ft. weight room addition was added

In 2011 All roofs were replaced through MSBA

During the summer of 2010 a 1,200 sq.ft. weight room addition project started at the rear of the High School with an anticipated project completion for November of 2010.

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**TOTAL BUILDING SQUARE FOOTAGE: Please provide the original building square footage PLUS the square footage of any additions.**

168619

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**SITE DESCRIPTION: Please provide a detailed description of the current site and any known existing conditions that would impact a potential project at the site. Please note whether there are any other buildings, public or private, that share this current site with the school facility. What is the use(s) of this building(s)? (maximum of 5000 characters).**

The Sharon High School is located at 181 Pond Street in Sharon, MA. The site measures roughly 13.7 acres of space. The buildings located on the site consist of the main school, a waste treatment facility, some storage sheds, and a press box for the football/multipurpose field. The athletic fields consist of (1) one baseball field of which the outfield is utilized for field hockey off season, (1) one softball field of which the outfield is utilized for the practice football field, (1) set of four tennis courts, (1) one rubberized surfaced track with high jump and long jump areas, and (1) one natural grass football/multipurpose field.

The site abuts Lake Massapoag and has several setback requirements relative to wetlands, Title V septic requirements, and zoning setbacks. The site offers little if any possible locations for future classroom expansion.

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**ADDRESS OF FACILITY: Please type address, including number, street name and city/town, if available, or describe the location of the site. (Maximum of 300 characters)**

181 Pond St.  
Sharon, MA 02067

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**BUILDING ENVELOPE: Please provide a detailed description of the building envelope, types of construction**

**materials used, and any known problems or existing conditions (maximum of 5000 characters).**

The High School enclosure is standard architectural elements commonly found in public schools in Massachusetts. Primarily brick exterior finishes with some alternative finishes in selective areas. Windows systems are aluminum framed with insulated metal wall panels. Flat roof areas are PVC roof systems.

**Has there been a Major Repair or Replacement of the EXTERIOR WALLS?** YES

**Year of Last Major Repair or Replacement:(YYYY)** 1997

**Description of Last Major Repair or Replacement:**

The exterior walls range in age from 1956 to 1997. All are red brick exterior with insulated aluminum panels around storefront and window areas. The only additional exterior finish is the upper wall section of the Auditorium area that is made of a corrugated metal panel system.

**Roof Section** A

**Is the District seeking replacement of the Roof Section?** NO

**Area of Section (square feet)**

**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))**

**Age of Section (number of years since the Roof was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

**Window Section** A

**Is the District seeking replacement of the Windows Section?** YES

**Windows in Section (count)** 999

**Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))**

Double pane aluminum framed

**Age of Section (number of years since the Windows were installed or replaced)** 22

**Description of repairs, if applicable, in the last three years. Include year of repair:**

Minor repairs of broken windows and repairs throughout to caulking due to water infiltration

**MECHANICAL and ELECTRICAL SYSTEMS: Please provide a detailed description of the current mechanical and electrical systems and any known problems or existing conditions (maximum of 5000 characters).**

The building's entire electrical and mechanical systems were upgraded as part of the 1997 addition/renovation project. All wiring, piping, emergency power, data, communication, power plant, and control systems were included as part of that project.

Several upgrades have taken place since the 1997 renovation work. Those upgrades are listed below.

- 2007 domestic hot water boiler and storage tank replacement as part of an energy conservation project with Bay State Gas
- 2009 complete replacement of all lighting fixtures with installation of occupancy sensors as part of an energy conservation project with NSTAR
- 2009 science department electrical upgrade to provide adequate power to classrooms for student experiments
- 2015 HVAC DDC control system upgrade of software and control hardware to provide improved system performance and interface with maintenance staff

Building is now at capacity with electrical service and beyond capacity with generator. The school is listed as a shelter.

**Boiler Section** 1

**Is the District seeking replacement of the Boiler?** YES

**Is there more than one boiler room in the School?** YES

**What percentage of the School is heated by the Boiler?** 80

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

Natural gas

**Age of Boiler (number of years since the Boiler was installed or replaced)** 22  
**Description of repairs, if applicable, in the last three years. Include year of repair:**  
 minor in house repairs

**Has there been a Major Repair or Replacement of the HVAC SYSTEM?** YES  
**Year of Last Major Repair or Replacement:(YYYY)** 1997  
**Description of Last Major Repair or Replacement:**  
 Boilers and controls

**Has there been a Major Repair or Replacement of the ELECTRICAL SERVICES AND DISTRIBUTION SYSTEM?** YES  
**Year of Last Major Repair or Replacement:(YYYY)** 1997  
**Description of Last Major Repair or Replacement:**  
 Lighting systems throughout the school including generator

**BUILDING INTERIOR: Please provide a detailed description of the current building interior including a description of the flooring systems, finishes, ceilings, lighting, etc. (maximum of 5000 characters).**

Interior finishes:

Flooring – primarily VCT tile that was installed during the 1997 project. Main foyer and bathrooms are ceramic tile. Carpeted areas are limited to offices, auditorium aisles, library/media center installed in 1997.

**PROGRAMS and OPERATIONS: Please provide a detailed description of the current programs offered and grades served, and indicate whether there are program components that cannot be offered due to facility constraints, operational constraints, etc. (maximum of 5000 characters).**

Sharon High School is a traditional college-preparatory school that serves 1,142 students in grades 9-12. The Program of Studies outlines available curricular and course offerings in English, Math, Science, Social Studies, Foreign Language, Wellness, Visual Arts, Performing Arts, and TV Media Production. Currently, 83 FTE's provide the related instruction for the aforementioned subjects. Support services for students come in the form of a health office staffed by one nurse and an assistant, a college counseling program staffed by six counselors and a director, a special education program that includes substantive numbers of individuals that provide academic and clinical support, a library media center overseen by a library teacher and an assistant, and a technology integration department comprised of two full-time individuals and one part-time individual. Extra-curricular opportunities for students are available in fall, winter, and spring sports, as well as in a wide array of year-round after-school clubs and organizations overseen by faculty/staff. In spite of what is currently an adequate number of faculty/staff to supervise students and to provide meaningful educational and extra-curricular experiences, the existing facility is not suited to meet the school's desired educational goals nor to properly maintain student and faculty/staff safety. In order to meet 21st century college and career readiness needs, Sharon High School must expand its curricular offerings. Though the faculty/staff are creative and work diligently to create course offerings that meet the interests of students and that can also help place them in a great position to transition to the next chapter of their lives, the existing facility significantly inhibits the school's capacity to evolve and keep up with educational demands. The vast majority of the building was built at a time when infrastructure needs and standards for public and classroom space were different. Our infrastructure cannot accommodate growing technology needs, and in an era where access to computers is essential, this is a major concern. Similarly, the lack of space to house non-traditional educational programming is problematic. Our TV Studio is aging rapidly, and space to expand budding forensic science, computer science, engineering design, art, drama, and wellness programs is non-existent, as space to initiate culinary, life-skills, or mechanical-oriented programs that can meet the needs of non-college bound students. The size of our science rooms, many of which are traditional classrooms that have been re-purposed, does not provide for good learning conditions, and they are arguably unsafe. Overcrowding is a significant issue (see SOI Main). The gym, cafeteria, and auditorium are also not built to accommodate our enrollment (see SOI Main). Making matters worse, environmental issues are a regular concern. In extreme weather, the mechanical systems in place do not consistently or efficiently regulate temperature, thereby compromising learning conditions. When it rains, water also enters the building in different locations. This happens in spite of the recent replacement of the roof, and it



is not limited to the ceiling. Leaks periodically come through the foundation and through windows. Structural issues with the brick/mortar and the windows also occasionally result in bees entering the building, which creates panic and forces classes of students to move for multiple days at a time while the matter is resolved. Additionally, termite swarms have been documented in the building. Poor weather and the lack of modern facilities have also impacted the athletic program. Wrestling practice during the winter sports season takes place in the cafeteria and has raised sanitary concerns. The track team also uses the cafeteria occasionally. Further, when the track team is forced to stay inside, runs and drills that happen in the hallways raise legitimate safety concerns for the student-athletes and for staff still on-site working.

**CORE EDUCATIONAL SPACES: Please provide a detailed description of the Core Educational Spaces within the facility, a description of the number and sizes (in square feet) of classrooms, a description of science rooms/labs including ages and most recent updates, a description of the cafeteria, gym and/or auditorium and a description of the media center/library (maximum of 5000 characters).**

Most general education classrooms at Sharon High School are typical in that they often host twenty to twenty-five students, have an entry/exit door, have a rear exit door, have exterior windows, and serve as home base for two to three teachers as evidenced by teacher desks and by courses scheduled into the room. Board and wall space is shared between teachers. A desktop computer, projector, and interactive whiteboard have also been added as standard equipment. Undersized in many respects, overcrowding concerns (see SOI Main), as well as sound permeating between rooms, are the source of much frustration.

The science rooms in the building vary in size. Several of the rooms currently used for science have been re-purposed from traditional classrooms. Several science rooms have designated lab areas, but cannot comfortably host twenty-five students or provide for the kind of instruction and laboratory experiences that the teachers desire. Only two of the thirteen rooms currently utilized for science instruction meet or come close to acceptable standards. Most science rooms lack sinks, emergency showers, and teacher demonstration stations. During the last decade, electrical upgrades were made in a few of the science rooms. The two largest science rooms were created by tearing down a wall between two rooms and by reassigning them for the current purposes.

The cafeteria has two major entry points, is undersized, and cannot accommodate the number of students that attend each of the four daily lunches. Students often resort to sitting on radiators or floors in adjacent hallways. The space itself is not ventilated well, and windows near the ceiling can only be opened manually. The furniture is outdated and falling apart, electrical outlets cannot often handle the needs of microwaves or televisions that have been incorporated, and a sound-system is non-existent and a major safety concern. Additionally, the lunch lines are typically long, resulting in an abbreviated period of time for students to eat and socialize.

The gymnasium is another space in need of a significant update. The bleachers are not handicapped accessible and one section is showing increased wear. The manual frames that hold the basketball backboards are slowly failing and in need of regular repair. Locker rooms adjacent to the gym are not suitable and cannot accommodate all of our teams, let alone visiting teams. Storage needs for equipment have compromised space in each locker room. There isn't enough space to secure personal belongings, and areas for privacy are non-existent. Only a single stall restroom is available in each locker room.

The auditorium is another space in need of desperate improvement. Seats are missing and in embarrassing condition. Aisle pitch is not ADA-compliant and aisle lighting does not exist. There is only one handicapped entrance located out of the way and via a discreet side doorway. The carpet in the aisles and orchestra pit is outdated and needs immediate replacement. An existing control room for sound and lights is not handicapped accessible and also has major supervision issues because it is enclosed, unlike arrangements in more modern facilities. Storage for theatre and musical equipment is significantly lacking and often ends up in nearby hallways or compromising fire exits.

The library media center is on the only section of the high school that is considered a second floor. Built in 1997, it contains a dedicated computer lab, offices for clinical staff, a conference room, two restrooms, and a private space for the library teacher. Cosmetic changes were made to the common space during the 2014-2015 and 2015-2016 school years. These included the removal of numerous bookshelves, the addition of new computer work stations, and the repurposing of specific walls. Lighting in some areas, as well as the ability to meet additional electrical needs, is problematic too.

Classroom breakdown:

(48) standard classrooms 750-900 sq.ft.

(1) music room 1126 sq.ft.

- (2) art rooms w/storage area 800-950 sq.ft
- (9) science classrooms 852-1150 sq.ft.
- (1) World Language Lab 1029 sq.ft.
- (3) computer labs 775-825 sq.ft
- (1) library/media center 5769 sq.ft. \*
- (1) auditorium 6423 sq.ft. seating area
- (1) auditorium stage 3197 sq.ft.

**CAPACITY and UTILIZATION: Please provide a detailed description of the current capacity and utilization of the school facility. If the school is overcrowded, please describe steps taken by the administration to address capacity issues. Please also describe in detail any spaces that have been converted from their intended use to be used as classroom space (maximum of 5000 characters).**

During any given period of the school day, just about every classroom and office space is utilized. The auditorium, gym, cafeteria, and library are also typically in use. As a result, it is difficult to facilitate special events, collaboration between classes, or necessary meetings because a suitable location usually isn't available. For example, when the auditorium is needed for a student assembly of some sort, classes using the auditorium are displaced or cancelled altogether. Similarly, if there is a parent gathering during the school day, it is usually held in the library, which interferes with classes that need the space or with other special programming that might need to occur. Our gymnasium is also the site of town elections, and this gets in the way of physical education classes because the gym cannot accommodate both activities at the same time. In the science department, because some rooms are needed to house non-science courses, space to prepare laboratories and related materials is not available to teachers, negatively impacting lessons and the time needed to complete them. When it is necessary to conduct educational testing with students for whom English is not the primary language, or with students who have or might need special education services, finding a private and quiet space is extremely difficult. This often results in unfortunate delays in the testing. Re-entry meetings for students who have had concussions also usually displace someone from a workspace because conference space is lacking. As already mentioned, overcrowding is also a serious concern (see SOI Main) and steps to mitigate the impact are limited. Four modular classrooms have been added over the course of the past fifteen years. Scheduling options have all been exhausted and already impact course availability for many students. Nothing can be done to large public spaces such as the gym, library, and auditorium. The only option in the cafeteria is to send students to an internal courtyard with picnic tables that were purchased by the PTSO. This is only possible on warm, non-rainy days, which are limited during the colder months. In the hallways, the only possible way to partially reduce the overcrowding is to open a set of exterior connectors between three hallways that would expose students to the elements and also require them to pass through multiple sets of fire doors. Students have not embraced this option when tried in the past. Around the facility, the availability of parking spots is limited and contributes to tardiness. The school has collaborated with the town to make parking possible at a nearby town beach, but the lot is not plowed in the winter and often unavailable to students. Fields and facilities used for athletics are also over-utilized. Teams share fields and regularly have to practice or compete at other schools in the district because it's the only space that is available or that meets competitive standards that exist at other high schools. As is evident through these examples, Sharon High School operates at maximum capacity and space utilization. Students and staff would benefit greatly from improvements that can't currently be made.

**MAINTENANCE and CAPITAL REPAIR: Please provide a detailed description of the district's current maintenance practices, its capital repair program, and the maintenance program in place at the facility that is the subject of this SOI. Please include specific examples of capital repair projects undertaken in the past, including any override or debt exclusion votes that were necessary (maximum of 5000 characters).**

The school department employs a staff of licensed and non-licensed skilled trades people. The maintenance staff provide services for all 5 school department buildings in the Town of Sharon. Staffing breakdown: (1) Director of M & O, (0.5) Administrative Assistant, (1) Licensed Electrician, (1) Licensed Plumber, (1) Licensed HVAC Technician, (2) General Maintenance Mechanics Sharon High School Custodial staffing: (1) Head Custodian, (1) Back-up Custodian, and (1.5) Evening Custodians. Several positions are outsourced.

The current maintenance program is coordinated by the Director through the utilization of maintenance industry standards and best practices for K-12 educational facilities. The School Department utilizes SchoolDude (web-based work order management system) for tracking and assigning general and preventative maintenance work orders. Work orders are assigned and prioritized with Life Safety and Health of building occupants being the primary objective. After health and safety the next focus falls on protection of building components and scheduled maintenance. All other work order requests are handled on a first come first served basis.

The maintenance department is very proud for implementing several “Green” initiatives. The school’s cleaning has been converted to a green cleaning methodology for the past 8 years. All equipment upgrades and projects implemented are performed only with utilization of high performing and energy efficient components.

For long range planning purposes the Sharon Schools utilizes a 5-year capital outlay plan. All major building components and projects are tracked on this plan to help with the Town’s budgeting and allocation of funds for large projects. The Sharon High School building that this SOI is being submitted has past its useful life. Building heating components including rooftop air handlers are all over 20 years old and are failing and need replacing. This project has been on the town’s radar screen for the past 8 years. The challenge is with so many spaces not meeting MSBA Guidelines and so many space not handicap accessible, it has been difficult to decide whether a major renovation and addition is needed or a new and larger, compliant school is the answer.

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**Priority 2*****Question 1: Please describe the existing conditions that constitute severe overcrowding.***

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The existing Sharon High School has 48 standard classrooms with 165,500 sq. ft. According to the 2006 recommendations, this is sufficient for 895 students. Yet the current population is 1145. The lack of space is particularly troublesome for some key curricular areas. There is too little space for science and computer classrooms. Computer classrooms that were provided as part of the 1997 renovation have had to be converted to general educational spaces. The amount of physical education spaces is inadequate to schedule physical education classes for all students 9-12. The Cafeteria is too small to seat students in fewer than 4 lunches and during lunch, students are allowed to eat outside and in the corridor on the floor in order to alleviate the overcrowding. Work has been done in years past to provide additional electrical service to general education classrooms to convert them into science rooms with the electrical capacity to serve the programs. Additional space is needed with working gas lines to provide proper curriculum. Science classrooms are undersized to be able to fit class sizes of 25 and, as a result, exacerbate the difficulty with scheduling of classes. Teachers do not have their own classrooms and have to vacate the room they're teaching in to accommodate the next class. Common planning time is unavailable to science teachers affected by these limited number of science classrooms. This also inhibits in-lab lesson planning.

**Priority 2**

***Question 2: Please describe the measures the School District has taken to mitigate the problem(s) described above.***

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Two modular classrooms were added in 2004 to provide some additional space and two more were added in 2008. Computer labs have been converted to regular education classrooms and the Early Childhood program had to be relocated to provide additional space for special education. Areas of the remodeled Library had to be converted to accommodate the additional space needs for special education. Two old lecture halls were converted over time to provide additional space for Guidance and Special Services in order to try to maximize space for children. The Auditorium is used for classroom space for drama and music. The Boosters and Athletic Department joined forces to raise money to construct an exercise weight room attached to the gym to encourage more physical fitness focus for students who cannot be scheduled into 4 years of physical education classes. This section is undersized and only focuses on weight lifting and not other physical fitness offerings

**Priority 2**

***Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.***

Adequate space continues to be a concern at Sharon High School. Too many students are placed in classrooms that were not originally designed to hold class sizes of 26+. As was addressed in a previous response, to another question, science labs are inadequate and instruction is hampered by over crowded and over scheduled classrooms. Instruction in such diverse disciplines as drama, art, and special needs are offered in rooms never intended to house those programs. As a result, computer labs have been dismantled to house more traditional classes and core academic classes are held in non-traditional settings such as the auditorium.

Students are affected more directly by the inadequate space concerns at the high school. Significant travel times between classes become an issue as classrooms are being used for different purposes than originally designed. Additionally, students are crowded into spaces that limit their ability to collaborate with their peers between classes and for class curriculum. Teachers frequently travel from room to room with carts to carry their instructional materials.

**Please also provide the following:**

<b>Cafeteria Seating Capacity:</b>	341
<b>Number of lunch seatings per day:</b>	4
<b>Are modular units currently present on-site and being used for classroom space?:</b>	YES
<b>If "YES", indicate the number of years that the modular units have been in use:</b>	15
<b>Number of Modular Units:</b>	4
<b>Classroom count in Modular Units:</b>	4
<b>Seating Capacity of Modular classrooms:</b>	25
<b>What was the original anticipated useful life in years of the modular units when they were installed?:</b>	15
<b>Have non-traditional classroom spaces been converted to be used for classroom space?:</b>	YES
<b>If "YES", indicate the number of non-traditional classroom spaces in use:</b>	5
<b>Please provide a description of each non-traditional classroom space, its originally-intended use and how it is currently used (maximum of 1000 characters).:</b>	
The auditorium at Sharon High School is currently being used during the school day as a classroom space. Its intended use is to provide the student body with a location for grade level or schoolwide assemblies, performances, music rehearsals, etc. Because the auditorium is currently used as a classroom space, the school is limited in its ability to provide a large group meeting/performance space. Space that was once designated office space and departmental planning space is now being used as special needs classroom space. In addition, two art rooms were stretched into three by making use of the kiln room as an instructional classroom space.	
<b>Please explain any recent changes to the district's educational program, school assignment policies, grade configurations, class size policy, school closures, changes in administrative space, or any other changes that impact the district's enrollment capacity (maximum of 5000 characters).:</b>	
Class size policy continues to rise due, in part, to limited instructional space. Rooms that were once administrative spaces for department meetings, as well as other designated office space, have been converted into classrooms.	
<b>What are the district's current class size policies (maximum of 500 characters)?:</b>	
The District and contractual class size policies at the high school level are as follows: English 15 - 25; Foreign languages 15 - 25; Science 15 - 25; Mathematics 15 - 25; Computers 15 - 20; Social Studies 15 - 25; Music 10 - 50; Art 12 - 22; Physical Education 15 - 25	



### Priority 3

***Question 1: Please provide a detailed description of the "facility-related" issues that are threatening accreditation. Please include in this description details related to the program or facility resources (i.e. Media Center/Library, Science Rooms/Labs, general classroom space, etc.) whose condition or state directly threatens the facility's accreditation status.***

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Outdated undersized science rooms, inadequate technology, inadequate foreign language labs  
Overcrowding, narrow corridors, poor lighting, inadequate sized classrooms, paint, inconsistent heating and cooling, old and worn carpeting, outdated and non-compliant bathrooms, insufficient usable lockers, undersized cafeteria and teacher dining needing repairs, neglected grounds, fences in disrepair, inadequate prep room areas for teachers, inadequate storage for administration and guidance, non-ADA compliant areas throughout building.

**Priority 3**

***Question 2: Please describe the measures the district has taken to mitigate the problem(s) described above.***

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Most areas are in need of a major renovation or new school to alleviate defects so we are submitting this SOI as the amount of renovations are too extreme to be done on our own.

**Priority 3**

***Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem(s) identified.***

The educational program at Sharon High School is impacted greatly by the facility and associated educational spaces. Based on a 2013 Existing Conditions Study conducted by Symmes Maini & McKee Associates, over 90% of the building is not up to current space requirements as identified by MSBA. In addition, as has been explained throughout this report, the science labs at Sharon High School are woefully inadequate. They are undersized, and they do not allow for constructivist, experiential learning. Consequently, the district is limited in the science offerings we can provide our students. Based on the current configuration of rooms and available space, we are limited to the traditional physical science, biology, chemistry, and a few, select electives. Instead, we would love to offer forensic science, oceanography, and other sciences that would interest our students. Additional issues that prevent the district from offering our students the education they deserve include: no devoted technology spaces, no devoted spaces for authentic STEM or STEAM offerings, insufficient foreign language lab space, undersized, or nonexistent classrooms, in art, music,, physical education/health.

The current setup at Sharon High School requires teachers to share classrooms, due to scheduling and double scheduling does not provide teachers within some departments with common planning time, and due to overcrowding, classes often start late as students struggle to get to one classroom to the next through throngs of students/adults.

**Please also provide the following:**

**Name of accrediting entity (maximum of 100 characters):**

NEASC

**Current Accreditation Status: Please provide appropriate number as 1=Passed, 2=Probation, 3=Warning, 4=Lost:**

3

**If "WARNING", indicate the date accreditation may be switched to Probation or lost:** 6/1/2018

**If "PROBATION", indicate the date accreditation may be lost:** 6/1/2018

**Please provide the date of the first accreditation visit that resulted in your current accreditation status.:**

6/1/2018

**Please provide the date of the follow-up accreditation visit:** 3/1/2018

**Are facility-related issues related to Media Center/Library? If yes, please describe in detail in Question 1 below.:**

YES

**Are facility-related issues related to Science Rooms/Labs? If yes, please describe in detail in Question 1 below.:**

YES

**Are facility-related issues related to general classroom spaces? If yes, please describe in detail in Question 1 below.:** YES

**Are facility-related issues related to SPED? If yes, please describe in detail in Question 1 below.:** YES

**Are facility-related issues related to support spaces? If yes, please describe in detail in Question 1 below.:**

YES

**Are facility-related issues related to "Other"? If yes, please identify the other area below and describe in detail in Question 1 below.:** NO

**Please describe (maximum of 100 characters).:**

**Priority 4*****Question 1: Please describe the conditions within the community and School District that are expected to result in increased enrollment.***

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It seems that since Money Magazine named Sharon as the best small town in which to live in the USA (2013), our enrollment continues to rise, especially at the elementary level. Eventually these elementary children will progress through the school system to middle school and then to high school. During a 2014-2015 NESDEC enrollment study, Sharon High School is expected to grow to a student population of 1225 students by the 2018-2019 school year (and we have 1142 now). By 2022-2023, the high school enrollment is expected to grow to 1333 students and by 2024-2025 it is expected to grow to 1406 students. As stated currently in this SOI, Sharon High School was built to accommodate 950 students.

Sharon also has community land that is currently in the planning stages for new building. At Exit 8 off Interstate 95, for example, a new development is planned with over 100 lofts and one and two bedroom apartments. There is also talk about more than 150 three/four bedroom homes being built on and near Rattlesnake Hill here in Sharon. Clearly, both developments would have a significant impact on the school system. Finally, during the past two years Sharon has realized several turnovers in the housing market. For example, many empty nesters who have graduated their children from the Sharon Public Schools are moving out of town, or downsizing in town, and they are selling their homes to families with small children. At just one of our elementary schools, for example, the student enrollment has increased from 450 to 550 in just the past three years. Again, these children will move through the school system and will eventually end up at Sharon High School.

#### Priority 4

***Question 2: Please describe the measures the School District has taken or is planning to take in the immediate future to mitigate the problem(s) described above.***

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During the past decade four modular classrooms have been added to Sharon High School. Walls have been torn down between art rooms to turn two classrooms into three (and used kiln space to add size to a classroom). What was once conference and office space have become instructional space. Classrooms are used all day long by up to three different teachers. Computer labs have been repurposed to be instructional spaces. Traditional classrooms have been repurposed to become still less than adequate science spaces.

**Priority 4**

***Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.***

As referenced elsewhere in this document, rooms that were never meant to be classrooms are being used as instructional spaces. Special needs spaces are inadequate and have been cited by the Department of Education as unacceptable. Science offerings are severely limited by the available spaces, and foreign language lab experiences are inhibited greatly by the current space. Teachers must share rooms and the adult and student traffic between classes results in delayed class start times and an unsafe traffic environment. The school loses the proposed use of the auditorium as it is used all day long as a classroom.

**Please also provide the following:**

<b>Cafeteria Seating Capacity:</b>	341
<b>Number of lunch seatings per day:</b>	4
<b>Are modular units currently present on-site and being used for classroom space?:</b>	YES
<b>If "YES", indicate the number of years that the modular units have been in use:</b>	15
<b>Number of Modular Units:</b>	4
<b>Classroom count in Modular Units:</b>	4
<b>Seating Capacity of Modular classrooms:</b>	25
<b>What was the original anticipated useful life in years of the modular units when they were installed?:</b>	15
<b>Have non-traditional classroom spaces been converted to be used for classroom space?:</b>	YES
<b>If "YES", indicate the number of non-traditional classroom spaces in use:</b>	5
<b>Please provide a description of each non-traditional classroom space, its originally-intended use and how it is currently used (maximum of 1000 characters).:</b>	
auditorium is used as a traditional classroom for part of the day. The library also houses a standard class. Two computer labs were converted into standard classroom spaces. Lecture hall is used as a standard classroom space. Two art rooms were stretched into three art rooms.	
<b>Please explain any recent changes to the district's educational program, school assignment policies, grade configurations, class size policy, school closures, changes in administrative space, or any other changes that impact the district's enrollment capacity (maximum of 5000 characters). :</b>	
Computer classes were dropped to accommodate enrollment/class size. Class size practices continue to rise due, in part, to limited instructional space. Rooms that were once administrative spaces for department meetings, as well as other designated office space, have been converted into classrooms.	
<b>What are the district's current class size policies (maximum of 500 characters)?:</b>	
Listed previously	



## Priority 5

***Question 1: Please provide a detailed description of the issues surrounding the school facility systems (e.g., roof, windows, boilers, HVAC system, and/or electrical service and distribution system) that you are indicating require repair or replacement. Please describe all deficiencies to all systems in sufficient detail to explain the problem.***

---

Boilers have been converted over to gas fired boilers. Lighting systems have been upgraded through the Utility rebate program to reduce electric consumption. HVAC controls have been upgraded to provide more control, comfort and energy savings.

If the building were to undergo a renovation to increase the life of the structure, most mechanical systems would need replacement. This would include all rooftop air handling units as well as individual classroom unit ventilators, cabinet unit heaters and make up air units. These have not been upgraded since 1997. Roofing systems have been upgraded and provide reduction of energy costs as well.

**Priority 5**

***Question 2: Please describe the measures the district has already taken to mitigate the problem/issues described in Question 1 above.***

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Small rebate projects have been undertaken to reduce energy such as installing more efficient motors and variable speed drives. Roof systems have been replaced and are currently still under warranty.

## Priority 5

***Question 3: Please provide a detailed explanation of the impact of the problem/issues described in Question 1 above on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.***

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Little of the building is handicap accessible and requires a considerable amount of shuffling around of classroom to provide access for all. Classrooms have to be frequently moved due to heating equipment failure.

**Priority 5**

***Question 4: Please describe how addressing the school facility systems you identified in Question 1 above will extend the useful life of the facility that is the subject of this SOI and how it will improve your district's educational program.***

Most building systems were replaced in the 1997 renovation but are now at the end of their serviceable lives. With the amount of renovation for proper class size, ADA compliance, MSBA classroom size guidelines energy efficiency and upgrading of the HVAC system it would be difficult to say that a renovation to increase the serviceable life would be more beneficial than the replacement of the building in its entirety.

**Please also provide the following:**

**Have the systems identified above been examined by an engineer or other trained building professional?:**  
YES

**If "YES", please provide the name of the individual and his/her professional affiliation (maximum of 250 characters):**

2008 Ken Wertz CFA, Director of Maintenance and Operations, Samuel Cohen, Certified Industrial Hygienist, Envirotech Lab ENE Systems Inc 2012 to present, Rory D. Marty Director of Maintenance and Operations and Level 2 Building Operator Certified

**The date of the inspection:** 6/1/2008

**A summary of the findings (maximum of 5000 characters):**

A Facility Conditions Study was completed on all aspects of the high school by SMMA. Symmes Maini & McKee Associates and accompanies this report in a written form.

## Priority 7

***Question 1: Please provide a detailed description of the programs not currently available due to facility constraints, the state or local requirement for such programs, and the facility limitations precluding the programs from being offered.***

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Areas that are most out of compliance are core academic classrooms consisting of general ed and science. 14% below MSBA Guidelines

Special Education - 45% below MSBA Guidelines

Music and Art - 48% below MSBA Guidelines

Vocational and Technology - 88% below MSBA Guidelines

Health and Physical Education - 13% below MSBA Guidelines

Dining and Food Service - 25% below MSBA Guidelines

Medical - 50% below MSBA Guidelines

ADA Non-Compliance

## Priority 7

***Question 2: Please describe the measures the district has taken or is planning to take in the immediate future to mitigate the problem(s) described above.***

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The district feels as if it has done all it can do to improve the learning environment at Sharon High School. Consequently, we are hopeful to be accepted into the MSBA Renovation/Addition Project so we can either renovate Sharon High School or building a new high school on the same site.

The Existing Conditions Study conducted in 2013 provides five different options from simply taking care of brick, mortar, windows, etc. to building a new high school. We completely understand MSBA will make its own determination of the need at Sharon High School, but we are hopeful that change begins sooner rather than later as enrollment is expected to be a significant concern within the next four or five years.



## Priority 7

***Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.***

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As conditions currently stand, the high School's ability to provide a high quality education is severely hampered by the condition and lack of proper, code compliant space. Many efforts have been put forth to provide an adequate education given the limitations of the building.

## REQUIRED FORM OF VOTE TO SUBMIT AN SOI

## REQUIRED VOTES

If the SOI is being submitted by a City or Town, a vote in the following form is required from both the City Council/Board of Aldermen **OR** the Board of Selectmen/equivalent governing body **AND** the School Committee.

If the SOI is being submitted by a regional school district, a vote in the following form is required from the Regional School Committee only. FORM OF VOTE Please use the text below to prepare your City's, Town's or District's required vote(s).

## FORM OF VOTE

Please use the text below to prepare your City's, Town's or District's required vote(s).

Resolved: Having convened in an open meeting on \_\_\_\_\_, prior to the closing date, the \_\_\_\_\_ [City Council/Board of Aldermen, Board of Selectmen/Equivalent Governing Body/School Committee] of \_\_\_\_\_ [City/Town], in accordance with its charter, by-laws, and ordinances, has voted to authorize the Superintendent to submit to the Massachusetts School Building Authority the Statement of Interest dated \_\_\_\_\_ for the \_\_\_\_\_ [Name of School] located at \_\_\_\_\_ [Address] which describes and explains the following deficiencies and the priority category(s) for which an application may be submitted to the Massachusetts School Building Authority in the future

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\_\_\_\_\_]; *[Insert a description of the priority(s) checked off on the Statement of Interest Form and a brief description of the deficiency described therein for each priority]*; and hereby further specifically acknowledges that by submitting this Statement of Interest Form, the Massachusetts School Building Authority in no way guarantees the acceptance or the approval of an application, the awarding of a grant or any other funding commitment from the Massachusetts School Building Authority, or commits the City/Town/Regional School District to filing an application for funding with the Massachusetts School Building Authority.

**CERTIFICATIONS**

The undersigned hereby certifies that, to the best of his/her knowledge, information and belief, the statements and information contained in this statement of Interest and attached hereto are true and accurate and that this Statement of Interest has been prepared under the direction of the district school committee and the undersigned is duly authorized to submit this Statement of Interest to the Massachusetts School Building Authority. The undersigned also hereby acknowledges and agrees to provide the Massachusetts School Building Authority, upon request by the Authority, any additional information relating to this Statement of Interest that may be required by the Authority.

**Chief Executive Officer \***

Fred Turkington

Town Manager

**School Committee Chair**

Veronica Wiseman

**Superintendent of Schools**

Timothy Farmer

(signature)

(signature)

(signature)

Date

Date

Date

\* Local Chief Executive Officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated to the chief executive office under the provisions of a local charter. Please note, in districts where the Superintendent is also the Local Chief Executive Officer, it is required for the same person to sign the Statement of Interest Certifications twice. Please do not leave any signature lines blank.



# 8.2

## INVITATION TO CONDUCT FEASIBILITY STUDY





## MASSACHUSETTS SCHOOL BUILDING AUTHORITY FEASIBILITY STUDY AGREEMENT

This Feasibility Study Agreement, dated the 15<sup>th</sup> day of March, 2018 (the "Agreement") is between the Massachusetts School Building Authority (the "**Authority**"), a public instrumentality of the Commonwealth of Massachusetts established by Chapter 70B of the Massachusetts General Laws and Chapters 208 & 210 of the Acts of 2004 of the Commonwealth, in each case as amended from time to time, and the Town of Sharon (the "**District**").

WHEREAS, the District submitted a Statement of Interest to the Authority for the Sharon High School (hereinafter "**School**"), and the District prioritized this Statement of Interest as its priority to receive any potential funding from the Authority;

WHEREAS, on February 15, 2017, the Board of Directors of the Authority voted to invite the District to the MSBA's Eligibility Period and the District has completed all applicable preliminary requirements to the satisfaction of the MSBA;

WHEREAS, on December 13, 2017, the Board of Directors of the Authority shall have voted to authorize the Parties to enter into this Agreement upon the terms and conditions stated herein.

WHEREAS, the Feasibility Study is one step in the multi-step process of the Authority's grant program for school building construction and renovation projects, and the invitation to collaborate on conducting and/or reviewing a Feasibility Study is not approval of a project or any funding by the Authority, except as expressly provided in this Agreement;

WHEREAS, the Authority's grant program for school building renovation and construction projects is a non-entitlement, discretionary program based on need, as determined by the Authority;

WHEREAS, the District has submitted a signed Initial Compliance Certification, as described in 963 CMR 2.02, 2.03 & 2.10(2), in the form prescribed by the Authority, and it has been accepted by the Authority;

WHEREAS, the District has formed a School Building Committee to monitor the Feasibility Study and advise the District during the study;

WHEREAS, the Authority may reimburse the District for a portion of eligible, approved costs incurred in connection with the Feasibility Study undertaken by the District for the School under certain terms and conditions, hereinafter provided, and subject to the provisions of M.G.L. c. 70B, 963 CMR 2.00 *et seq.* and all applicable policies and guidelines of the Authority.

NOW THEREFORE, in consideration of the promises and the agreements, provisions and covenants contained in this Agreement, and for other good and valuable

consideration, the receipt and sufficiency of which are hereby acknowledged, the Authority and the District (together, the “Parties”) agree as follows:

## SECTION 1 DEFINITIONS

1.1 Capitalized terms not specifically defined in this Definitions section shall have the meanings ascribed to them in either M.G.L. c. 70B or 963 CMR 2.00 *et seq.*

“Budget” shall mean a complete and full enumeration of all costs, including both hard costs and soft costs, so-called, that the District reasonably estimates, to the best of its knowledge and belief, will be incurred in connection with the planning, development, and the completion of the Feasibility Study, which Budget shall be approved by the Authority and attached hereto as **Exhibit A**, as it may be updated from time to time.

“Design Contract” shall mean the standard design contract developed and prescribed by the Authority, as it may be amended by the Authority from time to time that shall be executed by the District and the Designer for design services related to the Proposed Project.

“Designer” shall mean the individual, corporation, partnership, sole proprietorship, joint stock company, joint venture, or other entity engaged in the practice of architecture, landscape architecture, or engineering that meets the requirements of M.G.L. c. 7C, § 44 and has been procured and contracted by the District to conduct a Feasibility Study, in accordance with the provisions of Sections 2.1(a)(i) and 2.1(a)(ii) of this Agreement.

“Excusable Delay” shall mean a delay of the Feasibility Study that either (a) is solely because of a natural event, such as flood, storms, or lightning, that is not preventable by any human agency, or (b) is reasonably determined by the Authority to be excusable.

“Feasibility Study” shall mean a study as described in 963 CMR 2.10(8) and in any applicable policies and guidelines of the Authority and, in relation to a Major Reconstruction Project or Repair Project, as described in M.G.L. c. 70B, 963 CMR 2.00 *et seq.* and any applicable policies and guidelines of the Authority, shall also include an engineering study, in a format prescribed by or otherwise acceptable to the Authority, to investigate potential options and solutions, including cost estimates, for the deficiencies and issues identified in the Statement of Interest or as otherwise determined by the Authority.

“Owner’s Project Manager” shall mean the individual corporation, partnership, sole proprietorship, joint stock company, joint venture, or other entity under contract with, designated, or assigned by the District and approved by the Authority, to fully and completely manage and coordinate administration of the Project to completion.



The Owner's Project Manager must meet the qualifications set forth in M.G.L. c. 149, § 44A ½, 963 CMR 2.00 *et seq.*, and all applicable policies and guidelines of the Authority.

"Scope" shall mean the scope of the Feasibility Study as described in 963 CMR 2.10(8) and any applicable policies and guidelines of the Authority or as otherwise determined in writing by the Authority and as more fully described in **Exhibit B** attached hereto, as it may be updated from time to time as mutually agreed upon by the District and the Authority.

"Schedule" shall mean the schedule for the Feasibility Study, which schedule shall be updated from time to time and approved by the Authority.

"School" shall mean the Sharon High School located in the District.

"Statement of Interest" shall mean the Statement of Interest, as defined in 963 CMR 2.09 and all applicable policies and guidelines of the Authority, submitted to the Authority by the District for the School.

## SECTION 2 FEASIBILITY STUDY

Subject to the terms and conditions of this Agreement, and in reliance on the representations, warranties and covenants contained herein, the Parties hereby agree as follows:

### 2.1 Feasibility Study.

- (a.) The Parties hereby agree that the District shall undertake a Feasibility Study to investigate potential options and solutions, including cost estimates, to the School's deficiencies and issues as identified in the Statement of Interest or as otherwise determined by the Authority and in accordance with the Scope, Budget, and Schedule approved by the Authority. The adequacy, sufficiency and/or acceptability of a Feasibility Study or a Prior Study, as defined in Section 2.1(c) of this Agreement, for the purposes of the Authority's grant program shall be determined by the Authority within its sole discretion. Any determination by the Authority that a Feasibility Study or Prior Study is adequate, sufficient or acceptable for the Authority's purposes shall not be construed as a certification or approval by the Authority of the studies, plans, drawings, designs, cost estimates, specifications or any other information or materials contained therein. The District, its officials, employees and agents are and shall remain responsible for the Feasibility Study and/or Prior Study and the building designs, site plans, drawings, cost estimates, specifications and other materials and information relative thereto that the District submits to the Authority. The Authority's review of the Feasibility Study and/or

Prior Study and any studies, plans, drawings, designs, cost estimates, specifications or any other information or materials contained therein or related thereto is solely for the purpose of determining whether they meet the provisions of this Agreement and the Authority's regulations, standards, policies, guidelines and other requirements and whether the District will be eligible for potential funding from the Authority for the Proposed Project. Approval of a Proposed Project shall only be determined by a vote of the Authority's Board in accordance with 963 CMR 2.00 *et seq.* and the applicable policies and guidelines of the Authority.

- (i.) The District shall procure a Designer to conduct the Feasibility Study pursuant to the provisions of M.G.L. c. 7C, § 44 through 58, 963 CMR 2.10(8), 963 CMR 2.12, and any other applicable laws and regulations; provided, however, that if the estimated construction cost of the Proposed Project is determined to be more than five million dollars (\$5,000,000), then the District shall select the Feasibility Study Designer using the Authority's Designer Selection Panel in accordance with 963 CMR 2.00 *et seq.* and all applicable policies and guidelines of the Authority. The District shall not use a Designer who was procured by the District prior to July 1, 2007, to conduct the Feasibility Study, unless the Designer is acceptable to the Authority. It is further provided that, if said Designer who was procured by the District prior to July 1, 2007, is unacceptable to the Authority, the District shall conduct a new procurement for a Feasibility Study Designer pursuant to the applicable provisions of M.G.L. c. 7C, § 44 through 58, 963 CMR 2.10(8), 963 CMR 2.12, and any rules, regulations, policies and guidelines of the Authority.
- (ii.) The District shall use the Authority's Design Contract to contract with the Designer for the Feasibility Study. The District shall monitor the performance of the Designer and shall require the Designer to fully comply with all provisions of the Design Contract, including, but not limited to, all provisions affecting the interests of the Authority.
- (iii.) If, at any time, the construction cost of the Proposed Project is estimated to be more than one million five



hundred thousand dollars (\$1,500,000), or if the construction cost of the Proposed Project is estimated to be equal to or less than one million five hundred thousand dollars (\$1,500,000) and the Authority so requires, at any time, as a condition to qualify for funding by the Authority, the District shall procure and maintain under contract, or otherwise assign, an Owner's Project Manager, pursuant to M.G.L. c. 149, § 44A ½, 963 CMR 2.00, *et seq.* and any applicable policies and guidelines of the Authority. The selection of an Owner's Project Manager shall be subject to the review and approval of the Authority as required by M.G.L. 70B, 963 CMR 2.00, *et seq.*, and any applicable policies and guidelines of the Authority. Any costs associated with an Owner's Project Manager who is not approved by the Authority shall not be eligible for reimbursement.

(iv.) Where applicable, the District shall use the Authority's model request for services and standard contract to procure and contract with any Owner's Project Manager for the Proposed Project, including the Feasibility Study stage of the Proposed Project. The District shall monitor the performance of the Owner's Project Manager and shall require the Owner's Project Manager to fully comply with all provisions of the contract between the District and the Owner's Project Manager including, but not limited to, all provisions affecting the interests of the Authority.

(b.) Subject to the satisfaction of or compliance with, as reasonably determined by the Authority, : all of the terms and conditions of this Agreement, the applicable provisions of M.G.L. c. 70B, Chapters 208 and 210 of the Acts of 2004, and 963 CMR 2.00 *et seq.* and any other rule, regulation, policy or guideline of the Authority, and further subject to the Authority's approval of the Scope, Budget and Schedule and the District's approval, authorization and appropriation for the Feasibility Study using forms prescribed by or otherwise acceptable to the Authority, the Authority hereby agrees to pay to the District an amount that shall under no circumstances exceed the lesser of (i) 45.32% of the eligible, approved costs of the Feasibility Study, as determined by the Authority, or (ii) \$861,080.00. The Parties hereby acknowledge and agree that \$861,080.00 is the maximum amount of funding that the District may receive from the Authority for the Feasibility Study, and that the final amount of eligible

Feasibility Study costs approved by the Authority may equal an amount less than \$861,080.00, as determined by an audit or audits conducted by the Authority. Any costs and expenditures that are determined by the Authority to be either in excess of the \$861,080.00 or ineligible for payment by the Authority shall be the sole responsibility of the District. The reimbursement rate set forth above, and as more fully described in the Reimbursement Rate Summary, attached hereto as **Exhibit "C"**, is the rate at which the District may be reimbursed for the eligible, approved costs of the Feasibility Study.

In the event that the Authority reasonably determines that the Feasibility Study is not in accordance or compliance with the Scope, Schedule, Budget, all of the terms and conditions of this Agreement, the provisions of M.G.L. c. 70B, Chapters 208 and 210 of the Acts of 2004, 963 CMR 2.00 *et seq.* and any other rule, regulation, policy or guideline of the Authority, or is delayed (other than an Excusable Delay) or is not duly authorized, approved and funded by the District in accordance with applicable law and as required by the Authority, then the Authority may temporarily and/or permanently withhold payments to the District for any eligible, approved costs of the Feasibility Study, provided that the Authority shall not unreasonably withhold any such payments and further provided that the Authority shall give written notice to the District of any such withholding. Notwithstanding the foregoing, failure by the Authority to provide such written notice timely shall not create or result in any entitlement to payment for the District. In the event that the Authority either temporarily or permanently withholds payment for the Feasibility Study, the District hereby agrees and acknowledges that the Authority shall have no liability for any such withholding of payment or any loss that may occur as a result of any such withholding of payment.

The District shall not be eligible to receive any funding for the Authority's share of the eligible, approved Feasibility Study costs, or any portion thereof, unless and until the Authority has approved the Scope, Budget, and Schedule. The Authority shall reimburse the District only for costs incurred by the District in connection with the Feasibility Study that are timely submitted to the Authority, eligible for reimbursement pursuant to Authority policies, procedures, and guidelines, and audited and approved by the Authority.

- (c) Notwithstanding the provisions of Section 2.1(a) above, in the event that the District commenced a feasibility study unilaterally or without the prior written acknowledgement and concurrence of the Authority in connection with the deficiencies and issues identified in the Statement of Interest or as otherwise determined by the Authority (hereinafter "Prior Study"), and, after review, the Authority has determined in writing that the Prior Study is adequate and meets the needs of the Authority, in whole or in part, the



District may submit to the Authority requests for reimbursement of costs related to the Prior Study subject to the provisions of Section 2.1 (b), Section 4 and any other applicable provisions of this Agreement. The District acknowledges and agrees that any costs incurred by the District in relation to the Prior Study may not be eligible for reimbursement. In the event that any such costs are determined to be eligible, approved costs by the Authority, they shall be subject to the provisional reimbursement rate set forth in Section 2.1(b) of this Agreement and shall be subject to audit by the Authority. The District further acknowledges and agrees that, notwithstanding a determination by the Authority that the Prior Study is adequate and meets the Authority's needs, in whole or in part, the Authority may require the District to conduct a new or supplemental Feasibility Study, in accordance with, and as described in, the Budget, Scope and Schedule. The District further acknowledges and agrees that costs incurred in connection with a Prior Study that (i) does not meet the needs of the Authority, in whole or in part, as determined by the Authority, or (ii) was conducted after September 22, 2006, shall not be eligible for reimbursement.

## 2.2 Term of Agreement.

This Agreement shall terminate upon (1) approval of a Project Scope and Budget Agreement for the Proposed Project by the Authority's Board and (2) execution of said Project Scope and Budget Agreement by the Authority and the District or it shall terminate on June 13, 2020 or whichever occurs sooner.

## SECTION 3 COVENANTS

The District covenants and agrees that as long as this Agreement is in effect, the District shall and shall cause its employees, officers, agents, and representatives to perform and comply with all covenants of this Agreement.

3.1 The District hereby agrees that it shall make available for inspection by, and submit to, the Authority any and all information and documentation related to the Feasibility Study, including, but not limited to budget information, progress reports, and draft copies that may be requested by the Authority, promptly and in no event later than the deadline stated in any such request.

3.2 The District hereby agrees that it shall work with the Authority in developing the Scope, Budget and Schedule for the Feasibility Study and it acknowledges and agrees that the Authority's funding for the Feasibility Study is subject to the Authority's approval of the Scope, Budget and Schedule.

3.3 The District hereby acknowledges and agrees that the Authority shall not provide any amounts in excess of the amount determined under Section 2.1(b) of this Agreement.



3.4 The District hereby acknowledges and agrees that the Authority may, in its sole discretion, determine that certain costs incurred by the District in connection with the Feasibility Study are not eligible for reimbursement by the Authority, pursuant to any applicable provisions of M.G.L. c. 70B, 963 CMR 2.00 *et seq.*, including, but not limited to, sections 2.10 & 2.16(5), and any other policies and guidelines of the Authority.

3.5 The District shall comply with all provisions of this Agreement; the provisions of all other agreements between the Authority and the District that relate to the Feasibility Study; the provisions of M.G.L. c. 70B, 963 CMR 2.00 *et seq.*, and all policies and guidelines of the Authority; and all provisions of law applicable to the Feasibility Study, this Agreement, and any other agreements and documents related to the Feasibility Study, and shall take all action necessary to fulfill its obligations under this Agreement.

3.6 The District hereby acknowledges and agrees that the Authority shall not be required or obligated to make any payment for any eligible Feasibility Study costs while an Event of Default, as defined in section 8 of this Agreement, shall have occurred.

3.7 The District shall, and shall cause any Owner's Project Manager and Designer and their employees, subconsultants and agents to, keep adequate records of the Feasibility Study and make all Feasibility Study records and the Feasibility Study site(s) available to the Authority or representatives of the Authority for review during the course of the Feasibility Study.

3.8 The District hereby acknowledges and agrees that the duties of any Owner's Project Manager hired by and/or assigned to the Proposed Project by the District shall include, but not be limited to, fully and completely managing and coordinating on behalf of the District the administration of the Feasibility Study to completion. Any Owner's Project Manager hired by and/or assigned to the Proposed Project by the District shall be responsible for overseeing, tracking, and managing the Budget and Schedule. In the event that an Owner's Project Manager is not required for the Proposed Project, the District shall have the aforesaid duties and responsibilities in addition to any others imposed by M.G.L. c. 70B, 963 CMR, *et seq.*, the policies and guidelines of the Authority, and any other applicable provisions of law.

3.9 The District hereby agrees that the Authority shall have free access to, and open communication with, any Owner's Project Manager hired by and/or assigned to the Proposed Project by the District and that the Authority shall have full and complete access to all information and documentation relating to the Proposed Project to the same extent that the District has such access. The District agrees that it shall require any such Owner's Project Manager to fully cooperate with the Authority in all matters related to the Proposed Project; to promptly communicate, transmit, and/or make available for inspection and copying any and all information and documentation requested by the Authority; to fully, accurately and promptly complete all forms and writings requested by the Authority; and to give complete, accurate, and prompt responses to any and all questions, inquiries and requests for information posed by the Authority. The District



agrees that it shall not in any way, directly or indirectly, limit, obstruct, censor, hinder or otherwise interfere with the free flow of communication and information between the Owner's Project Manager and the Authority in all matters related to the Proposed Project and as provided herein; that it shall not suffer the same to occur by the act or omission of any other person or entity; and that it shall not retaliate against the Owner's Project Manager for communicating information to the Authority as provided herein. The District agrees to execute, deliver and/or communicate to the Owner's Project Manager any and all authorizations, approvals, waivers, agreements, directives, and actions that are necessary to fulfill its obligations under this paragraph. The District further agrees that the Authority shall bear no liability whatsoever arising out of the Authority's knowledge or receipt of information communicated to the Authority by the Owner's Project Manager and that the District shall remain responsible for the management and completion of the Proposed Project.

3.10 The District hereby acknowledges and agrees that the duties of the Designer shall include, but not be limited to, those described in this Agreement, including, but not limited to, the Scope attached hereto as Exhibit B; 963 CMR 2.10(8); any applicable rules, regulations, policies and guidelines of the Authority; and any standard scope of services and the Design Contract prescribed by the Authority.

3.11 The District hereby acknowledges and agrees that neither the District nor any of its employees, officials, agents, consultants or contractors shall submit any false or intentionally misleading information or documentation to the Authority in connection with this Feasibility Study Agreement or the Feasibility Study, and further acknowledges and agrees that the submission of any such information or documentation may cause the Authority to suspend, revoke or terminate any and all payments otherwise due to the District and/or recover any previous payments made to the District, and the District may be ineligible for any funding from the Authority. The District hereby further agrees that it shall have a continuing obligation to update and notify the Authority in writing when it knows or has any reason to know that any information or documentation submitted to the Authority contains false, misleading or incorrect information.

3.12 The District hereby acknowledges and agrees that the Authority shall bear no responsibility or liability of any sort for the results of any Feasibility Study, environmental assessment, geotechnical site testing, any necessary site remediation, clean-up, or other site remediation services.

3.13 The District hereby acknowledges and agrees that it shall provide a final Feasibility Study report to the Authority, which shall be in a format that is prescribed by or otherwise acceptable to the Authority.

3.14 The District hereby acknowledges and agrees that the Authority's grant program is a non-entitlement, discretionary program based on need, and the Feasibility Study may not result in a school construction, renovation or repair project that is eligible for funding by the Authority.

3.15 The District shall not combine, consolidate, or conjoin in any way the procurement, pre-qualification or selection of an Owner's Project Manager or Designer for the Proposed Project with the procurement, pre-qualification or selection of an Owner's Project Manager or Designer for any other construction, repair or renovation project without the express prior written approval of a duly authorized representative of the Authority. Any costs incurred by the District that relate to, or arise out of, the use of a combined, consolidated or conjoined procurement, pre-qualification or selection process as proscribed above, including, but not limited to, the preparation of bid documents, requests for services, and requests for qualifications, without the express prior written approval of a duly authorized representative of the Authority shall not be eligible for reimbursement.

#### SECTION 4 PAYMENTS AND AUDIT

4.1 Subject to the terms and conditions of the Agreement, the Authority shall reimburse the District for eligible, approved costs incurred in connection with the Feasibility Study in accordance with the following:

(a) Using the Authority's Pro-Pay system, the District shall submit requests for reimbursement on a monthly basis to the Authority in a format prescribed by the Authority. Each monthly request for reimbursement shall be approved locally by a duly authorized representative of the District, shall be in a form acceptable to the Authority, shall include reasonable detail, including, but not limited to (1) the amount of funding requested, (2) the nature of the materials or property or services received, (3) the total value of the work performed and materials furnished by the Owner's Project Manager, if any, the Designer, and each consultant, subconsultant or vendor to date, and (4) the value of the work completed during the Feasibility Study. The District agrees that each request for reimbursement shall be accompanied by the invoices for each of the amounts requisitioned and any other supporting documentation and information substantiating the District's request for reimbursement, as the Authority may request, in a form satisfactory to the Authority.

(b) Each request for reimbursement shall include a written certification signed by a duly authorized representative of the District stating that: (1) such request for reimbursement is solely for Feasibility Study costs, (2) the obligations itemized in the request for reimbursement have not been the basis for a prior request for reimbursement submitted by the District that has been paid or rejected by the Authority, (3) the reimbursement requested is due for work actually and properly performed or materials or property actually supplied prior to the date of the requisition, (4) the reimbursement requested is for costs that already have been duly paid by the District, and (5) such reimbursement requested is within the Budget approved by the Authority.



(c) The Authority shall review all requests for reimbursement properly submitted pursuant to this Agreement as soon as reasonably possible. The Authority shall not consider requests for reimbursement that are not, as reasonably determined by the Authority, (1) timely and properly submitted, (2) in accordance with the most recent Budget approved by the Authority, and (3) for eligible Feasibility Study costs incurred by the District. The District understands and agrees that no reimbursement shall be made by the Authority unless the District has complied with all of the terms and conditions of this Agreement, the applicable provisions of M.G.L. c. 70B, chapters 208 and 210 of the Acts of 2004, 963 CMR 2.00 *et seq.*, and all policies and guidelines of the Authority.

(d) After receipt from the District of a timely and properly submitted request for reimbursement pursuant to this Agreement, the Authority shall make payment to the District of the Authority's share of approved, eligible Feasibility Study costs, subject to the terms and conditions of this Agreement. The District hereby agrees and acknowledges that the amount of approved, eligible Feasibility Study costs reimbursed by the Authority may be subject to change, pending audit, including but not limited to an audit pursuant to Section 4.2 of this Agreement and the final close-out audit pursuant to Section 4.3 of this Agreement.

4.2 The Authority may review and perform a preliminary audit on each request for reimbursement submitted pursuant to this Agreement to ensure that only eligible costs of the Feasibility Study are approved and paid by the Authority. Any such preliminary audits shall be conducted in accordance with 963 CMR 2.16 and other policies and guidelines of the Authority. In the event that the Authority determines that an item contained in a request for reimbursement submitted by the District pursuant to this Agreement is not eligible for reimbursement by the Authority, the Authority shall adjust a subsequent reimbursement to the District to account for the ineligible costs. The District hereby acknowledges and agrees that each audit conducted pursuant to this Section 4.2 is preliminary, and the Authority may further adjust and alter the results of a preliminary audit after it conducts subsequent audits or a final close-out audit of the Feasibility Study.

4.3 The District hereby acknowledges and agrees that a final, close-out audit of the Feasibility Study by the Authority shall include an audit of all requests for reimbursement submitted and all reimbursements made by the Authority. The final, close-out audit shall be conducted in accordance with 963 CMR 2.16 and any other applicable regulations, policies and guidelines of the Authority. The District shall make all documents and materials requested by the Authority or its representatives available in a timely manner. The District further acknowledges and agrees that the final, close-out audit of the Feasibility Study may not occur until such time as the Authority conducts its final, close-out audit of the project that may result from the Feasibility Study, should the District be approved for any such project. Any adjustments applicable as a result of the final, close-

out audit may be made in the final amount of the Total Facilities Grant, as determined by the Authority.

## SECTION 5 REPRESENTATIONS AND WARRANTIES

The District hereby warrants and represents that each of the following statements is true, correct and complete:

5.1 The District is validly organized and existing under and by virtue of the laws of the Commonwealth, has full power and authority to own its properties and carry on its business as now conducted, and has full power and authority to execute, deliver and perform its obligations under this Agreement and all other documents related to the Feasibility Study.

5.2 The District is duly authorized to execute and deliver this Agreement and has taken all necessary steps to authorize the execution and delivery of this Agreement, to undertake the Feasibility Study and to perform and consummate all transactions contemplated by this Agreement.

5.3 The undersigned has the full legal authority to execute this Agreement on behalf of the District and to bind the District to its provisions.

5.4 This Agreement does not and will not, to any material extent, conflict with, or result in violation of any applicable provisions of law, including, but not limited to, any statute, charter, by-law, ordinance, rule or regulation, or any judgment, order, rule or regulation of any court or other agency of government.

5.5 The District has all requisite legal power and authority to own and operate the School that is the subject of the Feasibility Study and to undertake and oversee the Feasibility Study or, in the case of a school facility that is leased by the District, the District has all of the requisite legal power and authority to control and operate the School that is the subject of the Feasibility Study and to undertake and oversee the Feasibility Study pursuant to a lease which assures that the District has exclusive jurisdiction and control of the School and the land upon which it is situated for the anticipated useful life of the Proposed Project.

5.6 No information furnished by or on behalf of the District to the Authority in this Agreement, the Budget, the Initial Compliance Certification, or any other document, certificate or written statement furnished to the Authority in connection with the Feasibility Study contains any untrue statement of a material fact or omitted, omits or will omit to state a material fact necessary in order to make the statements contained in this Agreement or therein not misleading in light of the circumstances in which the same were made.



5.7 The District has duly obtained all necessary votes, resolutions, authorizations, appropriations and local approvals, in accordance with formats prescribed by or otherwise acceptable to the Authority, and has taken all actions necessary or required by law to enable it to enter into this Agreement and to fund and perform its obligations hereunder, in accordance with the Authority's guidelines, regulations, policies and standards. This Agreement constitutes a valid and binding obligation of the District, enforceable in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, moratorium, reorganization or other laws heretofore or hereafter enacted and general equity principles.

5.8 No litigation before or by any court, public board or body is pending or threatened against the District or the Authority seeking to restrain or enjoin the execution and delivery of this Agreement or the Feasibility Study, or contesting or affecting the validity of this Agreement or the power of the District to pay its share of the Feasibility Study.

5.9 The District has implemented policies and procedures to prevent and eliminate fraud, waste and abuse of public funds in connection with the Feasibility Study and any future construction or renovation projects that may be forthcoming as a result of the Feasibility Study.

5.10 The District has submitted all audit materials requested by the Authority in connection with any project for which the District has received or anticipates receiving funding from the Authority.

5.11 All meetings of all public bodies in the District that relate in any way to the Proposed Project, including, but not limited to, the meetings of the District's school building committee, have been conducted, and shall be conducted, in compliance with the provisions of G.L. c. 30A, §§ 18 – 25, 940 CMR 29.00 *et seq.*, the so-called Open Meeting Law, and all other applicable law.

## SECTION 6 INSURANCE

6.1 The District shall obtain and maintain all insurance required by law and insurance of such types and limits and upon such terms and conditions as may be required by, or as may be acceptable to, the Authority.

6.2 The District shall require by contractual obligation, and shall also ensure by the exercise of due diligence, that any Designer hired by the District in connection with the Feasibility Study obtain and maintain, at a minimum, insurance of such types and limits and upon such terms and conditions as may be required by law and as may be prescribed by the Authority in the Design Contract between the Designer and the District.

6.3 Except where the Owner's Project Manager is an existing employee of the District, the District shall require by contractual obligation, and shall also ensure by the exercise of due diligence, that any Owner's Project Manager hired by the District obtain

and maintain, at a minimum, insurance of such types and limits and upon such terms and conditions as may be required by law and as may be prescribed by the Authority in its standard contract for Owner's Project Manager services which is incorporated by reference herein.

## SECTION 7 COMPLIANCE WITH CONTRACT DOCUMENTS, PROJECT PERMITS AND OTHER APPLICABLE LAW

7.1 The District shall take all reasonable actions designed to ensure that the Feasibility Study complies with all applicable contract documents, building codes, laws, rules and regulations and to ensure that all necessary project permits have been obtained. Notwithstanding any right of approval or review held or exercised by the Authority in connection with this Agreement or the Feasibility Study, the District shall be responsible for the successful performance and completion of the Feasibility Study in accordance with this Agreement, the Design Contract, design documents and project permits, if any, and for the economical and efficient operation and administration of the Feasibility Study.

## SECTION 8 DEFAULTS AND REMEDIES

8.1 The occurrence of any of the following events shall constitute, and is herein defined to be, an Event of Default under this Agreement:

(a) If the District shall fail to perform and observe any covenant, agreement or condition on its part provided in this Agreement and such failure shall continue for a period of thirty (30) days after written notice thereof shall be given to the District by the Authority; provided if such failure cannot be remedied within such thirty (30) day period, it shall not constitute an Event of Default hereunder if corrective action satisfactory to the Authority, as determined by the Authority in writing, is instituted by the District within such period and diligently pursued until the failure is remedied. Any forbearance or failure of the Authority in giving such written notice shall not amount to any waiver of the Authority's rights under this Agreement as to the same or subsequent breaches and shall not preclude the Authority from pursuing any of its rights or remedies provided under this Agreement or as otherwise provided by law.

(b) If any representation or warranty made by the District in this Agreement or in any other agreement entered into by the District with the Authority shall prove to have been incorrect or to be misleading in any material respect.

8.2 If any Event of Default hereunder shall occur and be continuing, the Authority may proceed to protect its rights under this Agreement, and may: (a) terminate this Agreement, (b) permanently withhold or temporarily suspend payment of any eligible, approved costs to the District, (c) recover any payments of eligible, approved costs



previously made to the District, and/or (d) exercise any other right or remedy upon such default as may be granted to the Authority under this Agreement or under any other applicable provision of law.

8.3 No remedy conferred upon or reserved to the Authority is intended to be exclusive and every such remedy shall be cumulative and shall be in addition to every other remedy given under this Agreement or now or hereafter existing at law or in equity. No delay or omission to exercise any right, remedy or power accruing upon any Event of Default shall impair any such right, remedy or power or shall be construed to be a waiver thereof, but any such right, remedy or power may be exercised from time to time and as often as the Authority may deem expedient.

## SECTION 9 OTHER TERMS

9.1 Governing Law. This Agreement shall be governed by, construed, and enforced in accordance with, the laws of the Commonwealth of Massachusetts.

9.2 Venue. Any civil action brought against the Authority by the District, or any person or entity claiming by, through or under it, that arises out of the provisions of this Agreement, shall only be brought in the Superior Court for Suffolk County, Massachusetts. The District, for itself and for any person or entity claiming by, through or under it, hereby waives any defenses that it may have as to the venue to which it has agreed herein, including, but not limited to, any claim that this venue is improper or that the forum is inconvenient. The District for itself and for any person or entity claiming by, through or under it, hereby waives all rights, if any, to a jury trial in any such civil action that may arise out of the provisions of this Agreement.

9.3 Indemnification of the Authority by the District. To the fullest extent permitted by law, the District shall indemnify and hold harmless the Authority and its officers, agents and employees from and against any and all claims, actions, damages, liabilities, injuries, costs, fees, expenses, or losses, including, without limitation, reasonable attorney's fees and costs of investigation and litigation, whatsoever which may be incurred by, or for which liability may be asserted against, the Authority or any of its officers, agents or employees arising out of any activities undertaken by, for, or on behalf of the District in the execution or implementation of this Agreement or with respect to the Feasibility Study, including, but not limited to, the performance of any contract or obligation directly or indirectly related to the Feasibility Study. Such obligation shall not be construed to negate or abridge any other obligation of indemnification running to the Authority which would otherwise exist.

9.4 Members, Employees Not Liable. No member or employee of the Authority shall be charged or held personally or contractually liable by or to the District under any term or provision of this Agreement or because of any breach thereof or because of its execution or attempted execution.

9.5 Assignability. The District shall not assign any interest, in whole or in part, in this Agreement and shall not transfer any interest in the same, whether by assignment or novation, without the prior written approval of the Authority.

9.6 Payment Not A Waiver.

The Authority's payment(s) to the District under this Agreement or its review, approval or acceptance of any actions by the District under this Agreement shall not operate as a waiver of any rights under this Agreement and the District shall remain liable to the Authority for all damages incurred by the Authority as a result of the District's failure to perform in accordance with the terms and conditions of this Agreement.

The rights and remedies of the Authority provided for under this Agreement are in addition to any other rights or remedies provided by law. The Authority may assert a right to recover damages by any appropriate means, including, but not limited to, set-off, suit, withholding, recoupment, or counterclaim either during or after performance of this Agreement.

9.7 Notices. Any notices required or permitted to be given by either of the Parties hereunder shall be given in writing and shall be delivered to the addressee (a) in-hand (b) by certified mail, postage prepaid, return receipt requested; (c) by facsimile; or (d) by a commercial overnight courier that guarantees next day delivery and provides a receipt, and such notices shall be addressed as follows:

If to the Authority:

Massachusetts School Building Authority  
40 Broad Street, Suite 500  
Boston, MA 02109  
Attention: Director of Capital Planning  
Facsimile: (617) 720-8460

If to the District:

Dr. Victoria L. Greer  
Superintendent of Schools  
Sharon Public Schools  
75 Mountain St.  
Sharon, MA 02067  
Tel: (781) 784-1570  
Fax: (781) 784-1573  
Email: [v\\_greer@sharon.k12.ma.us](mailto:v_greer@sharon.k12.ma.us)

or to such other address or addressee as the District and the Authority may from time to time specify in writing. Any notice shall be effective only upon receipt, which for any notice given by facsimile shall mean notice that has been received



by the party to whom it is sent as evidenced by a confirmation slip that bears the time and date of receipt.

9.8 Severability. If any provisions of this Agreement shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such provision shall not affect any of the remaining provisions of this Agreement, and this Agreement shall be construed and enforced as if such invalid or unenforceable provision had not been contained herein.

9.9 Counterparts. This Agreement may be executed in one or more counterparts, any of which shall be regarded for all purposes as an original and all of which constitute but one and the same instrument. Each party agrees that it will execute any and all documents or other instruments, and take such other actions as may be necessary to give effect to the terms of this Agreement.

9.10 No Waiver. No waiver by either party of any term or conditions of this Agreement shall be deemed or construed as a waiver of any other terms or conditions, nor shall a waiver of any breach be deemed to constitute a waiver of any subsequent breach, whether of the same or of a different section, subsection, paragraph, clause, phrase, or other provision of this Agreement.

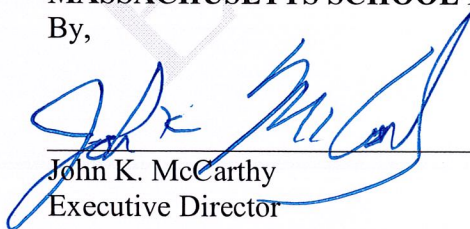
9.11 Integration. This Agreement merges and supersedes all prior negotiations, representations, and agreements between the Parties hereto relating to the Feasibility Study and constitutes the entire agreement between the Parties hereto with respect to the Feasibility Study and the Authority's funding of a portion of the eligible, approved costs of the Feasibility Study.

9.12 Amendments. This Feasibility Study Agreement may be amended only through a written amendment signed by duly authorized representatives of the District and the Authority.

IN WITNESS WHEREOF, the Parties have executed this Agreement on this 15<sup>th</sup> day of March, 2018.

**MASSACHUSETTS SCHOOL BUILDING AUTHORITY**

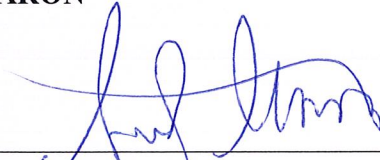
By,

  
\_\_\_\_\_  
John K. McCarthy  
Executive Director

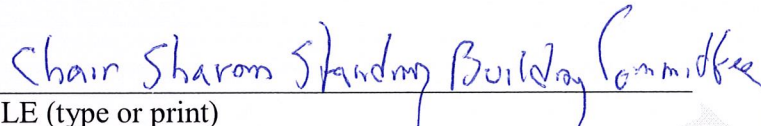
MSBA Identification Number: 201602660505  
District: Town of Sharon  
Project Name: Sharon High School

**TOWN OF SHARON**

By,

  
\_\_\_\_\_  
Gordon Gladstone

NAME (type or print)

  
\_\_\_\_\_  
Chair Sharon Standing Building Committee

TITLE (type or print)



# 8.3

## DESIGN ENROLLMENT CERTIFICATE



MASSACHUSETTS SCHOOL BUILDING AUTHORITY

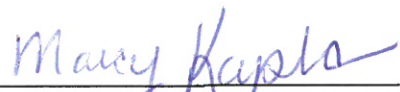
TOWN OF SHARON  
SHARON HIGH SCHOOL  
DESIGN ENROLLMENT CERTIFICATION

As a result of a collaborative analysis with the Massachusetts School Building Authority (the "MSBA") of enrollment projections and space capacity needs for the proposed project at Sharon High School, the Town of Sharon hereby acknowledges and agrees that the design of the proposed project at Sharon High School shall be based on an enrollment of no more than 1,250 students in grades 9-12. The Town of Sharon further acknowledges and agrees that, pursuant to 963 CMR 2.00 *et seq.*, the MSBA shall determine the square feet per student space allowance and total square footage for a high school serving 1,250 students in grades 9-12. The Town of Sharon acknowledges and agrees that it has no right or entitlement to any particular design enrollment, square feet per student space allowance, or total square footage and that it has no right or entitlement to a design enrollment any greater than 1,250 students for the Sharon High School, and further acknowledges and agrees that it shall not bring any claim or action, legal or equitable, against the MSBA, or any of its officers or employees, for the purpose of obtaining an increase in the design enrollment of Sharon High School that it has acknowledged and agreed to herein. The Town of Sharon further acknowledges and agrees that, among other things, the design enrollment, square feet per student space allowance, and total square footage of the Sharon High School shall be subject to the approval of the MSBA's Board and that the final approval of a proposed project at the Sharon High School shall be within the sole discretion of the MSBA's Board.

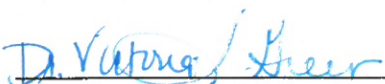
The undersigned, for themselves and the Town of Sharon, hereby certify that they have read and understand the contents of this Design Enrollment Certification and that each of the above statements is true, complete and accurate. The undersigned also hereby certify that they have been duly authorized by the appropriate governmental body to execute this Certification on behalf of the Town of Sharon and to bind the Town of Sharon to its terms.

  
\_\_\_\_\_  
Chief Executive Officer

Oct. 20, 2017  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Duly Authorized Representative of School Committee

Oct 13, 2017  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Superintendent of Schools

Oct. 13, 2017  
\_\_\_\_\_  
Date

# Massachusetts School Building Authority

Deborah B. Goldberg  
*Chairman, State Treasurer*

James A. MacDonald  
*Chief Executive Officer*

John K. McCarthy  
*Executive Director / Deputy CEO*

September 25, 2017

Mr. Frederic Turkington, Town Administrator  
Town Office Building  
90 South Main Street  
Sharon, MA 02067

Re: Town of Sharon, Sharon High School

Dear Mr. Turkington:

I would like to thank you and other local officials for meeting with Massachusetts School Building Authority (the "MSBA") staff on Wednesday September 13, 2017 during which enrollment projections and methodologies were reviewed for the Sharon High School project (the "Proposed Project") in the Town of Sharon (the "District"). As discussed, the next critical step is for the MSBA and the District to agree on the design enrollment for the Sharon High School.

Sharon High School presently serves the District's entire grade 9-12 enrollment, and accordingly, this analysis will be particularly focused on the enrollment projections for those grades.

The table below illustrates the District's K-12 enrollment during the most recent ten year period, including enrollment for the 2016-2017 school year as reported by the Department of Elementary and Secondary Education ("DESE"). The total grade 9-12 enrollment in the Town of Sharon as reported by the District for the 2016-2017 school year was 1,058 students, which reflects a decrease of 137 students (-11.5%) from the grade 9-12 enrollment reported in 2012-2013, which was the maximum grade 9-12 enrollment reported in the preceding ten years. Additionally, the current year's grade 9-12 enrollment reflects a decrease of approximately 72 students (-6.3%) from the average grade 9-12 enrollment reported during the preceding ten year period.

YEAR	K-5	6-8	9-12	TOTAL
2007	1,399	856	1,094	3,349
2008	1,401	860	1,081	3,342
2009	1,378	842	1,155	3,375
2010	1,398	809	1,178	3,385
2011	1,377	793	1,151	3,321
2012	1,403	789	1,195	3,387
2013	1,454	793	1,142	3,389
2014	1,502	828	1,104	3,434
2015	1,436	846	1,139	3,421
2016	1,511	851	1,058	3,420



The MSBA understands that the District is proposing a design enrollment to accommodate approximately 1,150 students, in grades 9-12 at the Sharon High School. The enrollment in grades 9-12 reported to DESE for the 2016-2017 school year in the Town of Sharon was 1,058 students.

With respect to future enrollments, the MSBA's base enrollment forecast indicates the Town of Sharon's grade 9-12 enrollment will experience an increasing trend over the next ten years. The average grade 9-12 base enrollment forecast for the projected period through the 2026-2027 school year is 1,210 students.

As a result of a sensitivity analysis performed by the MSBA on this base enrollment projection and further discussion with the District, the following adjustments have been made to the base enrollment projection:

- Out-of-District Enrollment
  - In order to adjust for fluctuations to the out-of-district enrollment patterns of the District's residents over time, the MSBA has made an additional adjustment to the base enrollment projection.
  - In order to make this adjustment, the MSBA adjusted the grade to grade survival ratios for grade K-5 enrollment by a total of 3.3% throughout a four year period in the projection.
  - This adjustment added approximately 25 students to the average grade 9-12 enrollment as compared to the projection without this adjustment.
- Development
  - Based on the discussions between the District and the MSBA, and the anticipated development information provided by the District, the MSBA enrollment model has been adjusted to use the five-year 75th percentile cohort survival rate for 2019-2020 rather than the five-year average cohort survival rate, which is utilized throughout the base enrollment forecast.
  - This adjustment added approximately 15 students to the average total grade 9-12 enrollment as compared to the projection without this adjustment.

As a result of analysis on the base enrollment projection, the adjustment to the base projection described above, and based on the historical enrollment trends of the District, the MSBA recommends a design enrollment of 1,250 students for Sharon High School.

The MSBA believes that this design enrollment recommendation will position the District to efficiently meet space capacity needs throughout future enrollment variations. Please sign and return the attached certification within 14 calendar days to confirm agreement on this design enrollment. If the District feels that this design enrollment does not meet the needs of the District, please respond to this letter via e-mail to Allison Jones and propose three meeting/conference call times for which the District can be available to discuss enrollment.

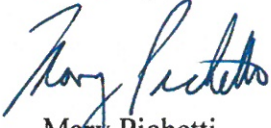
Page 3

September 25, 2017

Sharon High School Enrollment Letter

If you have any questions regarding this matter, please do not hesitate to contact me or Allison Jones (Allison.Jones@massschoolbuildings.org) at 617-720-4466.

Sincerely,



Mary Pichetti  
Director of Capital Planning

Cc: Legislative Delegation  
John J. McGrath, Chair, Sharon Board of Selectmen  
Marcy Kaplan, Chair, Sharon School Committee  
Dr. Victoria Greer, Superintendent, Sharon Public Schools  
Gordon Gladstone, Chair, Sharon School Building Committee  
Ken Wertz, Director of Facilities, Sharon Public Schools  
File: 10.2 Letters (Region 5)



# 8.4

## PHASE 1 ESA REPORT



Tappe Associates, Inc.  
Weston & Sampson Project No. 2180619

November 2, 2018

Mr. Charles Hay, Principal  
Tappe Associates  
6 Edgerly Place  
Boston, MA 02116

Re: **CHPS Environmental Siting Letter – Sharon High School  
Sharon, Massachusetts**

Dear Mr. Hay,

In accordance with your request, Weston & Sampson Engineers, Inc. (Weston & Sampson) has provided this letter addressing the Collaborative for High Performance Schools (CHPS) Site Selection review process for the Sharon High School in Sharon, Massachusetts (the Site). This letter contains the required information based on Section SS 1.0 regarding Site Selection as follows:

Per SS-1.0, a Phase I ESA was completed for the Site in accordance with ASTM 1527-13 (Current standard, ASTM 1527-05 is an old reference). Recognized Environmental Conditions (RECs) for the Site included:

- The presence of one decommissioned 20,000-gallon No. 2 fuel oil Underground Storage Tank (UST) beneath the rear parking lot of the High School building.

A Phase II ESA was conducted to assess this REC which included the collection of soil and groundwater samples. Environmental sampling in the vicinity of the UST did not identify concentrations of contaminants above the most stringent residential/institutional criteria (RCS-1) in Massachusetts.

Additionally, based on the findings of the Phase I ESA:

- Safety risks posed by rail lines, hazardous material pipelines, high power transmission lines, toxic air emissions from stationary sources or other sources of pollution were not identified.
- The Site is not currently or previously a hazardous, acutely hazardous substance release or solid waste disposal site as provided in the Phase I ESA.
- Train tracks, Freeways and traffic corridors were not identified within 500 feet of the Site.
- No power easements were identified within 350 feet of the Site.
- The Site appears to be self-draining without stagnant water and free from refuse, weed overgrowth and other hazards. At the time of observation, the site was not used for agricultural purposes including livestock or poultry.
- An above ground water storage or fuel storage tank was not identified within 1,500 feet of the Site.
- The Site is in a suburban residential area with no agricultural fields identified within 1,500 feet of the Site.

- The source of drinking water for the Site is not from an on-Site well. The school receives water from the municipal water supply which is tested annually.

We trust this information will be sufficient to document the CHPS site selection requirements. Should you need any additional information or have any question, please contact me at (978) 573-4040.

Sincerely,  
WESTON & SAMPSON ENGINEERS, INC.

A handwritten signature in black ink, appearing to read 'F. Ricciardi'.

Frank Ricciardi, P.E., LSP  
Vice President

# REPORT

November 2018

## PHASE I ENVIRONMENTAL SITE ASSESSMENT

Sharon High School  
181 Pond Street  
Sharon, MA 02067



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## EXECUTIVE SUMMARY

Weston & Sampson Engineers, Inc. (Weston & Sampson) on behalf of Tappe Associates, has performed a Phase I Environmental Site Assessment (ESA) of the property identified as the Sharon High School, 181 Pond Street, Sharon, Massachusetts (the Site). The Phase I ESA was performed as part of the design phase assessment for future Site redevelopment by the Town of Sharon. Pertinent findings of the Phase I ESA are as follows:

- The Site occupies approximately 28.5-acres of land which is developed with a two-story high school, a wastewater treatment plant, recreational fields, parking areas and access roads
- Historic documents indicate the Site was undeveloped prior to the construction of the current school complex in 1956. Prior to development the majority of the Site was wooded land.
- Review of historic aerial photographs and city directories indicate the historic use of properties adjacent to the Site included residential and recreational town park use, and undeveloped woodland. Review of an environmental database report, did not identify any facilities or releases of concern in the vicinity of the Site.
- One 20,000-gallon fuel oil underground storage tank (UST) formerly supplied the high school building with heating oil and was located on the western portion of the Site. This UST was identified in historic plans and Fire Department records and was reportedly removed in 1990. No documentation was identified during review of town files indicating the condition of surrounding soils or of the tank at the time of removal. Based on the lack of information regarding the tank removal, the unknown soil and groundwater conditions in the area of the tank are considered a potential REC.
- The building has one hydraulic elevator with an elevator control room. Mr. Kenneth Wertz, Operations Manager, indicated the elevator has a subsurface piston and an associated sump located beneath the elevator. Weston & Sampson was not provided access to these structures for inspection. However, Mr. Wertz indicated that the elevator is serviced on a regular basis and there have been no releases or issues reported. An additional hydraulic handicap elevator is located within the school lobby. This unit is self-contained with no accessible hydraulic system for inspection, and no separate piston or sump. No evidence of staining or releases to the surrounding area was observed in the vicinity of this handicap elevator.
- Numerous areas of routine chemical storage including paint and other building materials, janitorial supplies, and laboratory chemicals from the science wing portion of the school were identified. No major releases or spills were noted in the vicinity of chemical storage areas. Several *de minimis* spills were observed in the vicinity of sodium bicarbonate storage areas in the on-site wastewater treatment plant.
- Based on the age of the Site building (circa 1956), the building may contain hazardous building materials such as Asbestos Containing Material (ACM), lead based paint (LBP), Polychlorinated

Biphenyls (PCBs), and mercury. However, the consideration of these hazardous materials is beyond the scope of an ASTM Phase I ESA.

Based on the findings, opinion and conclusions of this Phase I ESA, Weston & Sampson recommends that a Phase II ESA be completed to address the area of the former fuel oil UST. Additionally, a Phase II ESA should be performed to obtain general soil and groundwater data to support design for future construction and redevelopment of the Site.

In addition to the Phase II ESA, we also recommend the following:

- Due to the age of the Site building there is potential for hazardous building materials. Therefore, a complete building materials survey should be performed prior to any future building renovation or demolition.
- In the event that renovation activities include removal or replacement of the hydraulic elevator, the area surrounding the elevator shaft/piston should be observed to evaluate for potential environmental impacts.

## 1.0 INTRODUCTION

Weston & Sampson, on behalf of Tappe Associates has prepared this Phase I Environmental Site Assessment (ESA) for the Sharon High School, 181 Pond Street, Sharon, Massachusetts (the Site). This ESA was performed in accordance with ASTM Standard E1527-13, which is compliant with the EPA All Appropriate Inquiry (AAI) Rule. Tappe Associates requested the Phase I ESA on behalf of the Town of Sharon as part of design phase assessment for future redevelopment of the property. The ESA included environmental database searches; review of local, state, and federal regulatory agency records; and a limited reconnaissance of the Site and vicinity. This report is subject to the Limitations described in Section 1.7.

### 1.1 Site Ownership and Location

Site and Address:	Sharon High School 181 Pond Street, Sharon, Massachusetts 02067
Latitude/Longitude:	42° 6' 49.1" North 71° 10' 39.54" West
UTM Coordinates:	Zone 19 319969 meters Easting 4664688 meters Northing
Elevation:	74 feet above mean sea level
Site Owner:	Sharon High School
Site Occupants:	High School
County:	Norfolk
Parcel ID:	Map 81, Lot 124
Size:	Approximately 28.5 acres

A Locus Map and Site Plan are provided as Figures 1 and 2, respectively. Photographs of the Site taken during the Phase I ESA are included in Appendix A.

### 1.2 Purpose

The Phase I ESA was performed to assess the Site with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601) and petroleum products. This practice is intended to permit the Site owner to satisfy some of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability: that is, the practices that constitute "all appropriate inquiry into the previous ownership and uses of the Site consistent with good commercial or customary practice" as defined in 42 U.S.C. § 9601(35)(B). The Phase I ESA was also performed to to satisfy some of the requirements of the Massachusetts School Building Authority (MSBA) school building grant program.

The objective of the Phase I ESA is to identify Recognized Environmental Conditions (RECs) at the Site at the time of the Site evaluation. The term "Recognized Environmental Condition" referenced in the E1527-13, refers to "the presence or likely presence of any hazardous substance or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment." The ASTM definition does not include, "de minimis" conditions, which generally do not present a threat to human health or the environment and would not be the subject of an enforcement action if brought to the attention of the appropriate governmental agencies; therefore, de minimis conditions are not considered RECs.

### 1.3 Scope of Services

This ESA has been conducted utilizing a standard of good commercial and customary practice that is consistent with ASTM Standard Practice E 1527-13. Any significant scope-of-work additions, deletions or deviations to ASTM E 1527-13 are noted below or in the corresponding sections of this report. A copy of the scope of services contract agreement between Weston & Sampson and Tappe Associates, specifying the work to be performed for this Phase I ESA and user responsibilities of the report is included in Appendix B of this report.

### 1.4 Non-ASTM Scope Considerations

The scope of work completed for this assessment did not include any non-ASTM scope considerations.

### 1.5 User Reliance

This report may be distributed and relied upon by Tappe Associates and the Town of Sharon as Tappe's client. Reliance on the information and conclusions in this report by any other person or entity is not authorized without the written consent of Tappe Associates, or Weston & Sampson.

### 1.6 Deviations

Except for the limitations and exceptions discussed in Section 1.7, this Phase I ESA complies with the ASTM Standard E1527-13.

### 1.7 Limitations

This report was prepared exclusively for Tappe Associates. Information provided by Weston & Sampson in this report is based solely on the information reported in this document. Future investigations and/or information that were not available to Weston & Sampson at the time of the investigation may result in a modification of the findings stated in this report.

Should additional information become available concerning this Site, or neighboring properties that could directly impact the Site, that information should be made available to Weston & Sampson for review so that, if necessary, conclusions presented in this report may be modified. The conclusions of this report are based on conditions observed at the Site by Weston & Sampson personnel at the time of the investigation, information provided by Tappe Associates, information provided by Environmental Data Resources, Inc. (EDR), and information provided by federal, state, and local agencies. This report has been prepared in accordance with generally accepted engineering and geological practices. No other warranty, express or implied, is made.

## 1.8 User Provided Information

An AAI User Questionnaire and a Phase I ESA Site Reconnaissance Questionnaire were provided to the Town of Sharon to satisfy the user interview requirement. The AAI User Questionnaire was completed by Mr. Kenneth Wertz representing Sharon Public Schools and the Town of Sharon. The information requested in the User Questionnaire is intended to assist in gathering evidence to identify RECs at the Site and apprise the user of their obligations under the ASTM Phase I ESA standard. Copies of the completed checklists are provided as Appendix C. Information provided by Mr. Wertz is discussed below.

### 1.8.1 *Environmental Liens*

Mr. Wertz is not aware of any environmental cleanup liens filed against the Site or recorded under federal, tribal, state, or local law.

### 1.8.2 *Activity and Use Limitations (AULs)*

Mr. Wertz is not aware of any AULs implemented at the Site.

### 1.8.3 *Specialized Knowledge*

Mr. Wertz did not report specialized knowledge or experience as it relates to the current or former use of the Site.

### 1.8.4 *Commonly Known or Reasonably Ascertainable Information*

Mr. Wertz reported that he is not aware of commonly known or reasonably ascertainable information about the Site that would help the environmental professional identify releases and/or threats of releases.

### 1.8.5 *Valuation Reduction for Environmental Issues*

Mr. Wertz indicated that the property is not being sold, so no property valuation is available.

### 1.8.6 *Degree of Obviousness of Contamination*

Mr. Wertz was not aware of any obvious indicators that point to the presence or likely presence of contamination at the Site.

## 1.9 User Provided Records/Documents

Tappe Associates provided Weston & Sampson with a sketch depicting an approximate footprint for various addition alternatives, as well as historic plans for the Site. A copy of the provided documentation is available in Appendix D.



## 2.0 DATA SOURCES

### 2.1 Electronic Database Search

A review of “standard” environmental databases as specified by ASTM Standard E 1527-13 and maintained by federal, state, and tribal offices was completed through EDR of Shelton, Connecticut. Databases were searched for properties with reported environmental conditions located within approximate minimum search distances as specified by ASTM Standard E 1527-13. The databases use geocoded information to identify the coordinates of the properties or to check the street addresses of practically reviewable non-geocoded “orphan” properties located within the same zip code. The detailed database report including mapping of results and limitations of the search criteria are contained in Appendix E. Database acronyms that are not explicitly defined in this discussion are also included. The EDR report identifies the name of the databases that were searched, the date information was last updated by EDR, and the date information was last updated by the original source.

It should be noted that plotted locations of listed facilities are not always accurate. With regard to listings that are determined or suspected to be inaccurate, based on information from other sources such as direct observation or consultation with individuals familiar with the property, Weston & Sampson uses the best available data when evaluating the location of listed orphan sites.

The table in Section 2.2 below summarizes number of properties reported for each database, within the appropriate search distance, including the Site. Available records for each of the listings identified in the databases were reviewed to evaluate the potential to impact the Site. In general, releases with sources that are proximate to, and hydraulically upgradient of the Site have the greatest potential to impact the Site. Weston & Sampson reviewed the location of each property and potential contaminant in the database report. For the purpose of this Phase I ESA, a database listing was excluded from further consideration because the associated release(s) of hazardous substances and/or petroleum are not likely to impact the Site if one or more of the following conditions are met:

- Hydrogeologically isolated from the Site (e.g., opposite bank of a river);
- At such distance from the Site that migration of contaminants to the Site is unlikely; or
- Groundwater flow from the listed property is away from the Site.

Exclusion based on the criteria listed above is done with respect to the magnitude of the release, contaminant type, and current regulatory status of the off-Site source. The remaining properties are evaluated in more detail to assess if they pose a threat to the Site. A detailed evaluation of the database results, regulatory file reviews (if performed) and the potential impact of listings that are likely to impact environmental conditions at the Site are included in Section 4.3 of this report.

### 2.2 Federal and State Records – EDR Standard Environmental Records Database

The table below summarizes the standard environmental databases searched by EDR, as well as some additional databases. For a comprehensive list of databases searched, see the EDR report, included as Appendix E. Also summarized in the table is the assessment of whether additional review is required and the rationale for such, based on the criteria outlined in Section 2.1. Specific off-Site properties identified within the database report are further evaluated in the table below. All acronyms in the table below are defined in Appendix E.

SUMMARY OF EDR'S FEDERAL/STATE REGULATORY DATABASE SEARCH FINDINGS						
Regulatory Database (Approximate Minimum Search Distance)	Site Listed	Off-Site listings Within Search Distance	Off-Site Listings Not Requiring Additional Review			Off-Site listings requiring additional review
			Hydrogeologic Isolation	Distance	Down gradient	
Federal National Priority List	No	0	0	0	0	0
NPL/delisted NPL (1.0 mile)	No	0	0	0	0	0
Federal CERCLIS (0.5 mile)	No	0	0	0	0	0
Federal CERCLIS NFRAP (0.5 mile)	No	0	0	0	0	0
RCRA CORRACTS (1.0 mile)	No	0	0	0	0	0
RCRA TSD (0.5 mile)	No	0	0	0	0	0
RCRA Generator Site (0.25 mile)	No	0	0	0	0	0
ERNS list (Site)	No	0	0	0	0	0
Engineering & Institutional Control Registries (Site & adjoining)	No	0	0	0	0	0
CERCLIS Sites - SHWS (1 mile)	No	11	0	10	0	1
State Landfill & Solid Waste Disposal Sites (0.5 mile)	No	0	0	0	0	0
State Leaking Storage Tank Sites (0.5 mile)	No	4	0	4	0	0
State Registered Storage Tank Sites (UST-0.25 mile)	No	0	0	0	0	0
State Engineering & Institutional Control Registries (0.5 mile)	No	1	0	1	0	0
State Voluntary Cleanup Sites (0.5 mile)	No	0	0	0	0	0
State Brownfields Sites (0.5 mile)	No	0	0	0	0	0
Local Land Records (Site)	No	NR	NR	NR	NR	NR
State Emergency Release (Site)	No	NR	NR	NR	NR	NR
GWDP / NPDES (Site)	Yes	NR	NR	NR	NR	NR
Asbestos, FTTS (Site)	Yes	NR	NR	NR	NR	NR
US AIRS (Site)	Yes	NR	NR	NR	NR	NR

NR= Not requested in database research

## 2.3 Orphan Sites

The EDR database report identified four orphan site listings. Orphan sites are those sites that could not be accurately mapped or geocoded due to inadequate location information. Orphan listings provided by EDR were cross referenced with state and local files to confirm addresses. Weston & Sampson attempted to locate listed orphan sites and there were no orphan sites identified with potential to impact the Site.

## 2.4 Historical Records Review

The objective of developing a history of the previous uses of the property is to help identify the likelihood of past uses that may have led to RECs. Historical use information was obtained from a variety of sources as summarized below.

SUMMARY OF HISTORICAL RECORDS SOURCES REVIEWED	
SOURCE	LOCATION
Historical Sanborn Report (None Identified, Site is an Unmapped Property. See Section 5.0 for further discussion)	Appendix F (Unmapped Property Report)
Historical Topographic Maps (Dated: 1894, 1915, 1919, 1936, 1941, 1943, 1946, 1964, 1979, 1985, 1987 and 2012)	Appendix G
Historical Aerial Photographs (Dated: 1952, 1961, 1969, 1970, 1975, 1986, 1995, 2008, 2012 and 2016)	Appendix H
Historical City Directories (Dated; 1984, 1988, 1992, 1995, 2000, 2005, 2010, and 2014)	Appendix I

## 2.5 Physical Site Setting

This section presents a description of the sources reviewed during the development of the environmental setting pertaining to the Site and regional features including topography, groundwater, and geology. The table below summarizes the physical setting sources included in this report.

SUMMARY OF PHYSICAL SITE SETTING SOURCES	
SOURCE	LOCATION
USGS Topographic Map, Massachusetts Quadrangle	Figure 1
Surficial Geology & Groundwater Flow	Figure 1 & Appendix E – EDR Report

## 2.6 Interviews

The purpose of the interview is to obtain information identifying possible RECs at the Site. A concerted effort was made to interview those knowledgeable about the Site. Weston & Sampson received information from Mr. Kenneth Wertz, representing the Sharon High School. Additionally, Weston & Sampson performed interviews with municipal officials and conducted the local municipal file reviews.

A summary of interview sources and location of the documentation of the interview and questionnaire results is included below.

SUMMARY OF INTERVIEW SOURCES	
SOURCE / INTERVIEWEE	LOCATION
<u>Owner/Key Site Manager</u> – Kenneth Wertz	Appendix C - General Questionnaire
<u>User</u> – Kenneth Wertz	Appendix C - AAI User Questionnaire
Sharon Assessors Office	Appendix J – Municipal Records
Sharon Clerks Office	
Sharon Building Division	
Sharon Board of Health	
Sharon Fire Prevention Office	

## 2.7 Site Reconnaissance

On October 4, 2018, Mr. Lee Koska, Engineer II with Weston & Sampson performed a walking visual reconnaissance of the Site. Mr. Koska was accompanied by Mr. Kenneth Wertz, Director of Operations and Maintenance for the Sharon school system. The purpose of the Site reconnaissance was to observe current conditions and assess, based on visual observations, if there was evidence of RECs (i.e., release(s) of oil and/or hazardous materials (OHM) to the surface or subsurface at the Site or its surrounding areas.

## 2.8 Qualifications of Environmental Professional Staff

Mr. Lee Koska, Engineer II with Weston & Sampson performed Site reconnaissance, municipal historical and database records review and report preparation. Mr. Koska has a B.S. degree in Environmental Engineering from Tufts University and Master's in Environmental Engineering from Northeastern University. Mr. Koska's work and the final Phase I ESA report was reviewed by Mr. Sean Healey, Team Leader with Weston & Sampson. Mr. Healey is a Licensed Site Professional (LSP) in Massachusetts and has over 20 years of experience working extensively on environmental assessment and remediation projects in Massachusetts. Mr. Healey received his B.S. degree from the University of Massachusetts. Copies of the Environmental Professional's resumes (listed above) are included in Appendix K.

## 2.9 References

A list of documents referenced in the development of this report is included in Appendix L.

### 3.0 SITE CONDITIONS AND USE HISTORY

This section presents a summary of the use, history, and environmental settings of the Site, regional features including topography, groundwater, geology and field observations based on the information gathered from the data sources listed in Section 2.

#### 3.1 Current Conditions and Use of the Site

##### 3.1.1 Site Conditions

The Site occupies approximately 28.5-acres of land which is developed with a two-story high school, a wastewater treatment plant, recreational fields, parking areas and access roads as shown on Figure 2. A pad mounted transformer is located to the northeast of the Site building, and an underground fuel oil storage tank is located in the western parking area adjacent to the primary Site building. Undeveloped wooded areas occupy the southwestern and northern portions of the Site. The wastewater treatment plant and associated leaching field are located west of the primary Site building. Topography at the Site slopes gently to the south.

The two-story Site building was constructed in 1956 and has a concrete slab foundation with partial basement. Various additions to the original structure were completed in 1963, 1997, 2001, 2009, and 2010. The building includes various classroom spaces, multiple science labs, a gymnasium, an auditorium, a cafeteria, administrative offices, multiple bathrooms/locker rooms, and multiple storage/utility closets and a maintenance shop and utility area. The building currently has natural gas heating and cooling systems, and previously used fuel oil for heat prior to 1990. The Site has been serviced with municipal water and the on-site sewerage treatment plant since 1998. Prior to this date the Site was serviced by a septic tank and leach field on the western portion of the property.

One 20,000-gallon fuel oil underground storage tank (UST) formerly supplied the high school building with heating oil and was located on the western portion of the Site. This UST was identified in historic plans and Fire Department records, and was reportedly removed in 1990. No documentation was identified during review of town files indicating the condition of surrounding soils or of the tank at the time of removal. ***Based on the lack of information regarding the tank removal, soil and groundwater conditions in the area of the tank are considered a potential REC.***

The building has one hydraulic elevator with an elevator control room. Mr. Wertz indicated the elevator has a subsurface piston and an associated sump located beneath the elevator. Weston & Sampson was not provided access to these structures for inspection. However, Mr. Wertz indicated that the elevator is serviced on a regular basis and there have been no releases or issues reported. An additional hydraulic handicap elevator is located within the school lobby. This unit is self-contained with no accessible hydraulic system for inspection, and no separate piston or sump. No evidence of staining or releases to the surrounding area was observed in the vicinity of this handicap elevator.

A boiler room and utility area are located on the western portion of the building and contain three gas boilers which were installed following the decommissioning of the on-site fuel oil UST in 1990 and subsequent transition to natural gas heat. The utility area also houses several pumps for HVAC equipment, and areas of chemical storage for various routine janitorial supplies and building materials. All flammable chemicals are securely stored in a flammable locker, and no evidence of spills was

observed in the vicinity of chemical storage areas. A sump pump was additionally located in this area, with no observed staining or evidence of a release to this structure. Mr. Wertz indicated that there have been no known releases of oil or hazardous material from any of the utility room equipment. HVAC systems are located on the roof of the Site building.

The on-site Sewerage Treatment Plant is operated by Weston & Sampson and utilizes a rotating biological contactor (RBC) to treat incoming wastewater from the school and bathroom facilities at Memorial Park Beach. Chemical feeds to the system include methanol and sodium bicarbonate, with several pallets of sodium bicarbonate observed adjacent to the RBC system. Small quantities of sodium bicarbonate powder were observed in the vicinity of the storage pallets, however no floor drains or significant quantities of spilled material were observed. The presence of this sodium bicarbonate is considered a *de minimis* condition. No other major chemical storage areas beyond small quantities of lab chemicals and lubricating oil (5-gallon pails or less) were observed in this area. An emergency generator services the wastewater treatment plant, however this unit is natural gas fired and does not utilize petroleum products as a fuel source.

Small quantities of miscellaneous paints and household cleaners were observed within the building, mainly in the maintenance area, custodial closets and auditorium. However, no evidence of spills or pools of liquid were observed, and there were no floor drains observed in the storage areas.

Several areas of laboratory chemical storage were identified in the science wing of the building. A complete manifest was not available for review, however no evidence of major spills or floor drains were observed in the chemical storage areas of the science wing. A neutralization system for the lab area wastewater is located in a utility closet of this wing. This system uses sodium hydroxide to neutralize incoming wastewater prior to discharge to the wastewater treatment plant. No evidence of spills or releases was observed in the vicinity of the sodium hydroxide storage drums.

Landscaping activities are performed by the Sharon Department of Public Works, with no major storage of landscaping chemicals, herbicides, pesticides, or petroleum products on site to support these activities.

### 3.1.2 Geology and Hydrogeology

Review of Geotechnical Field Data and EDR Soil Layer Information indicates the Site is underlain by up to up to 15 feet of gravelly sand with varying amounts of silt. The fine sandy loam/gravelly fine sandy loam is underlain by till. Based on topography, groundwater is expected to be between 5 and 10 feet below ground surface at the Site.

## 3.2 Past Use History

The Site's past use history was established based on information from interviews, review of municipal records, and review of historic aerial photographs, and city directories. The following table provides a summary of past use history based on a review of historic topographic maps.



SUMMARY OF HISTORICAL TOPOGRAPHIC MAPS	
TOPOGRAPHIC MAP	DESCRIPTION
1894, 1915, 1919, 1936, 1941, 1943 and 1946 Maps	Depict unimproved, wooded land and undeveloped fields, as well as numerous small structures in the surrounding vicinity which likely represent residential developments.
1964, 1979, 1985 and 1987 Maps	Depict the current high school building and associated athletic fields, with numerous small structures continuing to be depicted on surrounding parcels.
2012 Map	Structures or other notable features are no longer depicted on the Site or surrounding area.

The following table presents a summary of past use history based on historic aerial photographs.

SUMMARY OF HISTORIC AERIAL PHOTOGRAPHS	
AERIAL PHOTOGRAPH	DESCRIPTION
1969, 1970, 1975, 1986 and 1995 Aerials	Depict the current high school building and various sports fields to the south of the structure. Adjacent properties are depicted as residential developments and wooded land, with a parking lot associated with the Memorial Park Beach depicted to the south.
2008, 2012 and 2016 Aerials	Depict similar conditions to the previous aerial photographs, with the addition of the on-site wastewater treatment plant to the west of the primary high school building.

The following table presents a summary of past use history based on a review of historic city directories.

SUMMARY OF HISTORICAL CITY DIRECTORIES	
CITY DIRECTORY	DESCRIPTION
1984 Directory	Site occupant is listed as the Town of Sharon School Department, Senior High School Office.
1988 Directory	Site occupant is listed as Town Senior High School and Offices.
1992, 1995, 2000 Directories	Site occupant is listed as Sharon School District.
2000 Directory	Site is not listed, however the Sharon School District is listed as the occupant of 181 Pond Street.
2010, 2014 Directories	Site occupant is listed as Sharon Public Schools and the Sharon High School PTSO Foundation

Review of adjacent and nearby property directly listings identified residential use and did not reveal any commercial or industrial uses.

Historical Sanborn atlas maps were requested from EDR, however, the Site is listed as an unmapped property and maps were therefore not available for review.

### 3.3 Previous Site Releases

No State Hazardous Waste Site listings were identified for the Site in a review of the EDR Radius Report and MassDEP databases.

### 3.4 Identified Site Listings

The databases reviewed, as detailed in Section 2, revealed the following listings for the Site:

- The Site is listed for multiple asbestos related entries with an AHERA inspection reportedly conducted in 1998, and transite panel abatement activities conducted in the auditorium in 2017. The consideration of asbestos is outside of the scope of an ASTM Phase I ESA in accordance with ASTM E1527-13.
- A NPDES Groundwater Discharge Permit was identified for the Site wastewater treatment plant. No violations or evidence of releases were noted in the EDR listing regarding to this permit.
- The Site is additionally listed in the US AIRS database, with periodic inspections conducted from 1988 through 1996. Review of the federal ICIS-AIR Database indicated that the Site was operating, with minor emissions for various compounds associated with school operations. No violations were noted.

Based on the nature of the listings, none are expected to represent a REC in association with the Site.

The databases reviewed, as detailed in Section 2, revealed one off-site listing located within the approximate minimum search distance requiring additional review and/or evaluation.

## 4.0 OFF-SITE PROPERTY CONDITIONS AND USE HISTORY

This section presents a descriptive summary of the use, history, and environmental settings pertaining to off-site properties based upon the information gathered from the data sources listed in Section 2.

### 4.1 Current Use of Adjoining and Nearby Properties

The Site is located west of Pond Street and north of Beach Street in Sharon Massachusetts. Residential properties abut the Site to the north, east, and west. The Memorial Park beach and recreational park areas also abut the property to the south and east. There were no concerns identified with current use of adjoining and nearby properties.

### 4.2 Past Use History

As indicated in Section 3.2 the historic use of adjacent properties included undeveloped land, recreation space, and residential use. Based on these historic uses, the potential for impact to the Site is considered minimal.

### 4.3 Off-Site Database Listing Discussion

The databases reviewed, as detailed in Section 2, revealed one off-site listing located within the approximate minimum search distance requiring additional review and/or evaluation. This listing includes the following:

#### 13 Massapoag Lane (RTN 4-15623)

This property is located approximately 1,300 feet northwest of the Site. In July 2000, a release of approximately 20-gallons of hydraulic oil from hydraulic lines on garbage truck at the property. Emergency response was performed and the surficial release was remediated to background levels. A Class A-1 Response Action Outcome (RAO) Statement was submitted to the MassDEP in support of regulatory closure of the release. Based on the limited nature of this release, remedial activities, and regulatory status, this off-Site release is not considered a concern to the subject Site.

### 4.4 Vapor Encroachment Screening

In 2010, ASTM International issued its revised Standard E2600-10 entitled "Standard Guide for Vapor Encroachment (VE) Screening on Property Involved in Real Estate Transactions." This standard guide has been adopted into the ASTM 1527-13 Phase I Environmental Site Assessment Standard. The purpose of the VE standard is to define good commercial and customary practice for real estate transactions in the United States for conducting a screening assessment directed solely at the likelihood for migrating vapors to encroach upon a Site (i.e. the Site) creating a vapor encroachment condition (VEC). Whether or not encroaching vapors result in a vapor intrusion problem requires further investigation that is beyond the scope of the standard.

A VEC is defined as the presence or likely presence of chemicals of concern (COC) vapors in the subsurface of the Site caused by the release of vapors from contaminated soil or groundwater on or near the Site. An area of concern (AOC) as defined in the E2600-10 is measured 0.33-miles from the Site for known or suspect contaminated sites with VOCs or semi-VOCs; 0.10-mile from the Site for known or suspect petroleum hydrocarbon releases. The identification of AOCs may be reduced if the

groundwater flow direction is known relative to the Site. Critical distances are taken into account for contaminated groundwater plumes in any direction for COCs including petroleum LNAPL accumulating above the water table at a distance of 100 feet from the edge of the plume to the Site and 30 feet for dissolved volatile petroleum hydrocarbons.

Using the information evaluated in the Sections above, Weston & Sampson has performed a Vapor Encroachment Screening (Tier 1) in general accordance with the scope of work and limitations of ASTM Standard Practice E 2600-10 for the Site. The purpose of this Vapor Encroachment Screening (Tier 1) was to identify existing or potential VECs (as defined by ASTM Standard E 2600-10) affecting the Site. Based on the results of this screening, a VEC was not identified at the Site. The EDR VEC report is provided in Appendix E.

## 5.0 DATA GAPS

All AAI reports must include an identification of “significant” data gaps (as defined in § 312.20 of AAI final rule and § 12.7 of ASTM E1527-13), if any, in the information collected for the inquiry. Significant data gaps include missing or unattainable information that affects the ability of the environmental professional to identify conditions indicative of releases or threatened releases of hazardous substances, and as applicable, pollutants and contaminants, petroleum or petroleum products, or controlled substances, on, at, in or to the subject property. The documentation of data gaps must include information regarding the significance of these data gaps. The following is a discussion of potential data gaps for this assessment:

- Weston & Sampson identified a data gap due to the fact that interviews with former owners were not completed during this Phase I ESA Update. However, this does not represent a significant data gap as the Site appears to have been undeveloped prior to use by the current owners.
- A data gap was encountered relative to historical review. Historical aerials and atlas maps for the Site were not available to achieve a 5-year interval review. However, this does not represent a significant data gap, as the historical sources available indicate continuity of Site use.
- Weston & Sampson Site reconnaissance included only limited inspection along the wooded areas on the western portion of the Site. Due to thick vegetation and cover, detailed observation in these areas was limited. However, this does not represent a significant data gap as historic sources indicate these areas have been undeveloped and vegetated for some time.
- The subsurface elevator piston and sump within the building could not be observed. However, this is not considered a significant data gap as Site contacts indicated that there have been no known releases from the equipment. Additionally, no evidence of a release of hydraulic fluid was noted in the vicinity of the self-contained handicap elevator.

No other data gaps, as defined by ASTM Practice E 1527-13, were noted during the Site reconnaissance and records review that would significantly affect the ability of Weston & Sampson to identify RECs for the Site.

## 6.0 FINDINGS AND OPINIONS

Based on the work completed during this Phase I ESA, the following pertinent findings and opinions are offered:

- The Site occupies approximately 28.5-acres of land which is developed with a two-story high school, a wastewater treatment plant, recreational fields, parking areas and access roads.
- Historic documents indicate the Site was undeveloped prior to the construction of the current school complex in 1956. Prior to development the majority of the Site was wooded land.
- Review of historic aerial photographs and city directories indicate the historic use of properties adjacent to the Site included residential and recreational town park use, and undeveloped woodland. Review of an environmental database report, did not identify any facilities or releases of concern in the vicinity of the Site.
- One 20,000-gallon fuel oil UST formerly supplied the building with heating oil and was located on the western portion of the Site. This tank was reportedly decommissioned in 1990, however no documentation was identified indicating the condition of surrounding soils or condition of the tank at the time of closure.
- The building has one hydraulic elevator with an elevator control room. Mr. Kenneth Wertz, Operations Manager, indicated the elevator has a subsurface piston and an associated sump located beneath the elevator. Weston & Sampson was not provided access to these structures for inspection. However, Mr. Wertz indicated that the elevator is serviced on a regular basis and there have been no releases or issues reported. An additional hydraulic handicap elevator is located within the school lobby. This unit is self-contained with no accessible hydraulic system for inspection, and no separate piston or sump. No evidence of staining or releases to the surrounding area was observed in the vicinity of this handicap elevator.
- Numerous areas of routine chemical storage including paint and other building materials, janitorial supplies, and laboratory chemicals from the science wing portion of the school were identified. No major releases or spills were noted in the vicinity of chemical storage areas. Several *de minimis* spills were observed in the vicinity of sodium bicarbonate storage areas in the on-site wastewater treatment plant.
- Based on the age of the Site building (circa 1956), the building may contain hazardous building materials such as Asbestos Containing Material (ACM), lead based paint (LBP), Polychlorinated Biphenyls (PCBs), and mercury. However, the consideration of these hazardous materials is beyond the scope of an ASTM Phase I ESA. A complete building materials assessment should be performed prior to any future building renovation or demolition.



## 7.0 CONCLUSIONS

Weston & Sampson was contracted by Tappe Associates to perform a Phase I ESA of the Sharon High School, 180 Pond Street, Sharon, Massachusetts (the Site). The Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13. Any exceptions to, deletions from, this practice are described in Sections 1 of this report. The assessment revealed the following RECs for the Site:

- One 20,000-gallon fuel oil underground storage tank (UST) formerly supplied the high school building with heating oil and was located on the western portion of the Site. This UST was identified in historic plans and Fire Department records, and was reportedly removed in 1990. No documentation was identified during review of town files indicating the condition of surrounding soils or of the tank at the time of removal. Based on the lack of information regarding the tank removal, soil and groundwater conditions in the area of the tank are considered a potential REC.

Based on the findings, opinion and conclusions of this Phase I ESA, Weston & Sampson recommends that a Phase II ESA be completed to address soil and groundwater conditions in the area of the former UST. Additionally, a Phase II ESA should be performed to obtain general soil and groundwater data to support design for future construction and redevelopment of the Site.

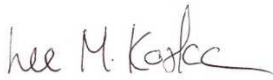
In addition to the Phase II ESA, we also recommend the following:

- Due to the age of the Site building there is potential for hazardous building materials. Therefore, a complete building materials survey should be performed prior to any future building renovation or demolition.
- In the event that renovation activities include removal or replacement of the hydraulic elevator, the area surrounding the elevator shaft/piston should be observed to evaluate for potential environmental impacts

## 8.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONALS

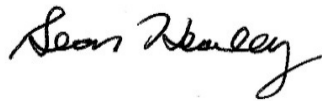
We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Authored by:



Lee M. Koska  
Engineer II

Reviewed by:

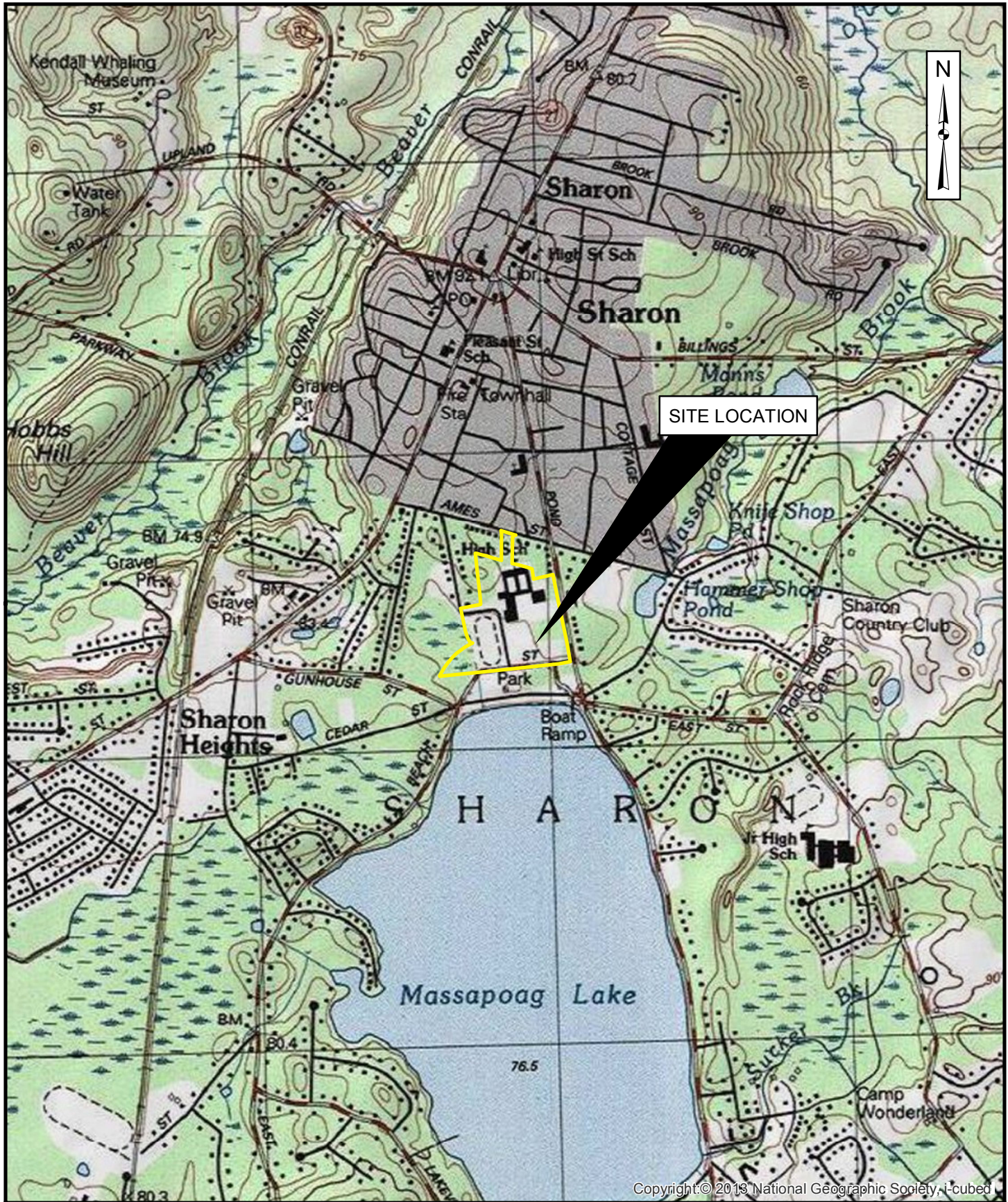


Sean Healey  
Team Leader, LSP  
Environmental Professional

FIGURES



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## Legend

APPROXIMATE SITE BOUNDARY

**FIGURE 1**  
**CITY OF SHARON, MA**  
**SHARON HIGH SCHOOL**

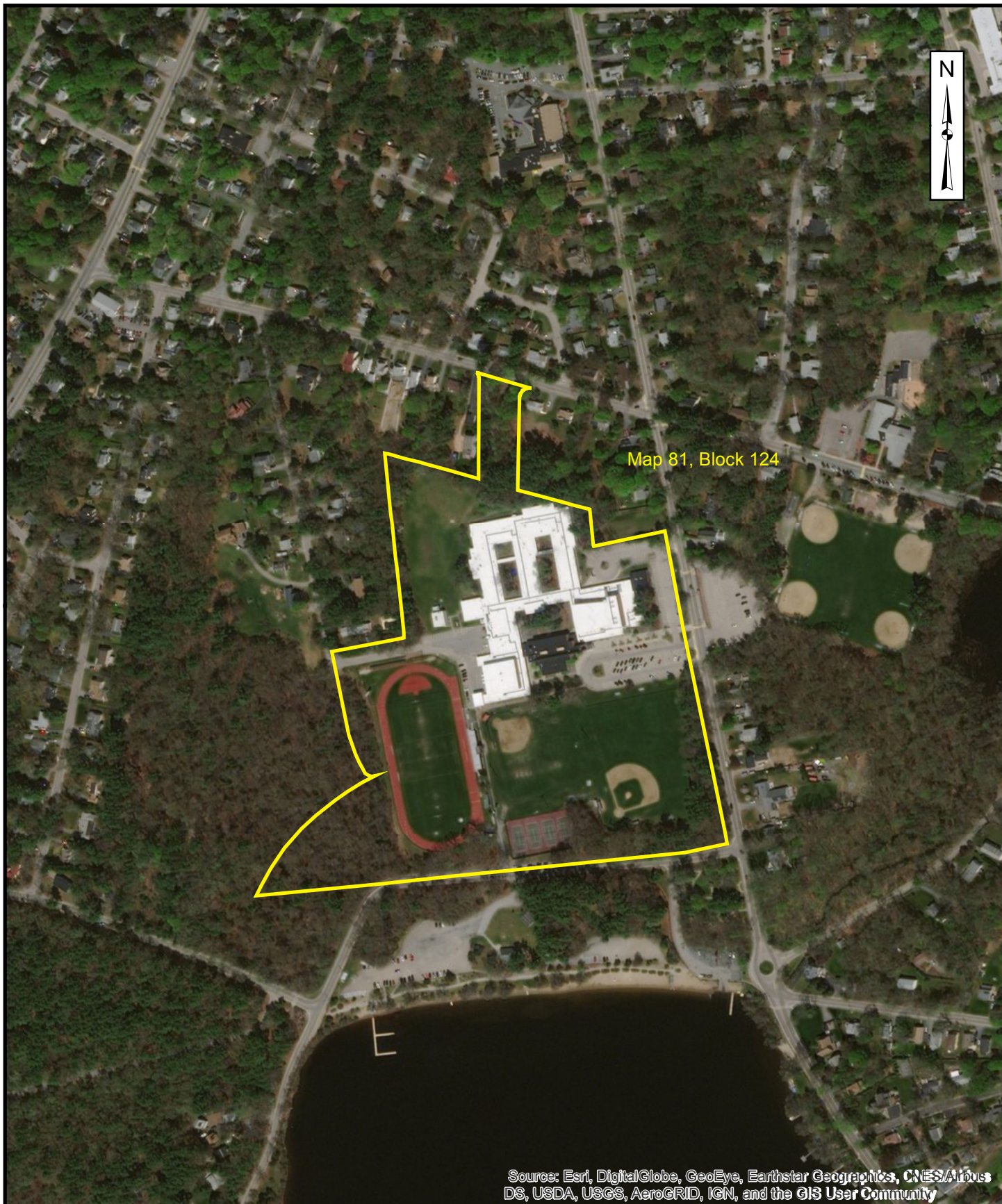
## LOCUS MAP

0 2,000 4,000 Feet

Weston & Sampson



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## Legend

 APPROXIMATE SITE BOUNDARY

## FIGURE 2 CITY OF SHARON, MA SHARON HIGH SCHOOL

## SITE PLAN

0 950 1,900 Feet

Weston & Sampson

**APPENDIX A**

Photograph Log





1 : High School Entrance



2 : Representative Parking Area



3 : Non PCB Transformer



4 : Wastewater Treatment Plant Exterior



5 : Gas fired emergency generator



6 : Rear parking area





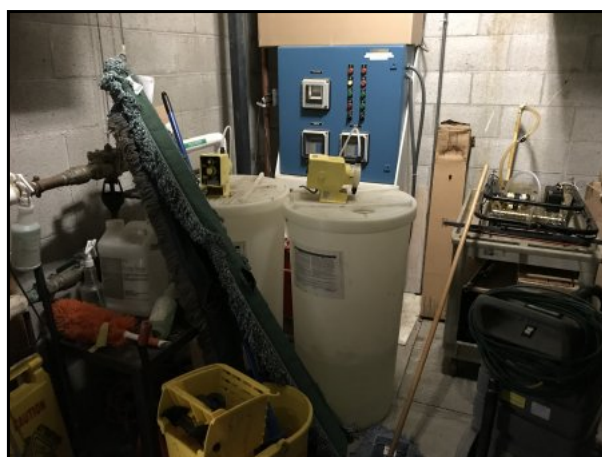
7 : Rotating Biological Contactor



8 : Wastewater treatment tanks



9 : Sodium bicarbonate storage



10 : Sodium hydroxide neutralization system



11 : Representative building chemical storage area



12 : Gas fired furnaces



13 : Maintenance area overview



14 : Chemical lab area



15 : Utility crawlspace



16 : Elevator hydraulic unit



17 : Handicap elevator unit



18 : Treatment plant leach field

## APPENDIX B

### Scope of Services



**Tappe Associates, Inc.  
Weston & Sampson Proposal No. 76218**

August 2, 2018

Mr. Charles Hay, Principal  
Tappe Associates, Inc.  
Six Edgerly Place  
Boston, MA 02116

Re: Preliminary Geotechnical Investigation and Environmental Assessment  
Proposed Sharon High School – Sharon, Massachusetts

Dear Mr. Hay:

In accordance with your request, Weston & Sampson Engineers, Inc. (Weston & Sampson) is pleased to provide you with this proposal for consulting engineering services to conduct a preliminary geotechnical investigation and environmental assessment for the proposed addition to, or replacement of, the Sharon High School (the Site) at 181 Pond Street in Sharon, Massachusetts.

Based on preliminary information provided by Tappe Associates (Tappe), preliminary concepts include additions to the north or south sides of the existing building(s) or a new building in the existing ball fields south of the existing campus. Sketches showing the approximate proposed footprints were provided by Tappe. No additional information regarding the existing building, site, or proposed structures was provided at the time of this proposal.

A feasibility study is proposed to evaluate preliminary geotechnical and environmental considerations associated with design and construction of additions or a new school building. Specific information including building locations and elevations, site grading, and utility depths were not available at the time of this proposal. We anticipate, however, that the proposed school addition or new building will be a one- to two-story structure and associated site improvements may include access roadways and parking areas, retaining walls, and underground utilities.

A Phase I Environmental Site Assessment (ESA) is required for the project to comply with the requirements of the Massachusetts School Building Authority (MSBA) school building grant program. Since geotechnical investigations will include advancement of soil borings, soil samples will be collected to evaluate general environmental soil quality at the site and around existing sources of oil and/or hazardous materials based on review of available plans and aerials for the Site.

The proposed locations, depths and types of sampling for the subsurface investigations described below are intended to allow a preliminary evaluation of subsurface conditions relative to geotechnical feasibility including potential foundation alternatives and environmental considerations for site development. Additional borings and environmental investigations will be required during conceptual and final design once

project details are developed. Our proposed scopes of services for the preliminary environmental assessment and geotechnical investigation are described below.

## SCOPE OF SERVICES

### *Geotechnical Assessment*

Our geotechnical assessment will include a subsurface investigation program (coordinated with the requirements of the Environmental Assessment), geotechnical analyses, and a report containing preliminary conclusions and geotechnical recommendations related to site development and foundation design and construction. Our specific scope will include the following items:

1. Review available subsurface and geologic information as indicators of subsurface conditions at the site.
2. Visit the site to observe existing features exposed at ground surface and the condition of the existing school structure to assess site access for subsurface explorations, and to mark proposed subsurface exploration locations in the field.
3. Conduct a program of test borings to explore subsurface conditions in the vicinity of the proposed additions and new building footprints. Up to nine borings are proposed to depths up to 25 ft. or refusal. We anticipate the test boring program will require three days. Adjustment of the number of borings or depths may be required to limit the drilling program to three days.

The borings will be advanced using hollow stem auger drilling methods with standard split-spoon sampling conducted at two- to five-foot intervals of depth. The borings will be advanced through any surficial fill and organic soils and will be terminated between ten and fifteen feet into naturally deposited inorganic soils or refusal. A track rig (or all-terrain vehicle) will be used to reduce ground disturbance, but some disturbance to grass and topsoil should be anticipated. Boring locations are proposed at locations that will not require access preparation including clearing of brush and small trees.

Boreholes will be backfilled with soil cuttings and the drilling sites will be restored to as near to pre-drilling condition as practicable. Borings completed in existing pavement areas will be cold patched with asphalt. *We assume that excess drill cuttings can be spread at the ground surface in an area of the site designated by school personnel. We also assume that special drilling procedures, personal protective equipment, drumming and disposal of drill cuttings, equipment decontamination, etc. are not required. Such measures, if required, will result in additional scope and costs.*

*We assume that there will be no restrictions on drilling during normal work days due to school being in session. We also assume the Building Committee and/or School District will assist with coordinating site access for explorations and provide any permission needed for drilling during school hours. Snow removal for access to boring locations and landscaping services to repair minor ground disturbance at boring locations are not included in our scope and will need to be provided by the Town if required. No permitting associated with wetland resources or other environmental/historic conditions is required.*



We will arrange for the test borings to be completed by a qualified test boring contractor. The drilling subcontractor will contact DIGSAFE to mark below-grade utilities in public streets near the project area prior to drilling. *We will need someone from the Town and School to identify below-grade utility locations on the site since DIGSAFE does not clear utilities outside of roadway right-of-ways.*

Weston & Sampson staff will monitor the explorations in the field, prepare test boring logs and measure the drilling locations relative to existing site features. *We will need an electronic version of the site plan to add the drilling locations for inclusion in our report.*

4. Prepare a summary letter report documenting the information obtained from Tasks 1 through 3, above, related to foundation design and construction issues at the site. The report will include an exploration location plan, logs of explorations prepared by Weston & Sampson, description of the exploration program and discussion of subsurface conditions encountered with comments on technical feasibility of shallow versus deep foundation systems, and comments on foundation construction and site preparation.

### *Environmental Assessment*

Our environmental assessment will consist of an ASTM Phase I ESA, as well as limited soil and groundwater sampling and analyses.

Our Phase I ESA will be conducted in general accordance with the United States Environmental Protection Agency's (EPA's) All Appropriate Inquiries (AAI) Final Rule and the standards set forth in the ASTM E1527-13 process. Weston & Sampson has performed due diligence assessments for Phase I ESAs using the principles of the AAI at multiple sites throughout New England. The AAI standard, which incorporates the ASTM standard, is the current standard of care for Phase I ESAs in the industry. Weston & Sampson personnel are well versed on AAI's Final Rule, and our staff includes many Environmental Professionals, as defined under the AAI Final Rule. The Phase I ESA will be performed in compliance with all other associated laws, professional standards, and industry practices.

The Phase I ESA will identify Recognized Environmental Conditions (RECs) at the site and evaluate the potential for a release of oil and/or hazardous materials (OHM) to the environment. This scope of services does not include a radon, hazardous building material survey, or a chain-of-title search. We propose to complete the following tasks 5 through 9:

#### 5. Historical, Environmental Site Review, Interviews:

Weston & Sampson will review existing files pertaining to historical site use and regulatory issues from various sources including:

- State and Federal environmental files and databases;
- Local records and plans, including those of the Fire Department for underground storage tank (UST) records;
- Previous environmental reports, where available;
- Sanborn Fire Insurance Maps and municipal directories where available;
- Aerial photographs, if available at local offices;

- Local topographic, surficial and bedrock geologic, and hydrologic maps, if available; and
- Interviews with individuals knowledgeable of the site.

Weston & Sampson will obtain a standard ASTM Phase I database search report to obtain additional information about potential documented releases at the property and surrounding areas.

6. Site Reconnaissance:

Weston & Sampson will perform an area reconnaissance of the property and surroundings. We will document evidence of RECs such as releases of OHM, dumped solid and/or hazardous waste, stressed vegetation, and evaluate potential impacts to the site identified in the records review. Photographs will be taken of the site to provide further documentation of site conditions. Please note that AAI requires that a qualified "Environmental Professional" perform the Site Inspection/Reconnaissance.

7. Questionnaires:

Per AAI requirements, Weston & Sampson will provide representatives of the existing property owner (Town representatives) who are familiar with the existing facility and the site history with a User Questionnaire to provide the following information. To receive CERCLA liability protection the *user* must provide the identified information, if available. The information included in the User Questionnaire includes the following: Environmental Liens, Activity and Use Limitations, Specialized Knowledge (e.g., specialized knowledge of RECs, historical RECs, or other potential environmental concerns in connection with the Site), Commonly Known or Reasonably Ascertainable Information (i.e., any commonly known or reasonably ascertainable information about the Site that would be indicative of releases or threatened releases), Valuation Reduction for Environmental Issues, and Degree of Obviousness of Contamination.

In addition to the User Questionnaire, Weston & Sampson will provide the representatives of existing property owner with an Environmental Questionnaire for completion. The information in the Environmental Questionnaire will generally include information regarding the environmental condition of the property including but not limited to: current use of the property, age of structures, use of abutting property, liens, property limitations, previous assessments, potential presence of contamination, etc.

The information from these questionnaires will be incorporated into the report and the completed forms will be attached as appendices to the Phase I report.

8. Phase I ESA Report:

Weston & Sampson will prepare a Phase I ESA Report summarizing the information collected above. The report will include a summary of the work scope, narrative descriptions of the completed tasks, findings and conclusions, figures, and images as necessary to support the information. The report will include a history of the site and an evaluation of RECs. Our Phase I ESA does not include a Chain-of-Title search at the Registry of Deeds.

9. Drilling, Soil and Groundwater Sampling, and Analyses:

Weston & Sampson will conduct one additional day of drilling to explore subsurface conditions in the vicinity of the existing wastewater treatment plant (WWTP), underground storage tanks (if any), oil-filled

electrical transformers, oil/hazardous material storage areas, mechanical rooms, and areas of anticipated cut/mass excavation during construction. Up to five borings are proposed to depths up to 15 ft. or refusal. The borings will be advanced using direct-push drilling methods.

Weston & Sampson will collect soil samples continuously during boring advancement. Soil samples from the borings will be screened in the field with a photoionization detector (PID), and for visual and olfactory signs of potential contamination. Groundwater monitoring wells will be installed to depths up to 20 ft. in three (3) borings. The wells will be finished at the ground surface with a flush-mount road box.

Up to five soil samples will be placed in appropriate sample containers, labeled, and shipped to a qualified analytical laboratory under appropriate chain-of-custody. For purposes of developing this scope of services and related costs, the selected soil samples will be analyzed for disposal characterization analyses consistent with Massachusetts Department of Environmental Protection (MassDEP) Policy# COMM-97-001 and common in-State disposal facility requirements, including total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), MCP-14 metals (antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc), conductivity, ignitability, pH, and reactivity. Additionally, one sample collected from the vicinity of the pad-mounted transformer will be analyzed for PCBs.

Our proposed sample screening may suggest that other types of analyses should be conducted. We will contact Tappe Associates as the work progresses if different (or more) testing is considered appropriate for the currently proposed effort.

Weston & Sampson will collect a groundwater sample from each of the newly installed monitoring wells. The sample will be collected via low-flow sampling techniques and submitted for laboratory analysis of extractable and volatile petroleum hydrocarbons (EPH/VPH) with target parameters, metals and VOCs. A duplicate sample will also be submitted for these analyses.

The results of the soil and groundwater sampling and analyses will be summarized and presented in a brief letter report or as an appendix to the Phase I ESA report. Recommendations for additional sampling and analyses to be completed during the design phase of the project will be based on the results of the analyses proposed herein.

#### 10. Siting Analysis:

As part of this Environmental Assessment, Weston & Sampson will also conduct a Siting Analysis in accordance with Clean & Healthy Public Schools (CHPS).

### ***ESTIMATED PROJECT COST***

We propose to conduct the Geotechnical Assessment as described in Tasks 1 through 4, above, on a lump sum basis. The estimated fee for this work is \$20,600, which includes \$9,900 in drilling subcontractor fees. The drilling subcontractor costs include prevailing wage rates based on our understanding of Massachusetts State Law.

We propose to conduct the Environmental Assessment as described in Tasks 5 through 9, above, on a lump sum basis. The estimated fee for this work is \$17,300, which includes approximately \$5,800 for analytical laboratory services and \$500 for expenses including sample shipment, environmental database searches, equipment rental and travel.

The total estimated cost to complete both assessments is \$36,900. We will not exceed this value without prior written authorization from Tappe Associates.

#### FEE SUMMARY

Category	Labor	Subs/Expenses (driller, labs)	Total
Geotechnical Fee	\$10,700	\$9,900	\$20,600
Environmental Fee	\$7,930	\$8,370	\$16,300
Total	\$18,630	\$18,270	\$36,900

#### SCHEDULE

We anticipate that our field work can be scheduled within approximately three to four weeks of receiving authorization. We anticipate that the geotechnical report and the Phase I ESA report can be submitted within four weeks of completing our field work. We will accelerate this schedule if possible based on subcontractor availability and can provide preliminary recommendations to the design team as they are developed.

#### ITEMS REQUIRED FROM TAPPE ASSOCIATES

We will need the following from Tappe Associates to complete our Environmental Services:

- *Names and contact information for appropriate representatives of the property owners (Town representatives) who could assist with the Questionnaires described in Task 7, above.*
- *Confirmation of the Town Assessor's parcel numbers for the parcels to be included in the Phase I ESA.*

We will need the following from Tappe Associates to complete our Geotechnical Services:

- *Electronic version of a site plan showing the existing buildings and site development features of the site as well as the proposed building footprint.*
- *A description of the proposed construction including such things as anticipated size of structures, use, number of levels of below-grade construction (if applicable) and other items that may impact foundation design and construction.*
- *Any drawings or information depicting the foundations for the existing buildings on the site.*
- *Any available subsurface information at the site.*



## WESTON & SAMPSON GENERAL TERMS AND CONDITIONS

1. It is understood that the Agreement attached hereto and dated August 2, 2018 is valid for a period of ninety (90) days. Upon the expiration of that period of time or the delay or suspension of the services, WESTON & SAMPSON reserves the right to review the proposed basis of payment and fees, to allow for changing costs as well as to adjust the period of performance to conform to work loads. References herein to WESTON & SAMPSON are understood to refer to WESTON & SAMPSON ENGINEERS, INC.
2. Invoices will be submitted periodically (customarily on a monthly basis), and terms are net cash, due and payable upon receipt of invoice. If the OWNER fails to make any payment due to WESTON & SAMPSON for services and expenses within thirty (30) days after receipt of WESTON & SAMPSON'S statement therefore, WESTON & SAMPSON may, after giving seven (7) days' written notice to the OWNER, suspend services under this Agreement. Unless payment is received by WESTON & SAMPSON within seven (7) days of the date of the notice, the suspension shall take effect without further notice. In the event of a suspension of services, WESTON & SAMPSON shall have no responsibility to the OWNER for delay or damage caused the OWNER because of such suspension of services.
3. WESTON & SAMPSON will serve as the professional representative of the OWNER as defined by the Proposal or under any Agreement and will provide advice, consultation and services to the OWNER in accordance with generally accepted professional practice consistent with that degree of skill and care ordinarily exercised by practicing design professionals performing similar services in the same locality, at the same site and under the same or similar circumstances and conditions. Therefore, estimates of cost, approvals, recommendations, opinions, and decisions by WESTON & SAMPSON are made on the basis of WESTON & SAMPSON'S experience, qualifications and professional judgment. Accordingly, WESTON & SAMPSON does not warrant or represent that bids or negotiated prices will not vary from the OWNER'S budget for the project, or from any estimate of the Cost of the Work evaluation prepared or agreed to by WESTON & SAMPSON. WESTON & SAMPSON makes no warranty or guarantee, express or implied, regarding the services or work to be provided under this Proposal or any related Agreement. Notwithstanding any other provision of these General Terms and Conditions, unless otherwise subject to a greater limitation, and to the fullest extent permitted by law, the total liability in the aggregate, of WESTON & SAMPSON and their officers, directors, employees, agents, and independent professional associates, and any of them, to OWNER and any one claiming by, through or under OWNER, for any and all injuries, claims, losses, expenses, or damages whatsoever arising out of in any way related to WESTON & SAMPSON's services, the project, or this Agreement, from any cause or causes whatsoever, including but not limited to, the negligence, errors, omissions, strict liability, breach of contract, misrepresentation, or breach of warranty of WESTON & SAMPSON or WESTON & SAMPSON's officers, directors, employees, agents or independent professional associates, or any of them, shall not exceed the greater of \$50,000 or the total compensation received by WESTON & SAMPSON hereunder and OWNER hereby releases WESTON & SAMPSON from any liability above such amount. WESTON & SAMPSON shall have no upfront duty to defend the OWNER but shall reimburse defense costs of the OWNER to the same extent of its indemnity obligation herein.
4. Where the Services include subsurface exploration, the OWNER acknowledges that the use of exploration equipment may alter or damage the terrain, vegetation, structures, improvements, or the other property at the Site and accepts the risk. Provided WESTON & SAMPSON uses reasonable care, WESTON & SAMPSON shall not be liable for such alteration or damage or for damage to or interference with any subterranean structure, pipe, tank, cable, or other element or condition whose nature and location are not called to WESTON & SAMPSON'S attention in writing before exploration begins.
5. WESTON & SAMPSON and its consultants shall have no responsibility for the discovery, presence, handling, removal or disposal of, or exposure of persons to, hazardous waste in any form at the project site. Accordingly, the OWNER agrees to assert no claims against WESTON & SAMPSON, its principals, agents, employees and consultants, if such claim is based, in whole or in part, upon the negligence, breach of contract, breach of warranty, indemnity or other alleged obligation of WESTON & SAMPSON or its consultants, and arises out of or in connection with the detection, assessment, abatement, identification or remediation of hazardous materials, pollutants or asbestos at, in,

under or in the vicinity of the project site identified in the Proposal. OWNER shall defend, indemnify and hold harmless WESTON & SAMPSON, its principals, agents, employees, and consultants and each of them, harmless from and against any and all costs, liability, claims, demands, damages or expenses, including reasonable attorneys' fees, with respect to any such claim or claims described in the preceding sentence, whether asserted by OWNER or any other person or entity. WESTON & SAMPSON shall not be liable for any damages or injuries of any nature whatsoever, due to any delay or suspension in the performance of its services caused by or arising out of the discovery of hazardous substances or pollutants at the project site.

6. WESTON & SAMPSON agrees to purchase at its own expense, Worker's Compensation insurance, Comprehensive General Liability insurance, and Engineer's Professional Liability insurance and will, upon request, furnish insurance certificates to OWNER reflecting WESTON & SAMPSON's standard coverage. WESTON & SAMPSON agrees to purchase whatever additional insurance is requested by OWNER (presuming such insurance is available, from carriers acceptable to WESTON & SAMPSON) provided OWNER reimburses the premiums for additional insurance.

7. As a part of this Agreement, OWNER without cost to WESTON & SAMPSON agrees to do the following in a timely manner so as not to delay the services of WESTON & SAMPSON:

a. Designate in writing a person to act as OWNER'S representative with respect to work to be performed under this Agreement, such person to have complete authority to transmit instructions, receive information, interpret and define OWNER'S policies and decisions with respect to materials, equipment elements and systems pertinent to the work covered by the Agreement.

b. Through its officials and other employees who have knowledge of pertinent conditions, confer with WESTON & SAMPSON regarding both general and special considerations relating to the Project.

c. Assist WESTON & SAMPSON by placing at the disposal of WESTON & SAMPSON, all available information pertinent to the Project including previous reports and other data relative to design or construction of Project.

d. Furnish or cause to be furnished to WESTON & SAMPSON all documents and information known to OWNER that relate to the identity, location, quantity, nature or characteristics of any hazardous waste at, on or under the site. In addition, OWNER will furnish or cause to be furnished such other reports, data, studies, plans, specifications, documents and other information on surface and subsurface site conditions required by WESTON & SAMPSON for proper performance of its services.

e. WESTON & SAMPSON shall be entitled to rely, without liability, on the accuracy and completeness of information and documents provided by the OWNER, OWNER'S CONSULTANTS and CONTRACTORS and information from public records, without the need for independent verification.

f. Pay for all application and permit fees associated with approvals and permits for all governmental authorities having jurisdiction over the Project and such approvals and consents from others as may be necessary for completion of the Project.

g. Arrange for and make all provisions for WESTON & SAMPSON and its agents to enter upon public and private lands as required for WESTON & SAMPSON to perform its work under this Agreement.

h. Furnish WESTON & SAMPSON with all necessary topographic, property, boundary and right-of-way maps.

i. Cooperate with and assist WESTON & SAMPSON in all additional work that is mutually agreed upon.

j. Pay WESTON & SAMPSON for work performed in accordance with terms specified herein.

8. The obligation to provide further services under this Agreement may be terminated by either party upon thirty days' written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party. If the Project is suspended or abandoned in whole or in part for more than three (3) months, WESTON & SAMPSON shall be compensated for all services performed prior to receipt of written notice from OWNER of such



suspension or abandonment, together with the other direct costs then due. If the Project is resumed after being suspended for more than three (3) months, WESTON & SAMPSON'S compensation shall be equitably adjusted. In the event of termination by either party, WESTON & SAMPSON shall be compensated for all services performed prior to receipt of written termination, together with other direct costs then due, including WESTON & SAMPSON's independent consultants, and for the services necessary to affect termination.

9. The OWNER and WESTON & SAMPSON waive all rights against each other and against the contractors, consultants, agents and employees of the other for damages, but only to the extent covered by any property or other insurance in effect whether during or after the project. The OWNER and WESTON & SAMPSON shall each require similar waivers from their contractors, consultants and agents.

10. All Drawings, diagrams, plans, specifications, calculations, reports, processes, computer processes and software, operational and design data, and all other documents and information produced in connection with the project as instruments of service, regardless of form, shall be confidential and the property of WESTON & SAMPSON, and shall remain the sole and exclusive property of WESTON & SAMPSON whether the project for which they are made is executed or not. The OWNER shall not have or acquire any title to or ownership rights in any of the documents or information prepared by WESTON & SAMPSON. OWNER may make and retain copies for information and reference in connection with the use and occupancy of the Project by the OWNER and others; however, such documents are not intended or represented to be suitable for reuse by OWNER or others on extensions of the Project or on any other Projects. Any reuse without written verification or adaptation by WESTON & SAMPSON for the specific purpose intended will be at OWNER'S sole risk and without liability or legal exposure to WESTON & SAMPSON or to WESTON & SAMPSON's independent consultants, and OWNER shall indemnify and hold harmless WESTON & SAMPSON and WESTON & SAMPSON's independent consultants from all claims, damages, losses, and expenses, including attorneys' fees arising out of or resulting therefrom. Any such verification or adaptation will entitle WESTON & SAMPSON to further compensation at rates to be

agreed upon by OWNER and WESTON & SAMPSON.

11. The substantive laws of the Commonwealth of Massachusetts shall govern any disputes between WESTON & SAMPSON and the OWNER arising out of the interpretation and performance of this Agreement.

12. WESTON & SAMPSON and the OWNER agree that any disputes arising under this Agreement and the performance thereof shall be subject to nonbinding mediation as a prerequisite to further legal proceedings.

13. WESTON & SAMPSON shall not be required to sign any documents, no matter by who requested, that would result in WESTON & SAMPSON having to certify, guaranty, or warrant the existence of conditions that would require knowledge, services or responsibilities beyond the scope of this Agreement.

14. Nothing contained in this Agreement shall create a contractual relationship with, or a cause of action in favor of, a third party against either the OWNER or WESTON & SAMPSON. WESTON & SAMPSON'S services hereunder are being performed solely for the benefit of the OWNER, and no other entity shall have any claim against WESTON & SAMPSON because of this Agreement or WESTON & SAMPSON'S performance of services hereunder.

15. Notwithstanding anything to the contrary contained herein, OWNER and ENGINEER agree that their sole and exclusive claim, demand, suit, judgment or remedy against each other shall be asserted against each other's corporate entity and not against each other's shareholders, A/E's, directors, officers or employees.

16. To the extent they are inconsistent or contradictory, express terms of this Proposal take precedence over these General Terms and Condition. It is understood and agreed that the services or work performed under this Proposal or any Agreement are not subject to any provision of any Uniform Commercial Code. Any terms and conditions set forth in OWNER'S purchase order, requisition, or other notice or authorization to proceed are inapplicable to the services under this Proposal or any related Agreement, except when specifically provided for in full on the face of such purchase order, requisition, or notice or authorization and specifically accepted in writing by WESTON & SAMPSON. WESTON & SAMPSON'S acknowledgement of receipt of any

purchase order, requisition, notice or authorization, or WESTON & SAMPSON'S performance of work subsequent to receipt thereof, does not constitute acceptance of any terms or conditions other than those set forth herein.

Approved by: TAPPE ASSOCIATES, INC.

17. If any provision of this Agreement shall be finally determined to be invalid or unenforceable in whole or in part, the remaining provisions hereof shall remain in full force and effect, and be binding upon the parties hereto. The parties agree to reform this Agreement to replace any such invalid or unenforceable provision with a valid and enforceable provision that comes as close as possible to the intention of the stricken provision.

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Printed Name and Title

18. The parties to this contract recognize their obligations under the Massachusetts Data Security Law and Regulations, G. L. c. 93H and 93I and 201 CMR 17.00, to safeguard "personal information" as defined below. Both parties hereby represent that they have adopted the required Written Information Security Program, have taken the other steps required to safeguard personal information and are in full compliance with the law. The parties agree that in furtherance of their legal obligations, they will not transmit, communicate or otherwise provide to each other any personal information, unless it is necessary to comply with their obligations under this Agreement. The parties also agree that when it is not necessary for them to transmit, communicate or otherwise provide to each other any personal information as part of their obligations hereunder, they will take active steps to prevent such transmission, communication, or transfer. For purposes of this Agreement, "personal information" means a Massachusetts residents first name and last name or first initial and last name in combination with any one or more of the following data elements that relate to such resident: (a) Social Security number; (b) driver's license number or state-issued identification card number; or (c) financial account number, or credit or debit card number, with or without any required security code, access code, personal identification number or password, that would permit access to a resident's financial account.

K:\76218 MA\Tappe School Projects\Sharon\WESTON1.docx

## AUTHORIZATION

Consulting engineering services as described above will be provided in accordance with the attached Weston & Sampson General Terms and Conditions dated July 1, 2016, which is an integral part of this proposal. When accepted by you, this proposal and the attached General Terms and Conditions will constitute our Agreement. Please indicate your acceptance by signing and returning one copy of this letter proposal. Also, please sign, date, and return the enclosed Terms and Conditions that are hereby incorporated by reference.

Thank you for inviting us to submit this proposal. We look forward to assisting you with this project. If you have any questions, please contact us at (978) 532-1900 (ext. 2324).

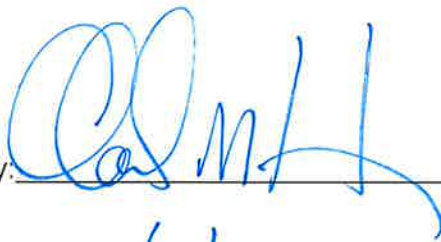
Very truly yours,

WESTON & SAMPSON ENGINEERS, INC.



Frank Ricciardi, PE, LSP  
Vice President

ACCEPTED FOR TAPPE ASSOCIATES, INC.

By: 

Date: 8/15/18

Attachment: July 1, 2016 Terms and Conditions

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**APPENDIX C**

Questionnaire / Checklist

Initials: KW

## AAI – USER QUESTIONNAIRE

### FOR

Sharon High School – Pond Street, Sharon MA

In order to qualify for one of the Landowner Liability Protections (LLPs), the *user*<sup>1</sup> must conduct the following inquiries required by 40 CFR 312.25, 312.28, 312.29, 312.30 and 312.31. Failure to conduct these inquiries could result in the determination that “all appropriate inquiries” is not complete.

**1.Environmental liens that are filed or recorded against the property (40 CFR 312.25).**

Did a search of recorded land title records (or judicial records where appropriate) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law?

- ☐ Yes  
☒ No  
☐ Unknown

**2.Activity and use limitations (AULs) that are in place on the property or that have been filed or recorded against the property (40 CFR 312.26(a)(1)(v) and (vi)).**

Did a search of recorded land title records (or judicial records where appropriate) identify any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law?

- ☐ Yes  
☒ No  
☐ Unknown

**3.Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).**

Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

- ☐ Yes  
☒ No  
☐ Unknown

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<sup>1</sup> The party seeking to complete an AAI to receive CERCLA liability protection

Initials: fw

**4. Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29).**

Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

- ☐ Yes  
☒ No  
☐ Unknown

**5. Commonly known or reasonably ascertainable information about the property (40 CFR 312.30).**

Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, (a.) Do you know the past uses of the property? (b.) Do you know of specific chemicals that are present or once were present at the property? (c.) Do you know of any spills or other chemical releases that have taken place at the property? (d.) Do you know of any environmental cleanups that have taken place at the property?

- ☐ Yes  
☒ No  
☐ Unknown

**6. The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).**

Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of releases at the property?

- ☐ Yes  
☒ No  
☐ Unknown

10/26/18  
Date

Kenneth Wertz  
Signature



**Weston & Sampson Phase I ESA Questionnaire  
for Property Owner, Occupants, and Site Reconnaissance Staff**

Question	Owner			Occupants (if applicable)			Observed During Site Visit If yes, provide description	
1a. Is the <i>property</i> used for an industrial use?	Yes	No	Unk	Yes	No	Unk	Yes	No
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1b. Is any <i>adjoining property</i> used for an industrial use?	Yes	No	Unk	Yes	No	Unk	Yes	No
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2a. Did you observe evidence or do you have any prior knowledge that the <i>property</i> has been used for an industrial use in the past?	Yes	No	Unk	Yes	No	Unk	Yes	No
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2b. Did you observe evidence or do you have any prior knowledge that any <i>adjoining property</i> has been used for an industrial use in the past?	Yes	No	Unk	Yes	No	Unk	Yes	No
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3a. Is the <i>property</i> used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk	Yes	No	Unk	Yes	No
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3b. Is any <i>adjoining property</i> used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk	Yes	No	Unk	Yes	No
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4a. Did you observe evidence or do you have any prior knowledge that the <i>property</i> has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk	Yes	No	Unk	Yes	No
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Weston & Sampson Phase I ESA Questionnaire  
for Property Owner, Occupants, and Site Reconnaissance Staff**

Question	Owner			Occupants (if applicable)			Observed During Site Visit If yes, provide description	
	Yes	No	Unk	Yes	No	Unk	Yes	No
4b. Did you observe evidence or do you have any prior knowledge that any <i>adjoining property</i> has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5a. Are there currently any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the <i>property</i> or at the facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5b. Did you observe evidence or do you have any prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the <i>property</i> or at the facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6a. Are there currently any industrial <i>drums</i> (typically 55 gal (208 L)) or sacks of chemicals located on the <i>property</i> or at the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6b. Did you observe evidence or do you have any prior knowledge that there have been previously any industrial <i>drums</i> (typically 55 gal (208 L)) or sacks of chemicals located on the <i>property</i> or at the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7a. Did you observe evidence or do you have any prior knowledge that <i>fill dirt</i> has been brought onto the <i>property</i> that originated from a contaminated site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7b. Did you observe evidence or do you have any prior knowledge that <i>fill dirt</i> has been brought onto the <i>property</i> that is of an unknown origin?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Weston & Sampson Phase I ESA Questionnaire  
for Property Owner, Occupants, and Site Reconnaissance Staff**

Question	Owner			Occupants (if applicable)			Observed During Site Visit If yes, provide description	
	Yes	No	Unk	Yes	No	Unk	Yes	No
8a. Are there currently any <i>pits</i> , <i>ponds</i> , or <i>lagoons</i> located on the <i>property</i> in connection with waste treatment or waste disposal?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8b. Did you observe evidence or do you have any prior knowledge that there have been previously, any <i>pits</i> , <i>ponds</i> , or <i>lagoons</i> located on the <i>property</i> in connection with waste treatment or waste disposal?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9a. Is there currently any stained soil on the <i>property</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9b. Did you observe evidence or do you have any prior knowledge that there has been previously, any stained soil on the <i>property</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10a. Are there currently any registered or unregistered storage tanks (above or underground) located on the <i>property</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10b. Did you observe evidence or do you have any prior knowledge that there have been previously, any registered or unregistered storage tanks (above or underground) located on the <i>property</i> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11a. Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the <i>property</i> or adjacent to any structure located on the <i>property</i> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11b. Did you observe evidence or do you have any prior knowledge that there have been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the <i>property</i> or adjacent to any structure located on the <i>property</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12a. Is there currently evidence of leaks, spills or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the <i>property</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Weston & Sampson Phase I ESA Questionnaire  
for Property Owner, Occupants, and Site Reconnaissance Staff**

Question	Owner			Occupants (if applicable)			Observed During Site Visit If yes, provide description	
	Yes	No	Unk	Yes	No	Unk	Yes	No
13a. If the <i>property</i> is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13b. If the <i>property</i> is served by a private well or non-public water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environmental/health agency?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14. Does the <i>owner</i> or <i>occupant</i> of the <i>property</i> have any knowledge of <i>environmental liens</i> or governmental notification relating to past or recurrent violations of environmental laws with respect to the <i>property</i> or any facility located on the <i>property</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
15a. Has the <i>owner</i> or <i>occupant</i> of the <i>property</i> been informed of the past existence of <i>hazardous substances</i> or <i>petroleum products</i> with respect to the <i>property</i> or any facility located on the <i>property</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
15b. Has the <i>owner</i> or <i>occupant</i> of the <i>property</i> been informed of the current existence of <i>hazardous substances</i> or <i>petroleum products</i> with respect to the <i>property</i> or any facility located on the <i>property</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
15c. Has the <i>owner</i> or <i>occupant</i> of the <i>property</i> been informed of the past existence of environmental violations with respect to the <i>property</i> or any facility located on the <i>property</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
15d. Has the <i>owner</i> or <i>occupant</i> of the <i>property</i> been informed of the current existence of environmental violations with respect to the <i>property</i> or any facility located on the <i>property</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

**Weston & Sampson Phase I ESA Questionnaire  
for Property Owner, Occupants, and Site Reconnaissance Staff**

Question	Owner			Occupants (if applicable)			Observed During Site Visit If yes, provide description	
16. Does the <i>owner</i> or <i>occupant</i> of the <i>property</i> have any knowledge of any <i>environmental site assessment</i> of the <i>property</i> or facility that indicated the presence of <i>hazardous substances</i> or <i>petroleum products</i> on, or contamination of, the <i>property</i> or recommended further assessment of the <i>property</i> ?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input type="checkbox"/>		
17. Does the <i>owner</i> or <i>occupant</i> of the <i>property</i> know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any <i>hazardous substance</i> or <i>petroleum products</i> involving the <i>property</i> by any <i>owner</i> or <i>occupant</i> of the <i>property</i> ?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input type="checkbox"/>		
18a. Does the <i>property</i> discharge <i>waste-water</i> (not including sanitary waste or storm water) onto or adjacent to the <i>property</i> and/or into a storm water system?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
18b. Does the <i>property</i> discharge waste water (not including sanitary waste or storm water) onto or adjacent to the <i>property</i> and/or into a sanitary sewer system?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Unk <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
19. Did you observe evidence or do you have any prior knowledge that any <i>hazardous substances</i> or <i>petroleum products</i> , unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried and/or burned on the <i>property</i> ?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of <i>PCBs</i> ?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Unk <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

**The Owner questionnaire answers were provided was completed by:**

Name: Mr. Kenneth Wertz

Title: Director of Maintenance and Operations

Firm: Town of Sharon

Address: 75 Mountain Street Sharon MA

Phone number: 781-519-1069

Date: 10/4/2018

Role(s) at the site: Operations and Maintenance Director

Number of years at the site: 15

Relationship to *user* (for example, principal, employee, agent, consultant): Employee

**The *Occupant* questionnaire answers were provided by:**

Name: Same as above.

Title:

Firm:

Address:

Phone number:

Date:

Role(s) at the site:

Number of years at the site:

Relationship to *user* (for example, principal, employee, agent, consultant):

**The *Site Visit* questionnaire was completed by:**

Name: Lee M. Koska

Title: Engineer II

Firm: Weston & Sampson Engineers

Address: 5 Centennial Drive, Peabody MA

Phone number: 978-532-1900

Date: 10/4/2018

Relationship to site: N/A

Relationship to *user* (for example, principal, employee, agent, consultant): Consultant



# 8.5

## PHASE 2 ESA REPORT



November 7, 2018

Mr. Charles Hay  
Principal  
Tappe Associates, Inc.  
Six Edgerly Place  
Boston, Massachusetts 02116

Re: **Phase II Environmental Site Assessment  
Sharon High School  
181 Pond St, Sharon, MA 02067**

Dear Mr. Hay:

Weston & Sampson Engineers, Inc. (Weston & Sampson) is pleased to provide this letter report summarizing the results of our Phase II Environmental Site Assessment (ESA) performed at the Sharon High School, located at 181 Pond Street in Sharon, Massachusetts (the "Site"). The Site is a 28.5-acre parcel of land developed with a two-story school building, a wastewater treatment plant, recreational fields, parking areas and access roads. The Site is bordered by residential properties and park space to the east and south across Pond Street and Beach Street. Undeveloped wooded land and residential properties along Ames Court and Ames Street border the Site to the north and west.

Weston & Sampson performed a Phase I ESA of the Site in October 2018. The Phase I ESA was performed on behalf of Tappe Associates, Inc. and the Town of Sharon as part of a feasibility study for future Site redevelopment by the Town of Sharon. The Phase I ESA identified that the Site was undeveloped prior to the construction of the current school complex. A Phase II ESA was recommended to assess soil and groundwater conditions in the area of proposed future redevelopment, and to assess potential soil impacts in the vicinity of a decommissioned 20,000-gallon fuel oil UST located underneath the rear parking area, which was identified as a Recognized Environmental Condition (REC).

## **PHASE II ENVIRONMENTAL SITE ASSESSMENT**

Weston & Sampson performed a Phase II ESA at the Site in September and October 2018 to obtain soil and groundwater data to assist in Site design for future construction. The Phase II ESA was performed in general accordance with our August 2, 2018 proposal to the Tappe Associates, Inc. and included the following:

- The collection of soil samples from Weston & Sampson geotechnical borings (advanced under a separate scope of work);
- Field screening soil samples for the presence of total organic volatiles (TOVs);
- Laboratory analysis of selected soil samples for disposal characterization parameters;
- The collection of groundwater samples from three wells installed during Phase II activities;
- Analysis of the groundwater samples for petroleum hydrocarbons and volatile organic compounds (VOCs); dissolved MCP-14 Metals, volatile petroleum hydrocarbons (VPH) and target analytes, and extractable petroleum hydrocarbons (EPH) and target analytes; and
- Preparation of a Phase II ESA letter report.

A summary of the Phase II ESA is provided below. See Figure 1 for sampling locations.

### Soil Boring Installation

On September 19, 20, and 21, 2018, nine (9) soil borings (B-101 through B-109) were advanced at the Site for geotechnical evaluation. The borings were advanced by New England Boring Contractors of Brockton, Massachusetts to depths up to 26 feet below grade surface (bgs). These borings were advanced using a hollow stem auger (HSA) and drive and wash drilling methodology. Five additional borings were advanced for environmental sampling via direct push continuous sampling techniques. The borings were located to assess subsurface conditions in the vicinity of the proposed future redevelopment, as well as to assess conditions in the vicinity of the decommissioned fuel oil UST. Soil samples were collected at continuous intervals within the borings. The samples were logged by a Weston & Sampson geo-environmental engineer. Soil boring logs are included as Attachment A.

In general, soils encountered during drilling consisted of the following:

**Surficial material:** Topsoil was encountered between 4 to 12 inches below ground surface. Locations WS-1 and WS-2 encountered a 4 inch thick layer of surficial asphalt pavement at the ground surface.

**Fill material:** Fill was encountered within the borings to maximum depths of approximately 8 feet bgs. The fill observed consisted of fine to coarse sand with silt and fine gravel. There was no debris observed within the fill material.

**Organics:** A layer of peat and organic silt was encountered below the fill in borings B-106 through B-109, WS-3, WS-4 and WS-5. Based on observations from the borings, the thickness of the organics ranged from about 6 to 12 inches.

**Silt and Sand:** Soils beneath the fill consisted of silt and fine to coarse sand with gravel to maximum depths of 26 feet bgs.

### Soil Sample Field Screening and Analysis

Soil samples were field screened for visual and olfactory evidence of impacts. Each soil sample was also field screened with a photoionization detector (PID) for TOVs. Field screening did not identify visual or olfactory impacts and PID screening also did not identify evidence of impact to soil. Concentrations of TOVs detected generally ranged from below the instrument detection limit to 0.7 parts per million by volume (ppmv). Note that geotechnical boring B-105 exhibited elevated PID readings from 0 – 3 feet bgs ranging from 20.3 to 54.6 ppmv. Soils in this area exhibited an odor of organic decomposition and based on the nature of the material (primarily topsoil), are not expected to represent an environmental concern.

Composite soil samples were prepared from 0.5 - 15 feet bgs in soil borings WS-1 through WS-5, to evaluate soils that may be excavated and removed during construction. Soil samples were submitted to Contest Analytical Laboratory in East Longmeadow, Massachusetts for disposal characterization analysis including Total Petroleum Hydrocarbons (TPH, VOCs, Semi-volatile Organic Compounds (SVOCs), Polychlorinated Biphenyls (PCBs), MCP 14 Metals, ignitability, pH, conductivity and reactivity. See Table 1 for summary of soil analytical results. Laboratory analytical reports are included as Attachment B. As shown in Table 1, analysis of the soil samples identified the following:

- Analysis of samples WS-1 through WS-5 identified metals (barium, beryllium, chromium, lead, nickel, vanadium, and zinc) at concentrations well below applicable Massachusetts Department of Environmental Protection (MassDEP) Reportable Concentration (RC) S-1 standards.
- SVOC compounds benzo(b)fluoranthene, fluoranthene, phenanthrene, and/or pyrene were detected in WS-2 and WS-5 at concentrations below RCS-1 standards. These detections may

be associated with the fill observed from 0-5 feet bgs or small asphalt pieces entrained in the sample from the ground surface.

- Petroleum hydrocarbons were detected in WS-2 through WS-5 at concentrations well below RCS-1 standards.
- VOCs and PCBs were not detected above laboratory reporting limits in any of the submitted samples.

Sample WS-2 was collected from approximately 25 feet south of the reported location of the decommissioned fuel oil UST as identified in Sharon Fire Department Records and historic site plans of the High School. This 20,000-gallon fuel oil underground storage tank (UST) formerly supplied the high school building with heating oil and was reportedly located beneath the parking lot on the rear portion of the building. According to Fire Department records, this tank was removed in 1990, however no documentation was identified during review of town files indicating the condition of surrounding soils or of the tank at the time of removal. Based on the lack of information regarding the tank removal, the unknown soil and groundwater conditions in the area of the tank were identified as a REC in the Phase I ESA. Although TPH was detected in the WS-2 sample, concentrations were below applicable RCS-1 concentrations. As a boring could not be advanced within the exact tank footprint due to utilities located throughout this area, the possibility exists that residual petroleum impacts may exist within this portion of the Site. Further assessment of material from this area is recommended during the design phase should these soils require excavation during construction.

#### Groundwater Sampling and Analysis

On October 23, 2018, Weston & Sampson collected three (3) groundwater samples from previously installed monitoring wells at the Site. The monitoring wells sampled (MW-101, MW-102, and MW-103) are located along the southern portion of the Site building behind the school as shown on Figure 1. The wells were installed during the previous boring activities in September 2018.

Prior to sampling, groundwater was measured at depths ranging from 5.4 to 7.7 feet bgs. Groundwater samples were then collected using low flow sampling techniques. Parameters including pH, temperature, specific conductivity, dissolved oxygen, oxidation reduction potential (ORP) and turbidity were recorded using a groundwater quality meter. Groundwater samples were collected from the monitoring well upon parameter stabilization and submitted to Contest for analysis of VOCs, EPH and VPH with target analytes, and dissolved MCP-14 metals. A duplicate sample was also submitted for quality assurance and control purposes (see Table 2 for a summary of groundwater analytical results). As shown in Table 2, analysis did not identify detectable concentrations of EPH, VPH or VOCs in the submitted samples. Based on these results, it appears that the former UST did not impact groundwater on the Site. Based on hydrogeologic mapping data obtained from MassGIS, the Site is not located in a mapped current or potential drinking water source area, however it is unknown whether any residences in the vicinity of the Site currently operate private drinking water wells. As such, groundwater results were conservatively compared to the more stringent reportable concentration GW-1 (RCGW-1). Dissolved chromium was detected in MW-102, as well as the duplicate sample collected from this well at 1.0 µg/L, well below RCGW-1 criteria.

### **SUMMARY**


In summary, analysis of soil samples identified petroleum hydrocarbons, SVOCs and metals at concentrations well below MassDEP RCS-1 standards. Based on the concentrations identified, soil can be reused on Site as part of future redevelopment. If soil export is planned, the export could be reused at receiving facilities that can accept less than RCS-1 soils. Weston & Sampson recommends facilities

with an approved Administrative Consent Order (ACO) from MassDEP. Additional soil characterization of potential export may be required to obtain approval at these types of facilities.

Groundwater analysis did not identify concentrations of petroleum hydrocarbons or VOCs. Chromium was detected at concentrations well below applicable RCGW-1 criteria. This groundwater data can be utilized to support future permitting for potential groundwater dewatering discharge during construction.

If you have any questions regarding this letter report, please do not hesitate to contact the undersigned at (978) 532-1900.

WESTON & SAMPSON ENGINEERS, INC.



Lee Koska  
Engineer II



Frank Ricciardi, PE, LSP  
Vice President, EGE Program Manager

Attachments: Figures, Table, Attachment A and B



## NOTES:

1. THIS DRAWING IS BASED ON A GOOGLE EARTH AERIAL IMAGE DATED APRIL 22, 2018 AND IS NOT TO SCALE.
2. BORINGS WERE COMPLETED BY NEW ENGLAND BORING CONTRACTORS OF BROOKTON, MASSACHUSETTS AND OBSERVED BY WESTON & SAMPSON ENGINEERS, INC. BETWEEN SEPTEMBER 19 AND 21, 2018.
3. GEOPROBES AND MONITORING WELLS WERE COMPLETED BY NEW ENGLAND BORING CONTRACTORS OF BROOKTON, MASSACHUSETTS AND OBSERVED BY WESTON & SAMPSON ENGINEERS, INC. ON SEPTEMBER 20, 2018.
4. LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE AND BASED ON FIELD MEASUREMENTS RELATIVE TO EXISTING SITE FEATURES.

## LEGEND:

- B-101  DESIGNATION AND APPROXIMATE LOCATION OF BORINGS.  
 WS-1/MW-101  DESIGNATION AND APPROXIMATE LOCATION OF GEOPROBES AND MONITORING WELLS.

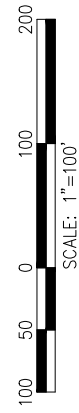


FIGURE 1

 SHARON HIGH SCHOOL  
SHARON, MA

## SITE PLAN

DESIGNED BY: BDC CHECKED BY: STS DATE: NOVEMBER 2018




Table 1  
Soil Analytical Results  
Sharon High School  
181 Pond Street, Sharon, MA

Parameter	Units	Reportable Concentrations (RCs)	SAMPLING LOCATION				
			WS-1	WS-2	WS-3	WS-4	WS-5
Sampling Date			9/20/2018	9/20/2018	9/20/2018	9/20/2018	9/20/2018
<b>Percent Solids</b>							
% Solids	% Wt	~	91.5	89.4	84.9	86.1	86.1
<b>Specific Conductance</b>							
Specific Conductance	µmhos/cm	~	5.5	4.5	2.4	3.1	2.6
<b>Ignitability</b>							
Ignitability	-	~	Absent	Absent	Absent	Absent	Absent
<b>Metals</b>							
ANTIMONY	mg/kg	20	> 1.8	> 1.8	> 1.9	> 1.9	> 1.9
ARSENIC	mg/kg	20	> 1.8	> 1.8	> 1.9	> 1.9	> 1.9
BARIUM	mg/kg	1000	<b>27</b>	<b>22</b>	<b>25</b>	<b>23</b>	<b>17</b>
BERYLLIUM	mg/kg	90	<b>0.43</b>	<b>0.35</b>	<b>0.47</b>	<b>0.30</b>	<b>0.22</b>
CADMIUM	mg/kg	70	> 0.18	> 0.18	> 0.19	> 0.19	> 0.19
CHROMIUM	mg/kg	100	<b>7.7</b>	<b>6.4</b>	<b>9.4</b>	<b>6.2</b>	<b>7.1</b>
LEAD	mg/kg	200	<b>5.6</b>	<b>3.9</b>	<b>9.8</b>	<b>4.5</b>	<b>5.9</b>
MERCURY	mg/kg	20	> 0.027	> 0.027	> 0.029	> 0.028	> 0.028
NICKEL	mg/kg	600	<b>4.8</b>	<b>4.7</b>	<b>5.0</b>	<b>4.4</b>	<b>4.8</b>
SELENIUM	mg/kg	400	> 3.6	> 3.6	> 3.8	> 3.8	> 3.8
SILVER	mg/kg	100	> 0.36	> 0.36	> 0.38	> 0.38	> 0.38
THALLIUM	mg/kg	8	> 1.8	> 1.8	> 1.9	> 1.9	> 1.9
VANADIUM	mg/kg	400	<b>15</b>	<b>13</b>	<b>19</b>	<b>14</b>	<b>11</b>
ZINC	mg/kg	1000	<b>22</b>	<b>17</b>	<b>27</b>	<b>17</b>	<b>19</b>
<b>Polychlorinated Biphenyls (PCBs)</b>							
TOTAL PCBs	mg/kg	1	> 0.783	> 0.747	> 0.828	> 0.828	> 0.801
<b>Total Petroleum Hydrocarbons (TPHs)</b>							
TPH	mg/kg	1000	> 8.9	<b>52</b>	<b>72</b>	<b>25</b>	<b>100</b>
<b>Volatile Organic Compounds (VOCs)</b>							
TOTAL VOCs	mg/kg	~	> 0.5075	> 0.5399	> 0.5897	> 0.5462	> 0.5384
<b>Semi-Volatile Organic Compounds (SVOCs)</b>							
BENZO(B)FLUORANTHENE	mg/kg	7	> 0.18	> 0.19	<b>0.22</b>	> 0.20	> 0.20
FLUORANTHENE	mg/kg	1000	> 0.18	> 0.19	<b>0.40</b>	> 0.20	<b>0.25</b>
PHENANTHRENE	mg/kg	10	> 0.18	> 0.19	<b>0.23</b>	> 0.20	> 0.20
PYRENE	mg/kg	1000	> 0.18	> 0.19	0.34	> 0.20	<b>0.25</b>
TOTAL SVOCs	mg/kg	~	> 18.33	> 19.32	1.19	> 19.95	<b>0.50</b>
<b>Reactive Cyanide</b>							
REACTIVE CYANIDE	mg/kg	~	> 4.0	> 4.0	> 3.9	> 4.0	> 3.9
<b>Reactive Sulfide</b>							
REACTIVE SULFIDE	mg/kg	~	> 20	> 20	> 20	> 20	> 20
<b>pH</b>							
pH	pH units	~	7.5	7.4	6.1	6.7	5.7

NOTES:  
1. > = Not detected above the laboratory reporting limits shown.  
2. NT = Not tested.  
3. ~ = No RCS-1 Standard available.  
4. Shaded values exceed the MCP Reportable Concentrations (RCs).  
5. Bolded values exceed laboratory reporting limits.





PROJECT  
Sharon High School  
Pond Street  
Sharon, MA

BORING No. WS-1  
SHEET 1 OF 1  
Project No. 2180619  
CHKD BY Lee Koska

BORING Co. New England Boring Contractors BORING LOCATION See attached plan  
FOREMAN Carl Downing GROUND SURFACE ELEV. 262 DATUM  
WSE REP. Padraic T. Kavanagh DATE START 9/20/18 DATE END 9/20/18

SAMPLER: Direct Push Geoprobe 2" OD 60" Spoon  
CASING:  
CASING SIZE: N/A

GROUNDWATER OBSERVATIONS				
DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (feet)	CASING (blows/ft)	SAMPLE				PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
		No.	REC/PEN (in)	DEPTH (ft)	BLOWS/6"				
0	NA		48/60"	0-5	N/A	ND	Asphalt to 4". 4" to 5' Light brown gravelly f-c SAND, trace Silt.		Fill
5			53/60"	5-10	N/A	0.2	Top 38" light brown f-c gravelly SAND, trace Silt, Bottom 15" brown to gray f-c gravelly SAND. Wet at approx. 7 feet		Gravelly SAND/Silt
10			51/60"	10-15	N/A	0.1	Top 35" brown to gray f-c gravelly SAND. Bottom 16" f-m Silty SAND, little Gravel.		
15							End of boring (EOB) at 15 feet.	1	
20									
25									
30									

GRANULAR SOILS		COHESIVE SOILS		NOTES: 1. EOB at 15 feet.
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY	
0-4	V. LOOSE	0-2	V. SOFT	
4-10	LOOSE	2-4	SOFT	
10-30	M. DENSE	4-8	M. STIFF	
30-50	DENSE	8-15	STIFF	
> 50	V. DENSE	15-30	V. STIFF	
		> 30	HARD	

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.  
ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG.  
FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. WS-1



PROJECT  
Sharon High School  
Pond Street  
Sharon, MA

BORING No. WS-2  
SHEET 1 OF 1  
Project No. 2180619  
CHKD BY Lee Koska

BORING Co. New England Boring Contractors BORING LOCATION See attached plan  
FOREMAN Carl Downing GROUND SURFACE ELEV. 262 DATUM  
WSE REP. Padraic T. Kavanagh DATE START 9/20/18 DATE END 9/20/18

SAMPLER: Direct Push Geoprobe 2" OD 60" Spoon  
CASING:  
CASING SIZE: N/A

GROUNDWATER OBSERVATIONS				
DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (feet)	CASING (blows/ft)	SAMPLE				PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
		No.	REC/PEN (in)	DEPTH (ft)	BLOWS/6"				
0	NA		14/60"	0-5	N/A	ND	Asphalt to 4". 4" to 5' Light brown gravelly fine to coarse SAND, trace Silt.		Fill
5			18/60"	5-10	N/A	0.2	Brown to tan gravelly SAND, trace Silt. Bottom 15" brown to gray fine to coarse gravelly SAND, little Silt. Wet	3	
10			34/60"	10-15	N/A	0.1	Top 17" gray fine to coarse gravelly SAND. Bottom 17" brown to tan fine to medium gravelly SAND, some Silt. Wet.		Gravelly SAND/Silt
15							End of boring (EOB) at 15 feet.	1,2	
20									
25									
30									

GRANULAR SOILS		COHESIVE SOILS		NOTES:
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY	
0-4	V. LOOSE	0-2	V. SOFT	
4-10	LOOSE	2-4	SOFT	
10-30	M. DENSE	4-8	M. STIFF	
30-50	DENSE	8-15	STIFF	
> 50	V. DENSE	15-30	V. STIFF	1. EOB at 15 feet 2. Well set at 15 feet (MW-101) 3. Groundwater level estimated at 5 ft. bgs based on wet soil samples
		> 30	HARD	

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.  
ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG.  
FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. WS-2





PROJECT  
Sharon High School  
Pond Street  
Sharon, MA

BORING No. WS-3  
SHEET 1 OF 1  
Project No. 2180619  
CHKD BY Lee Koska

BORING Co. New England Boring Contractors BORING LOCATION See attached plan  
FOREMAN Carl Downing GROUND SURFACE ELEV. 265 DATUM  
WSE REP. Padraic T. Kavanagh DATE START 9/20/18 DATE END 9/20/18

SAMPLER: Direct Push Geoprobe 2" OD 60" Spoon  
CASING:  
CASING SIZE: N/A

GROUNDWATER OBSERVATIONS				
DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (feet)	CASING (blows/ft)	SAMPLE				PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
		No.	REC/PEN (in)	DEPTH (ft)	BLOWS/6"				
0	NA	31/60	0-5	N/A	ND		Top soil to 6" dark brown fine to medium SAND, some Silt, trace roots. 6" to 5' brown fine to medium gravelly SAND, some Silt		Fill
5		38/60	5-10	N/A	0.2		Top 5 " brown fine to medium gravelly SAND, some Silt. 5" to 16" dark brown Sandy organic SILT. Trace roots. Bottom 22" brown to gray fine to medium Silty SAND Wet.	3	Organics Gravelly SAND, Silt
10		52/60	10-15	N/A	0.1		Brown to gray fine to coarse gravelly SAND, little Silt. Wet		
15		55/60	15-20	N/A			Brown to gray fine to coarse gravelly SAND Wet.		
20							End of Boring (EOB) at 17.5 Feet	1,2	
25									
30									

GRANULAR SOILS		COHESIVE SOILS		NOTES:
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY	
0-4	V. LOOSE	0-2	V. SOFT	
4-10	LOOSE	2-4	SOFT	
10-30	M. DENSE	4-8	M. STIFF	
30-50	DENSE	8-15	STIFF	1. EOB at 17.5 feet
> 50	V. DENSE	15-30	V. STIFF	2. Well set at 17.5 feet (MW-102)
		> 30	HARD	3. Groundwater level estimated at 5 ft. bgs based on wet soil samples

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.  
 ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG.  
 FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. WS-3





PROJECT  
Sharon High School  
Pond Street  
Sharon, MA

BORING No. WS-4  
SHEET 1 OF 1  
Project No. 2180619  
CHKD BY Lee Koska

BORING Co. New England Boring Contractors  
FOREMAN Carl Downing  
WSE REP. Padraic T. Kavanagh  
BORING LOCATION See attached plan  
GROUND SURFACE ELEV. 272 DATUM  
DATE START 9/20/18 DATE END 9/20/18

SAMPLER: Direct Push Geoprobe 2" OD 60" Spoon  
CASING:  
CASING SIZE: N/A  
GROUNDWATER OBSERVATIONS  
DATE TIME WATER AT CASING AT STABILIZATION TIME

DEPTH (feet)	CASING (blows/ft)	SAMPLE				PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
		No.	REC/PEN (in)	DEPTH (ft)	BLOWS/6"				
0	NA		38/60	0-5	N/A	0.1	Top soil to 6" dark brown fine to medium SAND, some Silt, trace roots. 6" to 21" brown fine to medium gravelly SAND, trace Silt. 21" to 38" brown fine to coarse gravelly SAND, trace Silt. Wet	3	Fill
5			40/60	5-10	N/A	0.2	Brown to gray fine to coarse gravelly SAND, little Silt. Wet.		Gravelly SAND, Silt
10			55/60	10-15	N/A	0.2	Brown to gray fine to coarse gravelly SAND, little Silt. Wet.		
15							End of boring (EOB) at 15 feet.	2 1	
20									
25									
30									

GRANULAR SOILS		COHESIVE SOILS		NOTES: 1. EOB at 15 feet 2. Well set at 14 feet (MW-103) 3. Groundwater level estimated at 1.75 ft. bgs based on wet soil samples
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY	
0-4	V. LOOSE	0-2	V. SOFT	
4-10	LOOSE	2-4	SOFT	
10-30	M. DENSE	4-8	M. STIFF	
30-50	DENSE	8-15	STIFF	
> 50	V. DENSE	15-30	V. STIFF	
		> 30	HARD	

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.  
ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG.  
FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. WS-4

##



PROJECT  
Sharon High School  
Pond Street  
Sharon, MA

BORING No. WS-5  
SHEET 1 OF 1  
Project No. 2180619  
CHKD BY Lee Koska

BORING Co. New England Boring Contractors BORING LOCATION See attached plan  
FOREMAN Carl Downing GROUND SURFACE ELEV. 259 DATUM  
WSE REP. Padraic T. Kavanagh DATE START 9/20/18 DATE END 9/20/18

SAMPLER: Direct Push Geoprobe 2" OD 60" Spoon  
CASING:   
CASING SIZE: N/A

GROUNDWATER OBSERVATIONS				
DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (feet)	CASING (blows/ft)	SAMPLE				PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
		No.	REC/PEN (in)	DEPTH (ft)	BLOWS/6"				
0	NA	36/60		0-5	N/A	ND	Top soil to 6" dark brown fine to medium SAND, some Silt, trace roots. 6" to 16" Dark brown fine to coarse gravelly SAND, some Silt. 16" to 19" Peat. 19" to 36" Dark brown fine to medium gravelly SAND, trace Silt.	2	Organics  Fill
5		45/60		5-10	N/A	0.2	Top 7" dark brown fine to medium SAND, some Silt. 7" to 14" dark brown fine to medium SAND. 14" to 45" Gray fine to medium Sand some Silt.		Gravelly SAND, Silt
10		60/60		10-15	N/A	0.1	Top 36" gray fine to medium SAND. 36" to 60" gray fine to coarse SAND little Gravel. Wet.	3	
15							End of Boring (EOB) at 15 feet.	1	
20									
25									
30									

GRANULAR SOILS		COHESIVE SOILS		NOTES:
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY	
0-4	V. LOOSE	0-2	V. SOFT	1. EOB at 15 feet
4-10	LOOSE	2-4	SOFT	2. Peat/organics
10-30	M. DENSE	4-8	M. STIFF	3. Groundwater level estimated at 5 ft. bgs based on wet soil samples
30-50	DENSE	8-15	STIFF	
> 50	V. DENSE	15-30	V. STIFF	
		> 30	HARD	

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.  
ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG.  
FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. WS-5

##

## GROUNDWATER MONITORING WELL INSTALLATION REPORT

PROJECT NAME/NO. Sharon High School LOCATION Sharon, MA CLIENT Tappe Architects, Inc. CONTRACTOR New England Boring WSE REP. Padraic T. Kavanagh CHECKED BY Lee Koska	<b>MONITORING WELL NO.</b> <b>MW-101</b> ELEVATION _____ TOP OF PVC _____ DEPTH TO GROUNDWATER FROM TOP OF PVC _____
--	---

GROUND ELEVATION _____  GENERAL SOIL CONDITIONS (NOT TO SCALE) See boring Log		<-----	FLUSH-MOUNTED ROADBOX  THICKNESS OF SURFACE SEAL(S) _____ TYPE OF SURFACE SEAL(S) _____ TYPE OF SURFACE CASING _____ ID OF SURFACE CASING _____ DEPTH BOTTOM OF CASING _____ ID OF RISER PIPE _____ TYPE OF RISER PIPE _____ TYPE OF BACKFILL AROUND RISER PIPE _____ DEPTH TOP OF SEAL _____ TYPE OF SEAL _____ DEPTH BOTTOM OF SEAL/TOP OF SAND COLUMN _____ DEPTH TOP OF SCREEN _____ TYPE OF SCREEN _____ SIZE OPENINGS _____ ID OF SCREEN _____ TYPE OF BACKFILL AROUND SCREEN _____ DEPTH BOTTOM OF SCREEN _____ DEPTH BOTTOM OF SAND COLUMN _____ TYPE OF BACKFILL BELOW SCREEN _____ DIAMETER OF BOREHOLE _____ DEPTH BOTTOM OF BOREHOLE _____	(GROUND SURFACE)  1 Foot Concrete Road Box 6 inches 1 Foot 2 inch PVC _____ 1 foot Bentonite 2 Feet 3 Feet 5 Feet PVC 0.01 2 inch SAND 15 Feet 15 Feet SAND 3" 15 Feet
--	--	--------	--	---

<b>NOTES:</b>   	<b>MONITORING WELL NO.</b> <b>MW-101</b>  
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###

# GROUNDWATER MONITORING WELL INSTALLATION REPORT

PROJECT NAME/NO.	Sharon High School		MONITORING WELL NO.	
LOCATION	Sharon, MA		MW-102	
CLIENT	Tappe Architects, Inc.		ELEVATION	
CONTRACTOR	New England Boring	DRILLER	TOP OF PVC	
WSE REP.	Padraic T. Kavanagh	DATE	DEPTH TO GROUNDWATER FROM	
CHECKED BY	Lee Koska	DATE	TOP OF PVC	

GROUND ELEVATION	<----- FLUSH-MOUNTED ROADBOX		(GROUND SURFACE)
GENERAL SOIL CONDITIONS		THICKNESS OF SURFACE SEAL(S)	1 Foot
(NOT TO SCALE)		TYPE OF SURFACE SEAL(S)	Concrete
See Boring Log		TYPE OF SURFACE CASING	Road Box
		ID OF SURFACE CASING	6 inches
		DEPTH BOTTOM OF CASING	1 Foot
		ID OF RISER PIPE	2 inch
		TYPE OF RISER PIPE	PVC
		TYPE OF BACKFILL AROUND RISER PIPE	
		DEPTH TOP OF SEAL	2 Feet
		TYPE OF SEAL	Bentonite
		DEPTH BOTTOM OF SEAL/TOP OF SAND COLUMN	3.5 feet
			5.5 Feet
		DEPTH TOP OF SCREEN	7.5 Feet
		TYPE OF SCREEN	PVC
		SIZE OPENINGS	0.01
		ID OF SCREEN	2 inch
		TYPE OF BACKFILL AROUND SCREEN	SAND
		DEPTH BOTTOM OF SCREEN	17.5 Feet
	DEPTH BOTTOM OF SAND COLUMN	17.5 Feet	
	TYPE OF BACKFILL BELOW SCREEN	SAND	
	DIAMETER OF BOREHOLE	3"	
	DEPTH BOTTOM OF BOREHOLE	17.5 Feet	

NOTES:	MONITORING WELL NO.
	MW-102

###

# GROUNDWATER MONITORING WELL INSTALLATION REPORT

PROJECT NAME/NO.	Sharon High School		MONITORING WELL NO.	
LOCATION	Sharon, MA		MW-103	
CLIENT	Tappe Architects, Inc.		ELEVATION	
CONTRACTOR	New England Boring	DRILLER	TOP OF PVC	
WSE REP.	Padraic T. Kavanagh	DATE	DEPTH TO GROUNDWATER FROM	
CHECKED BY	Lee Koska	DATE	TOP OF PVC	

GROUND ELEVATION	<----- FLUSH-MOUNTED ROADBOX		(GROUND SURFACE)
GENERAL SOIL CONDITIONS		THICKNESS OF SURFACE SEAL(S)	1 Foot
(NOT TO SCALE)		TYPE OF SURFACE SEAL(S)	Concrete
See boring Log		TYPE OF SURFACE CASING	Road Box
		ID OF SURFACE CASING	6 inches
		DEPTH BOTTOM OF CASING	1 Foot
		ID OF RISER PIPE	2 inch
		TYPE OF RISER PIPE	PVC
		TYPE OF BACKFILL AROUND RISER PIPE	
		DEPTH TOP OF SEAL	1 foot
		TYPE OF SEAL	Bentonite
		DEPTH BOTTOM OF SEAL/TOP OF SAND COLUMN	1 Foot
			2 Feet
		DEPTH TOP OF SCREEN	4 Feet
		TYPE OF SCREEN	PVC
		SIZE OPENINGS	0.01
		ID OF SCREEN	2 inch
		TYPE OF BACKFILL AROUND SCREEN	SAND
		DEPTH BOTTOM OF SCREEN	14 Feet
	DEPTH BOTTOM OF SAND COLUMN	15 Feet	
	TYPE OF BACKFILL BELOW SCREEN	SAND	
	DIAMETER OF BOREHOLE	3"	
	DEPTH BOTTOM OF BOREHOLE	15 Feet	

NOTES:	MONITORING WELL NO.
	MW-103

###





# 8.6

## GEOTECHNICAL REPORT



**Tappe Associates, Inc.**  
**Weston & Sampson Project No. 2180619**

November 2, 2018

Mr. Charles Hay, Principal  
Tappe Associates, Inc.  
Six Edgerly Place  
Boston, MA 02116

**Re: Preliminary Geotechnical Evaluation  
Sharon High School  
Sharon, Massachusetts**

## **INTRODUCTION**

Weston & Sampson Engineers, Inc. (Weston & Sampson) is pleased to present our preliminary geotechnical evaluation for the proposed addition to, or replacement of, the Sharon High School at 181 Pond Street in Sharon, Massachusetts. The purpose of our preliminary geotechnical evaluation was to complete preliminary subsurface investigations and geotechnical analyses and provide a discussion of geotechnical considerations for the proposed project. Our services were completed in accordance with our August 2, 2018 agreement.

We understand that concepts currently include either additions to the north or south sides of the existing building(s) or a new building in the existing athletic fields south of the existing campus as shown in **Figure 1 – Site Plan**. The information provided in this and other preliminary studies will be used to evaluate proposed building locations, potential site layouts, and other considerations for design and construction. Accordingly, specific information including building elevations, structural loads, site grading, associated structures, and utility depths were not available at the time of this report. We anticipate, however, that the proposed school building improvements will be a one- to two-story structure and associated site improvements may include access roadways and parking areas, retaining walls, and underground utilities.

Our understanding of the existing conditions and proposed project are based on our recent discussions with you and review of the following information:

- A design plan titled "Site Plan & Grading, High School, Town of Sharon," prepared by Anderson-Nichols and Co., dated May 12, 1955;
- Design plans titled "Sharon High School, Septic System Upgrade," prepared by Weston & Sampson, dated July 1994 (revised August 1994); and,
- Select design plans, Sheet Nos. C1.2 through C4.3 and WW.1 through WW.6 prepared by Symmes Maini & McKee Associates, dated July 10, 1997.

Our services included a Phase I Environmental Site Assessment (ESA) as required by the Massachusetts School Building Authority (MSBA) school building grant program. Select soil samples obtained from the geotechnical borings were screened in the field for the presence of volatile organic compounds (VOCs) with a photoionization detector (PID). Samples were also submitted to a testing laboratory for preliminary soil disposal characterization analyses. Our Phase I ESA with details on environmental sampling and testing, laboratory test results, and related environmental considerations for the proposed project are provided under separate cover.

## **EXISTING CONDITIONS**

The school property is generally bordered by Pond Street to the east, Beach Street to the south, residential properties and undeveloped forested and wetland areas to the west and residential properties to the north.

Existing site features include the existing school building, paved parking and driveway areas, lawn and landscape areas and concrete sidewalks. Natural turf (grass) athletic fields, a track and tennis courts are present to the south and west of the school building. An on-site wastewater treatment facility is located in the northwest portion of the property.

Site topography generally slopes gently downward from the northwest to the south and southeast. Based on topographic information contained in the existing design plans (dated 1955 and 1997), elevations range from approximately elevation (El.) 275 ft. in the northwest portion of the site to approximately El. 258 ft. in the southern portion of the site. Ground surface elevations in the athletic field areas located to the south and west of the existing school building are relatively level and range between approximately El. 259 ft. to El. 263 ft. Elevations are in feet and reference the National Geodetic Vertical Datum of 1929 (NGVD29) as indicated on the 1994 septic system upgrade design plans.

The existing one to two-story school building was reportedly constructed in the 1950's and the most recent building additions were completed in 2010. The first-floor finished floor elevations (FFE) range from El. 262.5 ft to El. 265.5 ft. based on the 1955 design plans.

An exterior retaining wall with an exposed height of up to approximately 3 ft. extends from the western building wall and retains grades north of the paved parking and loading dock areas on the west side of the building. A second retaining wall up to approximately 6.5 ft. retains higher grades to the northwest of the building.

## **SUBSURFACE CONDITIONS**

### **Geologic Setting**

Surficial geology information available from the Massachusetts Office of Geographic Information (Mass GIS) indicates the site is in an area of sand and gravel deposits overlying bedrock at depths less than 50 feet. Bedrock geology is mapped as hornblende diorite with amphibolite and hornblende gneiss. Shallow bedrock and outcrops are not mapped in the immediate site vicinity.

### **Previous Subsurface Information By Others**

Test boring logs included on the 1955 design plans indicate the subsurface conditions at the site consisted of loamy sand overlying sand and gravel. Several of these borings encountered soft peat deposits above the sand and gravel layer to depths ranging from approximately 1.0 to 4.5 ft. below the pre-construction ground

surface. Shallow groundwater was reported at depths ranging from approximately 1 to 2 ft. from the original ground surface. Cobbles and boulders were noted in several of the previous borings within the loamy sand and sand and gravel layers.

### **Subsurface Explorations**

Subsurface conditions were explored between September 19 and 21, 2018 by advancing eight borings (B-101 through B-109, B-103 was not completed) to depths up to 26.0 feet below the existing ground surface (BGS). Five environmental explorations (WS-1 through WS-5) were completed at various locations using a Geoprobe® rig and direct-push continuous sampling methods as part of the limited environmental investigations. Monitoring wells were installed in three Geoprobe® (MW-1 through MW-3) to allow measurement of groundwater levels and sampling for the purposes of environmental analysis. The explorations were completed by New England Boring Contractors of Brockton, Massachusetts. The approximate locations of the borings and geoprobes are shown in the attached **Figure 1 - Site Plan**.

The borings were completed using an ATV-mounted drill rig. Drive-and-wash and hollow stem auger drilling methods were used. Standard penetration tests (SPTs) and soil sampling were conducted at 2- to 5-ft. intervals in each boring by driving a 24-inch long by 1-3/8 inch inside diameter (2 inch outside diameter) split spoon sampler with blows from a 140-pound automatic hammer falling freely 30 inches per blow. Hammer blows per 6 inches of sampler penetration were recorded for 24 inches. The blow counts for the middle 12 inches are combined and designated as the SPT N-value, which can be correlated to soil consistencies and engineering soil properties. SPT refusal, where noted in the boring logs, is defined as 100 hammer blows for less than 6 inches of sampler penetration.

The Geoprobe® were completed using a hydraulic ram and percussive hammer to advance 5 ft. long sections of hollow steel casing with inside and outside diameters of 1¼ and 2¼ inches, respectively. A cutting shoe on the lead casing section allowed for collection of a continuous soil core sample inside the casing. The results of the environmental sampling are included in our Phase I environmental site assessment report.

Weston & Sampson geotechnical engineering staff monitored drilling activities in the field and prepared logs for each exploration. Subsurface conditions encountered in the explorations are described in the following section and the boring logs provided in **Attachment A**.

### **Soil Conditions**

All borings encountered between 4 to 12 inches topsoil at the ground surface. Geoprobe® WS-1 and WS-2 encountered a 4 inch thick layer of surficial AC pavement at the ground surface.

A layer of very loose to very dense fill was encountered beneath the topsoil to depths ranging from 3 to 8 ft. BGS in all borings. The fill generally consisted of silty SAND with variable amounts of gravel (trace to gravelly) and trace organics.

A layer of organics was encountered below the fill in borings B-106 through B-109 (and Geoprobe® borings WS-3, WS-4 and WS-5). The organics consisted of either dark brown organic SILT, trace fine sand, trace gravel or PEAT. Based on observations from the borings, the thickness of the organics ranged from about 6 to 12 inches and may represent a former ground surface layer.

Native soil conditions encountered below the fill to the depths explored generally consisted of medium dense to very dense, gray-brown fine to medium SAND with varying amounts of silt (little to silty) and gravel (trace to gravelly).

### **Groundwater**

Groundwater was observed in all explorations during drilling at depths ranging from about 2 to 8 ft. BGS. Observations were based on wet samples and observed levels prior to backfilling the boreholes. Groundwater was observed at depths ranging between about 5 to 8 ft. BGS in the monitoring wells on October 23, 2018.

We anticipate that groundwater levels will fluctuate with season, variations in precipitation, construction in the area, and other factors.

## **GEOTECHNICAL CONSIDERATIONS**

### **General**

Based on the subsurface conditions encountered in our explorations and preliminary geotechnical analyses, the primary geotechnical considerations for the proposed project are the presence of undocumented (non-engineered) fill, organics, and shallow groundwater. Geotechnical considerations associated with the existing fill and organic layers, support of foundations and slabs, permanent drainage and dewatering are discussed in the following sections.

Additional geotechnical explorations, analyses, and laboratory testing will be required to provide geotechnical recommendations for design and construction once specific project details such as building location(s), floor elevations, and grading are developed. We recommend that additional explorations include test pits to assess seasonal high groundwater levels; the extent, composition, and thickness of the existing fill; and to obtain bulk samples to further evaluate re-use of the existing fill. Test pits generally allow for better visual observation of shallow subsurface conditions and collection of bulk samples than borings.

### **Existing Fill and Organics**

Undocumented fill was encountered in all explorations to depths up to 8 ft., but generally ranged between 2 to 4 ft. The existing fill was likely placed during development of the school and athletic fields. The fill observed in the borings was predominantly sand to silty sand but did not contain trash or debris. Though not encountered in the current borings, boulders and cobbles should be expected in the fill and underlying native soils.

A layer of organics representing a possible former ground surface layer was encountered in explorations B-106, B-107, B-108, B-109, WS-3, WS-4 and WS-5. The organic layer ranged in thickness between approximately 2 to 12 inches and consisted of organic silt with varying amounts of sand and gravel. The bottom of the layer was generally 4.5 to 6.0 ft. BGS.

The existing non-engineered fill and organics are not suitable (or allowed by the Massachusetts Building Code) for support of foundations or other rigid structural site improvements that could be adversely affected by differential settlement. Existing fill and organics should be completely removed from within the zone-of-influence beneath proposed foundations and other structural elements. The 'zone-of-influence' is defined by a plane extending horizontally away from the bottom outside edges of footings and other structural site



improvements a horizontal distance of two feet in all directions, then down and away at 1H:1V (horizontal:vertical) slopes to the intersection with undisturbed native soils.

Based on the consistency and composition of the fill observed in the preliminary borings, it may be feasible for the existing fill to remain in place beneath proposed floor slabs, sidewalks, and flexible asphalt concrete pavements provided the fill is not underlain by unsuitable materials (such as loose or fine grained fill materials, debris, organics, topsoil, etc.) and subgrades are adequately prepared (re-compacted) and evaluated by a geotechnical engineer prior to placement of overlying materials. Additional explorations are recommended to investigate whether unsuitable materials may be present beneath the existing fill in other areas. Recommendations for site and subgrade preparation will be provided in our design-level geotechnical report.

### **Foundations and Slabs**

Provided non-engineered fill and organics are removed from the zone-of-influence beneath footings as described above and structural loads are typical for one- to two-story structures, proposed structures can be supported on conventional, shallow spread footings bearing on native, undisturbed, inorganic, medium dense (or denser) sand or on properly constructed structural fill directly overlying these materials. Removal of existing fill and organics from within the zone of influence beneath proposed foundations in some areas of the site will likely require dewatering as described below.

Lowest level floors can be supported on conventional slabs on-grade once topsoil and other unsuitable materials are removed and replaced with structural fill. It may be feasible for a portion of the existing fill to remain in place provided the fill is not underlain by unsuitable materials and subgrades are properly prepared and evaluated by a geotechnical engineer. Recommendations for design and construction of foundations and slabs will be provided in our design-level geotechnical report.

### **Drainage**

Permanent drainage will be required for retaining walls, embedded building walls, and other below-grade structures unless they are designed to resist hydrostatic pressures. Foundation drains and sub-slab drainage may be required depending on proposed finished floor elevations relative to existing grades and groundwater elevations. Any below grade structures such as vaults, pits, or tanks should be watertight and designed to resist buoyancy forces. Exterior grades should slope away from all structures.

### **Excavation Considerations**

Excavation will be required for site preparation, grading, foundation construction, utility construction, etc. Temporary excavation support will be required for excavation depths greater than four feet and where groundwater seepage is present.

Excavations below groundwater levels will likely encounter moderate to severe caving and flowing conditions where granular materials are present. Dewatering and management of groundwater, including seepage from temporary slopes, will be required during construction.

A layer of organics was encountered in several of the explorations. We recommend that the preliminary construction budget include contingencies for removal and replacement of the organics.

## Fill Materials

Well graded sand and gravel fill with less than approximately 10 percent fines (such as MassDOT M1.03.0-type B Gravel Borrow or M2.01.7 Dense-graded Crushed Stone) is recommended for use as Structural Fill in foundation, slab, and other structural areas. On-site materials meeting the gradation requirements for the aforementioned MassDOT materials may be acceptable for use as Structural Fill if approved by the geotechnical engineer. Based on the subsurface conditions observed in the preliminary borings, some of the existing granular fill materials may be suitable for use as Structural Fill provided the materials can be adequately moisture conditioned (i.e. dried) and compacted to minimum required densities.

On-site granular soils containing less than approximately 20 percent fines and free of organics, contamination (including metals, VOCs, SVOCs, etc.), and other deleterious materials may be suitable for use as fill in areas outside proposed structures (i.e. Common Fill) if properly moisture conditioned. The native soils (sand and silt) encountered in the borings generally contained more than 10 percent fines and should not be considered suitable for re-use as Structural Fill. It may be feasible to re-use these materials as Common Fill if properly moisture conditioned and compacted to minimum required densities.

Additional recommendations for fill materials, placement, and compaction will be provided in our design-level geotechnical report. Additional explorations and geotechnical laboratory testing are recommended to further evaluate the variability and composition of on-site materials and their suitability for re-use as fill.

## LIMITATIONS

We have prepared this preliminary feasibility study for use by Tappe Associates, Inc. and the design and construction teams for this project only. The information herein may be used for preliminary cost estimating and/or alternative analyses but is not considered sufficient for design or bidding and should not be construed as a warranty of subsurface conditions. Additional geotechnical explorations, analyses, and recommendations will be required for final design once project details including, but not limited to, site layout, grading, and proposed structure type(s), configurations, and elevations are determined.

We have made observations only at the aforementioned locations and only to the stated depths. These observations do not reflect soil types, strata thicknesses, water levels or seepage that may exist between observations. Within the limitations of scope, schedule and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty, expressed or implied, is given. For important information on the use of this report, please refer to **Attachment B** for the document titled *“Important Information about This Geotechnical-Engineering Report”*.

It has been a pleasure assisting you with this project and we look forward to our continued involvement. Please call if you have any questions.

Very truly yours,

WESTON & SAMPSON, INC.



Stephen T. Spink, PE  
Geotechnical Project Manager



Christopher J. Palmer, PE  
Senior Technical Leader - Geotechnical Engineering

**Attachments:**

Figure 1 – Site Plan

Attachment A - Boring Logs (9 pages)

Attachment B - Important Information about This Geotechnical-Engineering Report (2 pages)

STS:CJP

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NOTES:

1. BORINGS WERE COMPLETED BY NEW ENGLAND BORING CONTRACTORS OF BROCKTON, MASSACHUSETTS AND OBSERVED BY WESTON & SAMPSON ENGINEERS, INC. BETWEEN SEPTEMBER 19 AND 21, 2018.
2. GEOPROBES AND MONITORING WELLS WERE COMPLETED BY NEW ENGLAND BORING CONTRACTORS OF BROCKTON, MASSACHUSETTS AND OBSERVED BY WESTON & SAMPSON ENGINEERS, INC. ON SEPTEMBER 20, 2018.
3. LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE AND BASED ON FIELD MEASUREMENTS RELATIVE TO EXISTING SITE FEATURES.

LEGEND:

- B-101  DESIGNATION AND APPROXIMATE LOCATION OF BORINGS.
- WS-1/MW-101  DESIGNATION AND APPROXIMATE LOCATION OF GEOPROBES AND MONITORING WELLS.



NOT TO SCALE

FIGURE 1

SHARON HIGH SCHOOL  
SHARON, MA

SITE PLAN

DESIGNED BY: BDC CHECKED BY: STS DATE: NOVEMBER 2018

**Weston & Sampson**

Google Earth Imagery, Copyright 2018



## ATTACHMENT A

Boring Logs



**CLIENT:** Tappe Architects, Inc.

**PROJECT NUMBER:** 2180619

**PROJECT NAME:** Sharon High School

**PROJECT LOCATION:** Sharon, MA

**DRILLER:** Matt Ferreira - New England Boring Contractors

**LOGGED / CHECKED BY:** BDG / STS

**RIG TYPE / DRILLING METHODS:** ATV / cased rotary (drive-and-wash)

**CASING DIAMETER:** 3.5" OD / 3.0" ID

**SAMPLING METHODS:** Standard penetration test (SPT)

**SAMPLER TYPE:** Standard 24" long x 2" OD (1-3/8" ID) split-spoon

**SAMPLER HAMMER:** 140-lb. automatic hammer

**OTHER:** Diedrich D-50 Drill Rig

**BORING LOCATION:** See Site Plan.

**GROUND ELEVATION:** 272 ft. +/-

**DATUM:** NGVD29

**DRILLING START DATE:** 9/21/2018

**END DATE:** 9/21/2018

**GROUNDWATER OBSERVATIONS**

DATE	DEPTH	COMMENTS
9/21/2018	2 ft. +/-	Based on wet soil samples.

DEPTH (ft.) Elevation	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
0									<div>Mineral Soil</div> <div>GRAVEL, SAND, SILT, CLAY: &gt;50%</div> <div>gravelly, sandy, silty, clayey: 35-50%</div> <div>some: 20-35%</div> <div>little: 10-20%</div> <div>trace: 0-10%</div> <div>Organic Soil</div> <div>PEAT: 50-100%</div> <div>organic (soil): 15-50%</div> <div>with some organics: 5-15%</div>	
272.0	S-1	0.0	16/24	5 16 15 11	31		ND		Top 8" - Topsoil.	
	S-2	2.0	14/24	8 6 7 7	13		ND	FILL	Middle 5" - Light/dark brown, gravelly fine to coarse SAND, some silt, trace organics (roots); moist. [FILL] Bottom 3" - Light gray, fine to coarse SAND, little silt, trace gravel; moist. [FILL] Top 12" - Medium dense, brown, medium to coarse SAND, little gravel, trace silt; wet. [FILL] Bottom 2" - Medium dense, gray GRAVEL, little sand, trace silt; wet. [FILL]	Gravel stuck in shoe tip.
5 267.0	S-3	4.0	8/24	13 10 18 29	28		0.1	SAND	Medium dense, gray, fine to medium SAND, some gravel, little silt; wet.	Drill chattering at about 7 ft.
10 262.0	S-4	9.0	9/24	10 12 20 45	32		ND		Dense, gray-brown, fine to medium SAND, some silt, trace gravel; wet.	Rock fragment at bottom of spoon.
15 257.0	S-5	14.0	18/24	25 39 46 38	85		ND		Very dense, gray-brown, fine to medium SAND, some gravel, little silt; wet.	Drill chattering at about 11 ft.
Bottom of boring at 16 ft.										
SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:				
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.  2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.				
S	Split spoon	0-4	Very Loose	< 2	Very Soft					
ST	Shelby tube	4-10	Loose	2-4	Soft					
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff					
NX	Rock core	30-50	Dense	8-15	Stiff					
GP	Direct push	> 50	Very Dense	15-30 > 30	Very Stiff Hard					

**BORING NUMBER: B-101**

W&amp;S BORING LOG - DATA TEMPLATE - W&amp;S LOGS.GDT - 11/2/18 10:10 - I:\W&amp;S\LOCAL\PROJECTS\PRIVATE\TAPPE ASSOCIATES\SHARON - SHARON HIGH SCHOOL\GEOTECHNICAL\FIELD BORINGS\SHARON.HS - FEASIBILITY BORING LOGS.GPJ



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**PROJECT NUMBER:** 2180619

**PROJECT NAME:** Sharon High School

**PROJECT LOCATION:** Sharon, MA

**DRILLER:** Matt Ferreira - New England Boring Contractors

**LOGGED / CHECKED BY:** BDG / STS

**RIG TYPE / DRILLING METHODS:** ATV / cased rotary (drive-and-wash)

**CASING DIAMETER:** 3.5" OD / 3.0" ID

**SAMPLING METHODS:** Standard penetration test (SPT)

**SAMPLER TYPE:** Standard 24" long x 2" OD (1-3/8" ID) split-spoon

**SAMPLER HAMMER:** 140-lb. automatic hammer

**OTHER:** Diedrich D-50 Drill Rig

**BORING LOCATION:** See Site Plan.

**GROUND ELEVATION:** 266 ft. +/-


**DATUM:** NGVD29

**DRILLING START DATE:** 9/21/2018

**END DATE:** 9/21/2018

**GROUNDWATER OBSERVATIONS**

DATE	DEPTH	COMMENTS
9/21/2018	4 ft. +/-	Based on wet soil samples.

DEPTH (ft.) Elevation	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
0									<div>Mineral Soil</div> <div>GRAVEL, SAND, SILT, CLAY: &gt;50%</div> <div>gravelly, sandy, silty, clayey: 35-50%</div> <div>some: 20-35%</div> <div>little: 10-20%</div> <div>trace: 0-10%</div> <div>Organic Soil</div> <div>PEAT: 50-100%</div> <div>organic (soil): 15-50%</div> <div>with some organics: 5-15%</div>	
266.0	S-1	0.0	12/24	4 10 33 29	43		0.1		Top 10" - Topsoil.	
								FILL	Middle 1" - Orange-brown, fine to medium SAND, some silt, trace gravel, trace organics (roots); moist. [FILL] Bottom 1" - Light gray, fine to medium SAND, little silt, little gravel; moist. Very dense, light gray, fine to medium SAND, little silt, little gravel; moist.	Gravel stuck in shoe tip. Drill chattering at about 2.5 ft.    Drill chattering at about 7 ft.  Drill chattering at about 11.5 ft.
	S-2	2.0	7/24	28 34 29	68		0.1		Very dense, gray, fine to medium SAND, some gravel, little silt; wet.	
5	S-3	4.0	16/24	18 27 29 32	56		0.1		Dense, gray-brown, fine to medium SAND, some silt, trace gravel; wet.	
261.0								SAND	Very dense, gray-brown, fine to medium SAND, some silt, little gravel; wet.	
	S-4	9.0	18/24	31 24 19 47	43		ND			
10										
256.0										
	S-5	14.0	11/24	24 28 70 21	98		ND			
15										
251.0										
Bottom of boring at 16 ft.										
SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:				
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.  2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.				
S	Split spoon	0-4	Very Loose	< 2	Very Soft					
ST	Shelby tube	4-10	Loose	2-4	Soft					
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff					
NX	Rock core	30-50	Dense	8-15	Stiff					
GP	Direct push	> 50	Very Dense	15-30 > 30	Very Stiff Hard					

**BORING NUMBER: B-102**

W&amp;S BORING LOG - DATA TEMPLATE - WSE STANDARD 1/2/18 10:10 - \\WSE03\LOCAL\PROJECTS\PRIVATE\TAPPE ASSOCIATES\SHARON - SHARON HIGH SCHOOL\GEOTECHNICAL\FIELD BORINGS\SHARON.HS - FEASIBILITY BORING LOGS.GPJ

**CLIENT:** Tappe Architects, Inc.  
**PROJECT NUMBER:** 2180619

**PROJECT NAME:** Sharon High School  
**PROJECT LOCATION:** Sharon, MA

**DRILLER:** Matt Ferreira - New England Boring Contractors  
**LOGGED / CHECKED BY:** BDG / STS  
**RIG TYPE / DRILLING METHODS:** ATV / cased rotary (drive-and-wash)  
**CASING DIAMETER:** 3.5" OD / 3.0" ID  
**SAMPLING METHODS:** Standard penetration test (SPT)  
**SAMPLER TYPE:** Standard 24" long x 2" OD (1-3/8" ID) split-spoon  
**SAMPLER HAMMER:** 140-lb. automatic hammer  
**OTHER:** Diedrich D-50 Drill Rig

**BORING LOCATION:** See Site Plan.  
**GROUND ELEVATION:** 261.5 ft. +/- **DATUM:** NGVD29  
**DRILLING START DATE:** 9/19/2018 **END DATE:** 9/19/2018

**GROUNDWATER OBSERVATIONS**

DATE	DEPTH	COMMENTS
9/19/2018	2.9 ft. +/-	Based on measurement following casing removal.

DEPTH (ft.) Elevation	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
0									<div>Mineral Soil</div> <div>GRAVEL, SAND, SILT, CLAY: &gt;50%</div> <div>gravelly, sandy, silty, clayey: 35-50%</div> <div>some: 20-35%</div> <div>little: 10-20%</div> <div>trace: 0-10%</div> <div>Organic Soil</div> <div>PEAT: 50-100%</div> <div>organic (soil): 15-50%</div> <div>with some organics: 5-15%</div>	
261.5	S-1	0.0	21/24	3 6 8 16	14		ND		Top 10" - Topsoil.	Gravel stuck in shoe tip.
									Bottom 11" - Medium dense, brown, silty fine to medium SAND, trace gravel, trace organics (roots); moist. [FILL]	
5	S-2	4.0	0/24	12 1 1 2	2		NA	FILL	No recovery.	
256.5	S-3	6.0	13/24	4 4 10 14	14		ND		Medium dense, brown, silty fine SAND, trace gravel, trace organics (roots); wet. [FILL]	Gravel in the tip of spoon.
	S-4	8.0	10/24	17 24 41 29	65		0.2		Top 5" - Very dense, brown, gravelly fine to coarse SAND, trace silt; wet. Bottom 5" - Very dense, gray, sandy GRAVEL, trace silt; wet.	
10								GRAVEL		
251.5										
	S-5	14.0	7/24	11 14 6 13	20		0.1		Medium dense, gray-brown, sandy GRAVEL, little silt; wet.	
15										
246.5										
	S-6	19.0	13/24	22 30 32	62		0.2	SAND	Very dense, gray, gravelly fine to coarse SAND, little silt; wet.	Drill chattering at about 18 ft.
20										
241.5										
SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:				
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.  2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.				
S	Split spoon	0-4	Very Loose	< 2	Very Soft					
ST	Shelby tube	4-10	Loose	2-4	Soft					
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff					
NX	Rock core	30-50	Dense	8-15	Stiff					
GP	Direct push	> 50	Very Dense	15-30 > 30	Very Stiff Hard					

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**LOGGED / CHECKED BY:** BDG / STS  
**RIG TYPE / DRILLING METHODS:** ATV / cased rotary (drive-and-wash)  
**CASING DIAMETER:** 3.5" OD / 3.0" ID  
**SAMPLING METHODS:** Standard penetration test (SPT)  
**SAMPLER TYPE:** Standard 24" long x 2" OD (1-3/8" ID) split-spoon  
**SAMPLER HAMMER:** 140-lb. automatic hammer  
**OTHER:** Diedrich D-50 Drill Rig

**BORING LOCATION:** See Site Plan.  
**GROUND ELEVATION:** 263 ft. +/- **DATUM:** NGVD29  
**DRILLING START DATE:** 9/20/2018 **END DATE:** 9/20/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
9/20/2018	4 ft. +/-	Based on wet soil samples.

DEPTH (ft.) Elevation	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
0									<div>Mineral Soil</div> <div>GRAVEL, SAND, SILT, CLAY: &gt;50%</div> <div>gravelly, sandy, silty, clayey: 35-50%</div> <div>some: 20-35%</div> <div>little: 10-20%</div> <div>trace: 0-10%</div> <div>Organic Soil</div> <div>PEAT: 50-100%</div> <div>organic (soil): 15-50%</div> <div>with some organics: 5-15%</div>	
263.0	S-1	0.0	18/24	2	6		54.6		Top 9" - Topsoil.	
				3					Bottom 9" - Orange-brown, silty fine to coarse SAND, trace gravel; moist. [FILL]	
				8						
	S-2	2.0	21/24	15	53		20.3		Top 9" - Very dense, brown, silty fine to coarse SAND, trace gravel, trace organics (roots); moist. [FILL]	
				30					Bottom 12" - Very dense, gray, silty fine to medium SAND, trace gravel; moist. [FILL]	
				23						Drill chattering at about 3 ft.
5	S-3	4.0	18/24	17	40		ND		Dense, gray, fine to medium SAND, some silt, trace gravel; wet.	
258.0				23						
	S-4	6.0	9/24	19	37		0.1		Dense, gray, fine to medium SAND, some silt, little gravel; wet.	
				19						
				18						Drill chattering at about 7 ft.
				15						
10	S-5	8.0	14/24	11	29		0.2		Medium dense, gray, silty fine to medium SAND, little gravel; wet.	
				13						
253.0				16						Drill chattering at about 10 ft.
				18						
										Drill chattering at about 12 ft.
										Drill chattering at about 13 ft.
15	S-6	14.0	9/11	75			0.7		Very dense, gray, silty fine to medium SAND, little gravel; wet.	
248.0				100/5"						
Bottom of boring at 15.9 ft.										

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	
S	Split spoon	0-4	Very Loose	< 2	Very Soft	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

**BORING NUMBER: B-105**

W&amp;S BORING LOG - DATA TEMPLATE - W&amp;S STANDARD LOGS.GDT - \\WSE03\LOCAL\W&amp;S\PROJECTS\PRIVATE\TAPPE ASSOCIATES\SHARON - SHARON HIGH SCHOOL\GEOTECHNICAL\FIELD BORINGS\SHARON.HS - FEASIBILITY BORING LOGS.GPJ

**CLIENT:** Tappe Architects, Inc.  
**PROJECT NUMBER:** 2180619

**PROJECT NAME:** Sharon High School  
**PROJECT LOCATION:** Sharon, MA

**DRILLER:** Matt Ferreira - New England Boring Contractors  
**LOGGED / CHECKED BY:** BDG / STS  
**RIG TYPE / DRILLING METHODS:** ATV / cased rotary (drive-and-wash)  
**CASING DIAMETER:** 3.5" OD / 3.0" ID  
**SAMPLING METHODS:** Standard penetration test (SPT)  
**SAMPLER TYPE:** Standard 24" long x 2" OD (1-3/8" ID) split-spoon  
**SAMPLER HAMMER:** 140-lb. automatic hammer  
**OTHER:** Diedrich D-50 Drill Rig

**BORING LOCATION:** See Site Plan.  
**GROUND ELEVATION:** 263 ft. +/- **DATUM:** NGVD29  
**DRILLING START DATE:** 9/21/2018 **END DATE:** 9/21/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
9/21/2018	4.9 ft. +/-	Based on measurement following casing removal.

DEPTH (ft.) Elevation	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
0									<div>Mineral Soil</div> <div>GRAVEL, SAND, SILT, CLAY: &gt;50%</div> <div>gravelly, sandy, silty, clayey: 35-50%</div> <div>some: 20-35%</div> <div>little: 10-20%</div> <div>trace: 0-10%</div> <div>Organic Soil</div> <div>PEAT: 50-100%</div> <div>organic (soil): 15-50%</div> <div>with some organics: 5-15%</div>	
263.0	S-1	0.0	6/24	5 10 10 11	20		ND	FILL	Top 4" - Topsoil.	Gravel fragments stuck in shoe tip. Drill chattering at about 1 ft.
	S-2	2.0	17/24	9 9 6 14	15		0.1		Bottom 2" - Brown, fine to medium SAND, trace gravel, trace silt, trace organics (roots); moist. [FILL]	
	S-3	4.0	8/24	14 22 49 31	71		0.1		Top 2" - Brown, fine to medium SAND, trace gravel, trace silt, trace organics (roots); moist. [FILL] Middle 12" - Medium dense, orange-brown, fine to coarse SAND, little gravel, little silt; moist. [FILL] Organic seam (1/4") in sample.	Drill chattering at about 5 ft.
5 258.0								SAND	Bottom 3" - Gray, fine to medium SAND, some silt, little gravel; moist. Very dense, gray, fine to medium SAND, little gravel, little silt; wet.	
10 253.0	S-4	9.0	13/24	17 14 11 14	25		0.1		Medium dense, gray, fine to coarse SAND, some gravel, little silt; wet.	Drill chattering at about 10 ft.
15 248.0	S-5	14.0	14/24	11 17 16 24	33		ND		Dense, gray, fine to medium SAND, some silt, little gravel; wet.	
	S-6	19.0	11/11	83 100/5"			0.1		Very dense, gray, fine to medium SAND, some silt, little gravel; wet.	

Bottom of boring at 19.9 ft

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	
S	Split spoon	0-4	Very Loose	< 2	Very Soft	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

**BORING NUMBER: B-106**

W&amp;S BORING LOG - DATA TEMPLATE - W&amp;S STANDARD LOGS.GDT - \\WSE03\LOCAL\WSPROJECTS\PRIVATE\TAPPE ASSOCIATES\SHARON - SHARON HIGH SCHOOL\GEOTECHNICAL\FIELD BORINGS\SHARON.HS - FEASIBILITY BORING LOGS.GPJ

**CLIENT:** Tappe Architects, Inc.  
**PROJECT NUMBER:** 2180619

**PROJECT NAME:** Sharon High School  
**PROJECT LOCATION:** Sharon, MA

**DRILLER:** Matt Ferreira - New England Boring Contractors  
**LOGGED / CHECKED BY:** BDG / STS  
**RIG TYPE / DRILLING METHODS:** ATV / cased rotary (drive-and-wash)  
**CASING DIAMETER:** 3.5" OD / 3.0" ID  
**SAMPLING METHODS:** Standard penetration test (SPT)  
**SAMPLER TYPE:** Standard 24" long x 2" OD (1-3/8" ID) split-spoon  
**SAMPLER HAMMER:** 140-lb. automatic hammer  
**OTHER:** Diedrich D-50 Drill Rig

**BORING LOCATION:** See Site Plan.  
**GROUND ELEVATION:** 263 ft. +/- **DATUM:** NGVD29  
**DRILLING START DATE:** 9/20/2018 **END DATE:** 9/20/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
9/20/2018	3.1 ft. +/-	Based on seepage in hand excavation.

DEPTH (ft.) Elevation	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
0									<div>Mineral Soil</div> <div>GRAVEL, SAND, SILT, CLAY: &gt;50%</div> <div>gravelly, sandy, silty, clayey: 35-50%</div> <div>some: 20-35%</div> <div>little: 10-20%</div> <div>trace: 0-10%</div> <div>Organic Soil</div> <div>PEAT: 50-100%</div> <div>organic (soil): 15-50%</div> <div>with some organics: 5-15%</div>	
263.0									12" - Topsoil.	Hand-excavated to 3.5 ft. to avoid utilities.
									1.0 ft to 1.5 ft - Orange-brown, sandy SILT, trace gravel; moist. [FILL]	
									1.5 ft to 2.0 ft - Dark brown, SILT with some organics, trace sand; moist. [FILL]	
									2.0 ft to 3.5 ft - Orange-brown, sandy SILT, trace gravel; wet. [FILL]	
5	S-1	4.0	12/24	70 28 17 18	45		0.1	SAND	Dense, light gray, fine to medium SAND, some silt, trace gravel; wet.	Gravel fragments at top of spoon. Drill chattering at about 5 ft. Gravel fragments at top of spoon.
258.0	S-2	6.0	8/24	40 6 8 14	14		0.1		Medium dense, light gray, fine to coarse SAND, little silt, trace gravel; wet.	
10										
253.0										
15	S-3	14.0	15/24	33 49 53 47	102		0.7		Very dense, light gray, silty fine to medium SAND, little gravel; wet.	
248.0										

Bottom of boring at 16 ft.

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	
S	Split spoon	0-4	Very Loose	< 2	Very Soft	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

**BORING NUMBER: B-107**

W&amp;S BORING LOG - DATA TEMPLATE - W&amp;S STANDARD LOGS.GDT - \\WSE03\LOCAL\W&amp;S\PROJECTS\PRIVATE\TAPPE ASSOCIATES\SHARON - SHARON HIGH SCHOOL\GEOTECHNICAL\FIELD BORINGS\SHARON.HS - FEASIBILITY BORING LOGS.GPJ

**CLIENT:** Tappe Architects, Inc.

**PROJECT NUMBER:** 2180619

**PROJECT NAME:** Sharon High School

**PROJECT LOCATION:** Sharon, MA

**DRILLER:** Matt Ferreira - New England Boring Contractors

**LOGGED / CHECKED BY:** BDG / STS

**RIG TYPE / DRILLING METHODS:** ATV / cased rotary (drive-and-wash)

**CASING DIAMETER:** 3.5" OD / 3.0" ID

**SAMPLING METHODS:** Standard penetration test (SPT)

**SAMPLER TYPE:** Standard 24" long x 2" OD (1-3/8" ID) split-spoon

**SAMPLER HAMMER:** 140-lb. automatic hammer

**OTHER:** Diedrich D-50 Drill Rig


**BORING LOCATION:** See Site Plan.

**GROUND ELEVATION:** 259 ft. +/- **DATUM:** NGVD29

**DRILLING START DATE:** 9/19/2018 **END DATE:** 9/19/2018

**GROUNDWATER OBSERVATIONS**

DATE	DEPTH	COMMENTS
9/19/2018	2 ft. +/-	Based on seepage following casing removal.

DEPTH (ft.) Elevation	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
0									<div>Mineral Soil</div> <div>GRAVEL, SAND, SILT, CLAY: &gt;50%</div> <div>gravelly, sandy, silty, clayey: 35-50%</div> <div>some: 20-35%</div> <div>little: 10-20%</div> <div>trace: 0-10%</div> <div>Organic Soil</div> <div>PEAT: 50-100%</div> <div>organic (soil): 15-50%</div> <div>with some organics: 5-15%</div>	
259.0	S-1	0.0	12/24	2 5 9 5	14		ND	FILL	Top 4" - Topsoil.	
									Bottom 8" - Brown, gravelly fine to coarse SAND, little silt, trace organics (roots); moist. [FILL]	
5	S-2	4.0	18/24	3 6 11 11	17		0.3	SAND	Top 6" - Dark brown, SILT with some organics, trace gravel, trace fine sand; wet.	Switch from auger to drive-and-wash at 9 ft. due to heave.
254.0									Bottom 12" - Medium dense, brown, gravelly fine to medium SAND, little silt; wet.	
10	S-3	9.0	10/24	10 11 14 17	25		0.1		Medium dense, gray, fine to coarse SAND, trace gravel, trace silt; wet.	
249.0										
15	S-4	14.0	11/24	5 8 7 7	15		0.6		Medium dense, gray, fine to medium SAND, little silt; wet.	
244.0										
20	S-5	19.0	12/24	14 15 13 45	28		0.2		Top 8" - Medium dense, gray, gravelly fine to coarse SAND, little silt; wet.	
239.0									Bottom 4" - Medium dense, gray, silty GRAVEL, little sand, trace clay; wet.	
25	S-6	24.0	4/24	80 29	50		0.1		Dense, gray, fine to coarse SAND, some gravel, little silt; wet.	
SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:				
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.  2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.				
S	Split spoon	0-4	Very Loose	< 2	Very Soft					
ST	Shelby tube	4-10	Loose	2-4	Soft					
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff					
NX	Rock core	30-50	Dense	8-15	Stiff					
GP	Direct push	> 50	Very Dense	15-30	Very Stiff					
				> 30	Hard					

**BORING NUMBER: B-108**

W:\MS BORING LOG - DATA TEMPLATE - WSE\03 LOCAL\PROJECTS\PRIVATE\TAPPE ASSOCIATES\SHARON - SHARON HIGH SCHOOL\GEOTECHNICAL\FIELD BORINGS\SHARON.HIS - FEASIBILITY BORING LOGS.GPJ



**CLIENT:** Tappe Architects, Inc.      **PROJECT NAME:** Sharon High School  
**PROJECT NUMBER:** 2180619      **PROJECT LOCATION:** Sharon, MA

DEPTH (ft.) <i>Elevation</i>	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
25									Mineral Soil GRAVEL, SAND, SILT, CLAY: >50% gravelly, sandy, silty, clayey: 35-50% some: 20-35% little: 10-20% trace: 0-10%	
234.0				21 19						

Bottom of boring at 26 ft.

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	
S	Split spoon	0-4	Very Loose	< 2	Very Soft	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.  2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30 > 30	Very Stiff Hard	

**BORING NUMBER: B-108**

W&amp;S BORING LOG - DATA TEMPLATE - W&amp;S STANDARD LOG0010 - \\WSE03\LOCAL\W&amp;S\PROJECTS\PRIVATE\TAPPE ASSOCIATES\SHARON - SHARON HIGH SCHOOL\GEOTECHNICAL\FIELD BORINGS\SHARON HS - FEASIBILITY BORING LOGS.GPJ

**CLIENT:** Tappe Architects, Inc.  
**PROJECT NUMBER:** 2180619

**PROJECT NAME:** Sharon High School  
**PROJECT LOCATION:** Sharon, MA

**DRILLER:** Matt Ferreira - New England Boring Contractors  
**LOGGED / CHECKED BY:** BDG / STS  
**RIG TYPE / DRILLING METHODS:** ATV / cased rotary (drive-and-wash)  
**CASING DIAMETER:** 3.5" OD / 3.0" ID  
**SAMPLING METHODS:** Standard penetration test (SPT)  
**SAMPLER TYPE:** Standard 24" long x 2" OD (1-3/8" ID) split-spoon  
**SAMPLER HAMMER:** 140-lb. automatic hammer  
**OTHER:** Diedrich D-50 Drill Rig

**BORING LOCATION:** See Site Plan.  
**GROUND ELEVATION:** 262 ft. +/- **DATUM:** NGVD29  
**DRILLING START DATE:** 9/20/2018 **END DATE:** 9/20/2018

**GROUNDWATER OBSERVATIONS**

DATE	DEPTH	COMMENTS
9/20/2018	8.1 ft. +/-	Based on measurement following casing removal.

DEPTH (ft.) Elevation	SAMPLE INFORMATION						GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION <small>(see guide below for soil classification based on constituent percentage)</small>	COMMENTS
	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE				
0									<div>Mineral Soil</div> <div>GRAVEL, SAND, SILT, CLAY: &gt;50%</div> <div>gravelly, sandy, silty, clayey: 35-50%</div> <div>some: 20-35%</div> <div>little: 10-20%</div> <div>trace: 0-10%</div> <div>Organic Soil</div> <div>PEAT: 50-100%</div> <div>organic (soil): 15-50%</div> <div>with some organics: 5-15%</div>	
262.0	S-1	0.0	18/24	4	8		0.1	FILL	Top 6" - Topsoil.	
				3					Bottom 12" - Loose, brown, silty fine to medium SAND, trace gravel, trace organics (roots); moist. [FILL]	
	S-2	2.0	13/24	5	8		0.1		Top 2" - Brown, silty fine to medium SAND, trace gravel, trace organics (roots); moist. [FILL]	
				4					Bottom 11" - Loose, orange-brown, silty fine to medium SAND, trace gravel; moist. [FILL]	
				12					Top 2" - Orange-brown, silty fine to medium SAND, trace gravel; moist. [FILL]	
5	S-3	4.0	15/24	13	57		0.2	SAND	Middle 2" - Dark brown, SILT with some organics, trace sand; moist.	Oxidation staining.
257.0				28					Bottom 11" - Very dense, orange-brown/light gray, silty fine to medium SAND, trace gravel; moist.	
	S-4	6.0	14/24	15	56		0.1		Very dense, gray/orange-brown, fine to medium SAND, some silt, trace gravel; moist.	Oxidation staining.
				26						Drill chattering at about 7 ft.
				30						
	S-5	8.0	12/24	9	27		0.1		Medium dense, gray, silty fine to medium SAND, little gravel; wet.	
10				13						
252.0				14						Drill chattering at about 11 ft.
				15						
	S-6	14.0	14/24	14	31		ND		Dense, gray-brown, silty fine to medium SAND, some gravel; wet.	Drill chattering at about 13.5 ft.
15				16						
247.0				15						Drill chattering at about 15 ft.
				20						
										Drill chattering at about 18 ft.
20	S-7	19.0	13/17	41			0.2		Medium dense, gray-brown, silty fine to medium SAND, some gravel; wet.	
242.0				50						
				100/5"						

Bottom of boring at 20.4 ft.

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	
S	Split spoon	0-4	Very Loose	< 2	Very Soft	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

**BORING NUMBER: B-109**

W&amp;S BORING LOG - DATA TEMPLATE - WSE\303\LOCAL\PROJECTS\PRIVATE\TAPPE ASSOCIATES\SHARON - SHARON HIGH SCHOOL\GEOTECHNICAL\FIELD BORINGS\SHARON.HS - FEASIBILITY BORING LOGS.GPJ

## ATTACHMENT B

### Important Information about This Geotechnical-Engineering Report

# Important Information about This Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

**The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.**

## **Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects**

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled.* No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

## **Read this Report in Full**

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

## **You Need to Inform Your Geotechnical Engineer about Change**

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

## **This Report May Not Be Reliable**

*Do not rely on this report* if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be, and, in general, if you are the least bit uncertain about the continued reliability of this report, contact your geotechnical engineer before applying it.* A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

## **Most of the "Findings" Related in This Report Are Professional Opinions**

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

## This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

## This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

## Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may

perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

## Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

## Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old*.

## Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration*. Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists*.



Telephone: 301/565-2733

e-mail: [info@geoprofessional.org](mailto:info@geoprofessional.org) [www.geoprofessional.org](http://www.geoprofessional.org)

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# 8.7

## EXISTING CONDITIONS TRAFFIC ASSESSMENT





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TO:	Charles Hay, Tappé Architects	DATE:	November 7, 2018
FROM:	Elizabeth Peart Michael White	HSH PROJECT NO.:	2018107.00
SUBJECT:	Sharon High School – Existing Transportation Conditions		

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## Introduction

The Town of Sharon, partnered with Massachusetts School Building Authority (MSBA), is studying the feasibility of rehabilitation or replacement of the Sharon High School (SHS), located at 181 Pond Street in Sharon, Massachusetts. As part of the design team led by Tappé Associates, Howard Stein Hudson (HSH) has prepared this technical memorandum summarizing existing transportation conditions at SHS. As the feasibility phase continues, HSH will study proposed future conditions at SHS and ultimately prepare a comprehensive technical memo addressing existing and future transportation issues.

## Existing Condition

### Sharon High School Overview

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The 28.5 acre SHS campus is centrally located in the Town, north of Lake Massapoag, and includes the school building, several parking areas, and athletic fields. Primary vehicle access/egress is via two driveways on Pond Street, with secondary access/egress to the rear of the building via Ames Court. Staff members park in on-site spaces. Students are permitted to drive and park off-site. Loading docks are located at the rear of the building and loading/delivery vehicles use Ames Court to enter/exit the site. Note that vehicles cannot circulate entirely around the school building.

The SHS building is over 60 years old and not compliant with the Americans with Disabilities Act. With a current enrollment of 1,150 students in grades 9 through 12, the school is overcrowded based on state guidelines indicating that the existing building is appropriately sized for about 900 students. By 2025, the SHS enrollment is projected to increase to 1,350 students. SHS currently has about 140 staff members. If the future staffing level increases proportionally to the enrollment growth, staff will increase to about 160 members by 2025.

For SHS students, the school day begins at 8:05 a.m. and ends at 2:40 p.m. On occasional early-release days, dismissal is at 11:40 a.m. Some student clubs meet before school at 7:30 a.m. and many students participate in after school activities, such as clubs, organizations, and sports. After school activities typically begin between 2:45 p.m. and 3:30 p.m. and end at various times.



## Study Area

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For the transportation assessment of SHS, the study area encompasses the school site and five key intersections, listed below and shown in **Figure 1**.

- Ames Street/Ames Court;
- Pond Street/Ames Street;
- Pond Street/SHS North Driveway/Parking Lot (DPW) North Driveway;
- Pond Street/SHS South Driveway/Parking Lot (DPW) South Driveway; and
- Pond Street/Beach Street.

## Data Collection

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### TURNING MOVEMENT COUNTS

Turning Movement Counts (TMCs) were recorded during the morning peak period (7:00 – 9:00 a.m.) and the afternoon peak period (2:00 – 4:00 p.m.) on Thursday, October 18<sup>th</sup>, 2018 at the study intersections and include counts of vehicles, pedestrians, and bicycles. The peak one hour (the hour with the highest traffic volumes) was identified during each period and the associated TMCs are shown in **Figure 2** and **Figure 3**, respectively, for the morning and afternoon.

### AUTOMATIC TRAFFIC RECORDER COUNTS

An automatic traffic recorder (ATR) is a device that continuously records the number and class of vehicles on a roadway for a given period of time. ATR counts, as located in Figure 1, were conducted at two locations on Pond Street for a 48-hour period on October 18-19, 2018.

**Figure 4** and **Figure 5** present graphs of the hourly traffic volumes at the two Pond Street ATR locations. Travel volumes and patterns on Pond Street are, as expected, similar on the two days. The morning peak hour generally occurs between 7:00 a.m. and 8:00 a.m. reflecting the typical peak of commuter travel and the SHS start time at 8:05 a.m. The evening peak hour of traffic along Pond Street occurs between 5:00 – 6:00 p.m., reflecting commuter travel activity. Between 3:00 – 4:00 p.m., the volumes reflect a lesser peak, coinciding with SHS dismissal at 2:40 p.m. when students and staff start leaving the campus.

Two-way volumes along Pond Street are approximately 6,000 to 6,100 vehicle trips per day. Hourly volumes are highest, between approximately 600 and 700 vehicles per hour, during the morning and evening commuter peak hours. The directionality of vehicle travel (northbound vs. southbound) show the activity generated at the school and the background commuter patterns, which is predominantly northbound in the morning and southbound in the evening. During the midday, between about 9:00 a.m. and 1:00 p.m., hourly volumes are less than 300 vehicles per hour. After the evening peak, volumes decline from about 250 vehicles per hour at 7:00 p.m. to less than 50 vehicles per hour at midnight.



Figure 1. *Sharon High School Study Area and Data Collection Locations*





Figure 2. *Existing (2018) Condition Traffic Volumes, Morning Peak Hour*

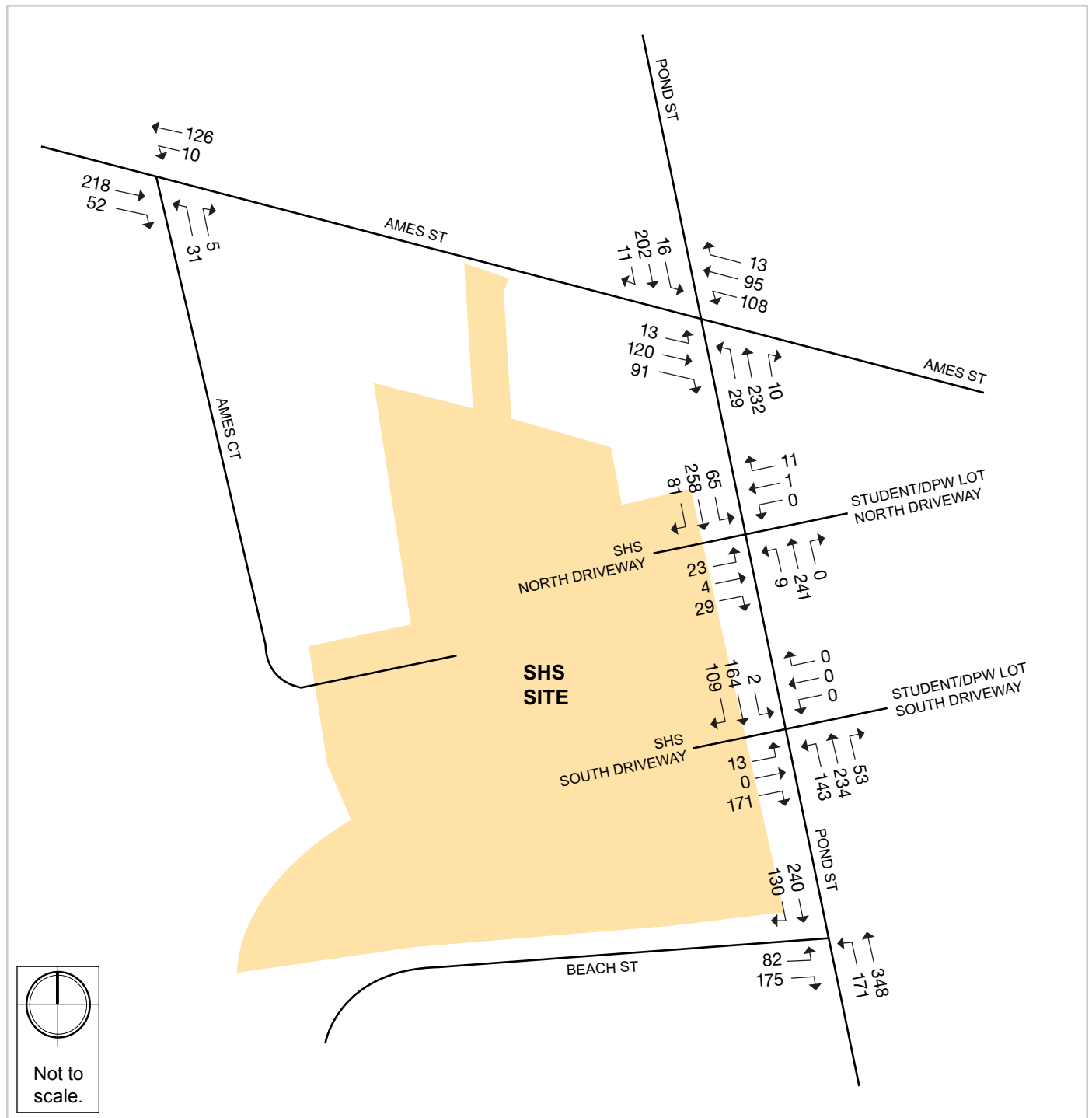






Figure 3. *Existing (2018) Condition Traffic Volumes, Afternoon Peak Hour*

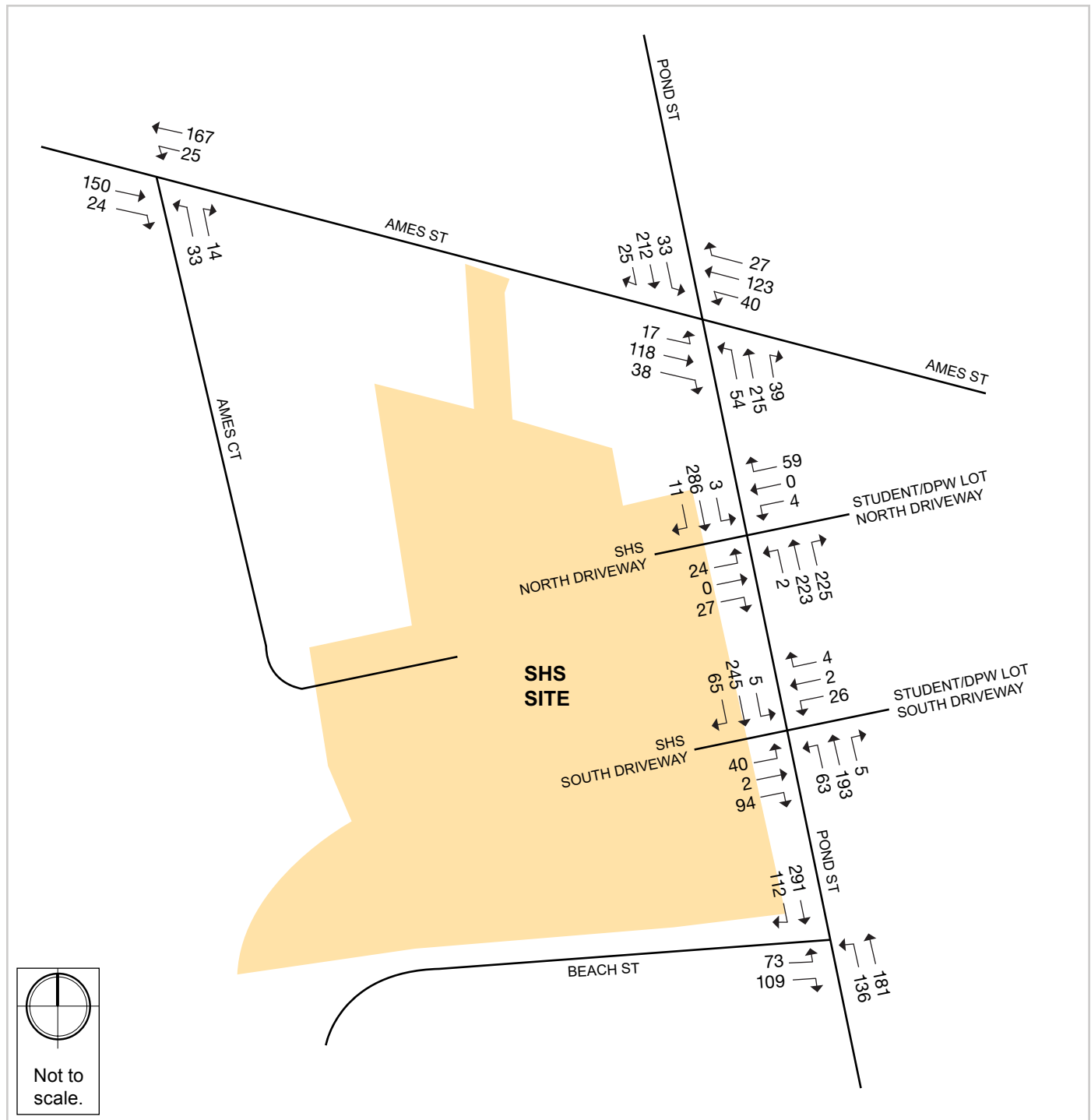




Figure 4. *Pond Street Volumes, North of Sharon High School Entrance*

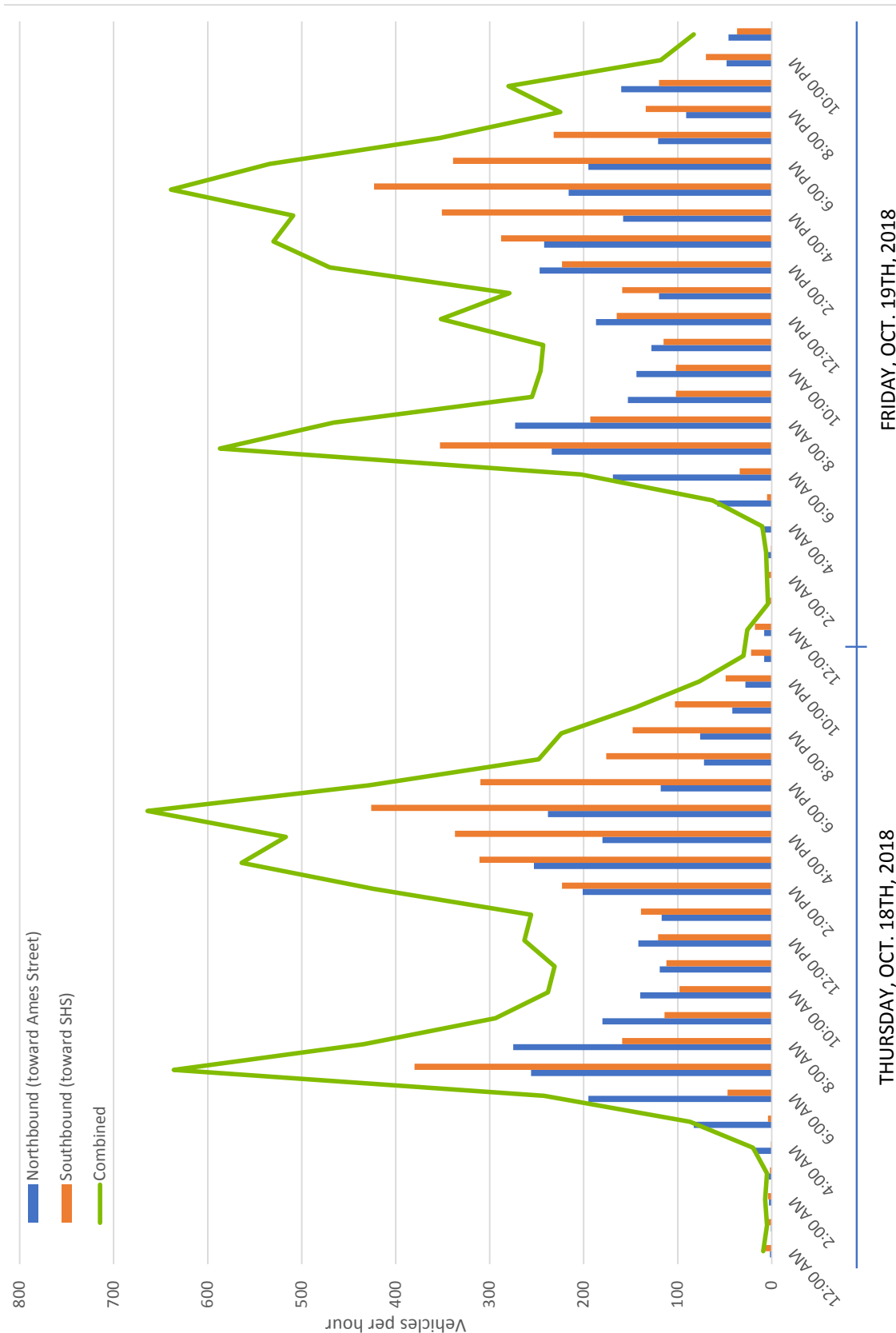
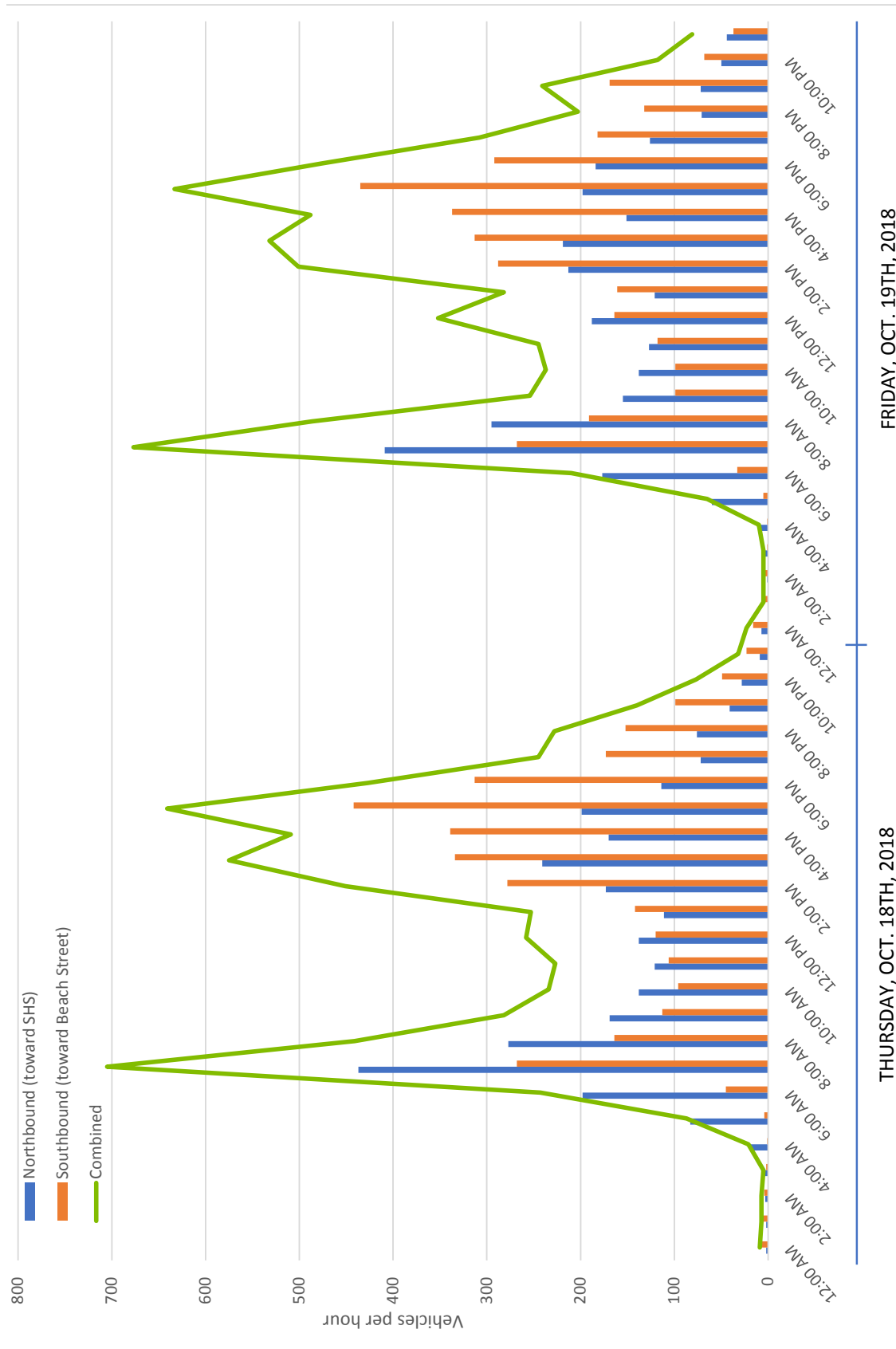




Figure 5. Pond Street Volumes, South of Sharon High School Entrance





## School Activity Observations

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The study team conducted detailed field observations at the SHS campus during the morning drop-off and afternoon pick-up periods on Thursday, October 25, 2018. The weather was clear. (Informal observations of the morning drop-off period were also observed on Friday, October 12, 2018, with rain showers.)

Students and staff enter and exit the school building at three primary points. The main entrance on the Pond Street side of the building is located near the middle of the south side of the building. An auxiliary entrance, also on Pond Street, is located near the circle on the northern side of the school. The rear entrance is located on the west side of the building at the end of Ames Court. Parents are permitted to drop-off and pick-up their students at any of these entrances, while school buses use only the main entrance and school vans serving special needs students use the auxiliary entrance.

The SHS school day officially starts at 8:05 a.m., although the library opens at 7:15 a.m. and the cafeteria is available for breakfast at 7:30 a.m. SHS is dismissed at 2:40 p.m. As is typical at high schools, vehicle activity associated with the afternoon dismissal period is less than during the morning arrival period because some students stay after school for clubs and athletics and more student carpooling occurs.

Unless otherwise noted, the observations presented below for the morning and afternoon periods are from October 25, 2018.

**Morning Arrival Period** Many staff members arrive and park on-site prior to 7:30 a.m. Noticeable parent drop-off activity starts about 7:30 a.m. with a few vehicles at a time. The pace increases at about 7:45 a.m. and continues up until a few minutes after 8:00 a.m. The 13 school buses serving the school typically arrive between 7:45 a.m. and 7:58 a.m. During this peak time, parent vehicles and buses queue back from the main entrance.

The queue can build back from the main entrance to the Pond Street/SHS South Driveway intersection. As this happens, some students will exit their parent's vehicle while waiting in the queue. In an attempt to discourage those parents from then passing on the left to exit the lot, school buses may unload students from the travel lane of the parking lot rather than the curb lane. The queue, which can extend from the main entrance back to Pond Street and then along Pond Street, begins to alleviate a bit past 8:00 a.m. and is somewhat clear by about 8:05 a.m. Some sporadic late drop-offs occur after 8:05 a.m. Overall, the circulation and mixing of parent drop-off vehicles with bus activity in the same area causes some driver confusion and creates an unsafe environment for students.

On October 12, 2018, with rainy weather, during the peak of the morning drop-off, buses and parent vehicles queued back from the main entrance, and out onto Pond Street in both directions. In the northbound direction, the Pond Street queue extended back to Beach Street. In the southbound direction,



the Pond Street queue extended back close to Ames Street. During this period, a fire-truck responding to a report of the pedestrian accident had to travel northbound on Pond Street, pass the school, and through the congestion. The queues observed on October 25, 2018, during clear weather, were much shorter.

At the auxiliary front entrance (with the circle), SHS faculty began to arrive and park at approximately 7:30 a.m. Approximately 50 parent vehicles dropped-off students off at the circle adjacent to the auxiliary front entrance. Seven school vans, carrying special needs students, began to arrive at approximately 7:45 a.m. Occasionally, parents would pass vans while students were unloading. At no time between 7:00 a.m. and 8:00 a.m. did the queue extend back more than three-quarters around the circle. The overlap of parent drop-off activity with school van activity in the same area creates an unsafe environment for students.

During the morning drop-off period, activity in the rear SHS area (accessed via Ames Court) was primarily related to SHS staff, who arrive and park, and 28 parent vehicles dropping-off students. The area was also used as staging for one full-sized school bus and two school vans. Most students who park at the Memorial Park Beach parking lot (Recreation Dept.) walk into the building at this rear entrance.

## AFTERNOON DISMISSAL PERIOD

During the afternoon pick-off period, all 13 school buses began to queue in the travel lane of the parking lot near the main entrance at approximately 2:30 p.m. The first arriving bus pulled all the way around and parked within the travel lane approximately 50 feet from the exit and the last bus parked in the travel lane approximately 150 feet from the main entrance. Parents did not queue within the line of buses. The parked buses did not allow enough space for faculty members parked in the main lot to exit their parking space. All buses were out of the parking lot by 3:00 p.m. A few parent vehicles arrived and parked in available spaces. While parents began to arrive at the main entrance soon after the school buses departed, very little parent vehicle queueing occurred. Many students were already waiting outside the school for their parents and got into the vehicle quickly. Most parents did not wait longer than five minutes for their student to enter the vehicle. A total of 23 personal vehicles picked-up students at the main entrance.

During the afternoon pick-up period at the auxiliary front entrance, school vans began to arrive and park around the circle at 2:05 p.m. By 2:35 p.m., 5 vans were parked at the circle. All vans departed by 2:45 p.m. Some parent vehicles that arrived at this entrance parked in available spaces by the circle and waited for their students. Once the vans departed, some parents would idle in the circle while waiting for students. In total, approximately 13 parent vehicles picked-up students at the auxiliary entrance. There were ten faculty members that used the auxiliary front entrance to access their vehicles between 2:30 and 3:30 p.m.

During the afternoon pick-up period, activity at the rear entrance was minimal. Prior to dismissal, the lot was occupied by 40 vehicles, seemingly all belonging to SHS staff. A total of 29 SHS staff members used the rear entrance to access their vehicles in the rear lot. An empty school bus entered the lot at 2:28 p.m.



and departed at 3:00 p.m. Approximately 29 parent vehicles picked students at the rear entrance. Some parents parked and waited for their student, but most remained in the travel lane to wait. Many students exiting the rear entrance walked toward the Recreation Department lot on Beach Street or towards Ames Court. The SHS football team hosted a 3:45 p.m. game at the field near the rear entrance.

It was noted that although left turns onto Pond Street are restricted at all times from the northern SHS driveway and during school drop-off and pick-up times from the southern SHS driveway, many vehicles do make the left turn. (These volumes are shown in **Figure 2** and **Figure 3**.)

## Existing Parking

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SHS staff members park on-site near the school building, including the spaces near the main building entrance, spaces adjacent to the circle on the northern side of the building, and spaces in the rear of the school, accessed via Ames Court.

Many students also drive to school and may park at three off-site student parking lots. The primary student parking area is located on Pond Street, opposite from the school's main entrance. This lot is owned by the Town's Department of Public Works (DPW) and student purchase passes at the school to park here. Students can also park at the Memorial Beach parking lot on Beach Street, which is owned by the Town's Recreation Department. Students purchase parking passes from the Recreation Department. Also, the SHS and The Young Israel of Sharon Synagogue, at 100 Ames Street, have an arrangement that permits up to 25 students to park at the Synagogue as needed.

**Table 1** shows a summary of parking supply and observed occupancies at these locations.

The on-site parking observations show that 80% of the overall spaces are occupied midday, indicating that sufficient staff and visitor parking is currently provided. Note that the 43 vehicles observed at the rear of the school included some visitors who were walking on the track. While the DPW lot for student parking is generally full, there are available spaces at the Recreation Dept. Lot. Note that a few student vehicles with tickets were observed in both the DPW lot and Recreation Department lot, indicating that the Town does enforce the parking regulations.





**Table 1. SHS Parking Supply and Occupancy**

Parking Location	Capacity (spaces)	Mid-morning <sup>1</sup> Parking Occupancy	
		Spaces	percent
Staff and Visitors			
On-site at SHS			
South (main entrance area)	73	45	62%
North (circle area)	28	21	75%
Front (adjacent to Pond St.)	46	43	93%
Rear	42	43	102%
Total	189	152	80%
Students			
Student/DPW lot <i>Pond Street</i>	135	124 <i>4 cars without permit</i>	92%
Student/Recreation Dept. Lot <i>Beach Street</i>	70	59 <i>3 cars without permit</i>	84%
Young Israel of Sharon Synagogue <i>Ames Street</i>	25 <i>Available for SHS use</i>	20 <sup>1</sup>	80%

*1 - Combination of observations on Thursday October 25, 2018, and Wednesday, November 7, 2018.*

*2 - It was unclear whether these were student vehicles or vehicles associated with the Synagogue.*

## Existing Pedestrian and Bicycle Conditions

Pedestrian and bicycle counts were conducted concurrent with the TMCs. **Figure 6** shows pedestrian volumes during peak hours. The highest pedestrian crossing activity occurred on Pond Street between the Student/DPW parking lot and the SHS site.

**Figure 6** also identifies the inventory of crosswalks. At the Ames Street/Ames Court intersection, no crosswalks are provided. At the Ames Street/Pond Street intersection, crosswalks are provided across the Ames Street eastbound approach and the Pond Street northbound approach. At the Pond Street/Beach Street intersection, only the eastbound Beach Street eastbound approach has a crosswalk. At each SHS driveway on Pond Street, one crosswalk is provided across the school driveways and one crosswalk across Pond Street. The Pond Street crosswalks are highly visible to drivers and signage to alert drivers is provided.

As shown in **Figure 7**, bicycle volumes at the study intersections are relatively low. No bicycle lanes are provided on roadways within the study area. About 20 parked bicycles were observed at the SHS bicycle racks during the midday.



The study team conducted an inventory of sidewalk conditions along Ames Street, Pond Street, and Beach Street and on the SHS site. Sidewalk conditions were classified according to the following three categories:

- **Excellent.** No deterioration observed.
- **Good.** Minimal deterioration, such as cracking, heaving, sinking, and intrusion or encroachment of vegetation observed.
- **Fair/Poor.** Some deterioration observed, including more severe cracking, heaving, sinking, and intrusion or encroachment of vegetation, as well as presence of patching.

The sidewalk conditions are shown in **Figure 8**. Most street segments serving the school have a sidewalk on only one side of the street. Where sidewalks exist, they are sufficiently wide and generally the condition is good to excellent. While walking paths within the SHS site are generally in good condition, a segment of sidewalk between the main entrance and the athletic fields/ rear of school has broken asphalt.

Crosswalk curb ramps that are not in compliance with the Americans with Disabilities Act (ADA) are also noted in **Figure 8**. Any non-compliant ramps on the school property will ultimately be brought into compliance as part of the SHS project. Upgrades to the off-site non-compliant ramps should be discussed with the Town. The crosswalk across Beach Street near the Recreation Department parking lot used by students has no ramps and does not connect to a sidewalk on the southern side of Beach Street.

## Existing (2018) Operation Analysis

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The key intersections in the Sharon High School area were evaluated to quantify the associated delays experienced by drivers. The criterion for evaluating traffic operations is level of service (LOS), which is determined by assessing average delay incurred by vehicles at intersections and along intersection approaches. Trafficware's Synchro (version 9) software package was used to calculate average delay and associated LOS at the study area intersections. This software is based on the traffic operational analysis methodology of the Transportation Research Board's 2000 Highway Capacity Manual (HCM).

LOS designations are based on average delay per vehicle for all vehicles entering an intersection. **Table 2** displays the intersection LOS criteria for unsignalized intersections (there are no signalized intersections in the designated study area).



Figure 6. *Existing (2018) Condition Pedestrian Volumes, Morning and Afternoon Peak Hours*

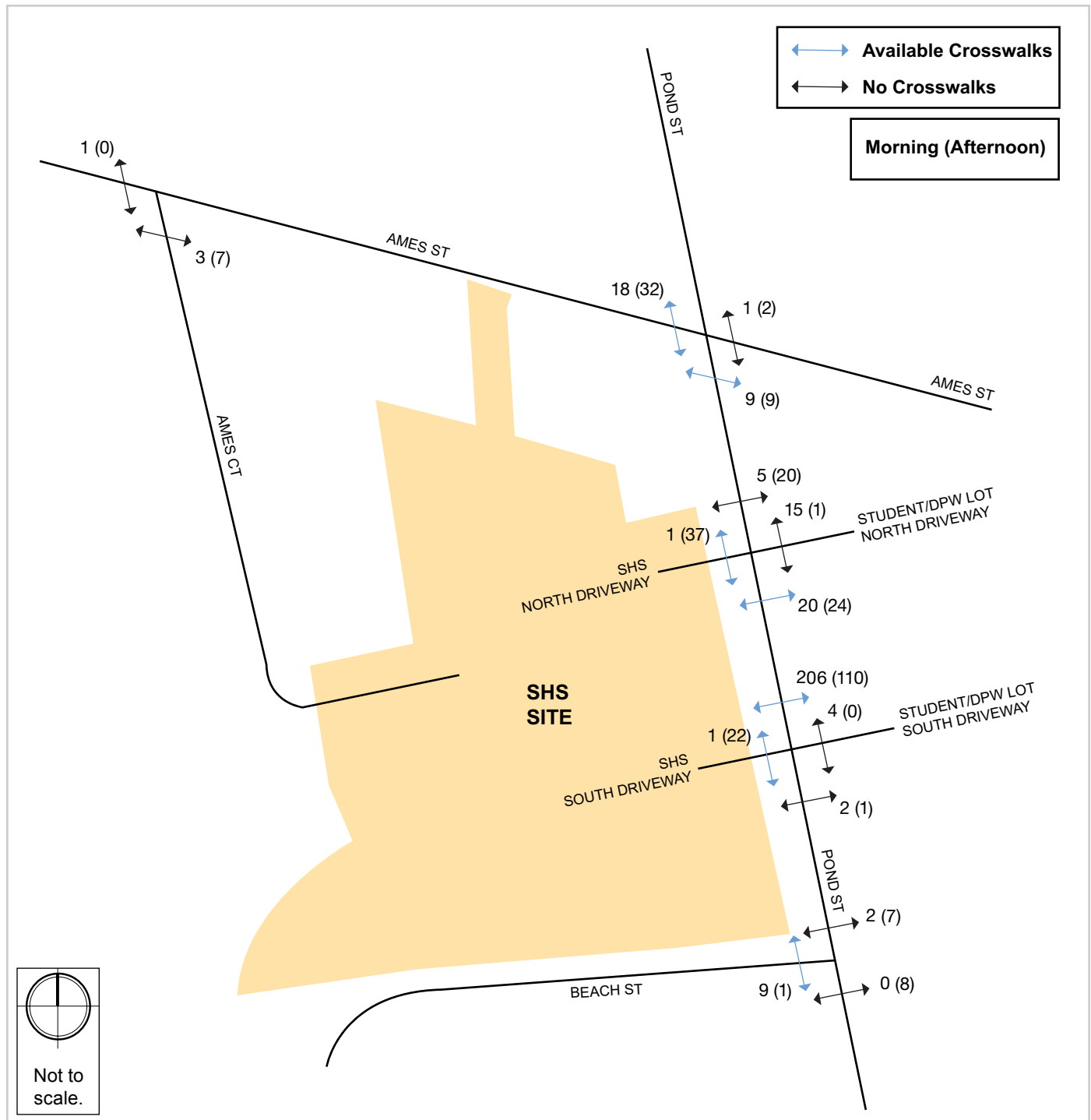




Figure 7. *Existing (2018) Condition Bicycle Volumes, Morning and Afternoon Peak Hours*

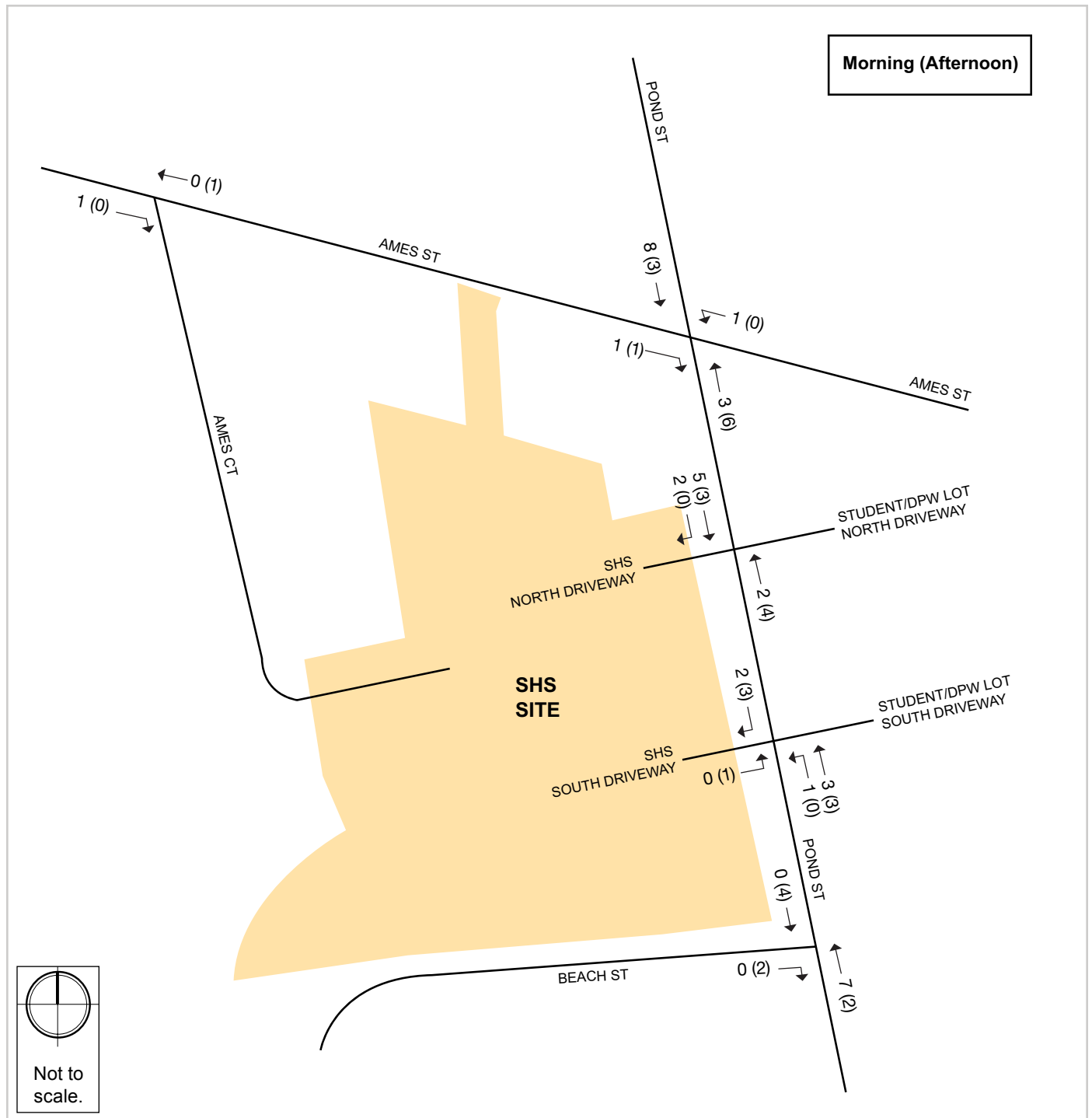
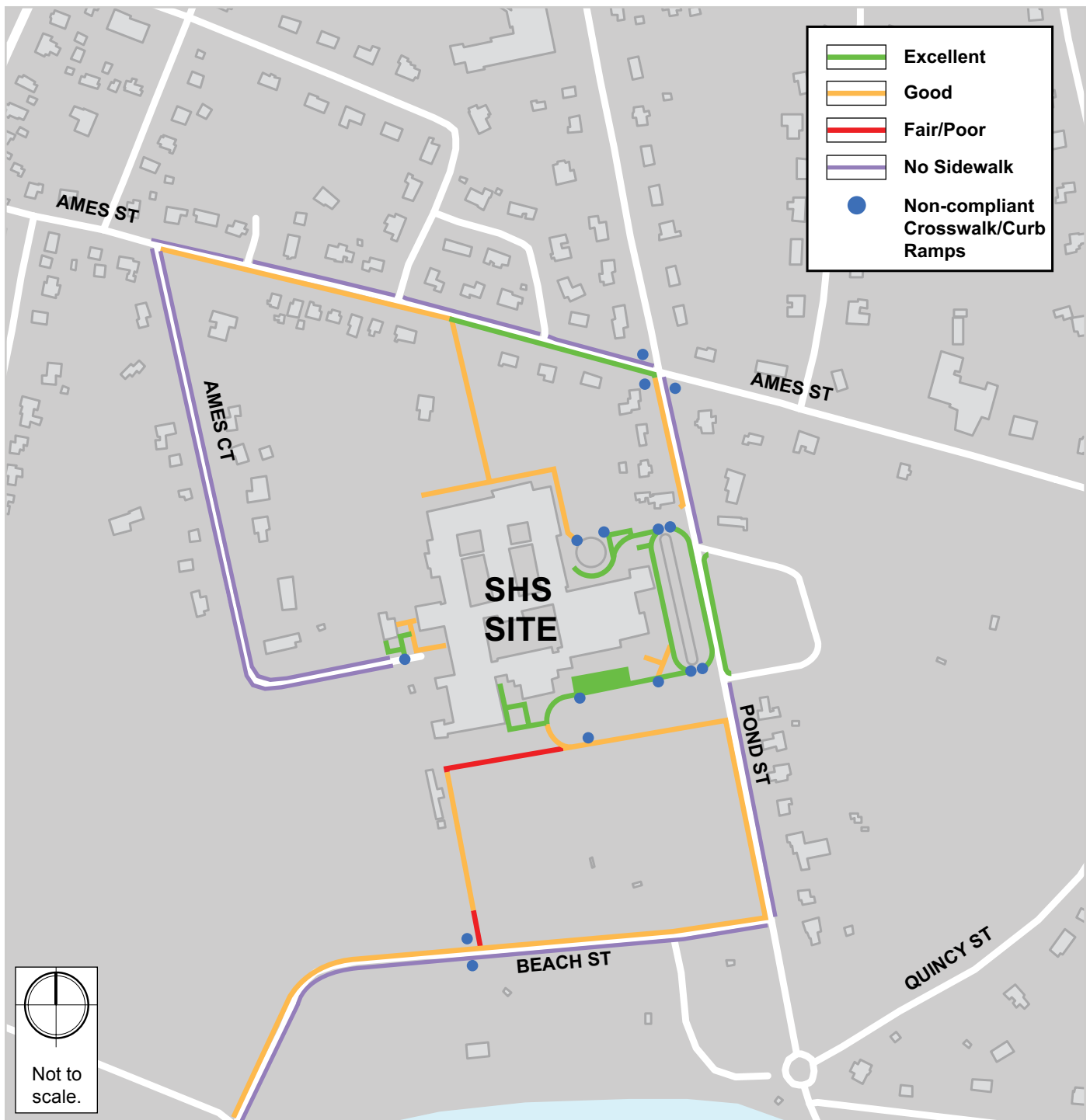




Figure 8. *Pedestrian Conditions*





**Table 2. Vehicle Level of Service Criteria, Unsignalized Intersections**

Level of Service	Average Stopped Delay (sec.)
<b>A</b>	≤10
<b>B</b>	>10 and ≤15
<b>C</b>	>15 and ≤25
<b>D</b>	>25 and ≤35
<b>E</b>	>35 and ≤50
<b>F</b>	>50

*Source: 2000 Highway Capacity Manual, Transportation Research Board*

LOS A indicates the most favorable condition, with minimum traffic delay, while LOS F represents the worst condition, with significant traffic delay. LOS D or better is typically considered acceptable. However, LOS E or F is often typical for a stop controlled minor street that intersects a major roadway.

In addition to delay and LOS, the operational capacity and vehicular queues are calculated and used to further quantify traffic operations at intersections. The following describes these other calculated measures.

- The volume-to-capacity (v/c) ratio is a measure of congestion at an intersection approach. A v/c ratio below one indicates that the intersection approach has adequate capacity to process the arriving traffic volumes over the course of an hour. A v/c ratio of one or greater indicates that the traffic volume on the intersection approach exceeds capacity.
- The 95th percentile queue length, measured in feet, represents the farthest extent of the vehicle queue (to the last stopped vehicle) upstream from the stop line during five percent of all signal cycles. The 95th percentile queue will not be seen during each cycle. The queue would be this long only five percent of the time and would typically not occur during off-peak hours. Since volumes fluctuate throughout the hour, the 95th percentile queue represents what can be considered a “worst case” scenario. Queues at the intersection are generally below the 95th percentile queue throughout the course of the peak hour. It is also unlikely that the 95th percentile queues for each approach to the intersection will occur simultaneously.

**Table 3** and **Table 4** summarize the Existing (2018) Condition capacity analysis for the study area intersections during the weekday morning and afternoon peak hours, respectively. Complete Synchro reports are provided in the Appendix.





**Table 3. Existing (2018) Condition Capacity Analysis Summary, Morning Peak Hour**

Intersection/Movement	LOS	Delay (sec.)	V/C ratio	95 <sup>th</sup> Percentile Queue (ft.)
<b>Ames Street/Ames Court</b>	-	-	-	-
EB Ames Street thru/right	A	0.0	0.26	0
WB Ames Street left/thru	A	0.7	0.01	1
NB Ames Court left/right	B	14.3	0.17	15
<b>Pond Street/Ames Street</b>	-	-	-	-
EB Ames Street left/thru/right	C	20.7	0.61	4
WB Ames Street left/thru/right	C	21.8	0.62	4
NB Pond Street left/thru/right	C	22.9	0.66	5
SB Pond Street left/thru/right	C	24.2	0.68	5
<b>Pond Street/SHS N. Driveway/Parking Lot (DPW) Driveway</b>	-	-	-	-
WB DPW Driveway left/thru/right	C	22.8	0.34	37
EB SHS Driveway left/thru/right <sup>1</sup>	B	11.3	0.04	3
NB Pond Street left/thru/right	A	0.4	0.01	1
SB Pond Street left/thru/right	A	2.1	0.08	6
<b>Pond Street/SHS S. Driveway/Parking Lot (DPW) Driveway</b>	-	-	-	-
WB DPW Driveway left/thru/right	C	18.6	0.58	94
EB SHS Driveway left/thru/right <sup>2</sup>	A	0.0	0.00	0
NB Pond Street left/thru/right	A	3.9	0.15	13
SB Pond Street left/thru/right	A	0.1	0.00	0
<b>Pond Street/Beach Street</b>	-	-	-	-
EB Beach Street left/right	F	147.3	1.18	374
NB Pond Street left/thru	A	4.9	0.21	20
SB Pond Street thru/right	A	0.0	0.32	0

*Grey Shading indicates LOS E or F*

*1 Note left turns are prohibited at all times, although many vehicles do turn left. See Figure 2 and Figure 3.*

*2 Note left turns are prohibited during school drop-off and pick-up periods, although many vehicles do turn left. See Figure 2 and Figure 3.*



**Table 4. Existing (2018) Condition Capacity Analysis Summary, Afternoon Peak Hour**

Intersection/Movement	LOS	Delay (sec.)	V/C ratio	95 <sup>th</sup> Percentile Queue (ft.)
<b>Ames Street/Ames Court</b>	-	-	-	-
EB Ames Street thru/right	A	0.0	0.12	0
WB Ames Street left/thru	A	1.3	0.03	3
NB Ames Court left/right	B	13.0	0.12	10
<b>Ames Street/Pond Street</b>	-	-	-	-
EB Ames Street left/thru/right	C	15.6	0.42	2
WB Ames Street left/thru/right	C	20.6	0.61	4
NB Pond Street left/thru/right	D	34.2	0.82	9
SB Pond Street left/thru/right	C	18.8	0.57	4
<b>SHS N. Driveway/DPW Driveway/Pond Street</b>	-	-	-	-
WB DPW Driveway left/thru/right	C	23.0	0.29	30
EB SHS Driveway left/thru/right	B	13.9	0.35	39
NB Pond Street left/thru/right	A	0.0	0.00	0
SB Pond Street left/thru/right	A	0.1	0.00	0
<b>SHS S. Driveway/DPW Driveway/Pond Street</b>	-	-	-	-
WB DPW Driveway left/thru/right	B	14.8	0.31	33
EB SHS Driveway left/thru/right	C	23.2	0.29	29
NB Pond Street left/thru/right	A	2.4	0.06	5
SB Pond Street left/thru/right	A	0.1	0.00	0
<b>Beach Street/Pond Street</b>	-	-	-	-
EB Beach Street left/right	D	30.1	0.63	101
NB Pond Street left/thru	A	4.8	0.15	13
SB Pond Street thru/right	A	0.0	0.34	0

*Grey Shading indicates LOS E or F.*

*1 Note left turns are prohibited at all times, although many vehicles do turn left. See Figure 2 and Figure 3.*

*2 Note left turns are prohibited during school drop-off and pick-up periods, although many vehicles do turn left. See Figure 2 and Figure 3.*

During the morning peak hour, approaches at four of the five study area intersections operate at an acceptable level of service, LOS D or better. While the Beach Street approach at the Beach Street/Pond Street intersection operates at LOS F during the morning peak hour, this is not unusual for a stop controlled minor street that intersects a major street, such as Pond Street.

During the afternoon peak hour, all approaches operate at LOS D or better.



## Summary

The memo presents a summary of existing transportation conditions at the SHS, with a focus on activity during the drop-off period in the morning and pick-up period in the afternoon. A key finding is that the overlap of parent vehicle activity with school buses and school vans in the same areas may result in an unsafe environment for students, particularly during the morning drop-off period. Near the main entrance, parent driver confusion on where to safely drop-off students can cause vehicle queues within the parking area that develop back toward Pond Street and sometimes onto Pond Street. The haphazard parent drop-off activity can also delay buses from efficiently moving to the appropriate drop-off area in front of the main entrance.

Traffic volumes in the study area begin to increase before the morning drop-off period, reaching peak volume at about 7:45 a.m. as school buses and parent vehicles begin arriving to drop off students. In the afternoon, traffic volumes begin to culminate around the time of the dismissal bell, reaching peak volume at 2:45 p.m. as school buses begin to exit the site. Most of the student pick-up occurs at the main entrance of the school. The longest on-site queues were observed during the morning drop-off period at the main entrance. While these queues can occasionally stretch back onto Pond Street, the period is relatively short.

Adequate on-site parking is provided for staff and visitors. Students must obtain parking permits and park off-site across Pond Street at the DPW lot or across Beach Street at the Recreation Department lot. While the Pond Street crosswalks between the DPW lot and SHS campus are highly visible to drivers and have ADA compliant curb ramps, the Beach Street crosswalk between the Recreational Department lot and the SHS campus (near the athletic fields) does not adequately connect to a sidewalk on the south side of Beach Street.

The results of the capacity analysis show that the study area intersections generally operate at LOS C or better. The only exception is the Beach Street eastbound approach at Pond Street that operates at LOS F during the morning peak hour.

As the feasibility phase continues, HSH will study proposed future conditions at SHS and ultimately prepare a comprehensive technical memo addressing existing and future transportation issues.



# Appendix

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- Intersection LOS/Synchro Reports

# HCM Unsignalized Intersection Capacity Analysis

## 1: Ames Court & Ames Street

11/07/2018

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↘↙	
Traffic Volume (veh/h)	150	24	25	167	33	14
Future Volume (Veh/h)	150	24	25	167	33	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.53	0.53	0.76	0.76
Hourly flow rate (vph)	179	29	47	315	43	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			208		602	194
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			208		602	194
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			97		90	98
cM capacity (veh/h)			1375		440	853
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	208	362	61			
Volume Left	0	47	43			
Volume Right	29	0	18			
cSH	1700	1375	514			
Volume to Capacity	0.12	0.03	0.12			
Queue Length 95th (ft)	0	3	10			
Control Delay (s)	0.0	1.3	13.0			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.3	13.0			
Approach LOS			B			
Intersection Summary						
Average Delay		2.0				
Intersection Capacity Utilization		32.9%	ICU Level of Service	A		
Analysis Period (min)		15				

Intersection

Intersection Delay, s/veh	24.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	17	118	38	40	123	27	54	215	39	33	212	25
Future Vol, veh/h	17	118	38	40	123	27	54	215	39	33	212	25
Peak Hour Factor	0.83	0.83	0.83	0.61	0.61	0.61	0.68	0.68	0.68	0.91	0.91	0.91
Heavy Vehicles, %	0	1	0	2	1	4	2	2	0	0	2	0
Mvmt Flow	20	142	46	66	202	44	79	316	57	36	233	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.6	20.6	34.2	18.8
HCM LOS	C	C	D	C

















Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	10%	21%	12%
Vol Thru, %	70%	68%	65%	79%
Vol Right, %	13%	22%	14%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	308	173	190	270
LT Vol	54	17	40	33
Through Vol	215	118	123	212
RT Vol	39	38	27	25
Lane Flow Rate	453	208	311	297
Geometry Grp	1	1	1	1
Degree of Util (X)	0.831	0.421	0.609	0.57
Departure Headway (Hd)	6.606	7.278	7.039	6.91
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	553	492	511	519
Service Time	4.606	5.359	5.108	4.979
HCM Lane V/C Ratio	0.819	0.423	0.609	0.572
HCM Control Delay	34.2	15.6	20.6	18.8
HCM Lane LOS	D	C	C	C
HCM 95th-tile Q	8.5	2.1	4	3.5



# HCM Unsignalized Intersection Capacity Analysis

## 3: Pond Street & SHS N. Driveway/DPW N. Driveway

11/07/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	0	27	4	0	59	2	223	225	3	286	11
Future Volume (Veh/h)	24	0	27	4	0	59	2	223	225	3	286	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.61	0.61	0.61	0.29	0.29	0.29	0.88	0.88	0.88	0.83	0.83	0.83
Hourly flow rate (vph)	39	0	44	14	0	203	2	253	256	4	345	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	948	872	352	788	751	381	358			509		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	948	872	352	788	751	381	358			509		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	100	94	95	100	70	100			100		
cM capacity (veh/h)	169	289	697	290	340	671	1212			1066		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	83	217	511	362								
Volume Left	39	14	2	4								
Volume Right	44	203	256	13								
cSH	282	618	1212	1066								
Volume to Capacity	0.29	0.35	0.00	0.00								
Queue Length 95th (ft)	30	39	0	0								
Control Delay (s)	23.0	13.9	0.0	0.1								
Lane LOS	C	B	A	A								
Approach Delay (s)	23.0	13.9	0.0	0.1								
Approach LOS	C	B										
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Utilization			43.1%		ICU Level of Service				A			
Analysis Period (min)			15									

















18107::Sharon High School 2:45 pm 10/18/2018 Existing (2018) Weekday Afternoon Peak Hour  
HSH

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# HCM Unsignalized Intersection Capacity Analysis

## 4: Pond Street & SHS S. Driveway/DPW S. Driveway

11/07/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	2	94	26	2	4	63	193	5	5	245	65
Future Volume (Veh/h)	40	2	94	26	2	4	63	193	5	5	245	65
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.40	0.40	0.40	0.88	0.88	0.88	0.93	0.93	0.93
Hourly flow rate (vph)	48	2	113	65	5	10	72	219	6	5	263	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	686	677	298	788	709	222	333			225		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	686	677	298	788	709	222	333			225		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	99	84	74	99	99	94			100		
cM capacity (veh/h)	332	353	714	248	339	823	1210			1356		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	163	80	297	338								
Volume Left	48	65	72	5								
Volume Right	113	10	6	70								
cSH	529	277	1210	1356								
Volume to Capacity	0.31	0.29	0.06	0.00								
Queue Length 95th (ft)	33	29	5	0								
Control Delay (s)	14.8	23.2	2.4	0.1								
Lane LOS	B	C	A	A								
Approach Delay (s)	14.8	23.2	2.4	0.1								
Approach LOS	B	C										
Intersection Summary												
Average Delay			5.7									
Intersection Capacity Utilization			48.8%	ICU Level of Service					A			
Analysis Period (min)			15									










18107::Sharon High School 2:45 pm 10/18/2018 Existing (2018) Weekday Afternoon Peak Hour  
HSH

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# HCM Unsignalized Intersection Capacity Analysis

## 5: Pond Street & Beach Street

11/07/2018

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	73	109	136	181	291	112
Future Volume (Veh/h)	73	109	136	181	291	112
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.92	0.92	0.70	0.70
Hourly flow rate (vph)	91	136	148	197	416	160
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	989	496	576			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	989	496	576			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	61	76	85			
cM capacity (veh/h)	234	576	997			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	227	345	576			
Volume Left	91	148	0			
Volume Right	136	0	160			
cSH	363	997	1700			
Volume to Capacity	0.63	0.15	0.34			
Queue Length 95th (ft)	101	13	0			
Control Delay (s)	30.1	4.8	0.0			
Lane LOS	D	A				
Approach Delay (s)	30.1	4.8	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay		7.4				
Intersection Capacity Utilization		59.9%		ICU Level of Service		B
Analysis Period (min)		15				

# HCM Unsignalized Intersection Capacity Analysis

## 1: Ames Court & Ames Street

11/07/2018

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	218	52	10	126	31	5
Future Volume (Veh/h)	218	52	10	126	31	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.61	0.61	0.69	0.69	0.45	0.45
Hourly flow rate (vph)	357	85	14	183	69	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			442		610	400
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			442		610	400
tC, single (s)			4.1		6.4	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			99		85	98
cM capacity (veh/h)			1129		450	613
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	442	197	80			
Volume Left	0	14	69			
Volume Right	85	0	11			
cSH	1700	1129	467			
Volume to Capacity	0.26	0.01	0.17			
Queue Length 95th (ft)	0	1	15			
Control Delay (s)	0.0	0.7	14.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.7	14.3			
Approach LOS			B			
Intersection Summary						
Average Delay		1.8				
Intersection Capacity Utilization		24.9%		ICU Level of Service		A
Analysis Period (min)		15				

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HSH

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Intersection

Intersection Delay, s/veh	22.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	13	120	91	108	95	13	29	232	10	16	202	11
Future Vol, veh/h	13	120	91	108	95	13	29	232	10	16	202	11
Peak Hour Factor	0.74	0.74	0.74	0.71	0.71	0.71	0.82	0.82	0.82	0.66	0.66	0.66
Heavy Vehicles, %	8	4	2	2	2	0	0	0	0	0	2	0
Mvmt Flow	18	162	123	152	134	18	35	283	12	24	306	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

















Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20.7	21.8	22.9	24.2
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	6%	50%	7%
Vol Thru, %	86%	54%	44%	88%
Vol Right, %	4%	41%	6%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	271	224	216	229
LT Vol	29	13	108	16
Through Vol	232	120	95	202
RT Vol	10	91	13	11
Lane Flow Rate	330	303	304	347
Geometry Grp	1	1	1	1
Degree of Util (X)	0.656	0.604	0.621	0.683
Departure Headway (Hd)	7.141	7.182	7.349	7.082
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	502	499	490	507
Service Time	5.22	5.262	5.431	5.159
HCM Lane V/C Ratio	0.657	0.607	0.62	0.684
HCM Control Delay	22.9	20.7	21.8	24.2
HCM Lane LOS	C	C	C	C
HCM 95th-tile Q	4.7	3.9	4.2	5.1

# HCM Unsignalized Intersection Capacity Analysis

## 3: Pond Street & SHS N. Driveway/DPW N. Driveway

11/07/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	4	29	0	1	11	9	241	0	65	258	81
Future Volume (Veh/h)	23	4	29	0	1	11	9	241	0	65	258	81
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.54	0.54	0.54	0.50	0.50	0.50	0.74	0.74	0.74	0.66	0.66	0.66
Hourly flow rate (vph)	43	7	54	0	2	22	12	326	0	98	391	123
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1022	998	452	1056	1060	326	514				326	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1022	998	452	1056	1060	326	514				326	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	78	97	91	100	99	97	99				92	
cM capacity (veh/h)	194	224	611	170	206	720	1062				1245	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	104	24	338	612								
Volume Left	43	0	12	98								
Volume Right	54	22	0	123								
cSH	305	596	1062	1245								
Volume to Capacity	0.34	0.04	0.01	0.08								
Queue Length 95th (ft)	37	3	1	6								
Control Delay (s)	22.8	11.3	0.4	2.1								
Lane LOS	C	B	A	A								
Approach Delay (s)	22.8	11.3	0.4	2.1								
Approach LOS	C	B										
Intersection Summary												
Average Delay				3.8								
Intersection Capacity Utilization				55.2%	ICU Level of Service				B			
Analysis Period (min)				15								

18107::Sharon High School 7:00 am 10/18/2018 Existing (2018) Weekday AM Peak Hour  
HSH

















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# HCM Unsignalized Intersection Capacity Analysis

## 4: Pond Street & SHS S. Driveway/DPW S. Driveway

11/07/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	171	0	0	0	143	234	53	2	164	109
Future Volume (Veh/h)	13	0	171	0	0	0	143	234	53	2	164	109
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.51	0.51	0.51	0.25	0.25	0.25	0.85	0.85	0.85	0.71	0.71	0.71
Hourly flow rate (vph)	25	0	335	0	0	0	168	275	62	3	231	154
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None				None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	956	987	308	1291	1033	306	385			337		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	956	987	308	1291	1033	306	385			337		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	100	53	100	100	100	85			100		
cM capacity (veh/h)	213	213	720	67	200	739	1157			1234		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	360	0	505	388								
Volume Left	25	0	168	3								
Volume Right	335	0	62	154								
cSH	618	1700	1157	1234								
Volume to Capacity	0.58	0.00	0.15	0.00								
Queue Length 95th (ft)	94	0	13	0								
Control Delay (s)	18.6	0.0	3.9	0.1								
Lane LOS	C	A	A	A								
Approach Delay (s)	18.6	0.0	3.9	0.1								
Approach LOS	C	A										
Intersection Summary												
Average Delay			7.0									
Intersection Capacity Utilization			60.1%		ICU Level of Service					B		
Analysis Period (min)			15									

18107::Sharon High School 7:00 am 10/18/2018 Existing (2018) Weekday AM Peak Hour  
HSH

Synchro 9 Report  
Page 4

# HCM Unsignalized Intersection Capacity Analysis

## 5: Pond Street & Beach Street

11/07/2018



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	82	175	171	348	240	130
Future Volume (Veh/h)	82	175	171	348	240	130
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.81	0.81	0.67	0.67
Hourly flow rate (vph)	109	233	211	430	358	194
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1307	455	552			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1307	455	552			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	21	61	79			
cM capacity (veh/h)	138	603	1008			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	342	641	552			
Volume Left	109	211	0			
Volume Right	233	0	194			
cSH	291	1008	1700			
Volume to Capacity	1.18	0.21	0.32			
Queue Length 95th (ft)	374	20	0			
Control Delay (s)	147.3	4.9	0.0			
Lane LOS	F	A				
Approach Delay (s)	147.3	4.9	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay		34.9				
Intersection Capacity Utilization		73.6%		ICU Level of Service		D
Analysis Period (min)		15				

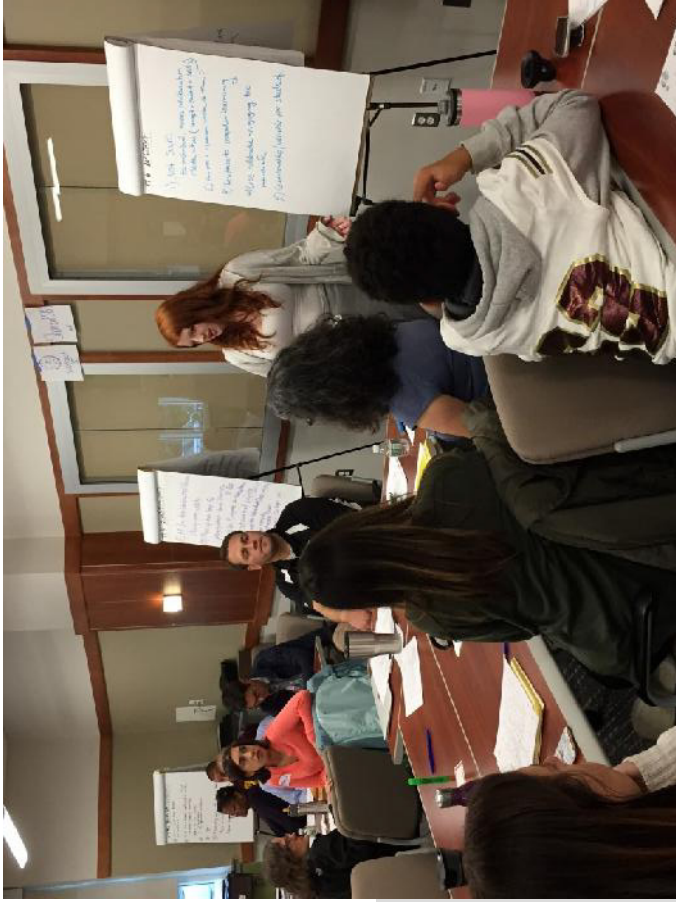
18107::Sharon High School 7:00 am 10/18/2018 Existing (2018) Weekday AM Peak Hour  
HSH

Synchro 9 Report  
Page 5

# 8.8

## EDUCATIONAL VISIONING NOTES





## Sharon High School Educational Visioning

Sharon Public Schools  
Sharon, MA

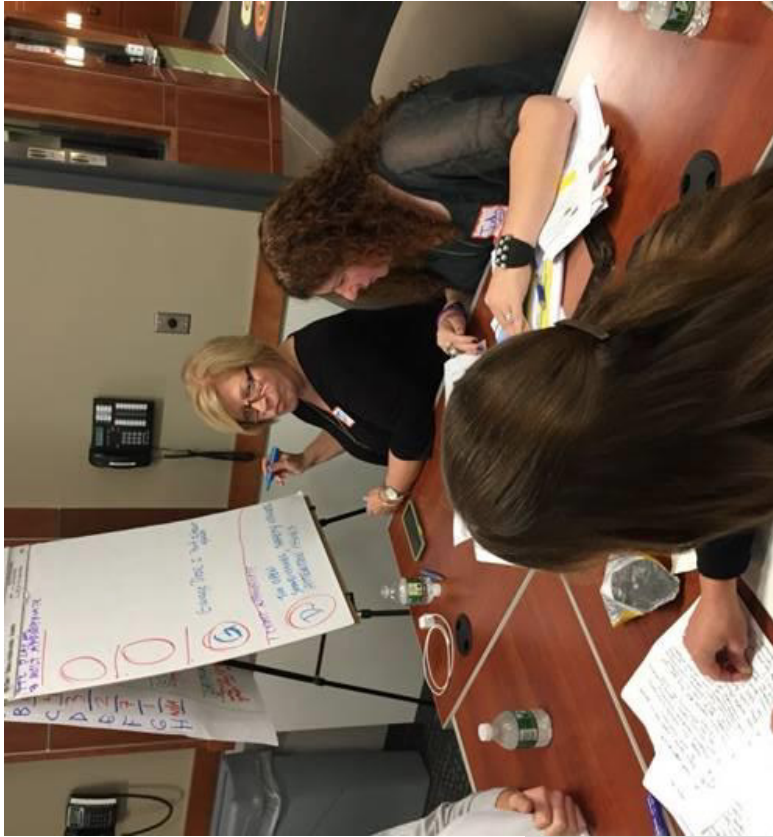
October 2018 **DRAFT**

Frank Locker Educational Planning





## Ch 1 Contents + Acknowledgements



## Contents + Acknowledgements

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Innovations in Education  
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## Ch 2 Executive Summary

- Aspire beyond the Common Core and beyond the Massachusetts Department of Elementary and Secondary Education guidelines to do what is best for student learning, and to instill a life-long sense of wonder and purpose. Create independent, life-long learners
- Establish a program of staff Professional Development to support the educational deliveries outlined here

The full Guiding Principles are expressed in Ch 3, Educational Vision.

### Learning Modalities

The Visioning Team members identified these as the most effective ways for students to learn:

- Project-Based Learning
- Small Group Work/Student Collaboration
- Direct teaching
- Interdisciplinary learning
- Making things, prototyping, STEM, and STEAM
- Teacher Teaming/ Synchronous Collaboration
- Social/Emotional Learning

### School Structure: Internal

These are the most appropriate ways for students to learn:

- Career Pathways within Departmental model or Small Learning Communities
- Teachers synchronously teaching, sharing students in real time

These most favored organizational structures call for the nature of school and role of teachers to be changed.

See Educational Vision Ch 3 for details.

## FACILITY CONCEPTS

### Places for Learning

The Visioning Team reviewed exemplar schools from across the USA and around the world, and identified critical facility characteristics for future core teaching and learning at Sharon High School.

Essential characteristics of desired core learning spaces are:

- Learning spaces arranged as Small Learning Communities
- Classrooms are components of “suites of spaces,” supported by other spaces immediately adjacent
- Circulation to be used for learning
- Classrooms are to be flexible, interconnected, and supported by auxiliary spaces including Collaboration/Breakout/Commons Spaces
- Interdisciplinary possibilities
- Open, shared presentation areas
- Variety of furnishings, offering students and teachers more choices in supporting learning
- Possibility of student groups working in multiple places under the guidance of the teacher
- Teacher collaboration supported by the facilities, through double sized Classrooms, connections between Classrooms and strategic placement of related functions
- Teacher Planning Centers to support teacher collaboration and sense of community

For a full description of the most appropriate and least appropriate exemplars, with illustrations, see Ch 4 Facility Concepts.

### Future Furniture

A Breakout Group of the Visioning Team participants reviewed and ranked Classroom and Extended Learning Area/ Breakout/ Commons furniture options for the future.

Three furniture options from among 21 were selected by that group to represent the furniture deemed most appropriate. They are:





## INTRODUCTION

This Educational Vision reflects the work of a Visioning Team, approximately 40 teachers, district and school administrators, students, and school board members, with the owner's project manager and architects. Created in three days of intense facilitated workshops it is intended to guide the long-term development of both education and facilities at Sharon High School.

## EDUCATIONAL VISION

### Guiding Principles

The *Guiding Principles* presented here were created to express the values, beliefs, and concepts developed by the educator and community Visioning Teams which examined educational trends, best practices, and issues affecting the delivery of 21<sup>st</sup> century education. These *Guiding Principles* present the essence of that inquiry. They are not policy but they address the overarching themes identified by participants. They may serve as a foundation for the future school. As such, they are intended to form the basis of future educational delivery and facilities planning. Staff Professional Development is crucial to the successful implementation of the educational concepts outlined here.

## OVERARCHING PRINCIPLES

- This future-oriented Educational Vision articulates of innovative best and next educational practices, some of which are already in operation in some classrooms in the school
- Create a common understanding of this Educational Vision among administrators, faculty, parents, and students to continue shifting the educational model from one that is fairly traditional to one that is more transformed
- Prepare students for success in the 21<sup>st</sup> century, an emerging world of global competition, uncertain employment prospects simultaneous with unheralded workplace opportunities, infinite access to information, and rapid change in technology
- Teach 21<sup>st</sup> century skills at the same time as traditional content
- Build relationships with students, families, and communities through school structure and programs



## Executive Summary



## ACKNOWLEDGEMENTS

### Visioning Team

#### TEACHERS

Charles Fazio  
Deborah Feldman  
Jennifer Feldman  
Janine Gardner  
Jennifer Graveline  
Shawn Kenner  
Timothy McGee  
David Morse  
Zach Snow  
Jeffrey Sonis  
Kathleen Turner  
Coordinator/STA  
Nurse  
Social Studies  
Art  
Special Education  
Science  
Music  
Wellness  
Science  
Math  
Foreign Language

#### SCHOOL BUILDING ADMINISTRATORS + STAFF

Jose Libano  
Stacy Newman  
Bob Pomer  
Christine Smith  
Principal  
Technology Support  
Guidance  
Student Services

#### DISTRICT ADMINISTRATORS + STAFF

Victoria Greer  
John Marcus  
Superintendent  
Assistant Superintendent

#### STUDENTS

Andrea Danila  
Lereca Depina Rodrigues  
Elianna Ellis-Rech  
Michael Holzman  
Shea Lefendre  
Christian Stengel  
Jasmine Pearl Villaroel  
Miguel Von Fedak Raffensperger  
Veronica Lynn Wallace  
Gwendolynn Angela Wooden  
Griffin Yas

#### PARENTS + COMMUNITY

Scott Brody  
Kathryn Brown  
Peter Chan  
Anna Costa  
Judy Crosby  
Alice Furman  
Amy Garcia  
Jack Girvan  
Rangana Guha  
Kate Harrigan  
Kevin Haskins  
Marcy Kaplan  
Lauren Koch  
Tanya Labunska  
Yully Cha Leonardi  
Jo Lyness  
Maura McAuliffe  
Kevin McClanahan  
Manjula Riley  
Silvana Sears  
Yun Xia  
Heather Zelevinsky

#### Architects

##### TAPPE ARCHITECTS

Chris Blessen  
Charles Hay  
Project Design  
Partner

#### Owner's Project Manager

##### PMA CONSULTANTS

Paul Queeny  
Project Manager

#### Educational Planner

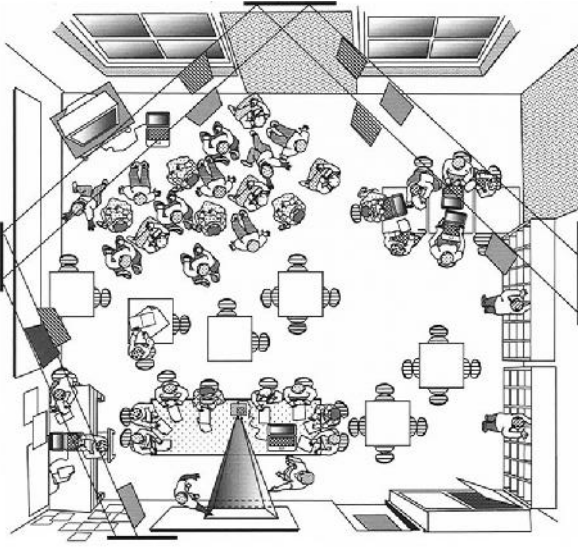
##### FRANK LOCKER EDUCATIONAL PLANNING

306c Dover Point Rd  
Dover NH 03820  
617.412.7444 [www.franklocker.com](http://www.franklocker.com)  
Dr Frank Locker





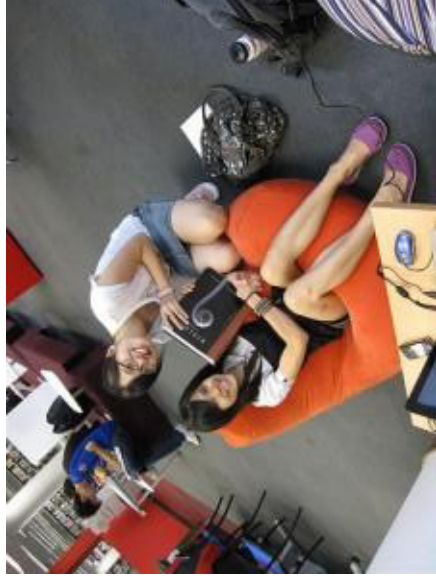
## #9 Student Centered Classroom Step 5



## #13 Node Chairs



## #14 Bean Bag Chairs



## Overall School Organization Diagram

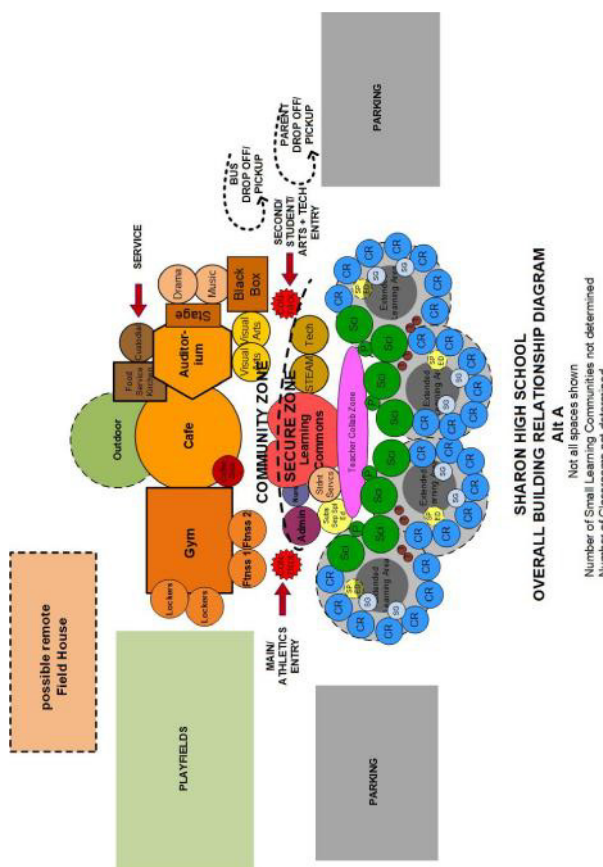
Workshop participants created concepts for their future school. First, in Table Teams, they developed important needs and planning concepts. Then they guided Frank Locker to draw an overall school organization diagram to capture their concepts. Major functions were drawn as bubbles, in relative size, and in relative positioning. The concept featured the following essential characteristics:

- Flexible for change, like the Glacier High School plan
- Flexible interdisciplinary learning spaces/CRS
- Central Student Services, like a university
- Central Teacher Collaboration Zone
- Student defined learning spaces
- Library not necessarily quiet, but with quiet places
- Wood shop/home economics/maker space
- Auditorium with ensemble rehearsal and Black Box Theater
- Arts front and center
- Open area for student directed study and collaboration
- Science at exterior of building for access to outdoors
- The place for students to go at arrival and end of day
- Athletics and Fitness with possible remote Fieldhouse
- Cafeteria as "go to" space but connected to outside
- Coffee Shop
- Student Help Desk

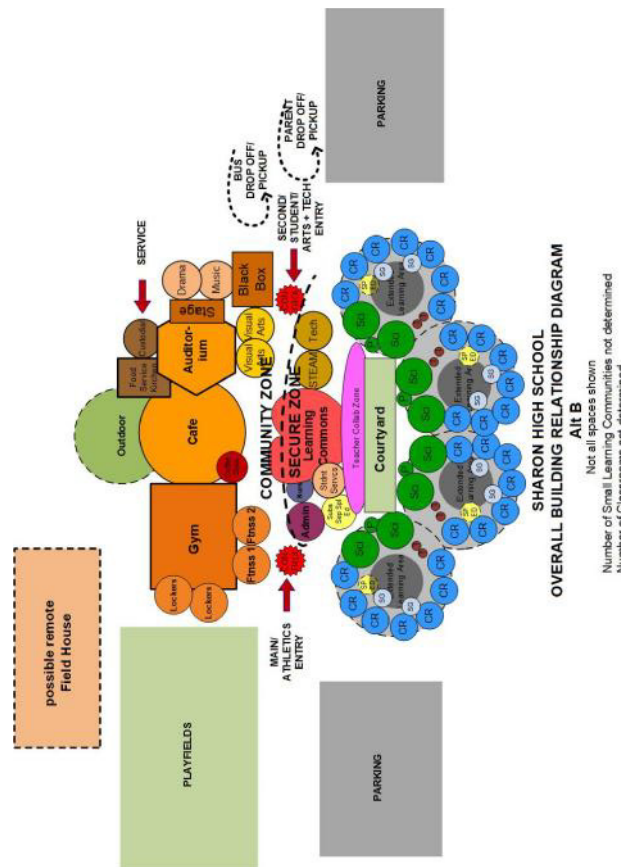


## Ch 2 Executive Summary

The overall diagram was developed with two variations:



Alternate A shows an internal Teacher Collaboration Zone and Science.



Alternate B locates an internal Courtyard at the center of the building to bring light and air to Science and the Teacher collaboration center, and offer a safe outside 'break' for all.



## INTRODUCTION

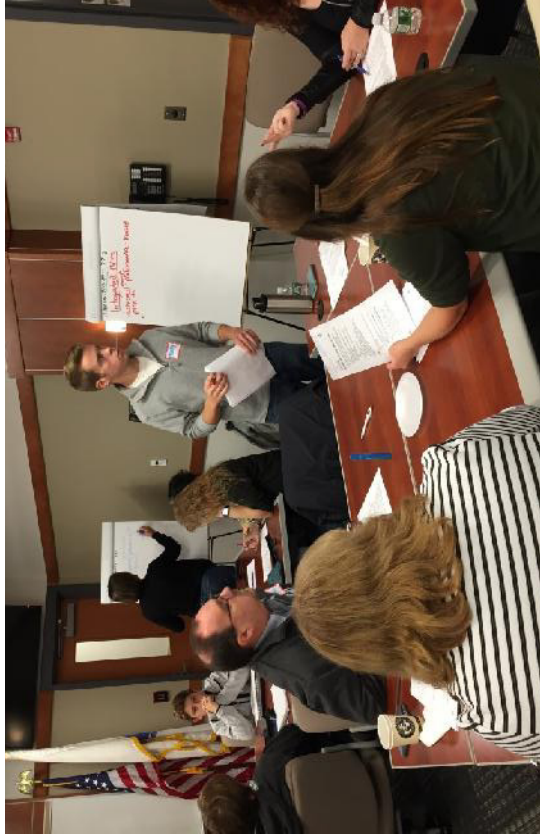
This Educational Vision reflects the work of a Visioning Team, approximately 40 teachers, district and school administrators, students, and school board members, with the owner's project manager and architects. Created in three days of intense facilitated workshops it is intended to guide the long-term development of both education and facilities at Sharon High School.

Much of the work was conducted by Table Teams, small groupings of six participants each. They brainstormed, debated, and attempted to reach consensus on most of the defining issues. Each Table Team had educators, students, parents, and municipal representatives evenly distributed to the greatest extent possible.

## VISION COMPONENTS

The Educational Vision for Sharon High School (SHS) is described here through several components:

- **Guiding Principles** establish broad parameters for educational delivery, school structure, and facilities
- **School Transformation + Development Map (ST+DM) © 2018** Frank Locker Inc) relates educational delivery and facilities to national practices, both today and projected into the future
- **Most Important Concepts for the Future** identifies the best and next practices most important for future teaching and learning
- **Innovations in Education** explores shifts in teaching and learning
- **Learning Modalities** identifies the most effective and appropriate ways for teachers to reach students with curriculum delivery
- **School Structure: Internal Organization** defines preferred approaches to the overall relationships of people and programs



## Educational Vision





## Ch 3 Educational Vision

### GUIDING PRINCIPLES

The *Guiding Principles* presented here were created to express the values, beliefs, and concepts developed by the educator and community Visioning Teams which examined educational trends, best practices, and issues affecting the delivery of 21<sup>st</sup> century education. These *Guiding Principles* present the essence of that inquiry. They are not policy but they address the overarching themes identified by participants. They may serve as a foundation for the future school. As such, they are intended to form the basis of future educational delivery and facilities planning. Staff Professional Development is crucial to the successful implementation of the educational concepts outlined here.

The *Guiding Principles* are:

### Overarching Principles

- This future-oriented Educational Vision articulates of innovative best and next educational practices, some of which are already in operation in some classrooms in the school
- Create a common understanding of this Educational Vision among administrators, faculty, parents, and students to continue shifting the educational model from one that is fairly traditional to one that is more transformed
- Prepare students for success in the 21st century, an emerging world of global competition, uncertain employment prospects simultaneous with unheralded workplace opportunities, infinite access to information, and rapid change in technology
- Teach 21st century skills at the same time as traditional content
- Build relationships with students, families, and communities through school structure and programs
- Aspire beyond the Common Core and beyond the Massachusetts Department of Elementary and Secondary Education guidelines to do what is best for student learning, and to instill a life-long sense of wonder and purpose. Create independent, life-long learners
- Establish a program of staff Professional Development to support the educational deliveries outlined here

### Educational Delivery

Educational Delivery addresses overarching themes required to provide a 21st century high-performing educational experience for all students, at SHS.



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### INSTRUCTIONAL MODELS

- Develop a social/emotional learning initiative
- Increase student engagement by shifting the teaching model to more active, student centered learning, with opportunities for student voice in their learning
- Employ project-based learning wherever it increases learning
- Group students in small learning teams to differentiate instruction and foster communication, collaboration, and improved social skills, and foster differentiated instruction
- Organize classroom teachers to support interdisciplinary teaching and learning, including synchronous team teaching, sharing larger cohorts of students full time, real time
- Create a school and community cultures that values flexibility for change
- Position students to learn 21<sup>st</sup> century skills, especially the “four C’s”, collaboration, communication, creativity, and critical thinking, while simultaneously meeting standard curriculum goals
- Integrate career-tech learning with academic learning
- Research the Deeper Learning schools; adopt their practices to increase learning, student engagement, and skill development.

Those include:

- Project-based learning
- Increased student voice in their learning
- Mastery of rigorous academic content
- Collaboration
- Oral as well as written communication

### TECHNOLOGY INTEGRATION

Our world is dependent on technology implementation in all aspects of life. Students must be provided with the technological skills and knowledge which will enable them to function successfully in a global context. Technology should include:

- Wireless capability in all spaces in the new/renovated school building
- Deploy mobile devices in lieu of desktop devices
- Create places and learning goals for students to learn using new technology, including documentation of oral presentations, and the production of videos, story boards, and apps



## Ch 3 Educational Vision

Technology must not be viewed as a curriculum add-on, but, rather as an effective tool to be utilized in meaningful instruction that is relevant and rigorous.

### Educational Structure

Educational Structure establishes the organizational patterns necessary to group students and teachers in the most effective ways.

#### ORGANIZATION

- Position educators to better know their students through the size and strategic placement of learning spaces

#### RELATIONSHIPS

- Organize school as Small Learning Communities to support formation of relationships
- Foster student collaboration to build social and communication skills, and the ability to work with others
- Create opportunities for students to grow socially and emotionally while working with others in classroom assignments

#### CURRICULUM

- Build 21<sup>st</sup> century skills while meeting traditional curriculum goals
- Create regular opportunities for students to improve their oral communication skills
- Integrate the curriculum
- Link career-tech learning to academic learning

#### SCHEDULES

- Create common planning time for all teachers

### Facility Implications

- Develop the facility as a platform for continued educational change, giving future generations of educators and students the power to easily change the educational model
- Support Safety and Security in new or renovated facilities as an integral planning component, not as an “add on” as it has been in the past
- Design facilities to be flexible, able to support multiple learning modalities, teaching styles, and program change over time

- Develop Small Learning Communities, learning spaces arranged in clusters
- Select furniture that supports collaboration, different learning modalities, and is substantiated by brain research
- Create a Teacher Collaboration Center to foster communication, collaboration, interdisciplinary teaching, and greater knowing of students by teachers
- Create a building plan that offer security and safety despite constant visitors, many of whom will be active participants in student learning
- Integrate outdoor learning, recess and recreation spaces in the building and site designs
- Create presentation spaces to honor and encourage frequent student and expert visitor presentations
- Minimize circulation spaces that do not also offer opportunities for learning, such as Extended Learning Areas, Breakout/ Collaboration small group spaces

## SCHOOL TRANSFORMATION + DEVELOPMENT MAP

Workshop participants, working in three-person Micro Teams, used the School Transformation + Development Map to evaluate current educational delivery and facilities, and to project the desired future for both.

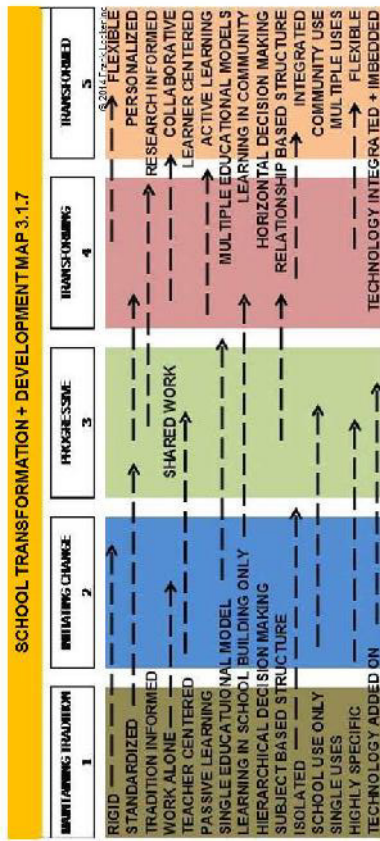
The ST+DM expresses the evolutionary shift in education in great detail, chronicling educational practices and facility design. Schools today are in different points of evolution, and many schools expect to be in different points of evolution in the long-term future. The ST+DM characterizes school practices and facilities on a 1 through 5 basis, with 1 as the most traditional category, and 5 as the most transformed.





## Ch 3 Educational Vision

### SCHOOL TRANSFORMATION + DEVELOPMENT MAP

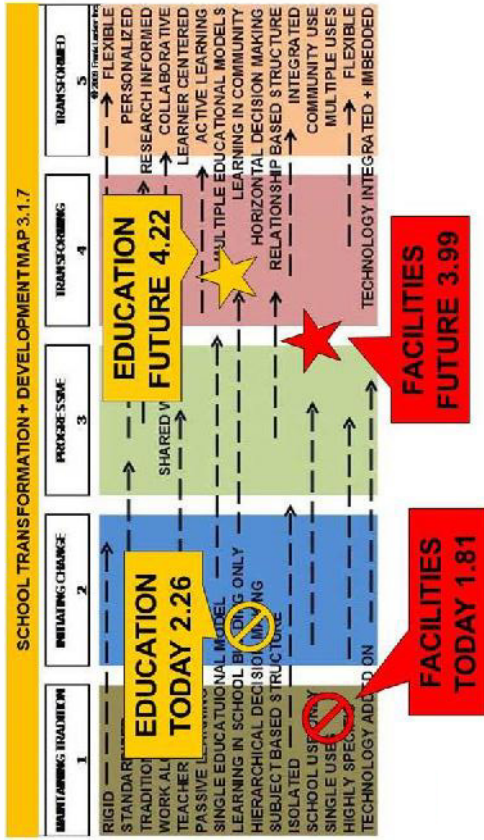


Workshop participants worked in Micro Teams to review the multiple educational practices and facilities concepts in the School Transformation + Development Map. They scored their schools in the following categories:

- Educational Delivery Today
- Facilities Today
- Future Educational Delivery
- Future Facilities

Their scoring was:

### SCHOOL TRANSFORMATION + DEVELOPMENT MAP



The overall scoring of all Micro Teams was relatively close for Education and Facilities, both Now and the Future, indicating a high degree of consensus among workshop participants.

The most important lessons from the ST+DM for the immediate future come from the difference between today's situation and the desired future. Overall, the Visioning Team desires significant changes for education, almost two columns out of five. Desired facilities changes are similar, almost two columns.

For education this means that a program of staff professional development needs to be implemented, starting soon. For facilities, it means that the future buildings will not look like traditional school. In both cases dialogue with the community needs to be engaged in order to share and receive comment and guidance on the exciting concepts proposed for the future SHS.





## Ch 3 Educational Vision

### MOST IMPORTANT CONCEPTS FOR THE FUTURE

Visioning Team members, working in Table Teams, were asked to identify the most important issues for education and facilities in Sharon High School's future.

The results are outlined here, in order of importance based on frequency of citing by individuals and Table Team discussions:

#### EDUCATION

- Student engagement
- Social/ emotional learning
- 21<sup>st</sup> century skills
- Deeper Learning

#### FACILITIES

- Flexible platform for change
- Safety and security in 21<sup>st</sup> century buildings
- Flexible, varied, brain based furniture

Note that these concepts, collectively, call for a major shift in both educational deliveries and the facilities that support them. Curriculum requirements and standards will remain, but the nature of teacher roles and student activities will change.

### INNOVATIONS IN EDUCATION

Visioning Team members, working in Table Teams, explored innovations in educational deliveries by developing detailed concepts of how those innovations might look in the classroom, and then deciding whether to endorse the innovation.

Their explorations are described in detail in Appendix Ch 5.2. Their assessments of the innovations are:

#### INTEGRATED/INTERDISCIPLINARY LEARNING

- Deemed important by five of six Table Teams
- Positively endorsed by five of six Table Teams responding to the question

#### BLENDLED LEARNING/ FLIPPED CLASSROOM

- Positively endorsed by one Table Team that explored the innovation. Regarded as “another tool” by the others

#### MASTERY LEARNING

- Three Table Teams responded to the question. One endorsed it for some classrooms, one said “yes – but,” and one did not support

#### PROJECT BASED LEARNING

- Positively endorsed by two of the three Table Teams that explored the innovation

#### MAKING THINGS TO LEARN

- Cautiously endorsed by one of three Table Teams responding to the question

### LEARNING MODALITIES

Visioning Team members each individually considered 21 learning modalities, ranging from traditional lecturing and direct teaching to independent study, and ranked them in order of appropriateness.

The most commonly cited most effective modalities, in order of importance, are:

- Project-Based Learning
- Small Group Work/Student Collaboration
- Direct teaching
- Interdisciplinary learning
- Making things, prototyping, STEM, and STEAM
- Teacher Teaming/ Synchronous Collaboration
- Social/Emotional Learning





## Ch 3 Educational Vision

### SCHOOL STRUCTURE: INTERNAL ORGANIZATION

The Table Teams reflected on model school organizational structures, and determined these to be the most and least appropriate structures. They are shown here in rank order.

#### **Most appropriate:**

- Career Pathways within Departmental model or Small Learning Communities
- Teachers synchronously teaching, sharing students in real time

#### **Least appropriate:**

- Teacher looping

One Table Team overlapped Interdisciplinary teaching and learning with the Departmental Model

These preferred organizations would have teachers sharing daily deliveries to a much greater degree than today

Dialogues among Sharon teachers need to start soon, extending to parents and students, to explore, share, and deploy these concepts.



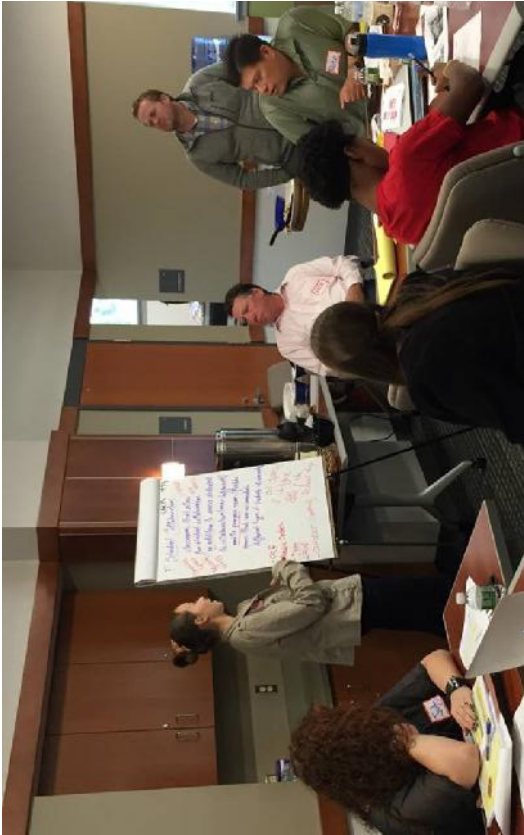
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## INTRODUCTION

The Visioning Team developed concepts for Sharon High School's future facility. The concepts are defined through:

- **Facility Overview** underscores the most important facility concepts
- **Key Words for Facilities**, characterizing the desired future school building in tiny "sound bites"
- **Places for Learning**, detailed descriptions of the learning environments
- **Defined Spaces**, expressing desired characteristics of the most important non-classroom spaces
- **Future Furniture** showing favored furniture selections
- **Overall School Organization Diagram** shows essential program space relationships for the future building



## Facility Concepts

## FACILITY OVERVIEW

Develop school building plans with the following considerations:

- Integrate 21<sup>st</sup> century concepts of safety and security in all renovated or new buildings
- Design facilities to be flexible, able to support multiple learning modalities, teaching styles, and program change over time
- Empower the possibility of team teaching with shared larger cohorts of students through connections between classrooms
- Make a flexible floor plan for continued educational change, allowing, at a minimum, ability for school stakeholders to operate Departmentally, or as Small Learning Communities, or both simultaneously
- Develop Small Learning Communities, learning spaces arranged in clusters, for both interdisciplinary and departmental uses
- Select furniture that supports collaboration, different learning modalities, and is substantiated by brain research
- Create Teacher Planning Centers to foster collaboration, interdisciplinary teaching, and greater knowing of students by teachers
- Create building plans that offer security and safety despite constant visitors, many of whom will be active participants in student learning





## Ch 4 Facility Concepts

- Create spaces that support more “hands-on” learning, especially STEM and STEAM labs and Maker Spaces
- Create presentation spaces to honor and encourage frequent student and expert visitor presentations
- Minimize circulation spaces that do not also offer opportunities for learning. Maximize those that do, such as Extended Learning Areas, Breakout/ Collaboration small group spaces

## KEY WORDS FOR FACILITIES

As closure to the three days of workshops, participants were asked to identify one word or a two-word phrase that best represented their personal thoughts about the future Sharon High School.

Their most commonly cited key words are:

- Flexible, flexibility, flexible building, flexible space

With a big gap in citations:

- Adaptable, adaptable spaces
- LEED – Engaging, Environment, Energy, Design
- Happy

For the full listing, see Appendix Ch 5.3.

## PLACES FOR LEARNING

The Visioning Team reviewed thirteen exemplar schools from the USA, the United Kingdom, and Australia. Working in Table Teams they ranked the schools for appropriateness for the future teaching and learning at Sharon High School.

### MOST APPROPRIATE

Several exemplars were highly favored, selected by multiple Table Teams as most appropriate. They were:

- F Waverly High School (cited by 4 of 7 Table Teams)
- H Concord Elementary Schools (4 of 7 Table Teams)
- L Wooranna Park Primary School
- +Milan HS Center for Innovative Studies (4 of 7)



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- D Slate Magazine 5<sup>th</sup> Grade Exploratory Classroom (3 of 7)
- G Cristo Rey High School (3 of 7)
- I New Tech High (3 of 7)

Others were selected as Least Appropriate. They were:

- A Southampton High School (3 of 7 Table Teams)
- E Ipswich Middle School (3 of 7)

### MOST APPROPRIATE ESSENTIAL CHARACTERISTICS

Most of the schools cited as Most Appropriate shared these characteristics:

- Learning spaces arranged as Small Learning Communities
- Classrooms are components of “suites of spaces,” supported by other spaces immediately adjacent
- Circulation to be used for learning
- Classrooms are to be flexible, interconnected, and supported by auxiliary spaces including Collaboration/Breakout/Commons Spaces
- Interdisciplinary possibilities
- Open, shared presentation areas
- Variety of furnishings, offering students and teachers more choices in supporting learning
- Possibility of student groups working in multiple places under the guidance of the teacher
- Teacher collaboration supported by the facilities, through double sized Classrooms, connections between Classrooms and strategic placement of related functions
- Teacher Planning Centers to support teacher collaboration and sense of community

## Most Appropriate Planning Concepts

Here are representative photos, descriptions, and Table Team comments for the most commonly cited exemplar schools, in order of degree of support from the Table Teams.

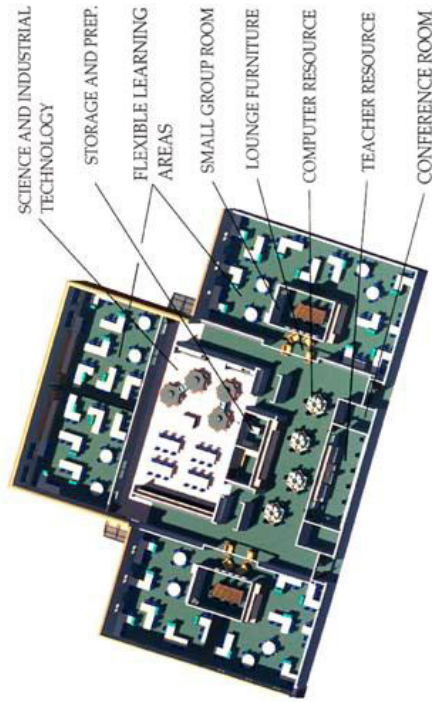
### WAVERLY HIGH SCHOOL

Featuring:

- Arranged as a Small Learning Communities, each for 200+- students

## Ch 4 Facility Concepts

- Some Classrooms planned as "Fat 'L'", allowing more corners for student collaboration than the traditional rectangular Classroom



- Not all Classrooms are the same: two Classrooms are rectangular, interconnected with folding wall, and thus flexible for 50-60 students in whole group modality
- Fat L Classrooms interconnect with folding wall
- Teacher Planning Center
- Science Lab/Industrial Tech (STEM) space at the center of the cluster

Table Team comments included:

- Foldable walls
- Teacher space
- Flexible spaces
- Flexibility of walls and spaces
- ? "noise"
- Good use of space
- Flexibility and grouping
- Pod design
- Different furniture
- Flexible



## CONCORD ELEMENTARY SCHOOLS

Featuring:

- Library/Media Center organized as the access to all classrooms
- Shared spaces for hands-on learning, presentations, and computer uses all contained within the Learning Corridor
- Small Group Rooms interspersed between classrooms



Cited for:

- Breakout spaces
- Outside classrooms
- Diverse work spaces
- Constant access to media center
- Library is easy to get to (accessible resources!)
- We like flexible/vast breakout spaces for every classroom and like larger corridors
- Concerns about tripping over furniture between periods

## WOORANNA PARK PRIMARY SCHOOL + MILAN HIGH SCHOOL CENTER FOR INNOVATIVE STUDIES

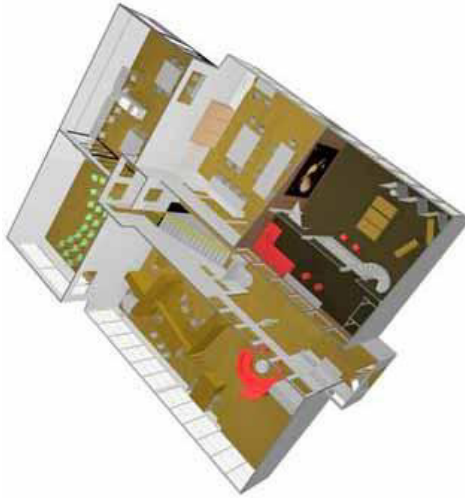
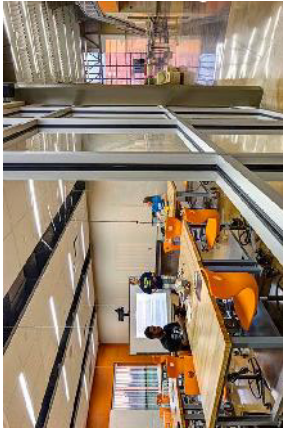
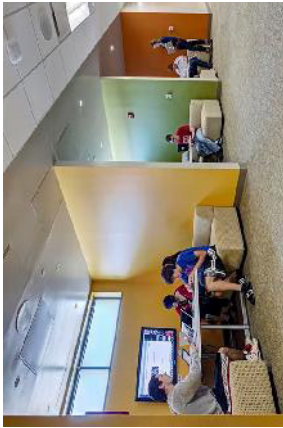
Featuring:

- Designed to support project-based learning
- Integrated suite of learning spaces
- Each space supports a different learning activity as "learning centers"



## Ch 4 Facility Concepts

- Students and teachers move with their students from space to space based on learning needs
- Teachers collaborate and coordinate use of spaces



### Table Team comments included:

- Variety of classroom types and sizes
- Flexible uses
  - Independent
  - Collaborative
- Multi-purpose common areas
- Indoor-outdoor movement
- Differentiation
- Personalization
- Connecting people worldwide
- Very versatile
- Good for different types of learners



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- Good for SEL
- Student engagement
- Indoor/outdoor spaces
- Flexible design

## SLATE MAGAZINE 5<sup>th</sup> GRADE EXPLORATORY CLASSROOM

### Featuring:

- Classrooms with active learning zone at the center and student teams at the edges
  - Work counters, sinks, large student tables on wheels in the center
  - Groups of smaller student desks at the perimeter
- Shared Commons/Breakout space between classrooms
- Folding glass wall between the classrooms and the Commons/Breakout space
- Able to be linked to serve more than two classrooms
- Outdoor learning space that mirrors the classroom



### Table Team comments included:

- Outside workspace
- Openness
- Connection to nature
- Flexible uses
  - Independent
  - Collaborative
- Multi-purpose common areas
- Indoor-outdoor movement
- Differentiation
- Personalization
- Connecting people worldwide





## Ch 4 Facility Concepts

### CRISTO REY HIGH SCHOOL

- Thematic Small Learning Communities, each for 125 students
- Flowing Circulation/ Collaboration/ Breakout Zone with a variety of furniture
  - Garage doors at each classroom



Table Team comments included:

- **Garage door – not** clear glass
- Writeable walls
- Large productive spaces with a comfortable, cozy atmosphere
- Openness to collaborative areas
- We like garage door flexibility as long as it is acoustically sound

### NEW TECH HIGH

Featuring:

- Double sized classrooms for teachers working in pairs
- Cyber Café at center of the school
- Well-developed outdoor learning spaces
- Each classroom has small group discussion area



Table Team comments included:

- High School Cafeteria
- Promotes independence + choice
  - But still has some structure
- Natural light
- Supports large/small group collaboration
- Community structure
  - Promotes independence + choice
    - But still has some structure
  - Natural light
  - Supports large/small group collaboration
  - Community structure

### Least Appropriate Planning Concepts SOUTHAMPTON HIGH SCHOOL

Featuring:

- Isolated classrooms arranged along single-purpose corridors
- No support spaces for classrooms
- Grade-based and curriculum-based planning, with no consideration for building relationships
- No sense of learning communities within the buildings
- Challenging separations between learning spaces



## Ch 4 Facility Concepts

- Isolated classrooms
- No central focus

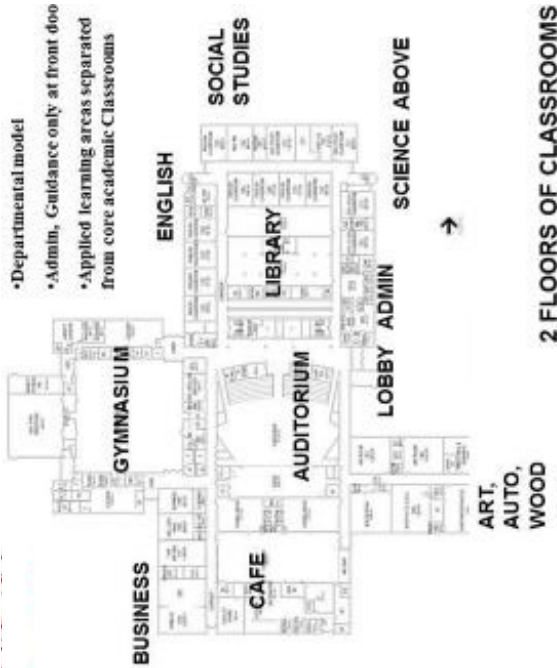


Table Team comments:

- Little flexibility
- No teacher collaboration
- Little group learning
- Current model
- No 21st century vision
- Traditional

### IPSWICH MIDDLE SCHOOL

Featuring:

- Arranged in "pods" or "clusters" with eight classrooms, a Teacher Planning Center, and a Special Education Resource Room in each
- Each pod is centered around a shared Commons/breakout space
- Classrooms are arranged in pairs
  - Math and science
  - English and social studies

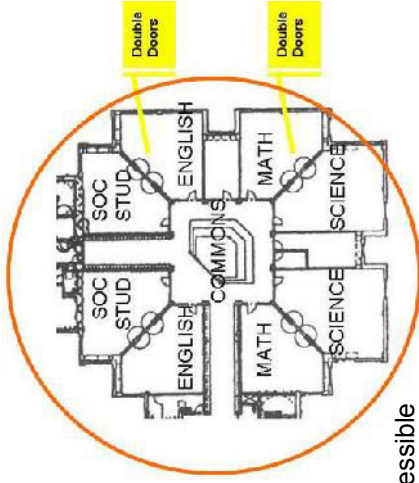


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Table Team comments included:

- If flattened, could be more accessible
- We dislike S.L.C.'s
- Not suitable for Sharon's needs



## DEFINED SPACES

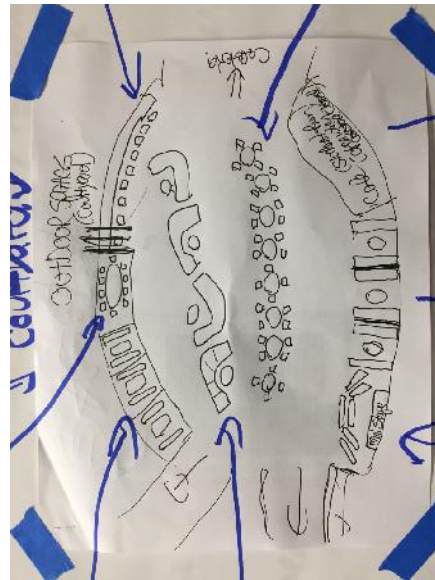
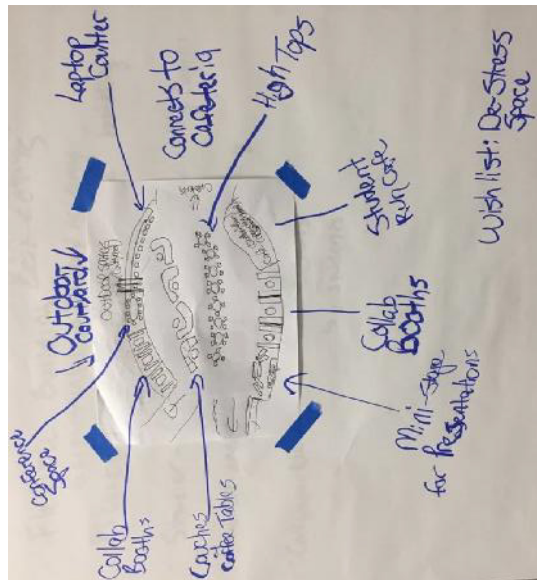
Essential non-classroom spaces were given consideration by the Table Teams. The outlines below represent the most salient concepts. A full description of their work, including additional illustrations, is in Appendix Ch 5.3.

### 21<sup>st</sup> CENTURY LIBRARY/MEDIA CENTER/LEARNING COMMONS

- Conference space
- Outdoor courtyard
- Laptop counter
- Connects to cafeteria
- High top tables
- Student run café
- Collaboration booths (x2)
- Mini-stage for presentations
- Couches + coffee tables
- Wish list: De-stress space



## Ch 4 Facility Concepts



### 21<sup>st</sup> CENTURY DINING/FOOD SERVICE

- Different areas to dine/eat
- Common area – cafeteria
- Mixed furniture/seating styles
- Quieter areas
- Indoor/outdoor
- Non-square; multiple floors

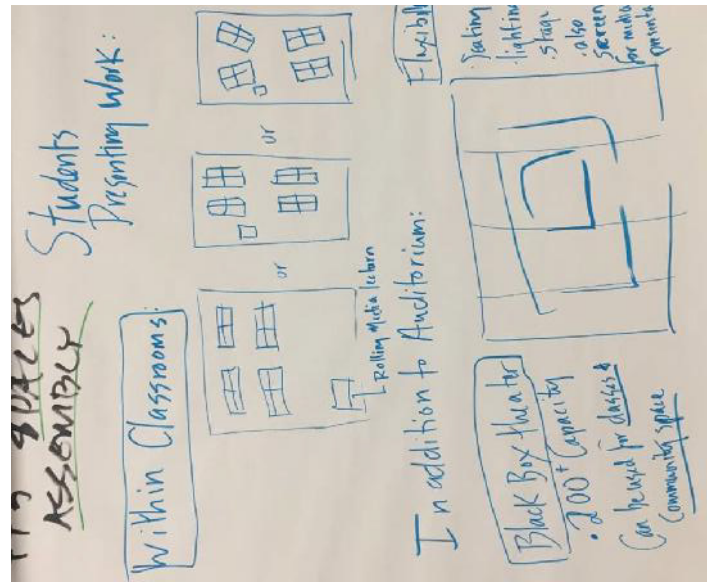


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- Sunlight/atrium
- Food choices – stations
- Easy in/out
- Internship opportunities
- Freight farming – vertical hydroponic – water
- Composting/sustainability/recycling

### ALL FORMS OF ASSEMBLY/PRESENTATION: STUDENTS PRESENTING THEIR WORK, SMALL GROUP PRESENTATIONS, BIGGER GROUP PRESENTATIONS, WHOLE BUILDING ASSEMBLY

- Rolling media lectern
- In addition to auditorium:
  - Black box theater
  - ✓ 200+ capacity (can be used for classes + community space)







## Ch 4 Facility Concepts

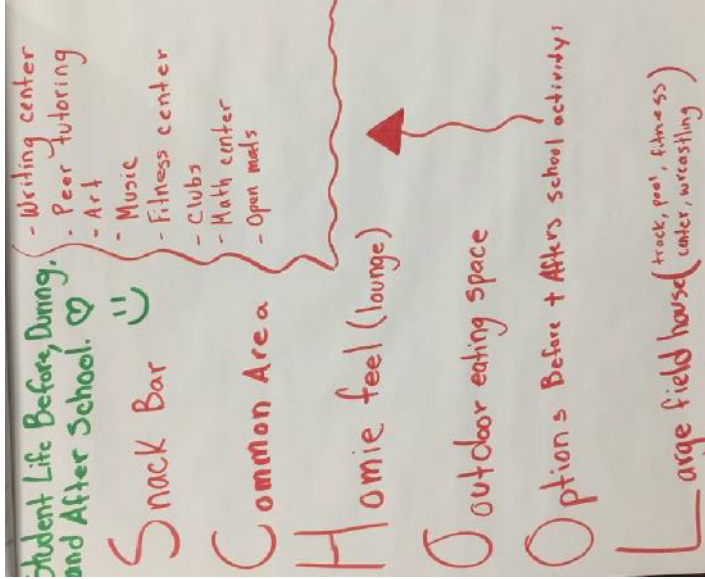
- o Flexible
  - ✓ Seating
  - ✓ Lighting
  - ✓ Stage
  - ✓ Also screen for media presentations

### STUDENT COLLABORATION

- Classrooms that allow for student collaboration in addition to spaces dedicated to collaboration (near/adjacent)
  - o Convertible spaces
  - o Adjustable walls
  - o L-shape
  - o White-board walls
- Multi-purpose rooms/flexible spaces that can accommodate different types of student collaboration
- All spaces are utilized 80% of the school day
  - o Cafeteria
  - o Media center
  - o Gym
  - o Auditorium
  - o Outdoor (classroom)

### STUDENT LIFE BEFORE, DURING AND AFTER SCHOOL

- Snack bar
- Common area
- Homey feel (lounge)
- Outdoor eating space
- Options before + after school activities
  - o Writing center
  - o Peer tutoring
  - o Art
  - o Music
  - o Fitness center
  - o Clubs
  - o Math center
  - o Open mats
- Large field house (track, pool, fitness center, wrestling)



### TEACHER SUPPORT INCLUDING COLLABORATION

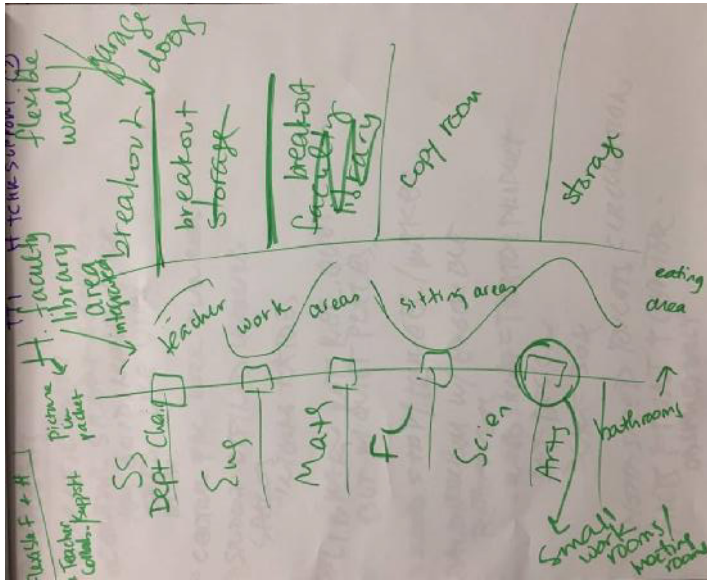
- Social, work and collaboration space
  - o Breakout rooms on the side
- Individual desk/planning space
- Bathrooms, ventilation, clean
- Most teachers with "their" classrooms
  - o Flexible teachers space whenever necessary
- Goals:
  - o Teachers each have a classroom that they use
    - ✓ Paired with other rooms that they can use (foldable walls, doors)
- Need areas for gathering + collaboration
- Resource, staff library + media center
- Integrate departments
- One central area where all teachers gather
- Quiet place or social
- Small offices





## Ch 4 Facility Concepts

- Copy room
- Whole teacher wing/pod
- Teacher resource "library"
- Kitchenette in area
- Clean bathrooms



### OUTDOOR LEARNING

- Rooftop pavilion (ex: garden)
- Solar panel farm
- Outdoor dining/gaming boards (chess)
- Outdoor white-boards
- Outdoor exercise equipment + facilities
- Environmental art
  - Murals + sculptures
- Covered outdoor area
- Sound amplification system
- Outdoor paths/tracks



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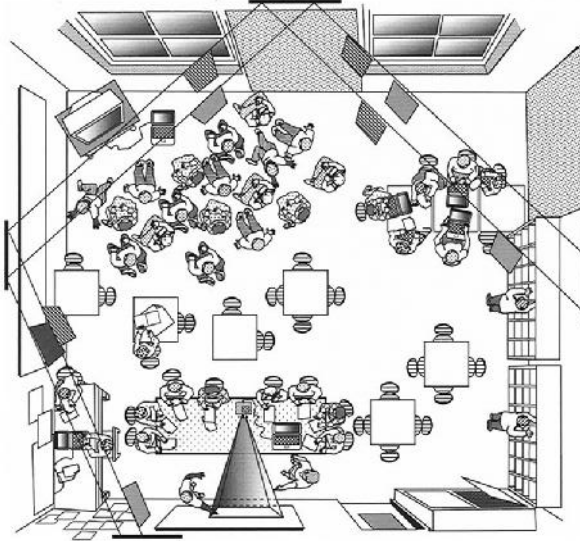
- Outdoor workshop
- Outdoor stage/theater (Amphitheater)
- Hub for WiFi and electricity
- Heat/amps for warming
- Greenhouse

## FUTURE FURNITURE

A breakout group of the Visioning Team participants reviewed and ranked Classroom and Breakout/Commons furniture options for the future.

The Breakout Group chose to share three of them with the whole Visioning Team as representative of the most appropriate furniture for all grade levels. Those selections were:

### #9 Student Centered Classroom Step 5



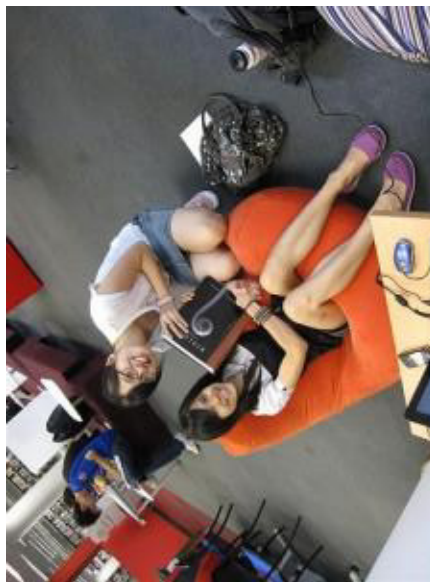


## Ch 4 Facility Concepts

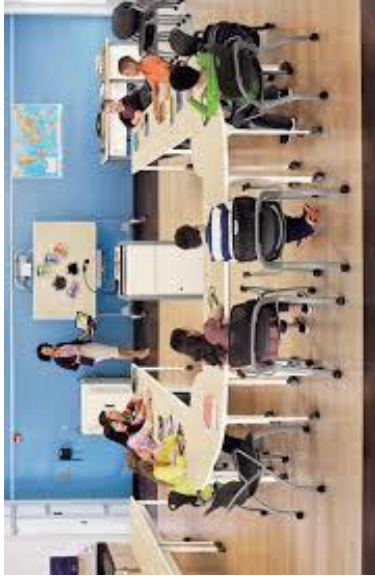
### #13 Node Chairs



### #14 Bean Bag Chairs



The tabulation of their worksheets shows these as the most appropriate:  
**#11 Furniture on Wheels**



### #22, D School Maker Space







## Ch 4 Facility Concepts

The Options were ranked as follows:

Future Furniture Ranked	Appropriate	Mostly	Don't Know	Maybe	Not Important	RANK
8 FKa Classrooms: Wheels	4	3				1
22 Breakout Spaces: D School	5	1	1			1
19 Breakout Spaces: Electronic	3	4				3
9 FKa Classrooms: Modular	4	2		1		4
18 Breakout Spaces: Student	2	5				4
21 Breakout Spaces: Group	2	5				4
15 Breakout Spaces: Booths	3	2	1	1		7
20 Breakout Spaces: Informal	3	1	3			7
6 FKa Classrooms Step 4		5	2			9
13 FKa Classrooms: Node	1	4	1	1		9
23 Breakout Spaces: D School	1	3	2		1	11
10 FKa Classrooms: Variety		5		1	1	12
11 FKa Classrooms: Rounds	1	3	1	1	1	12
7 FKa Classrooms Step 5	2	2		1	1	14
12 FKa Classrooms: Stand Up	1	2	2	1	1	14
2 Classrooms		3	1	2	1	16
14 FKa Classrooms: Bean Bags	1		2	4		16
16 Breakout Spaces: Modules		2	3	1	1	16
3 Classrooms Step 1		2	3		2	19
4 Classrooms Step 2		1	2	3	1	20
5 Classrooms Step 3		2	1	1	3	21
17 Breakout Spaces: Sprawl		2	1		4	22

See Appendix Ch 5.3 for the rating of Options and Appendix Ch 5.6 for the full presentation.

## OVERALL SCHOOL ORGANIZATION DIAGRAM

Workshop participants created concepts for their future school. First, in Table Teams, they developed important needs and planning concepts. Then they guided Frank Locker to draw an overall school organization diagram to capture their concepts. Major functions were drawn as bubbles, in relative size, and in relative positioning. The concept featured the following essential characteristics:

### WHOLE GROUP DISCUSSION

The Visioning Team identified the following essential characteristics in discussion:

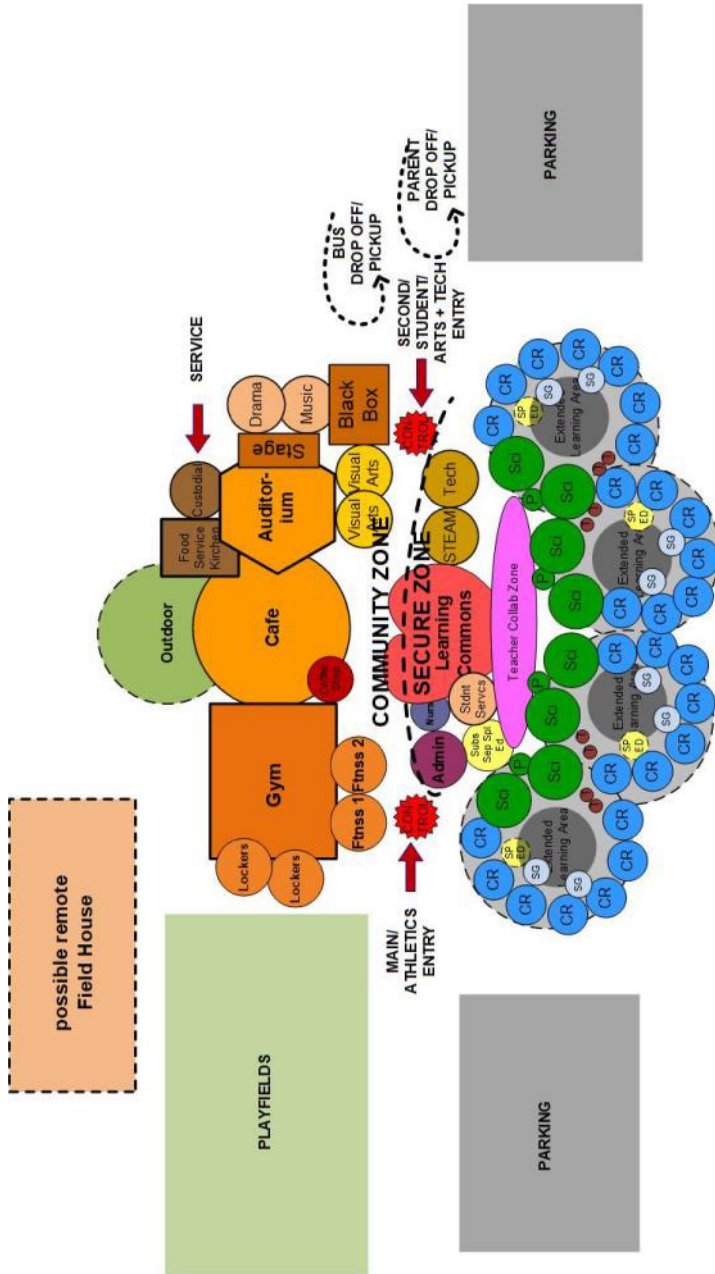
- Flexible for change, like the Glacier High School plan
- Flexible learning spaces/CRS
  - Interdisciplinary
- Central Student Services, like a university
  - Guidance
  - Nurse
  - Psychologist
  - Special Education
  - METCO
- Central Teacher Collaboration Zone
- Student defined learning spaces
  - Supported by interns and aides
- Library not necessarily quiet
  - But with quiet places
- Wood shop/home economics/maker space
- Auditorium with ensemble rehearsal
  - Wood shop for theater projects
  - Set design
  - Black Box Theater
- Right sized Toilets and circulation
- Arts front and center
  - Observed daily
  - See into arts – glass garage doors
- Open area for student study and collaboration
  - Student directed
- Science at exterior of building
  - Access to outdoors
  - Hopefully place for Astronomy classes



## Ch 4 Facility Concepts

- The place for students to go at arrival and end of day
- Athletic and Fitness
  - Possible remote Fieldhouse
  - Variety Activity Rooms
- Cafeteria as “go to” space but connected to outside
- Coffee Shop
- Student Help Desk

The overall diagram was developed with two variations:



SHARON HIGH SCHOOL  
OVERALL BUILDING RELATIONSHIP DIAGRAM  
Alt A

Not all spaces shown

Number of Small Learning Communities not determined

Number of Classrooms not determined

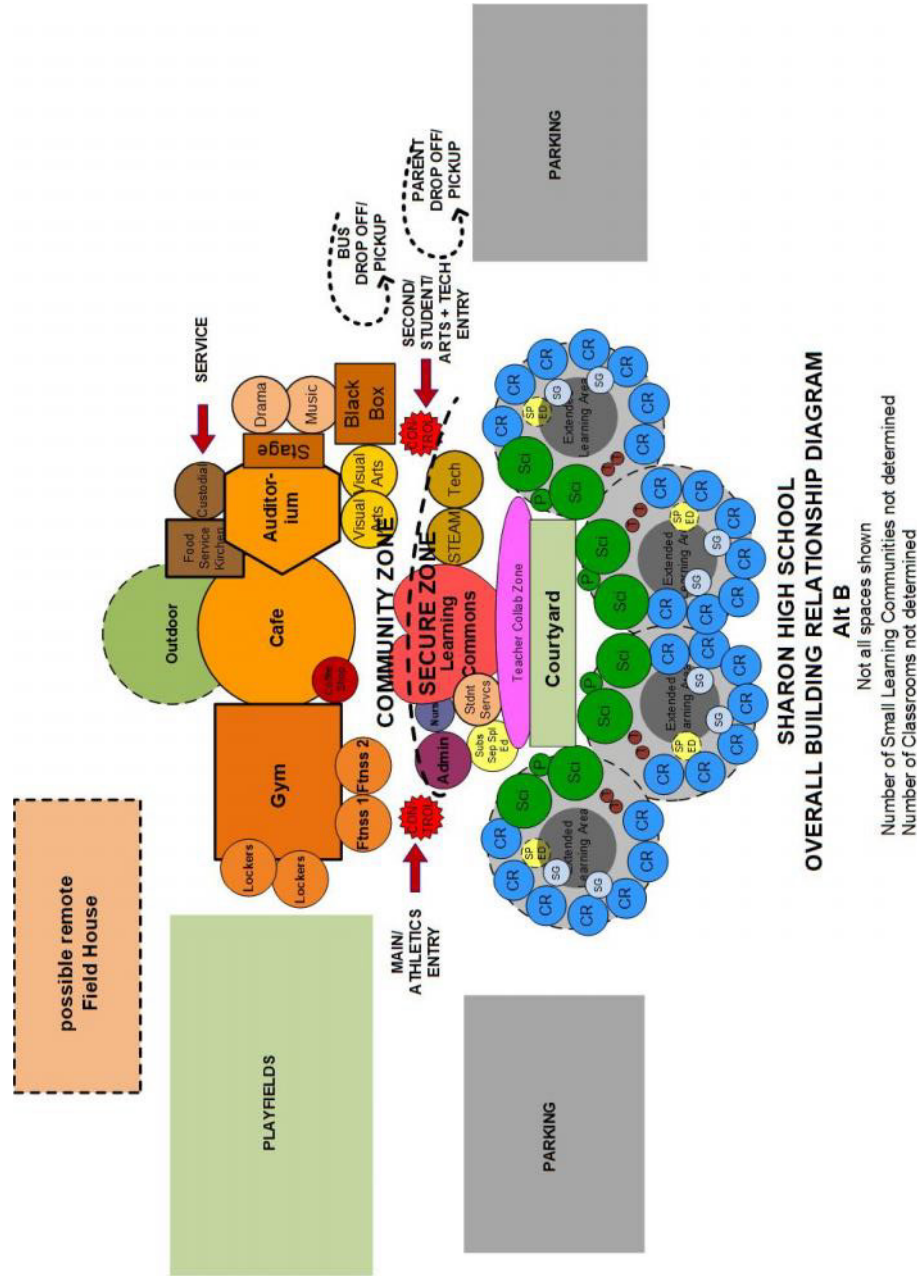
Alternate A shows an internal Teacher Collaboration Zone and Science.



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## Ch 4 Facility Concepts



Alternate B locates an internal Courtyard at the center of the building to bring light and air to Science and the Teacher collaboration center, and offer a safe outside 'break' for all.





## AGENDA

The first Visioning Workshop was held on 27<sup>th</sup> September 2018. Notes of all activities follow:

- Videos
- Snapshot of Our School
- 21<sup>st</sup> Century Schools Presentation
- 21<sup>st</sup> Century Learning Most Important Issues
- Student Success
- Randy Nelson: *Living + Working in the Collaborative Age*
- Review of Current Programs
- Learning Modalities

## VIDEOS

Workshop participants had watched the video of Ken Robinson, *Changing Educational Paradigm*, as the start of the workshop, and then discussed it.

Here are their thoughts in response:

- How do we prepare students for life?
  - Potential not conformity
- American studies – English and history
- Juniors – say school is like a prison
- Alternatives
  - Interdisciplinary – not enough
  - More collaboration
  - Break down separate departments
  - Give kids more meaning
- Interdisciplinary yes!
  - Perspective added
  - Could be more efficient too
- Divergent thinking
- Arts – senses come alive
- Transcendental school projects were done at SHS
  - Great projects
- Teach to test
- Problems:
  - How we group students
  - Advance by grade



## Workshop Notes Day 1



## Ch 5.1 Workshop Notes Day 1

- o Advance by level

## SNAPSHOT OF OUR SCHOOLS

The Visioning Team, as a whole group exercise, brainstormed What is Good at Sharon HS, and identified their Wishes/Concerns:

### WHAT'S GOOD

- METCO is good
- Teachers are good
- Relationships
- Diverse programs
- Clubs – sports
- Productive grads
- Community support increase
- Curriculum wide
- Pride
- Good music
- Feels good
- Kids not afraid to share voice
  - o Activists
  - o Push adults
- Feel welcome
- Teachers work hard
- All work together
- Guidance helpful
- Common teacher plan blocks
- Technology
- Support staff – lots/great
- Teachers provide off-campus opportunities
  - o Travel abroad

### WISHES/CONCERNS

- Poor accessibility
- Lots of traffic
- Disconnect between town pride and exterior of the facilities
- Need more flexible seating
- Need more room in classrooms
- Need more work on character development
- Students feel need to overwork

- Library classes on the 5 C's
- Flex schedule
- No time to not be at one's desk
- Stress-stress-stress
  - o Too college focused
  - o Not providing pathways
- Teachers don't coordinate homework
- Kids want/need life skills
  - o Financial literacy
- No time
- Stress
- Attitude – culture of stress
  - o Community problem
  - o Parents want kids in best colleges
- More community connections
- Deeper support for arts
  - o Back to culture
  - o Kids shun arts for high level courses
- Cookie cutter classrooms
  - o Need open spaces
  - o Need collaboration
  - o Need free thinking
- Career explorations needed
- How to shift culture from diversity to inclusion
- What role does technology play?
- Academic competition stimulates kids
- But academic competition throws off balance
- Teachers lack work space
- Late start helps
  - o Need community conversation
- Building depressing and disorienting
  - o Need health
- School should start later
- Addition in 1990's was to have additional classrooms but was not built
  - o Lesson learned!





## Ch 5.1 Workshop Notes Day 1

### 21<sup>st</sup> CENTURY SCHOOLS PRESENTATION

Frank Locker presented on the changing values, goals, and deliveries that characterize the most progressive thinking about schools in the United States, and worldwide, today. Key points included:

- 20<sup>th</sup> vs 21<sup>st</sup> century schools:
  - The 20th century was a century of creating efficient schools; the 21st century has been a century of looking for effectiveness in schools
  - 20th century was the century of the teacher; 21st century is the century of the learner
  - The teacher used to hold all the information; now the teacher is the guide
- Research in learning informs us of many effective educational practices
  - Some are gaining popularity
  - Others are not yet in general practice
- Learning is more effective when students apply their learning immediately
- The Multiple Intelligence theory explains why different students learn best in different ways
- 21st Century Skills Framework offers a clear concept of skills students need for success in our rapidly changing global economy. It establishes:
  - Core, subject-based learning is not sufficient any more
  - Learning relevant 21st century survival skills is just as important, perhaps more important. These include:
    - ✓ Learning and innovation skills
    - ✓ Life and career skills
    - ✓ Information, media, and technology skills
  - Craig Jerald was cited as researching the most important traits that business and industry really want – professionalism/work ethic
  - Learning should be interdisciplinary, bringing the arts between subject areas
  - Learning should be infused with 21st century themes. These include:
    - ✓ Global awareness
    - ✓ Financial, economic, business and entrepreneurial literacy
    - ✓ Civic literacy
    - ✓ Health literacy



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- Learning is a social activity. Students learn better when they are in strong relationships with teachers and peers
- The Relevance and Rigor Framework of the International Center for Leadership in Education correlated Bloom's Taxonomy with application, offering a concise understanding of effective learning
- Google's Futurist has identified future new job titles
  - ✓ University Dismantler
  - ✓ Wireless Electrician
  - ✓ Urban Agriculturalist
- Teachers' work is supported through strong relationships with other professionals
- Schools are looking for more community connections to improve student learning
- Flexible furniture is needed to bring the student the support to learn in a variety of modalities

### Individual Responses

Visioning Team members scored the importance of the different issues outlined while Frank was presenting. They were asked "How important are these issues to teaching and learning at our future school?"

A compilation and ranking of their responses are on the next page. Individual comments follow:

## Ch 5.1 Workshop Notes Day 1



21st Century Schools PART 1 Responses to issues as presented									
Very Important	Important	Don't Know	Maybe	Not Important	Scary to Me				
9	14	5	5	4	4				
33	8	1			4				
13	12	9	4	1	4				
24	15	3							
16	11	7	3	1					
13	17	5	1	2					
15	19	4	5	1					
26	11	3	1	1	1				
8	11	11	6	3					
25	12	2	2	1					
15	16	5	3						
10	16	5	6	2	2				
21	13	4							
16	12	7	4	1	4				
18	13	7	1						
23	5	1	1						
18	18	5			2				
25	13	2	2		1				
18	14	4	4						

21st Century Schools PART 1 RANKING OF RESPONSES									
Very Important	Important	Don't Know	Maybe	Not Important	Scary to Me				
33	8	1			4				
24	15	3							
25	13	2	2		1				
26	11	3	1	1	1				
25	12	2	2	1					
18	18	5			2				
15	19	4	5	1					
21	13	4							
18	14	4	4						
18	13	7	1						
15	16	5	3						
16	12	7	4	1	4				
16	11	7	3	1					
13	17	5	1	2					
13	12	9	4	1	4				
10	16	5	6	2	2				
23	5	1	1						
8	11	11	6	3					
9	14	5	5	4					



## Ch 5.1 Workshop Notes Day 1

21st Century Schools PART 2 Responses to issues as presented	Very Important	Important	Don't Know	Maybe	Not Important	Scary to Me
20 20th Century Schools	4	7	4	7	8	4
21 21st Century Schools	24	11	1	4		
22 Safety + Security in 21st Century Schools	23	9	2	1	1	1
23 Flexible, Varied, Brain Based Furniture	24	14	2	6		
24 21st Century Learning Studios	18	15	2	3	2	2
25 Teacher Planning Centers	15	13	5	4		4
26 Small Learning Communities	11	15	5	6	1	1
27 Flexible Platform for Change	25	10	4	2	2	
28 End of the Library as We Know It Today	9	15	7	3	3	3
29 End of the Cafeteria as We Know It Today	7	16	8	3	5	
30 End of Isolated Teaching: Blue Point	4	14	11	5	4	
31 End of Isolated Teaching: Forest Ave	5	17	6	5	3	
32 End of Isolated Teaching/Integrated Teaching/PBL: New Tech	13	17	5	8	1	
33 End of the Classroom as We Know it Today: Wooranna Park + Milan	9	8	8	6	2	1

21st Century Schools PART 2 Responses to issues as presented	Very Important	Important	Don't Know	Maybe	Not Important	Scary to Me	RANK
23 Flexible, Varied, Brain Based Furniture	24	14	2	6			1
27 Flexible Platform for Change	25	10	4	2	2		2
21 21st Century Schools	24	11	1	4			3
32 End of Isolated Teaching/Integrated Teaching/PBL: New Tech	13	17	5	8	1		4
24 21st Century Learning Studios	18	15	2	3	2	2	5
22 Safety + Security in 21st Century Schools	23	9	2	1	1	1	6
25 Teacher Planning Centers	15	13	5	4		4	7
26 Small Learning Communities	11	15	5	6	1	1	8
28 End of the Library as We Know It Today	9	15	7	3	3	3	9
29 End of the Cafeteria as We Know It Today	7	16	8	3	5		10
31 End of Isolated Teaching: Forest Ave	5	17	6	5	3		11
30 End of Isolated Teaching: Blue Point	4	14	11	5	4		12
33 End of the Classroom as We Know it Today: Wooranna Park + Milan	9	8	8	6	2	1	13
20 20th Century Schools	4	7	4	7	8	4	14

## Individual Comments

Comments from individual Visioning Team members in response to the presentation issues are as follows:

### ISSUE

#### Part 1

#### 1 History Work + School

- Our workplaces don't match our learning spaces
- Rooms set up needs to reflect new ways of learning
- People (not equal)
- If we continue this way no progress would be made
- Need to look to future not past
- 21<sup>st</sup> century will have great socioeconomic changes including AI + climate catastrophe + the destruction of faith in national institutions because of "active measures"
- To understand why we need to change
- The idea of preparing students for the world at that time – we should change the way we prepare students but to prepare them for this time
- The underlying philosophy is the same – except now it is not for a job but for a way of thinking + interacting





## Ch 5.1 Workshop Notes Day 1

- School programs should change with the times – people in today's world aren't taught for success
- Not everyone can be the same
- Don't want students to be educated to conform
- What about us that grew up "industrial"
- Expectations of what school needs to accomplish need to be "redesigned" (teams/not standard teaching)
- Easy to feel like a #
- Everyone learns differently
- Past should not control the future as it does not have relevance for today + future jobs
- Culture creates school + school creates culture
- Not conducive to today's work/learn
- Design schools with jobs + careers in mind and how these are rapidly changing
- Stagnant, uninspired thinking
- There are some good reasons for its endurance
- Interchangeable people
- Grouping kids by birthday does a disservice to kids who learn at different rates
- Different interests
- Workforce is changing, education must also change
- If the point is divergent thinking + team work then yeah
- Because schools aren't preparing students for the 21<sup>st</sup> century workplace
- Business is taking on the educating and training
- Adapting to new technology
- To make sure we do not repeat what happened 100 years ago
- Everything is the same

### 2 Student Engagement

- Peak shouldn't be at 5<sup>th</sup> grade
- Very central
- Kids get bored – it's the same thing every day
- Nothing gets done without engagement
- Students should be interested and excited in what they learn
- Students need to learn to be innovators, inventors, creative thinkers
- Need to motivate students
- Important to tap into students' intrinsic motivation to learn
- Agree – see APS Engagement Levels Survey in My Children

- "Life-long learners"
- Bi-product of system we set up = engagement
- Stats on collaboration are scary, reasons too
- Need passion to learn
- We need to engage kids where they are
  - Address frustration
- Shouldn't prepare everyone for the same things
- Get punished for not being engaged in the learning
- Kids dislike learning due to low enthusiasm (hate school)
- Without this, what do you have?
- To motivate ALL students
- Enjoying learning – shouldn't be a chore!
- If they aren't interested they aren't understanding

### 3 Futurist Thoughts

- Need to teach thinking skills/problem solving skills – connected to any job
- Preparing students for uncertain future world
- Making them prepared and capable to tackle the future
- Hard to predict, plan
- I don't really get it
- It's going to be a crazy job market + you have to try to be versatile
- Should be very civics, ethics oriented
- Teach skills/thinking for any job
- Being adaptable is more important
- Collaboration booths
- Presentation zone
- Students need to be prepared for the jobs they will receive, not the jobs that used to be available
- Growing world population
- Less jobs more robotics
- I don't agree with most of this
- There are still teachers, businesses, products...
- Important to provide foundations so students can adopt to future demands
- Jobs for future
- Future of teaching for workplace
- Blue collar jobs still important
- There is future, have to remember past





## Ch 5.1 Workshop Notes Day 1

- Very important, but need to be careful to avoid too much focus on tech at expense of arts
- Don't forget the development of the human child
- 60% of jobs 10 years from now unknown
- Related to #1 with relationship to careers/jobs
- Seems to do what it accuses current system of: training to do not think, seems either or ignores integrating of concepts
- Lack of jobs in the future
- Many jobs out there are going to be taken by some sort of robots and those people are going to try to get a programming job
- What jobs will continue to exist
  - Soft skills are important
- Touch since tech moves so fast
- Focus on skills
- Energy efficient
- New jobs, kids need to be prepared
- If the point is we need to prepare student for constant change then yeah
- Will somewhat happen naturally
- How does this align to the focus on high achievement
- Don't know a lot

### 4 20<sup>th</sup> + 21<sup>st</sup> Century Learning

- Drastic changes needed to change how teachers teach – in silos vs. together teams
- I don't know
- Obvious isn't it?
- See 1, but also we need more philosophy + ethicists to think about the civics/community implication of changes
- Jobs in the future will become less cut and dry
- Less focus on teacher-centered + more on student-centered
- Need to blend both
- Develop program for each student
- Collaborate – project based learning
- More teacher engagement – collaboration – teams
- Ethics + values to go along with entrepreneurship
- Case study model – learn from past
- Understanding why antiquated ideas are not conducive to lifelong learning
- Genuinely more practical

- Students need more personal learning
- Reform old learning, revolution of thinking
- Making kids more engaged and empowering them

### 5 Student Talk at Dinner

- Because it shows how engaged a student is
- Need to be able to discuss with parents openly
- They need to have dinner with family
- Need for school–family, family-kid connection
- Students will always want to leave school – you can't change them
- If education has meaning student will be excited
- Problem would still exist
- Yes, but hard to measure
- Teens don't talk at dinner
- Many families don't even eat together
- Teacher is not holder of knowledge but kids still need knowledge/content
- Almost 0 students will want to talk about school at dinner
- Hard to measure (but that's ok?)
- Excitement – engagement
- School shouldn't be like a prison
- Again, students should love what they are doing in school
- Students voice should guide the work – not always adults/teachers
- School isn't everything

### 6 Learning Pyramid

- Are teachers being taught how to do this?
  - Not sure most teachers have set up courses like this
  - Professional development
- Learning is not so definable
- Reading + lecture are valuable - a good beginning to an opening
- The learning pyramid needs to change because it is out of date
- Flip the pyramid – more experiential learning is needed
- Give more opportunities to students to teach peers/others
- Flip pyramid
- Misleading interpretation – probably doesn't control for time spent on topic
- Some learning isn't successful or efficient for all students



## Ch 5.1 Workshop Notes Day 1

- Active learning promotes retention and engagement
- Important but in any building
- Practice by doing is best!

### 7 Gardner: Multiple Intelligences

- Need to assess educational communication
- Based not in any good scientific understanding of cognition
- Multiple intelligences has been disproved
- See, I think much about this
- Need to develop "weaknesses"
- It's very important that we allow for all types of learning
- Recognize these intelligences are important
- Very important to understand
- Read Piaget
- Feeds into our ability to differentiate learning for students
- Parent identified/supported
- Collaboration
- There is not time to focus on "other intelligences"
- Especially the "less traditional" intelligences like visual, interpersonal, musical and naturalistic
- Recognize different modalities of learning and adapt education to support many different types
- ...but we don't test for this on MCAS! Why?
- Are these supported by neuroscience or are they outdated hypotheses?
- Need to embrace other intelligences
- Foster students' interests/abilities
- Very subtle – not beneficial for me at least

### 8 Social/ Emotional Learning

- Would love to see students focus more on this...but from people who know this well...might not be the class teacher
- I feel if you listen to others you will be better
- Sociability is inherently human
- Interpersonal
- Emotional learning happens through a child's life
- Need to integrate social skills into curriculum
- Interpersonal skills
- How you take risks/how you listen/interview skills
- Lots of stress and anxiety in schools
- Especially important for future managers, collaborators

- This is a social issue before it's a school issue
- Is EQ teachable, or innate?
- Collaboration
- Connection with people is needed for success
- Comes from home too
- Learning people skills

### 9 Relationships: Dunbar's Law, Magic of 150

- If teacher had a better connection, would change learning for every student
- Relationships are critical
- Teachers – know kids/kids know each other
- Emotional learning happens through a child's life
- More team based + interdisciplinary teaching
- Sometimes being practical is good
- Structure mentoring relationships
- Did not really understand what was being conveyed with this
- So our adults don't share kids
- Didn't understand
- Hogwarts-style houses
- Need stronger relationships between students/teachers
- Teachers need to communicate so the student doesn't have an excessive workload

### 10 Integrated Arts + Academics

- Proof = foreign language
- Creation, curiosity, innovation, risk-taking
- We can have a better way to share our opinions
- Interdisciplinary
- Storyboard vs. essay – is it important that all kids can make an essay?
- Every tool we have should be used to help students learn, even if it's non-traditional
- Greater emphasis needed on humanities
- Yes and integrated physical ed/movement as well
- Use different parts of brain to learn new skills
- AND SPORTS! Whole body
- Can express learning in other ways
- If a student isn't interested in the arts they shouldn't be forced to participate
- Also helps kids learn – relate to content





## Ch 5.1 Workshop Notes Day 1

- Artistically inclined students
- Balance! Create well-rounded citizens
- Movement yes
- Strong connections between arts and every subject
- Engagement in any way possible

### 11 STEM/STEAM/Engineering

- Coding
- It would be fun
- A basis of science and math is increasingly important
- STEAM? Or STREAM
  - Reflection
- Need balance
- STEAM is a very good tool however if done wrong it doesn't work
- Greater emphasis needed on humanities + ethics
- Design workshop spaces
- Again, need to be careful to include the arts
- Not in isolation
- Flexible thinking
- As important as anything else
- Engineering-inclined people need to discover what they are interested in
- Preparation for the world of the future
- Need arts integration for creativity + collaboration
- Helps in careers
- Really not sure...depends on who you engage

### 12 Computers for Learning

- Both very important and scary to me
- Question – how to make sure use is productive
- Double-edged sword – very destructive without social aspect
- Only as a supplement not as a replacement
- Zombies with computers
- Still need face-to-face
- Computers cannot replace face-to-face learning
- Important to blend learning, not computer learning by itself
- Online learning does not equal ridiculous idea that online learning should make up 50% of all education
- Value the development of the human
- For access/not for online courses

- Some....but not all
- But need to be careful that computer integration is driven by educational goals, not push by edu-tech \$
- What type of computers for learning?
- Human teachers in the same room are inherently better than on-line courses
- Some kids learn better online
- Online courses can be more efficient and offer more variety
- “Use of” online – yes
- Half and half; you need live teacher for most learning
- It's important but education is traditional so it poses a threat

### 13 Deeper Learning

- Not sure I understand the difference between this and #4
- Skill learning
- Learning how to learn
- Sometimes topics like these can be really confusing
- Deep knowledge = real knowledge
- I think deeper learning is a great way for students to learn
- Like to know more
- Need to allow time
- PBL + all its connections are the CORE of all of this work
- Incorporates many of other categories
- Project based learning
- Applicability of real world
- Project based learning hard to do well
- Project based learning
- As long as interpersonal is part of it
- Did study control for variables b/w schools (S.E.S., IQ, etc)
- Learning not for the sake of learning but for real-world knowledge
- This slide is everything

### 14 Mastery Transcript Coalition

- Measuring whole child
- Need to know more – new concept to me
- It would take off so much pressure and stress off of students
- Too categorized – better but not the right way
- Must consider – what happens when student's don't show mastery of whatever
- A new way to assess student learning that has been updated





## Ch 5.1 Workshop Notes Day 1

- Like to know more
- SAT's need to go
- Whole child
- Need to assess differently if we're going to teach different way
- Measure whole child
- Look at kids in different ways
- It has kids focusing on building a portfolio for college from 9<sup>th</sup> grade – increased anxiety beyond where we are already
- The culture creates the school
- Very important but need all kids to collaborate to get a better answer
- Faculty need to re-learn assessment
- SAT alternatives
- If students will ultimately be judged on soft skills, how can we ensure kids with intelligences other than interpersonal will still be able to succeed?
- Life skills – “trivia” (rote memorization)
- Perhaps a better standard for this day/age then SAT
- Not just standardized testing but not set off well in the future?

### 15 21<sup>st</sup> Century Innovators

- Internet doesn't know it all – just ask SIRI
- Well duh!
- Books are important, not just the internet
- Some knowledge is important
- Teaching students what to do with info they already have
- Tony Wagner is the GI!
- What you learn is not important – what you know is
- What you know is not important, what you do is
- Internet has so much available to us
- Knowing things may not be AS important but it's still important
- Doing
- Actions over intelligence
- Ability to take action?
- Going out and doing things

### 16 21<sup>st</sup> Century Skills

- Critical thinking, creativity, collaboration
- It would help for the long run
- Well, yeah!
- The 4 C's will give students the skills they need in today's world

- Yes, but more flexible, adaptable model
- Basic critical thinking applied to life
- We have to remember that we are humans not robots
- 4 C's
- Add SEL and you have me
- A challenge without state standards changing
- Critical – hard and soft skills
- Life skills/innovation\
- School needs to create success!
- Old + tired. The above is new
- Focused on the future – all of the things mention need to be integrated
- Kids know tech better already

### 17 Jerald's Research on 21<sup>st</sup> Century Education

- Teaching GRIT ...hard to do!
- But not everyone can afford 4 years of college
- People need to know how to be themselves
- Written skills are used with oral presentation + critical thinking.
- Need to write a speech – write your thoughts in order to reflect on them and integrate
- Not to be deceived and manipulated by materials on the internet is key critical thinking
- Critical thinking, etc
- “STEM” focused kids forgetting importance of these
- The skills jobs look for are what we need to be teaching
- Agree with researcher – top employers view
- So much that we learn in school is not relevant to the rest of our lives
- 21<sup>st</sup> Century schools
- What sort of “employers”? Who are they 20 years from now?
- How do you hire people with critical thinking skills if they haven't learned how to be them
  - Arts, humanities, etc
  - Ethics
- Convince our kids that STEM isn't everything
- Learning what will provide professionalism, work ethic
- Work, field prioritizes “work” qualities over “academic” qualities
- Good info
- Skills that can be applied in the long run
- Are we preparing students for the workforce?





## Ch 5.1 Workshop Notes Day 1

- Don't know if these are things you can learn in school
- ### 18 Project Based Learning: Café Paresien
- This takes a lot of time – most teachers aren't given this kind of flexibility to implement this kind of project
  - Projects, if designed poorly, can be horrible – also can be over the top
  - Really cool – time constraints?
  - All HW – checked in weekly
  - Learning by doing
  - Both of these (#18 & 19) integrate the ideas from the other slides
  - Project learning is the best way to learn
  - Great interdisciplinary project
  - Yes but can be applied in other areas too
  - All curriculum should look like this
  - Realistic projects
  - In HS we are responsible for ourselves and that is it, but in real life almost everything is collaborative work
  - Students application of skills integrated by their passion create lifelong learning
  - Real world experiences
  - Good example of PBL
  - Projects are the future of learning
  - Interdisciplinary
  - Sometimes projects are the most efficient – less stress
  - Projects can often assess comprehension better than tests
  - If the French improved ok
  - Good to incorporate many things – but projects we have done have been time crunched and very stressful

### 19 Design Thinking, Making Things to Learn

- It's better to do things with your hands, better than letting machines do it for us
- Need more than just physical learning
- Learning by doing
- Both of these (#18 & 19) integrate the ideas from the other slides
- Making things can help but it is very impractical
- Feeds different learners
- Using hands to learn

- Satisfaction
- Intrigued by integration of vo-tech and academics
- This is why kids should be encouraged to take notes with pen and paper. Typing leads to reduced comprehension and retention
- Processes shown through this curriculum
- Hands-on learning can help students retain information
- Making with a student-directed purpose, not just because making is new buzz
- Goal focused

### 20 20<sup>th</sup> Century Schools

- Outdated model
- Interdisciplinary structure informs learning culture
- Important to have
- Rooms too small for productive learning
- It's very important for buildings to allow occupants to feel oriented and not bombarded with visual or acoustical chaos
- Still lots of good reasons for traditional classrooms

### 21 21<sup>st</sup> Century Schools

- Gives different experiences
- Smaller spaces
- Flexible
- Not realistic
- This is good!
- Focus on relationships!
- All learning not at school
- Small learning communities
- Appropriate sized classes that promote creativity
- Not necessarily the best but could be efficient for more collaborative learning
- Proper space encourages active learning
- It's very important for buildings to allow occupants to feel oriented and not bombarded with visual or acoustical chaos
- Different sized classrooms
- We might regret this down the road
- More collaborative; fluid, flexible spaces

### 22 Safety + Security in 21<sup>st</sup> Century Schools

- Better protection





## Ch 5.1 Workshop Notes Day 1

- More school resource officers
- More exits?
- Needs to be extremely well organized
- Sad our culture has made this necessary
- Not really an issue right but it is always important
- Student safety is the #1 priority
- It's very important for buildings to allow occupants to feel oriented and not bombarded with visual or acoustical chaos
- Don't neglect evacuation routes, even during power outages
- Overstated hyperbolic media-fueled frenzy
- From lockdown to guiding of exit safety for kids and staff and parents (visitors)
- Accessibility (language, ADA)
- Intuitive – amount of training required

### 23 Flexible, Varied, Brain Based Furniture

- Keeps engagement
- Some people need to move
- Like having everything on wheels with locks
- Get away from chairs altogether – but focus on versatile movement and space – dividers – as much white-board as possible
- Students are engaged when comfortable
- Many students need different seating
- Although not all teachers would change teaching
- Important
- Opens up all kinds of possibilities
- Adds to stimulating and varied environment
- Allows for the brain to stay alert
- Can let students feel more comfortable but can also be a distraction
- It's very important for buildings to allow occupants to feel oriented and not bombarded with visual or acoustical chaos
- Easy to implement and change – adaptable
- Chairs that have a table can go to the side for ASL classes
  - Able to move the table up and down so you can see everyone sign and also able to do work
- Flexible – a variety of seats for students' needs
- Casters
- Furniture built for learning

### 24 21<sup>st</sup> Century Learning Studios

- Again students stay engaged with the class
- Need to be aware of accessibility when looking at furniture; also ? re: large amount of glass
- Access for “ADA” children
- Learning studios
- Good lighting, studio model
- Visible learning is great
- Very good
- Need to start with SEL
- LOVE this concept
- Love it
- Easier for teachers and students
- Environment can create productive learning
- Too much glass is a fad
- It depends

### 25 Teacher Planning Centers

- I'm not a teacher
- I like the idea of teachers having the common space to plan but big issues with the idea of “teams” or 4 teachers teaching same cohort all day
- Don't like what was presented
- Knowing kids
- Everyone needs to be on same page
- Get help from people that they feel connected to
- Careful – needs to be inviting
- I understand it but I don't like it
- Think this really depends on teacher dynamics – would require major shift in attitude/professional expectations
- Don't pick on math though.
- Plan yes but need solo time too
- Allows for more collaboration/better learning
- Communication between teachers is essential!
- Collaboration by example
- Teacher planning centers but not for teachers in a class
- Interdisciplinary/cooperative teaching (pod-like?)
- Have to take care of quality of work at the staff/teachers level first in order to better serve the kids
- Teacher collaboration







## Ch 5.1 Workshop Notes Day 1

### 26 Small Learning Communities

- Students need more space for group projects
- Like Pods but not design
- Small learning commons
- Like this but important to learn from guidelines (i.e. ADA requirements)
- Need to be connectable
- Some subject areas seem left out
  - "Core subjects" prioritized?
- I like this idea of Ipswich
- Creates a sense of tight-knit community
- Go visit Ipswich, MA school to see how teachers like it now
- A place where social workers, etc and a nurse in one area so it's easy for them and the kids to find them

### 27 Flexible Platform for Change

- Classrooms need to be closer together because students will be late if too far apart
- Choice for future years
- How to think about ways to incorporate changes in future
- Trends in teaching; buildings that can "morph"
- Need ability to re-think
- Crucial in changing society
- Need adaptability
- Increased enrollment
- Need to think more about this...
- Figure out what works for us
- Change is a constant
- Offers choice
- Schools need to be open to change
- To feel connected to a place, you need to know how things relate to each other spatially, to have a sense of direction
- Flexible – being able to arrange teaching and learning environs to meet needs at the moment – interdisciplinary flexibility too
- 100 years
- By academy vs. subject
- Flexible spaces

### 28 End of the Library as We Know It Today

- They have more space
- Like "Learning Commons"

- Like some aspects of central location but how would you staff if repeated in many areas
- Grade level areas or content areas
- Yes! People need to feel free to use this space
- It would depend – are there some quiet areas?
- Loo at Wellesley High School
- Yes Common learning hallways
- This is how they might work in future
- I love traditional libraries! Great for deep thinking, introspection and introverts. Places of peace
- Center NH model!
- Sometimes people will disrupt the quietness of the library
- Everyone needs to be able to easily access the library
- I like the library as corridor/common area design
- More central, more common
- Quiet
- Like idea of integration and multi-purpose
- Accessibility

### 29 End of the Cafeteria as We Know It Today

- Students have more space
- Stop with the steps!! Literally not accessible
- Not accessible for all
- Table levels different
- Like but not as important – library gets lots of use already
- Less "cliques"
- Combination of 28 + 29 would be awesome
  - Put resources + learning together
- Make it freer + free-flowing – let kids go anywhere
- Love functional stairs
- Yes. CLH = cafeteria
- More comfortable seating, larger space
- No need to combine cafeteria + library, lunch can already be eaten in the library
- Mixing eating areas with other spaces (like libraries) is potentially life-threatening for kids with severe food allergies
- I like the varied seating
- Integrated space for assembly – acoustics
- Like idea of integration and multi-purpose
- Noise



## Ch 5.1 Workshop Notes Day 1

### 30 End of Isolated Teaching: Blue Point

- Might have too many teachers
- Like the ability for teachers to be able to collaborate
- How can we teach collaboration if we are endlessly working in isolation
- Yes! Have classes integrate + mix – teachers can help each other
- Mix and match 30, 31 + 32
- Teacher collaboration should happen but it's not essential
- Provisions for privacy, security, and safety equally to all users without stigma

### 31 End of Isolated Teaching: Forest Ave

- It might help
- Effective learning space
- Resistance – questions of change
- Inspiration for flexible platform, for change
- Yes!

### 32 End of Isolated Teaching/ Integrated Teaching/ PBL: New Tech

- Once again maybe too many teachers but I do like the hands-on part
- Alignment and combine teachers/2 per
- Like the flexible, innovative learning spaces
- Teachers with different teaching styles could collaborate
- I like this a lot
- Interesting concept – we would have to change how we operate?
- Research-based
- Real world learning
- Project based learning is often more effective – preparation for real world
- Don't confuse flexibility with indecisiveness (or vice versa)
- Pros + Cons (Also, are these students comparable to neighboring public school students which stats compared them to or are they self-selected?)

### 33 End of the Classroom as We Know it Today: Wooranna Park + Milan HS Center for Innovative Studies

- I do like the amount of space
- Center for Innovative Studies at Milan HS

- Yes, need to improve upon what a classroom is
- Rethinking
- Distracting
- Fun
- Variety promotes engagement

#### Other comments:

- Most of this views students as a product to mold for entry into a workforce. What is missing is a view of developmental stages of the children as they grown and an awareness of developing a self-advocate, self-determined curious learner. What about daily living skills and financial literacy?
- Loop up the South Korean school structure. Dalton School in China not stolen a branch – look it up!
- Jon's Amazon experience – Adaptable, flexible, self-teaching, motivated
- 60% of the jobs 10 years from now haven't been invented yet
- Train kids how to think
- ADA!! Seems to be an afterthoughts, literally showing us spaces as ideas that do not allow for those with mobility impairment – incredibly disappointing
- Need to think of the concept(s) and not the specific examples
- Re: #'s 30, 31 + 32
  - All of these concepts would require major shift in teaching and learning approach – can't just give different furniture/space without significant changes
- Re: #'s 30, 31, 32, 33
  - Major commitment to changes in how we educate students than our current practices
- Collaboration = important but what about individual work?
- Glacier Kalispell Montana HS – great concept!
- Global point: There are some serious trade-offs to moving toward these designs
- Re #'s 31, 32 and 33
  - All related to #25 – staff experience + productivity
- Noise concerns
- Accessibility concerns - ADA





## Ch 5.1 Workshop Notes Day 1

### 21<sup>ST</sup> CENTURY LEARNING MOST IMPORTANT ISSUES

Workshop participants, working as Table Teams, were asked to reach consensus on the three most important (effective) ideas for our school, and identify why they believed as they did.

Their thoughts were:

#### TABLE TEAM 1

##### Two Most Important

###### Part 1

- #2 Student Engagement
  - Self-evident
  - May need a shift in culture to increase engagement
  - Any type of learning must start with an interest in learning
- #13 Deeper Learning
  - Preparing them for an uncertain future
  - Deeper learning includes 3, 4, 7, 8, 9, 10, 14, 16, 18, 19
  - Having tools and skills not just knowledge

###### Part 2

- #27 Flexible Platform for Change
  - Need to be adaptable to future educational styles
  - Versatility in education makes education more engaging and powerful
- #22 Safety + Security in 21<sup>st</sup> Century Schools

#### TABLE TEAM 2

##### Two Most Important

###### Part 1

- #7 Social/Emotional Learning + #8 Multiple Intelligences
  - Important for teachers to form relationships with students
  - Students need social skills
- #13 Deeper Learning (Project based learning) + 21<sup>st</sup> Century Skills
  - Engagement comes with deeper learning

###### Part 2

- #27 Flexible Platform for Change



**Educational Visioning** Sharon High School Sharon, MA  
Frank Locker Educational Planning

- Why “things change”
- #22 Safety + Security in 21<sup>st</sup> Century Schools
  - Always in forefront
- Plus Universal Design

#### TABLE TEAM 3

##### Two Most Important

###### Part 1

- #2 Student Engagement
  - Engagement promotes retention
- #13 Deeper Learning and # 10 Integrated arts
  - #13 Students must focus on life skills, not just rote memorization
  - #10 For cultural, contextual, and creative connections across subject areas + disciplines

###### Part 2

- #22 Safety + Security in 21<sup>st</sup> Century Schools
- #23 21<sup>st</sup> Century Learning Centers
- #24 Teacher Planning Centers
- #25 Small Learning Communities
- #26 Flexible Platform for Change
- #27 End of the Library as We Know It Today
- #28 End of the Cafeteria as We Know It Today
  - Comments for above:
    - ✓ Open to change
    - ✓ Adapt learning
    - ✓ Prioritize important resources

#### TABLE TEAM 4

##### Two Most Important

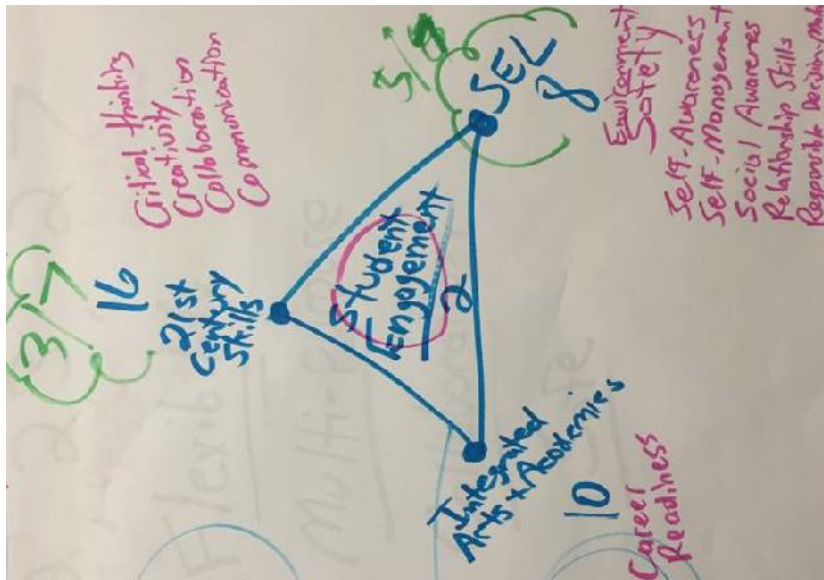
###### Part 1

- #2 Student Engagement
- # 16 21<sup>st</sup> Century Skills
  - Critical thinking
  - Creativity
  - Collaboration
  - Communication
- #10 Integrated Arts + Academics
  - Career readiness
- # 8 Social/Emotional Learning
  - Environment



## Ch 5.1 Workshop Notes Day 1

- Safety
- Self-awareness
- Self-management
- Social Awareness
- Relationship skills
- Responsible decision makers



- Part 2**
- #22 Safety + Security in 21<sup>st</sup> Century Schools
  - #23 Flexible, Varied, Brain Based Furniture and
  - #27 Flexible Platform for Change
    - Flexibility
    - Multi-purpose

- Collaboration
- Safe

### TABLE TEAM 5 Two Most Important

#### Part 1

- #2 Student Engagement
  - A student who is interested in what they are learning will be more likely to pay attention and work hard in such a class
- #8 Social/Emotional Learning + #16 21<sup>st</sup> Century Skills
  - Necessary to become an engaged and productive member of society
  - (but actually knowing some content is important too)

#### Part 2

- #23 Flexible, Varied, Brain Based Furniture
  - Easy to integrate change
- #27 Flexible Platform for Change
  - Planning for future

### TABLE TEAM 6

#### Two Most Important

#### Part 1

- #2 Student Engagement
  - Enjoyment of learning
  - Lifelong learners
- #16 21<sup>st</sup> Century Skills + #8 Social/Emotional Learning
  - Critical Thinking
  - Ethical/moral decision making

#### Part 2

- #23 Flexible, Varied, Brain-Based Furniture
  - To remain focused
  - Activity-appropriate seating
- #25 Teacher Planning Centers
  - To support collaboration
- #22 Safety + Security in 21<sup>st</sup> Century Schools
  - Use ID cards – entry
- #27 Flexible Platform for Change





## Ch 5.1 Workshop Notes Day 1

### TABLE TEAM 7 Two Most Important

- Part 1**
- #2 Student Engagement
    - Build passion to learn
    - Create lifelong learners
    - Students need to be engaged to learn
  - #18 Design Thinking + #19 Project Based Learning
    - Develops creativity + higher level learning
    - Student's interests drive learning
  - #8 Social/Emotional Learning
    - Teaching the entire student
    - Building resiliency to everyday stressors
    - Develop risk taking skills, awareness, and confidence
- Part 2**
- #22 Safety + Security in 21<sup>st</sup> Century Schools
  - #27 Flexible Platform for Change
    - Shifts lay outs
    - Meet kids where they are

### SUMMARY

#### Most Important

Shown here in order of number of citations:

#### Part 1

- Student Engagement (cited by 6 of 7 Table Teams)
- Social/Emotional Learning (5 of 7 Table Teams)
- 21<sup>st</sup> Century Skills (3 of 7)
- #13 Deeper Learning (3 of 7)

#### Part 2

- #27 Flexible Platform for Change (cited by 7 of 7 Table Teams)
- #22 Safety + Security in 21<sup>st</sup> Century Schools (6 of 7 Table Teams)
- #23 Flexible, Varied, Brain Based Furniture (5 of 7)

## DEFINING STUDENT SUCCESS IN LIFE

Workshop participants were given this challenge as a homework assignment:

### DEFINE STUDENT SUCCESS IN LIFE

- A. Define success in life for our students.  
B. What do our students need from us to be successful in life?
1. Define the kind of place our future school should be.
  2. Identify what educators should be doing.
  3. Identify what students should be doing
    - a. In school.
    - b. And out of school.
  4. What should parents be doing?

Their responses were:

### Success

#### Table Team 1

##### A) Define success in life for our students

- Well-rounded, happy and proactive
- Good character

##### B) What do our students need from us to be successful in life?

1. Define the kind of place our future schools should be
  - ✓ Safe, universal, flexible, challenging, welcoming, full of opportunities, inclusive
2. Identify what educators should be doing
  - ✓ Facilitate unique chances to explore and develop
  - ✓ Eliminate grades?
  - ✓ Facilitate exploration
  - ✓ Provide paths
  - ✓ Positive role models
3. Identify what students should be doing
  - a. In school
    - Deciding their own paths, self-reflecting, exploring, learning to communicate
  - b. And out of school
    - Positive role models
    - Physically, social and mindful activities
    - Not homework
    - Learn to disconnect and live unstructured







- Learn how to play without structure/guidance
- 4. **What should parents be doing?**
  - ✓ Lightening up
  - ✓ Too much structure right now
  - ✓ Allow kids to fail
  - ✓ Be a mentor not a boss
  - ✓ Stop life engineering

## Table Team 2

- A) **Define success in life for our students**
  - Personally satisfied with one's self, happiness, willingness to take risks to learn + grown to one's potential
- B) **What do our students need from us to be successful in life?**
- 2. **Define the kind of place our future schools should be**
  - ✓ Engaging, safe (emotionally and physically)
  - ✓ Student centered (meet every interest/passion)
  - ✓ Welcoming/inclusive
- 3. **Identify what educators should be doing**
  - ✓ Relate, inspire, collaborate
  - ✓ Provide mentor/learning paths
- 4. **Identify what students should be doing**
  - a. **In school**
    - Be engaged, collaborate, challenge themselves, manage stress
    - Learning
      - ☐ Ethically
      - ☐ Hands on
      - ☐ Life skills
      - ☐ Interests
  - b. **And out of school**
    - Time with family
    - De-stress (exercise, extra-curricular activities, time away from academics)
- 5. **What should parents be doing?**
  - Support student to be self-reliant and a self advocate
  - Acceptance

## Table Team 3

- A) **Define success in life for our students**
  - Pride in what they do and waking up eager and happy

- Ability to tolerate change
- B) **What do our students need from us to be successful in life?**

Good role models, life skills, confidence, self-esteem and support to reach potential

  1. **Define the kind of place our future schools should be**
    - Educators - inspiring
  2. **Identify what educators should be doing**
    - ✓ Bring out the best in each child
    - ✓ Supportive atmosphere
  3. **Identify what students should be doing**
    - a. **In school**
      - Effort at learning
      - Cultivate abilities/interests
      - Develop as a person
    - b. **And out of school**
      - No response
  4. **What should parents be doing?**
    - Involved but trust the process

## Table Team 4

- A) **Define success in life for our students**
  - Capacity to enjoy life and make a meaningful/secure living
- B) **What do our students need from us to be successful in life?**
  1. **Define the kind of place our future schools should be**
    - ✓ Abilities/encouragement/support to be happy/healthy
  2. **Identify what educators should be doing**
    - ✓ School should be place where students can hone/develop the above
    - ✓ Educators facilitate above opportunities
  3. **Identify what students should be doing**
    - a. **In school**
      - Vet information
      - Be resourceful/creative
      - Communicate and collaborate in different ways
    - b. **And out of school**
      - Students should build capacities
  4. **What should parents be doing?**
    - Parents should provide unconditional support

## Table Team 5

- A) **Define success in life for our students**







## Ch 5.1 Workshop Notes Day 1

- Able to support self and family
  - Self-fulfillment in all you do
  - Contributor to society
- B) **What do our students need from us to be successful in life?**
1. **Define the kind of place our future schools should be**
    - ✓ Inviting, well-lit, good circulation, well-defined spaces, natural light. No atrium!
    - ✓ Financial literacy
    - ✓ Life skills
    - ✓ Smarter about homework
  2. **Identify what educators should be doing**
    - ✓ Seeking appropriate challenges
    - ✓ Focus on personal growth
    - ✓ Pursuing interests
    - ✓ Seek opportunity for growth
  3. **Identify what students should be doing**
    - a. **In school**
      - Time management
      - Pursue interests – NOT resume building
    - b. **And out of school**
      - Students should build capacities
      - Seeking opportunities for growth
  4. **What should parents be doing?**
    - Broaden definition of success
    - Put grades in their proper place
    - College admission is not a referendum on you as a parent
    - Let them fail – teach them how to respond

### Table Team 6

- A) **Define success in life for our students**
- \$, college, family, happiness fulfillment
- B) **What do our students need from us to be successful in life?**
1. **Define the kind of place our future schools should be**
    - ✓ More possibilities beyond college path
  2. **Identify what educators should be doing**
    - ✓ Listening, engaging students
  3. **Identify what students should be doing**
    - a. **In school**
      - Learning to be positive contributors, advocating, taking responsibility

- b. **And out of school**
  - Not a lot of outside work – more leisure
4. **What should parents be doing?**
  - Support, encourage creativity and enjoyment

### Table Team 7

- A) **Define success in life for our students**
- Doing a job that makes you happy
  - Meaningful and positive contributors to society
  - Know what you love
- B) **What do our students need from us to be successful in life?**
1. **Define the kind of place our future schools should be**
    - ✓ Create a physically and emotionally safe place for learning
  2. **Identify what educators should be doing**
    - ✓ Relationships with students to promote engagement
      - Inclusive
      - Flexible
      - Community oriented
      - Safe
      - Support multi-opportunity
  3. **Identify what students should be doing**
    - a. **In school**
      - Do your best and be positive
    - b. **And out of school**
      - Try different things and develop skills in other ways
  4. **What should parents be doing?**
    - Setting healthy expectations
    - Helping kids be resilient

## RANDY NELSON: LIVING + WORKING IN THE COLLABORATIVE AGE

In his video, Randy Nelson, former Dean of Pixar University, outlined some ideas his company has adopted as a part of its search for creating a highly collaborative workplace. The Visioning Team identified issues that were relevant to Sharon High School.





## Ch 5.1 Workshop Notes Day 1

They included:

- At Sharon High School
  - Interested not interesting
  - Factors that lead to interested are stick not carrot
  - Stress mental problems
- Students need to know
- Emphasis on failure
  - Innovators – failure recovery not risk avoidance
- Kids choose electives
  - Lots AP – college
  - Lots avoid courses they might get low grades in
- We do not talk re: character development
- Parent pressure
  - Want kids to get good grades
- Parent pressure (do not fail)
  - Adds to student stress
- Emphasis on grades is much more than 20-30 years ago
- Happens earlier than high school
  - Kids in ES focus on academic after school activities
- Lots of role model schools
  - High standards
  - Other assessments
- Parent: we need to be educated
- Tech tools
  - Stress
    - Power school
    - Schoology
- Students add their own stress
- Students think college is only way to succeed in life
  - Other pathways?
- Many happy plumbers

## REVIEW OF CURRENT PROGRAMS

The Visioning Team was given this challenge:

### PROGRAM REVIEW

Here is a starter list of topics, covering types of learners and learning modalities currently at our school. This list is not complete. Brainstorm with your table team to add others that are worth exploring.

### PICK THE HARDEST ONE (and a second choice)

#### TOPICS: LEARNERS, MODALITIES, + RELATIONSHIPS

1. Students with special needs: Special Education
2. Students with special needs: Talented + Gifted
3. METCO
4. Foreign Exchange, foreign languages
5. Advanced Placement, AP
6. Wellness
7. Students who aspire to leadership positions in careers ASAP; no college
8. Students who we fear will drop out of school
9. Students who are bored/disengaged with school
10. Multiple intelligences in core courses: musical learners, bodily/kinesthetic learners and/or visual learners
11. Social emotional learning in individual classrooms
12. Social emotional learning as a school-wide practice
13. Critical thinking/problem solving skills in core courses
14. Interdisciplinary teaching/learning among core classes
15. Core academics in applied/exploratory classes
16. Active/applied/exploratory learning in academic classes



## Ch 5.1 Workshop Notes Day 1

Each table will pick two of these topics to review. All items are to be addressed.

### DIRECTIONS:

On your flipchart(s), record your table team's answers to the following questions:

1. Identify the number + the topic
2. Is this topic something we do right now at our schools?
3. If so, how/ where/ in what way do we currently do this?
4. Is this topic important? How much?
5. How well do we do this?
6. Should we improve our programs/ service/ organization focused on this topic? Yes or No?
7. If "Yes", how do we do that? If "No", why not?

Responses were:

### #1 STUDENTS WITH SPECIAL NEEDS: SPECIAL EDUCATION – Table Team 5

1. Identify the number + the topic
  - #1 Special Education
2. Is this topic something we are serving right now at our school?
  - Yes
3. If so, how/where/in what way do we currently serve the topic?
  - Academic lab (1 period/day)
  - Individualized accommodations
  - Push-in and co-teaching
  - Unified sports
4. Is this topic important? How much?
  - Yes - completely
5. How well do we serve the topic?
  - Excellent student culture, welcoming
  - Teachers feel supported
  - Always room for growth
  - Constantly changing needs



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6. Should we improve our programs/service/organization focused on this topic? Yes or No?
  - Yes
  - All electives plus ac lab?
  - Universal design

7. If "Yes", how do we do that? If "No", why not?
  - Reconsider schedule

### #2 STUDENTS WITH SPECIAL NEEDS: GIFTED + TALENTED Not selected.

### #3 METCO

#### TABLE TEAM 4

1. Identify the number + the topic
  - #3 METCO
2. Is this topic something we are serving right now at our school?
  - Yes – METCO Participating District since 1968
    - Not income or race-based program
3. If so, how/where/in what way do we currently serve the topic?
  - Pull-out program 1<sup>st</sup> through 8<sup>th</sup> that meets once a week (here!)
4. Is this topic important? How much?
  - Important to Sharon's identity
5. How well do we serve the topic?
  - We're committed, but...
    - Students don't feel like they belong
    - Sharon students vs METCO students
6. Should we improve our programs/service/organization focused on this topic? Yes or No?
  - Yes
7. If "Yes", how do we do that? If "No", why not?
  - Educator/community education about program
  - More transportation
  - Bring back host families

### #4 FOREIGN EXCHANGE, FOREIGN LANGUAGES Not selected.



## #5 ADVANCED PLACEMENT, AP

Not selected.

## #6 WELLNESS

Not selected.

## #7 STUDENTS WHO ASPIRE TO LEADERSHIP POSITIONS IN CAREERS ASAP: NO COLLEGE

Table Team 7

1. Identify the number + the topic
  - #7 Students who aspire to leadership positions in careers ASAP: no college
2. Is this topic something we are serving right now at our school?
  - No
3. If so, how/where/in what way do we currently serve the topic?
  - N/A
4. Is this topic important? How much?
  - Yes
    - All students even college bound students could benefit from it
5. How well do we serve the topic?
  - n/a
6. Should we improve our programs/service/organization focused on this topic? Yes or No?
  - Yes
7. If "Yes", how do we do that? If "No", why not?
  - Add programming + make relationships with businesses
    - Life skills
    - Accounting/legal/business courses
    - Entrepreneurial academy/design
    - Intern/externships
    - Incubator/competition
    - Mentorships – partnering with businesses + colleges

## #8 STUDENTS WHO WE FEAR WILL DROP OUT OF SCHOOL

Not selected.

## #9 STUDENTS WHO ARE BORED/DISENGAGED WITH SCHOOL

Table Team 1

1. Identify the number + the topic
  - #9 Students who are bored/disenaged with school
2. Is this topic something we are serving right now at our school?
  - N/a
3. If so, how/where/in what way do we currently serve the topic?
  - Who?/Why
    - Struggling academically
    - Disenfranchises
      - Feel marginalized
      - Are marginalized
    - Not challenges enough
    - Wrong learning style
      - Teachers not meeting learning needs of students
    - Non-college bound
    - Non-traditional learners
    - One strength student (single subject interest)
    - Non-binary LGBTQ students
      - Don't "fit" economically
4. Is this topic important? How much?
  - Yes, very
5. How well do we serve the topic?
  - No response
6. Should we improve our programs/service/organization focused on this topic? Yes or No?
  - Yes
7. If "Yes", how do we do that? If "No", why not?
  - Current
    - SEL
    - Peer tutors/writing workshops
  - Future
    - Ongoing SEL
    - Diversified program of studies
    - Make students aware of outside opportunities at earlier age (ex: inform parents + students of vocational options (voc. school))



## Ch 5.1 Workshop Notes Day 1

- Provide internship options, partner with businesses
- Flexible schedule
  - Am/pm/evening classes
- Teachers communicate re: students' needs collaborate to better meet students' needs
- Community building activities in classes/school wide
- Integrating cultural/other competency in curriculum

### #10 MULTIPLE INTELLIGENCES IN CORE COURSES; MUSICAL LEARNERS, BODILY/INESTHETIC LEARNERS AND/OR VISUAL LEARNERS

Not selected.

### #11 SOCIAL EMOTIONAL LEARNING IN INDIVIDUAL CLASSROOMS

Not selected.

### #12 SOCIAL EMOTIONAL LEARNING AS A SCHOOL-WIDE PRACTICE

#### TABLE TEAM 2

1. Identify the number + the topic
  - #12 Social Emotional learning as a school-wide practice
2. Is this topic something we are serving right now at our school?
  - Somewhat/not much
3. If so, how/where/in what way do we currently serve the topic?
  - Wellness classes
  - Assemblies
  - Meeting with guidance
  - Surveys
4. Is this topic important? How much?
  - Yes
5. How well do we serve the topic?
  - Need more formal programs
6. Should we improve our programs/service/organization focused on this topic? Yes or No?
  - Yes

7. If "Yes", how do we do that? If "No", why not?
  - SEL curriculum
  - Student to student mentoring
  - Advisory relationships
  - Access to physical space
  - Access to exercise, music, art to de-stress
  - Staff training
  - Smaller guidance caseloads
  - School-wide language

### #13 CRITICAL THINKING/PROBLEM SOLVING SKILLS IN CORE COURSES

#### TABLE TEAM 6

1. Identify the number + the topic
  - #13 Critical thinking/problem solving skills
2. Is this topic something we are serving right now at our school?
  - It's happening but we could do better
    - Greater synthesis of ideas
3. If so, how/where/in what way do we currently serve the topic?
  - Discussions, analytical writing, TSO
4. Is this topic important? How much?
  - Yes
    - Beyond the classroom
    - Issues in the school
5. How well do we serve the topic?
  - Academically – yes
  - Outside class – not as much
6. Should we improve our programs/service/organization focused on this topic? Yes or No?
  - Yes – school wide
7. If "Yes", how do we do that? If "No", why not?
  - More depth

### #14 INTERDISCIPLINARY TEACHING/LEARNING AMONG CORE CLASSES

Not selected.



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## Ch 5.1 Workshop Notes Day 1

### #15 CORE ACADEMICS IN APPLIED/EXPLORATORY CLASSES

Not selected.

### #16 ACTIVE/APPLIED/EXPLORATORY LEARNING IN ACADEMIC CLASSES

Not selected.

#### #0 EL

##### TABLE TEAM 3

1. Identify the number + the topic
  - #0 EL
2. Is this topic something we are serving right now at our school?
  - Yes
3. If so, how/where/in what way do we currently serve the topic?
  - EL teacher and...SEI "endorsed" teachers
  - Access to curriculum
4. Is this topic important? How much?
  - Yes
    - Many EL's in our school(s)
5. How well do we serve the topic?
  - Questions
    - Who are the stakeholders
    - Staffing levels
    - Service frequency
6. Should we improve our programs/service/organization focused on this topic? Yes or No?
  - Yes
7. If "Yes", how do we do that? If "No", why not?
  - Stay updated with staff + resources to assist our diverse L's

## LEARNING MODALITIES

This was the challenge:

### LEARNING MODALITIES

Here is a list of learning modalities. Which are most appropriate for core learning? Which ones should we be using most at our future school? Which ones the least?

#### Personal reflection:

- Personally rank them in order of appropriateness for learning
- Focus on the 4 most and the 2 least appropriate
  - Appropriateness implies extensive application

#### Group consensus discussion:

- Then debate with your Table Team members. Persuade them if you can

#### Then vote with your dots:

- Vote your personal opinion. No need to pay attention to your table mates
- Green dots for the top 4. Red for the bottom 2

	4	Most	2	Least
A. Direct teaching				
B. Lecture (sustained direct teaching)				
C. Seminar instruction				
D. Teacher team/synchronous collaboration				
E. Independent study				
F. Small group work/student collaboration				
G. Peer tutoring/teaching				







## Ch 5.1 Workshop Notes Day 1

- H. Internships \_\_\_\_\_
- I. Service learning \_\_\_\_\_
- J. Project-based learning \_\_\_\_\_
- K. Making things, prototyping, STEM, STEAM \_\_\_\_\_
- L. Interdisciplinary learning \_\_\_\_\_
- M. Thematic/integrated learning \_\_\_\_\_
- N. Integrated arts learning \_\_\_\_\_
- O. Social/emotional learning \_\_\_\_\_
- P. Student presentations \_\_\_\_\_
- Q. Computer-based: adaptive learning, games \_\_\_\_\_
- R. Blended learning/flipped classroom \_\_\_\_\_
- S. Distance learning \_\_\_\_\_
- T. Technology with mobile devices \_\_\_\_\_
- U. Technology with desktop devices \_\_\_\_\_
- V. Other \_\_\_\_\_

The responses were:

Learning Modalities Responses as presented	Most	Least
A. Direct teaching Responses as presented	16	4
B. Lecture (sustained direct teaching)	1	20
C. Seminar instruction	5	4
D. Teacher team/synchronous collaboration	7	1
E. Independent study	5	4
F. Small group work/student collaboration	20	
G. Peer tutoring/teaching	5	5
H. Internships	7	
I. Service learning	5	1
J. Project-based learning	21	
K. Making things, prototyping, STEM, STEAM	10	
L. Interdisciplinary learning	12	
M. Thematic/interdisciplinary learning	9	
N. Integrated arts learning	3	2
O. Social/emotional learning	8	
P. Student presentations	6	3
Q. Computer-based: games, programs		7
R. Blended learning/flipped classroom	7	4
S. Distance learning/videoconferencing		11
T. Technology with mobile devices	2	4
U. Technology with desktop devices	2	3
V. Other		2



## Ch 5.1 Workshop Notes Day 1

Learning Modalities RANKING OF RESPONSES	Most	Least	RANK
J. Project-based learning	21		1
F. Small group work/student collaboration	20		2
A. Direct teaching Responses as presented	16	4	3
L. Interdisciplinary learning	12		4
K. Making things, prototyping, STEM, STEAM	10		5
M. Thematic/interdisciplinary learning	9		6
O. Social/emotional learning	8		7
H. Internships	7		8
D. Teacher team/synchronous collaboration	7	1	9
I. Service learning	5	1	10
P. Student presentations	6	3	11
R. Blended learning/flipped classroom	7	4	12
C. Seminar instruction	5	4	13
E. Independent study	5	4	14
N. Integrated arts learning	3	2	15
G. Peer tutoring/teaching	5	5	16
U. Technology with desktop devices	2	3	17
T. Technology with mobile devices	2	4	17
V. Other		2	19
Q. Computer-based: games, programs		7	20
S. Distance learning/videoconferencing		11	21
B. Lecture (sustained direct teaching)	1	20	22



## AGENDA

The second Visioning Workshop was held on 28<sup>th</sup> September 2018.  
Notes of all activities follow:

- School in 2038
- What to Teach? How to Teach?
- Integrating the Curriculum
- Blended Learning/Flipped Classroom
- Mastery/Adaptive Learning
- Project-Based Learning
- Making Things to Learn
- School Structure 1: Overall
- School Structure 2: Internal



## Workshop Notes Day 2

### SCHOOL IN 2038

Visioning Team participants had looked into the long-term future as homework. This was the challenge:

### DEFINE SCHOOL IN 2038

Answer as many of these questions as needed to create your concept of future school.

1. What will students at our school be doing in 20 years?
  - a. What is “a day in the life of a student?”
  - b. If they can learn content through the internet, why come to school?
2. What will faculty/staff at our school be doing in 20 years?
  - a. What is “a day in the life of a teacher?”
  - b. What is the teacher role?
3. Community?
  - a. How will the community be involved in our school? How will community use our school?



## Ch 5.2 Workshop Notes Day 2

- b. How will our school be involved in the community? Will learning happen there? How?

4. Facilities: What does this imply for facilities?

Here is a record of their individual thoughts:

### 1. WHAT WILL STUDENTS AT OUR SCHOOL BE DOING IN 20 YEARS?

#### A. WHAT IS "A DAY IN THE LIFE OF A STUDENT?"

- College schedule
- Internships
- Untraditional work
- Interviews
- Individualized
- Students may not come to school at traditional hours and may not stay on "campus all day"
- They might have flexible hours (same am/pm/evening classes) + be involved in off-campus experiences (internships, field trips, on-site learning)
- Students at our school come every day excited to learn in open group projects and hang out with their friends.
- Working jobs?
- Hopefully we will have moved education to more hands-on learning with less emphasis on standardized test and data collection and more toward life experiences and the humanities
- Advisory – graduation requirements
- Long school day
- There will be no snow days!
- There will be "IEP" for all students
- Varied start/end time based on needs/strengths/weaknesses/interests
- Enter school, get to their first period class then during eagle block be free to go anywhere on school grounds, end of the day
- Learning will take place in + out of school. Open walls
- Anytime, anywhere learning. Learning will be assessed regardless of where it happens. Learning groups will be flexible...
- Who is a student? Everyone – kids and adults
- Open campus

- Internships
- After school activities for all
- State of the art technology
- Learning new concepts/skills and apply in project based learning to adapt in everyday world situation
- Children may be on different tracks/different modes of learning
- More college like – time flexibility
- Similar – more integration, more PBL
- Lunch block
- Students' schedules will revolve around their individual learning goals, which likely would include a combination of foundational learning courses, interdisciplinary project-based courses, and specific skill or academic areas that they may choose to focus on in more depth (with the guidance of faculty)
- The foundational + interdisciplinary courses would likely be scheduled at specific times, with the individualized areas of study scheduled around the other courses
- Rotating schedule
- Vocational opportunities
- Lunch blocks – too hard to focus – use for individualized time
- Time/opportunities to explore
- Open times
- Eve/day classes
- More flexibility with time
- Engaging curriculum in an environment geared to promote cooperation, collaboration and energy
- Open times for grabbing snacks; eating breakfast/lunch/dinner
- On-going classes – sort of college/university campus like
- Days/evenings
- More "academic" less like middle/high school as we know it now
- Students will be learning the basics as we all have but the manner in which we learn will be different
- The classroom as we know it will be gone
- The day:
  - ✓ Enter at homeroom time (8:00)





## Ch 5.2 Workshop Notes Day 2

- ✓ Have advisory period
- ✓ Go to class (rotating schedule like current)
- ✓ Have Eagle Black (open campus)
- ✓ Have classes
- ✓ Have lunch block (open campus)
- ✓ No more 90 minute classes
- ✓ No home work!
- Free schedule
- More incorporation of technology
- More inclusion
- Specialized classes aimed at sparking a career choice
- No homework!
- Less jam-packed schedule
- No books, less people
- "Pretty similar"
- Schedule – more choice, less structured
- Collaborating with other students
- Hopefully individual learning too
- More realistic schedule each day
- Teaching classes, less hours
- Studying history, psychology, literature, programming, science, philosophy, law, phys ed, art and other social communication skills
- Building robots, etc
- There will be AI adaptive technology
- Civics
- Learning how to resist misinformation/disinformation techniques which are always adapting and changing
- Less scheduled – can get in later
- More biological sensitive
- Competency based determination
- Some days at school, some at home, some at service or internship
- Digital ledger; choice; customized flow of work
- A day in the life of a student will likely be very different than a day in the life of a student now. Students will most likely become more efficient learners and will not have to take as many hours of school. They might enter workplace roles at a younger age to simulate the "real world". Outside of school, they will have more time for innovation and creativity

- Interact with other students, attend classes, study, do projects
- Students will submit very minimal paper homework.
- If they do not feel well, they have the ability to Skype into class, so they don't miss any assignments/notes
- Wake up too early. Check social media. Drag self to school. Perk up during second class period. Try to avoid getting called on. More social media. After school gets out, head home with too much homework. Social media. Fall asleep too late. Repeat
- Going to each classroom in different parts of the building
- Using computers at home and doing online classes
- A day in the life of students is school, extra-curricular, and homework, relaxing if time
- Self-directed learning, small group learning, online learning, science labs
- No idea
- Going to school learning new things in different ways.
- Having more space to sit and do projects or work as a group
- It could be a "non-traditional" day, one not based on an agrarian calendar
- It will likely not include a traditional college path trajectory
- Or environment - Students are already becoming more concerned about the environment than previous generations, and schools of the future might engage students in the global environment
  - ✓ Maybe schools are self-sustaining and students run it, with a farm as part of their school day
- Hanging out in school
- Taking special interest seminars around there core classes

### B. IF THEY CAN LEARN CONTENT THROUGH THE INTERNET, WHY COME TO SCHOOL?

- A human experience informs socio-emotional learning and sociability leads to better learning because the qualities of different people will build upon each other – can't communicate online the same was as in person







## Ch 5.2 Workshop Notes Day 2

- The internet/learning via computers cannot replace the relationships that students build with teachers and with other students
- Face to face interactions are necessary to prepare students for a world where they will create/maintain personal and professional relationships
- Students come to school to learn how to find content.
- The human experience!
- Social/emotional learning will always need to be in person!
- Because some kids are hands-on learners like me
- The 4 C's!
- Relationship = engagement!
- Must attend school to collaborate, socialize, communicate, share work and projects, direct contact with teachers
- Social connections + building interpersonal relationships/communication skills
- Need to reinforce empathic situations/skills
- Argh! Content is the enemy of innovation
- Students will come to school primarily for the relationships – both with their friends/peers, as well as for mentorship/guidance from faculty
- Students will also come for the ability to create, build and perform and develop skills in the process
- Back to basics always needed – social, collaboration, friends – human contact/connections
- Typewriters make a comeback!
- Research library, books make a comeback!
- Internet learning is not in depth learning – one needs the interaction of teacher and other students to fully understand concepts
- Human interaction
- Make friends
- Learn directly from teachers
- Hands-on learning
- Social/life skills
- Cool new building that has a great reputation in academic excellence
- Kids can't learn from internet – too distracting
- Social skills/contact

- Face to face interaction
- Because people are better than computers at teaching
- Maybe the internet will be a less broadly depended up and trusted source
- Specific office of online software and sites will likely be useful
- Human-to-human contact will be more important than ever for learning, for emotional health, and for social good and democracy to thrive
- Motivation, socialization
- Students will come to school for the social aspect.
- School will be a way to socialize with like-minded learners
- Personal interaction, theater and music, arts, athletics
- Kids need to go to school for the learning experience: interactions, collaboration, learning to be respectful and develop character
- Because you really need a “live” teacher – the internet will get you only so far. No!
- Online learning requires intense levels of motivation and self-discipline. It also does nothing to develop necessary interpersonal skills. Finally, the simple act of staring at a computer screen is not beneficial for human cognition
- I would rather that not happen. Kids are supposed to interact with other people and think of ideas to do in group work
- School helps develop social skills with other people
- The social part of informal interactions, access to support services, specially designed instruction
- Free/reduced lunch?
- Blended – hybrid online learning?
- Lots of junk on internet. Experts still needed for teaching content + facilitating group learning experiences + developing skills
- Because it's better to learn from a teacher and from other students
- To learn social skills
- To give teachers the opportunity to impart INSTRUCTION and DIRECTION and GUIDANCE in a way that computers can't





## Ch 5.2 Workshop Notes Day 2

- Obtain socialization skills

### 2. WHAT WILL FACULTY/STAFF AT OUR SCHOOL BE DOING IN 20 YEARS?

#### A. WHAT IS "A DAY IN THE LIFE OF A TEACHER?"

- Meetings with other teachers
- Discussions with students' psychologists
- Review of students' projects every other week
- Classes dominated by student group work
- Extra-curriculars after and before school
  - ✓ Reaching out to create internships
- Teachers may not come to school at traditional hours.
- They may have some time for large group instruction, some time for small group instruction, time for supervising students who are collaborating or working independently, and time to meet with colleagues to plan for learning, experiences/instruction and to discuss how to better meet the needs of students
- A teacher will teach their class then teach classes with other teachers. They have periods off and time to meet with students for student free time
- Working with students – guiding them in project exploration and experiential learning
- Rigor – balance, play, stress
- Project based teams – planning and teaching
- Connecting with content experts – real-time – online
- Set up for their classes and be prepared to walk around cause of the big room
- Learning facilitators, orchestrators, PBL scaffolding and coaching, much less direct instruction
- Groups of students flow in and out as do teachers
- Directing class on hands-on projects
- Small clusters/group learning/collaboration style
- Teachers will primarily help to design "learning paths" for their students and help to give guidance and formative feedback to their students along the way
- Teachers may also work collaboratively with other faculty and/or with students to lay the groundwork and set objectives for foundational and/or interdisciplinary courses, as well as to assess student growth and give feedback to students in those courses

- Teachers will be connected by physical spaces at schools, will be free to create courses in their areas of expertise, as well collaborate with other teachers in own interdisciplinary approach
- More like college – not set hours for all teachers – day and evening classes
- We will still have teachers but the "sole" concept may be gone
- Collaborative teaching more likely will be the way
- Teachers will each have their own classroom
- Prep periods
- Teaching interdisciplinary classes
- Open campus
- Guiding kids in their learning
- More equipped in technology
- Combination of direct teacher balanced with problems and group projects
- Hopefully a more realistic schedule – more time for collaboration with colleagues/students + evaluating student work
- Teaching kids who are excited to learn
- They will lead project based learning
- They will teach across disciplines with other teachers
- They will be training often therefore more professional development
- (Guide on the side)
- Meeting with students – deliver
- Meeting with staff – plan
- Learning – reflect/enrich
- A day in the life of a teacher of the future will include less physical travelling as many courses may be moved online. Teachers will need to be adaptable as there will not only be a variety of local students but likely international students as well, due to the accessibility of online material
- Design lessons and projects, teach materials, guide and counsel students
- Teachers and faculty will partially be replaced by technology, but robots and other technology would not teach us in a very engaging way. The curriculum would be straightforward and far less fun



## Ch 5.2 Workshop Notes Day 2

- o Facilitating, directing, guiding – same as always
- o This is an excellent question to which I have no answer
- o Making sure they get to their other classroom on time
- o Faculty will be either still teaching at SHS or some other school, or possibly retired
- o Collaboration with colleagues
- o Access to tech for hybrid classes
- o Hopefully, not super different
- o Teaching kids in many different ways
- o Providing instruction, guidance
- o Preparing students for the future, and to be lifelong learners
- o “Walking around” teaching

### B. WHAT IS THE TEACHER ROLE?

- o An interdisciplinary mentor
- o 1-1 advising
- o Greater individual relationships
- o Positive role model
- o A guide through explorations in knowledge
- o Teachers must provide some direct content instruction but focus on using content as a starting point/context for fostering communication and collaboration and cooperation – and showing students that there are numerous paths for success in life
- o The teacher’s role is to be there to provide guidance, structure, and leadership to the students when needs be
- o Wise old sage
- o Facilitate their learning
- o Provide window/lens
- o Teaching critical thinking skills, collaboration skills
- o Less content delivery – implementation
- o To be there for the student during school and for help
- o Learning facilitators, orchestrators, PBL scaffolding and coaching, much less direct instruction
- o Groups of students flow in and out as do teachers
- o Work as a guide – allow students to make mistakes and build confidence/self esteem through those mistakes to engage next challenge

- o Get to know student interests, needs and strengths, help students to set learning goals, design “learning paths” and/or curriculum for foundational and/or interdisciplinary courses, provide feedback and mentorship/guidance to students
- o To facilitate discussion – to promote thinking on the part of students
- o To be the “arranger” of internships, etc and help individual students pursue individual interests
- o To guide students through learning process
- o A teacher and guide
- o Teach lessons and be approachable
- o Guide
- o Promote creativity and critical thinking
- o Combination of direct teacher balanced with problems and group projects
- o Will likely be doing more facilitating/meeting 1 on 1
- o Captivate kids to keep them engaged
- o Seminar leading, direct teaching, Socratic dialogue will continue
- o To learn
- o To communicate to parents
- o To answer students’ questions
- o A teacher’s role will be to produce easy accessible engaging content that will appeal to a wide variety of learners. Furthermore, a teacher should act as a resource to guide students through trouble spots and answer their questions
- o Teach, guide, support, nurture. Teach students how to learn
- o A teacher is supposed to motivate their students to learn and advance their skills allowing them to grow as people while obtaining all of the knowledge. However, a teacher also must be available to help when its’ asked of them
- o Facilitating, directing, guiding – same as always
- o Turn adolescents into critical-thinking and compassionate members of society
- o To teach kids what they need to learn
- o The teacher’s role is to get the best out of each student
- o Teach, facilitate conversation, assign work, lead



- Similar but more guidance
- To help kids and get them where they want to be at
- To facilitate the learning process in a personalized way

## 3. COMMUNITY?

### A. HOW WILL THE COMMUNITY BE INVOLVED IN OUR SCHOOL? HOW WILL COMMUNITY USE OUR SCHOOL?

- Internships, jobs, projects and town activities within school
- Open school library, cafeteria and gym to community use at ANY TIME – allows greater community relationships + connection
- A community that depends upon its' high school to expand what Sharon is
- Community members should develop partnerships with the school to allow students to have internships and authentic learning experiences
- The community will be able to have input in what new courses and options will be provided for students and perhaps some community programs could be held in the new building
- Supporting good learning and offering partnerships with the school and students (internships, etc)
- A huge area of potential growth!
- Bringing the skills/expertise/opportunities for collaboration into school
- They get to decide if we get to build our new school
- Learning will be anytime anywhere
- Community members will be mentors and resources, coaches, hosts of internship students
- Community should be a central support to school, providing resources – not just financially but other services (mentorship, etc)
- Community members may come in to share their expertise and/or experiences with students.
- Community members may also offer internships and/or externships and/or form mentoring relationships with students
- The community will have to be adaptable to “allhaus” schools – public safety availability; DPW availability

- Non-denominational religious sanctuary where anyone can practice (indoor – outdoor)
- Higher police presence
- Dunkin or other possibly student run coffee shop in school
- More town
- Town meetings – decision making
- Internships
- Projects, internships/authentic experiences
- The community needs to adapt its culture to one that will benefit its learners. The community must also help provide funding for necessary changes
- Raise funds, supplemental enrichment, volunteer opportunities, an advocate for education
- We will pay for it
- The community should help with the upkeep of the school grounds (volunteer basis). Also attending sporting events
- There will be a retail store in one part of the school
- Library as part of the town library
- Hopefully more collaboration/externships

### B. HOW WILL OUR SCHOOL BE INVOLVED IN THE COMMUNITY? WILL LEARNING HAPPEN THERE? HOW?

- Be a business-producing center for community growth and development
- Students will have off-campus experiences that may include internships + service learning
- Our school will actively produce positive/influential members of our community
- In our school we will provide a variety of options for students to get involved in the community
- Community discussions around culture and advancing education
- A huge area of potential growth
- School/community service
- Identifying community needs – solving community problems
- We will be inviting the community to all the sport events





## Ch 5.2 Workshop Notes Day 2

- School will be a center of lifelong learning for all, including adults
- Flexible space, serving everyone
- HS should be integrated with MS, ES – should not be as segmented
- Student learning goals and/or projects may involve developing skills and expertise by doing a service project for the community
- It may also involve an internship or externship with business or other organizations within the community
- The school will?
- Maybe use of externships
- Open campus
- Internships available for students at local business or police/fire
- Put a higher emphasis on athletes as a way to have fun and "escape from school"
  - ✓ Minimal pressure for career
- More internships/opportunities
- Producing positive members of society
- Service learning
- Daily living skills
- Our schools will be involved in the community by hosting events showcasing student work that members of the community can attend
- Participate in the community through volunteerism
- The schools will host publicly-available music and art, encourage student entrepreneurs locally, encourage volunteerism
- Our school should help the community by doing charity work of community service for the town of Sharon
- Internships/externships
- Hopefully more collaboration/externships
- Plan events, support their kids

### 4. FACILITIES: WHAT DOES THIS IMPLY FOR FACILITIES?

- Labs, workshops, gathering centers, areas for outdoor community gatherings and reunions
- A constant environment for integration and community involvement

- Specialized areas to be able to have students create things that the community will benefit from
- A society for society
- Given the unknown future and the changes likely to occur in the way we deliver instruction and students learn, the facility needs to be flexible
- We need space that can be adapted for small group and large group interactions, spaces for students and teachers to gather (outside of "class"/instructional time), spaces for exercise (outdoor + indoor)
- Our school will have to have a diverse set of facilities along with optimal space for different types of learners. This means common areas for students to do work alone or in groups. Also comfortable spaces for students to build relationships with and get to know their teachers. However traditional classrooms are necessary for students who feel the most comfortable in that environment
- We need a new building that has larger more versatile learning spaces
- Flexibility is key!
- They are going to be big and everywhere and new
- Flexibility, adaptability, smaller learning cohort spaces; ability to group in many ways
- Collaborative teaching spaces
- Perhaps cross use between three schools?
- Facilities should reflect the many different types of learning paths students may take – it should not be one-size-fits-all
- Some areas of the facilities may look like a modern-day work environment, while other areas may involve more traditional aspects of school
- There will be a need for more collaborative spaces, including areas for one-to-one meetings to occur between teachers + students
- The facility should also be flexible, with the ability to change the size + layout of some rooms and the ability to easily move furniture around
- Facilities will have to be managed by management companies that are used to 24/7 operations





## Ch 5.2 Workshop Notes Day 2

- Facility will have to be designed for open space/movement – campus may be more than one “building”
- Constantly changing models within building of how “classrooms” look like
- Coffee shop
- Larger class sizes/room to breathe
- More classes
- Vocational classes
- Better fields
- Well kept grounds
- Wide hallways
- Religious sanctuary
- Good food in cafeteria, improve options
- Open space
- Modern and exciting
- Equipped with new tech and spaces for subjects (several labs, auditorium, art studio)
- More flexible/modern space to encourage less traditional ways of learning
- Flexible, extensible, school extends beyond walls
- Facilities will need to be adaptable and comfortable.
- More spacious classrooms will allow for more active learning that will engage students. Facilities will also need to have the most important resources be easily assessable to a variety of learners
- The facilities should be available for community use beyond the obvious field, gym and theater. Classrooms can be meeting spaces
- They'd better be modern to meet the needs of the particular schools' educational offerings
- We need cost-effective facilities that are inviting: mostly natural light for classrooms and work spaces, indoor plants, cozy spaces that make people feel comfortable and ready to grow
- Facilities should be modern, open and inclusive with colorful walls and an inclusive and diverse culture. The facilities should also be flexible
- Not sure

- Support students, not always in the office but walking around and helping the kids with work – getting more engaged

## WHAT TO TEACH? HOW TO TEACH?

The Visioning Team discussed learning standards brought by the Common Core, by related Massachusetts Department of Elementary and Secondary Education (DESE) standards, by MCAS, and other “drivers.” They were prompted by these questions:

## WHAT TO TEACH + HOW TO TEACH WHOLE GROUP DISCUSSION BASED ON THE FOLLOWING PROMPTS:

Consider these higher authorities/standards:

- Massachusetts Dept of Elementary + Secondary Education guidelines/standards
- MCAS
- Common Core guidelines/organization
- Parents
- School Committee
- Understandings about university acceptance
- Other

1. Do the any of these **explicitly** stop us from delivering education the way we said was most appropriate?
2. Do any **implicitly** stop us?
3. Which, if any, has the most influence over what we do?
4. Do they present roadblocks, making it difficult or impossible to do so?
5. If “yes,” what are they?
6. What is our action plan?



## WHAT SHOULD OUR STRATEGY BE TO DO WHAT WE WANT TO DO?

The Visioning Team addressed these issues as Table Teams. Their thoughts included:

Seven Table Teams addressed this challenge. Their responses were:

### TABLE TEAM 1

#### What to Teach? How to Teach?

##### Explicitly

- MCAS
- Pre-determined curriculums
- Pre-requisites and grad requirements
- Lack of \$\$\$
- Lack of space

##### Implicitly

- College culture
- Parental want for excellence
- IDEA need to follow the main path
- Culture of "activity"
  - A student must ALWAYS be doing something

##### Other

- College board
- Nothing is 100% stopping us
  - Makes it difficult
  - Bureaucratic hoops
  - Standardization
  - Control of teachers' classes

### TABLE TEAM 2

#### What to Teach? How to Teach?

##### Explicitly

- DESE requirements
  - # days, hours, certifications, courses
  - Passing MCAS (connects to cultural expectations below)

##### Implicitly

- University/college admissions and choices
  - Understanding and expectations
- Cultural (local) expectations

- Schedule(s)
- Lack of understanding of other models
  - Remedied by communication, visioning, leadership

### TABLE TEAM 3

#### What to Teach? How to Teach?

##### Explicitly

- MA Department of Education
- MCAS
- Common Core

##### Implicitly

- Parents
- University acceptance

##### Other

- School committee

### TABLE TEAM 4

#### What to Teach? How to Teach?

##### Explicitly

- Established standards/expectations for all
- University requirements
- Parents

##### Implicitly

- Teachers

### TABLE TEAM 5

#### What to Teach? How to Teach?

##### "Most appropriate"??

##### Explicitly

- M.G.L. c. 37
- MassCore

##### Implicitly

- Vast content in short time, so lecture is sometimes most efficient
- Bathwater (Baby) ☺

### TABLE TEAM 6

#### What to Teach? How to Teach?

##### Explicitly

- DESE







## Ch 5.2 Workshop Notes Day 2

- Graduation requirements
- Money/resources
- Scheduling
- Implicitly**
- Students
- Parents
- College
- Divergent goals among stakeholders

### TABLE TEAM 7

#### What to Teach? How to Teach?

- Explicitly**
- Teacher unions
- MCAS/DESE
- Parents (loud)
- Property values
- School committee
- \$\$
- Implicitly**
- College acceptance
- Failure to access the 4 C's
- All other parents
- Assumptions about scores + relationship to quality education

## INTEGRATING THE CURRICULUM

The challenge was:

### INTERDISCIPLINARY/INTEGRATED CURRICULUM DELIVERY

An interdisciplinary/ integrated curriculum has interdisciplinary/cross-curricular teaching and learning.

Here are some examples:

- Parallel instruction: 19th century lit in English, simultaneously civil war in history
- Paired classes: two separate courses with corollary curriculums scheduled back-to-back

- Integrated core academics: ELA, social studies, math, and/or science taught together:
  - STEM/STEAM (Science, Technology, (Arts), Engineering, Math)
  - Humanities: ELA and history
- Integrated "specials":
  - Arts with core: Art with ELA, music with math
  - Wellness program integrating PE, Science, and Health
- Thematic Small Learning Communities: Arts, STEM, Sustainability
- Internships with the curriculum wrapped around
- Capstone/Senior Project
- Others?

### Questions:

- 1 Is interdisciplinary/cross-curricular teaching and learning important for the future? YES NO
- 2 Why?
- 3 Pick the most appropriate/ challenging from above or invent another. For each develop a scenario:
  - A Characterize teaching and learning: **how is integration achieved?**
  - B How many teachers are involved? What are they doing?
  - C How many students are involved? **What modalities are they using?**
  - D How do students express their learning?
  - E What are the overall school organizational concepts?
  - F Scheduling concepts? Who controls the schedule?
  - G What does this mean for facilities?



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## Ch 5.2 Workshop Notes Day 2

- 4 On a scale of 1 to 10 (with 10 = most), how engaging is this?
- 5 Do you think Sharon High School should support integrating the curriculum on a regular basis? YES or NO.

All Table Teams addressed this challenge. Their responses were:

### TABLE TEAM 1

#### Integrating the Curriculum

- 1 Is interdisciplinary/cross-curricular teaching and learning important for the future?

YES NO

Yes

#### 2 Why?

- To engage more students
  - ✓ Broader education and/or more depth
  - ✓ Potential for real-world experience

- 3 Pick one or more from above or invent another. For each develop a scenario:

Internships

#### A Characterize teaching and learning: How is integration achieved?

- o Change philosophy of graduation requirements
- o Internship culminating in project/presentation

#### B How many teachers are involved? What are they doing?

- ✓ Paid identified position to find/facilitate internships

- ✓ Teacher #? – depends on subject area(s)

#### C How many students are involved? What modalities are they using?

- ✓ ? #

#### D How do students express their learning?

- ✓ Maybe written, maybe oral, maybe collaborative, maybe individual, maybe a “take it further...”

#### E What are the overall school organizational concepts?

- o Start with pilot

- o If our philosophy is “internship” it may look different for all students
- o “One size does not fit all”

#### F Scheduling concepts? Who controls the schedule?

- o Adjust schedule
  - ✓ Do kids do it at the beginning

#### G What does this mean for facilities?

- o No response

- 4 On a scale of 1 to 10 (with 10 = most), how engaging is this?

▪ Potential for 10

- 5 Do you think Sharon High School should support integrating the curriculum on a regular basis?

YES or NO.

Yes

### TABLE TEAM 2

#### Integrating the Curriculum

- 1 Is interdisciplinary/cross-curricular teaching and learning important for the future?

YES NO

Yes

#### 2 Why?

- No response

- 3 Pick one or more from above or invent another. For each develop a scenario:

▪ Integrated Arts

#### A Characterize teaching and learning: How is integration achieved?

- o Achieved through performance-based projects

#### B How many teachers are involved? What are they doing?

- ✓ One primary teacher with two+ consulting teachers/aids with specialized experience

#### C How many students are involved? What modalities are they using?

- ✓ 20+ students

- ✓ Reading, research, collaboration, writing, enacting, engineering/design, music, history, negotiating





## Ch 5.2 Workshop Notes Day 2

### D How do students express their learning?

- ✓ Projects measured with checkpoints, performance, self-reflection, etc

### E What are the overall school organizational concepts?

- No response

### F Scheduling concepts? Who controls the schedule?

- Allotted common time and meeting place

### G What does this mean for facilities?

- Black box/flexible facilities

### 4 On a scale of 1 to 10 (with 10 = most), how engaging is this?

- 8/10

### 5 Do you think Sharon High School should support integrating the curriculum on a regular basis?

YES or NO.

- Yes

- ✓ Research, reporting, reflecting, reciting, realizing

### E What are the overall school organizational concepts?

- No response

### F Scheduling concepts? Who controls the schedule?

- Traditional scheduling

### G What does this mean for facilities?

- Some facilities will need to be adaptable/adjustable

### 4 On a scale of 1 to 10 (with 10 = most), how engaging is this?

- 9

### 5 Do you think Sharon High School should support integrating the curriculum on a regular basis?

YES or NO.

- Yes

## TABLE TEAM 3

### Integrating the Curriculum

#### 1 Is interdisciplinary/cross-curricular teaching and learning important for the future?

YES NO

- Yes

#### 2 Why?

- Connections + context

#### 3 Pick one or more from above or invent another. For each develop a scenario:

##### A Characterize teaching and learning: How is integration achieved?

- Start with a pilot program

##### B How many teachers are involved? What are they doing?

- ✓ 4-7

- ✓ Rotating among the classes + courses teaching the same students

##### C How many students are involved? What modalities are they using?

- ✓ No response

##### D How do students express their learning?

## TABLE TEAM 4

### Integrating the Curriculum

#### 1 Is interdisciplinary/cross-curricular teaching and learning important for the future?

YES NO

- Yes

#### 2 Why?

- Provide further content, clarifications + connections

#### 3 Pick one or more from above or invent another. For each develop a scenario:

##### A Characterize teaching and learning: How is integration achieved?

- Integration through flexibility

##### B How many teachers are involved? What are they doing?

- Multiple teachers/modalities

##### C How many students are involved? What modalities are they using?

- ✓ No response

##### D How do students express their learning?

- ✓ Learning expressed in varied ways



## Ch 5.2 Workshop Notes Day 2

**E What are the overall school organizational concepts?**

- o Organizational concepts possibly different across school

**F Scheduling concepts? Who controls the schedule?**

- o No response

**G What does this mean for facilities?**

- o Facilities need to be flexible and multi-purposeable

**4 On a scale of 1 to 10 (with 10 = most), how engaging is this?**

- 10 - most

**5 Do you think Sharon High School should support integrating the curriculum on a regular basis?**

**YES or NO.**

- Yes

### TABLE TEAM 5

**Integrating the Curriculum**

**1 Is interdisciplinary/cross-curricular teaching and learning important for the future?**

**YES NO**

- To an extent

**2 Why?**

- At its core, much of the curriculum is ok as is  
✓ Enrollment #'s suggest this

**3 Pick one or more from above or invent another. For each develop a scenario:**

**A Characterize teaching and learning: How is integration achieved?**

- o No response

**B How many teachers are involved? What are they doing?**

- o No response

**C How many students are involved? What modalities are they using?**

- ✓ No response

**D How do students express their learning?**

- o No response

**E What are the overall school organizational concepts?**

- o No response

**F Scheduling concepts? Who controls the schedule?**

- o No response

**G What does this mean for facilities?**

- o New building possibilities to support more cross-curricular connections/alignment might include:

- ✓ Inter-disciplinary teacher work spaces
- ✓ Larger =/or multiple faculty lounge(s)

**4 On a scale of 1 to 10 (with 10 = most), how engaging is this?**

- No response

**5 Do you think Sharon High School should support integrating the curriculum on a regular basis?**

**YES or NO.**

- It depends...(on what you mean by "integrating" and "regular basis")

### TABLE TEAM 6

**Integrating the Curriculum**

**1 Is interdisciplinary/cross-curricular teaching and learning important for the future?**

**YES NO**

- Yes

**2 Why?**

- Engaged/efficient

**3 Pick one or more from above or invent another. For each develop a scenario:**

- Internships

**A Characterize teaching and learning: How is integration achieved?**

- o Coordinator

**B How many teachers are involved? What are they doing?**

- o Collaboration/planning time

**C How many students are involved? What modalities are they using?**

- o Art history





## Ch 5.2 Workshop Notes Day 2

- o Music/English/theater
- o Science/math/history

### D How do students express their learning?

- o Play
- o Public speaking
- o Debate
- o Art and music
- o Scripts
- o Film
- o Digital media project

### E What are the overall school organizational concepts?

- o Schedule, plan, coordinate

### F Scheduling concepts? Who controls the schedule?

- o No response

### G What does this mean for facilities?

- o No response

### 4 On a scale of 1 to 10 (with 10 = most), how engaging is this?

- 10+++

### 5 Do you think Sharon High School should support integrating the curriculum on a regular basis?

YES or NO.

- Yes

## BLENDED LEARNING/ FLIPPED CLASSROOM

This was the challenge:

### BLENDED LEARNING/FLIPPED CLASSROOMS

#### Table Team discussion and report out.

Reflect on the Khan Academy or other source of content outside of school.

Imagine that your students have experienced a similar video (from Khan or elsewhere) covering the content of a subject you teach.

### 1 Construct a classroom activity that will engage your students to actively use the content and understandings of the video

- A Describe the activity
- B Formulate the questions/parameters for that activity

### 2 Project what your life as a teacher would be like if you had to know the content of the videos but didn't have to deliver that content

- A What could you do that you do not do now?
- B Would there be any liabilities?
- C Other considerations?

### 3 On a scale of 1 to 10 (with 10 = most), how engaging is this?

### 4 Do you think we should support blended learning/flipped classrooms in all classrooms on a regular basis? YES? NO?

- A If not all, which ones?

- B If not at all, why not?

### 5 What might this mean for facilities?

Four Table Teams took this challenge. Responses were:

#### TABLE TEAM 2

#### Blended Learning/Flipped Classroom

### 1 Construct a classroom activity that will engage your students to actively use the content and understandings of the video

- A Describe the activity

- o Foreign language – watch a video in the target language on a topic to be discussed in class that day

- o B Formulate the questions/parameters for that activity

- o Small group – large group discussion of video in target language







## Ch 5.2 Workshop Notes Day 2

- ✓ Check for understanding/formative feedback
  - ✓ Apply vocabulary/learning via in-class activity/project using target language
  - When students not prepared, lose out on student to student interaction
- 2 Project what your life as a teacher would be like if you had to know the content of the videos but didn't have to deliver that content**

### A What could you do that you do not do now?

- Less whole-class instruction (i.e. vocabulary) more student-centered activities, more opportunities for application

### B Would there be any liabilities?

- More prep for teachers
- Could be implemented poorly if not well-understood by teachers
- Learning considerations of student
- Needs to be structured well
- ✓ Units build off each other
- ✓ Avoid randomness/scattered lessons

### C Other considerations?

- ✓ No response

### 3 On a scale of 1 to 10 (with 10 = most), how engaging is this?

10

### 4 Do you think we should support blended learning/flipped classrooms in all classrooms on a regular basis? YES? NO?

- Should not be required on regular basis – use only where makes sense
- Teachers need to be provided with PD on proper implementation

### 5 What might this mean for facilities?

- Flexible learning/seating at school
- ✓ Student access to tech from home

## TABLE TEAM 3

### Blended Learning/Flipped Classroom

#### 1 Construct a classroom activity that will engage your students to actively use the content and understandings of the video

##### A Describe the activity

- EXs
- Quantum no
- Disorderly yes
- Recursion no
- Iteration yes

##### ○ B Formulate the questions/parameters for that activity

- Ed puzzle do
- ✓ Monitor
- ✓ Assess

#### 2 Project what your life as a teacher would be like if you had to know the content of the videos but didn't have to deliver that content

##### A What could you do that you do not do now?

- ✓ Guide on side
- ✓ Hands on
- ✓ Good use of class time

##### B Would there be any liabilities?

- Not appropriate for all students for all topics

##### C Other considerations?

- Over-use

### 3 On a scale of 1 to 10 (with 10 = most), how engaging is this?

7

### 4 Do you think we should support blended learning/flipped classrooms in all classrooms on a regular basis? YES? NO?

- Teacher/student choice
- "It's just another tool"

### 5 What might this mean for facilities?

- Access to technology, adaptable, ideal for change





## Ch 5.2 Workshop Notes Day 2

### TABLE TEAM 4

#### Blended Learning/Flipped Classroom

- 1 Construct a classroom activity that will engage your students to actively use the content and understandings of the video

##### A Describe the activity

- o Art: animation lesson

- o B Formulate the questions/parameters for that activity

- o 25 computers

- 2 Project what your life as a teacher would be like if you had to know the content of the videos but didn't have to deliver that content

##### A What could you do that you do not do now?

- o Whole class lesson captured in 5 minute video (re-teach, absent, snow day)
- o Apply in live class

##### B Would there be any liabilities?

- o No response

##### C Other considerations?

- o No response

- 3 On a scale of 1 to 10 (with 10 = most), how engaging is this?

- 10

- ✓ Multimedia

- ✓ Applicable x-subjects

- 4 Do you think we should support blended learning/flipped classrooms in all classrooms on a regular basis? YES? NO?

- Yes

##### 5 What might this mean for facilities?

- Planning space for x-subject teachers
- Built in tech to support
- Spaces for kids to continue the work

### TABLE TEAM 5

#### Blended Learning/Flipped Classroom

- 1 Construct a classroom activity that will engage your students to actively use the content and understandings of the video

##### A Describe the activity

- o AP Bio Hardy-Weinberg equilibrium

- o B Formulate the questions/parameters for that activity

- o Mating game activity

- 2 Project what your life as a teacher would be like if you had to know the content of the videos but didn't have to deliver that content

##### A What could you do that you do not do now?

- ✓ Frees up more time for project/problem-based learning in class

##### B Would there be any liabilities?

- o No response

##### C Other considerations?

- ✓ No response

- 3 On a scale of 1 to 10 (with 10 = most), how engaging is this?

- Could be 10, depends on execution

- 4 Do you think we should support blended learning/flipped classrooms in all classrooms on a regular basis? YES? NO?

- Might not work in all subjects – arts?

- Might get too redundant/less engaging if done every day

- Also, internet access issues

##### 5 What might this mean for facilities?

- No required impact. Can happen now

## MASTERY LEARNING

This was the challenge:

## MASTERY LEARNING

### Table Team discussion and report out.

### DEFINITIONS

Standard learning: seat time is constant; amount of learning varies by student.

Mastery learning: seat time is variable; learning is mastered.





## A CURRENT PRACTICES

1 Identify a classroom, by grade level and subject at your school.

2 Answer these questions:

- A How many students in the class?
- B How many students are learning below grade level?
- C How many are above?
- D How many students don't want others to know when they don't understand the learning material?

## B NEXT PRACTICES

- 1 Could mastery learning improve learning at our school? YES or NO
  - o If "yes", how?
- 2 What would classroom activities look like? Describe how a teacher could guide/manage teaching like this.
- 3 Could learning be enhanced by use of computers with adaptive learning programs?
- 4 What might mastery learning mean for scheduling? For graduation concepts?
- 5 On a scale of 1 to 10 (with 10 = most), how engaging is this?
- 6 What might mastery learning mean for facilities?
- 7 Do you think we should support mastery-based, adaptive learning on a regular basis? YES or NO
  - A Why?
  - B Why not?

This was addressed by three Table Teams. Here are their responses:  
**TABLE TEAM 2**

**Mastery Learning**

## A CURRENT PRACTICES

- 1 Identify a classroom, by grade level and subject at your school.



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French IV

2 Answer these questions:

- A How many students in the class?
  - o 26
- B How many students are learning below grade level?
  - o No response
- C How many are above?
  - o No response
- D How many students don't want others to know when they don't understand the learning material?
  - o No response
  - o Implications
    - o Some students have "mastered" language as defined by national standards but are still placed sequentially with students who have not (Novice/Intermediate/Advanced)
    - o In FRIV 1/3 lower, 1/3 there, 1/3 higher
      - ✓ Students who are above or below reluctant
    - o Shift: Promote students by proficiency level + not FR I, II, III and A, B, C grades

## B NEXT PRACTICES

- 1 Could mastery learning improve learning at our school? YES or NO
  - Yes

- o Reduces boredom/disengagement
- o Helps with classroom management
- o Improves proficiency

2 What would classroom activities look like? Describe how a teacher could guide/manage teaching like this.

- Classroom activities – differentiation to a point and then move to next level (novice and advanced not together)
- Advancement vertical to plateau – then horizontal movement

3 Could learning be enhanced by use of computers with adaptive learning programs?

- Yes – students can interact with native speakers...

4 What might mastery learning mean for scheduling? For graduation concepts?



## Ch 5.2 Workshop Notes Day 2

- Flexible
  - More teachers, fewer students at higher levels
  - Students might make advancement mid-year
  - Graduation requirements as we know them - change
- 5 On a scale of 1 to 10 (with 10 = most), how engaging is this?**
- 10
- 6 What might mastery learning mean for facilities?**
- Space for large group and small group...
- 7 Do you think we should support mastery-based, adaptive learning in all classrooms on a regular basis? YES or NO**
- Yes – but...

### TABLE TEAM 6

#### Mastery Learning

##### A CURRENT PRACTICES

- 1 Identify a classroom, by grade level and subject at your school.

- No response

##### 2 Answer these questions:

- A How many students in the class?

- No response

- B How many students are learning below grade level?

- No response

- C How many are above?

- No response

- D How many students don't want others to know when they don't understand the learning material?

- No response

##### B NEXT PRACTICES

- 1 Could mastery learning improve learning at our school? YES or NO

- Not sure

- ✓ Too individual, misses collaboration

- ✓ Master what (concept vs. content vs. skills)

- 2 What would classroom activities look like? Describe how a teacher could guide/manage teaching like this.

- How does a classroom teacher do this?

- 3 Could learning be enhanced by use of computers with adaptive learning programs?

- Resistance to computer learning

- 4 What might mastery learning mean for scheduling? For graduation concepts?

- Less collaborative and engaging to individual

- 5 On a scale of 1 to 10 (with 10 = most), how engaging is this?

- Questionable/variable per student

- 6 What might mastery learning mean for facilities?

- No response

- 7 Do you think we should support mastery-based, adaptive learning in all classrooms on a regular basis? YES or NO

- No

### TABLE TEAM 7

#### Mastery Learning

##### A CURRENT PRACTICES

- 1 Identify a classroom, by grade level and subject at your school.

- Health

##### 2 Answer these questions:

- A How many students in the class?

- 25

- B How many students are learning below grade level?

- 4%

- C How many are above?

- 30%

- D How many students don't want others to know when they don't understand the learning material?

- 50%

##### B NEXT PRACTICES

- 1 Could mastery learning improve learning at our school? YES or NO

- Yes

- ✓ Greater depth

- ✓ More flexible opportunities

- ✓ More variety of opportunities





## Ch 5.2 Workshop Notes Day 2

- 2 What would classroom activities look like? Describe how a teacher could guide/manage teaching like this.
  - Center based teaching
  - Blended learning
  - Peer-to peer PBL
- 3 Could learning be enhanced by use of computers with adaptive learning programs?
  - Yes
- 4 What might mastery learning mean for scheduling? For graduation concepts?
  - Would need flexibility
    - ✓ Grad requirements
    - ✓ Graduate early or take other classes/internships
- 5 On a scale of 1 to 10 (with 10 = most), how engaging is this?
  - 10
- 6 What might mastery learning mean for facilities?
  - Need new school/flexible classrooms
    - ✓ Set up of classrooms are not sufficient
- 7 Do you think we should support mastery-based, adaptive learning in all classrooms on a regular basis? YES or NO
  - Yes
    - ✓ Very beneficial to some classes

## PROJECT-BASED LEARNING

This was the challenge:

### Table Team discussion and report out.

Develop a project to serve as the vehicle for learning

- 1 Describe the content/subject areas. Bonus for interdisciplinary!
- 2 Identify the learning/curriculum goals
- 3 Conceive the project. The project should be sufficiently complex to have no single solution.  
EXAMPLE: Design a marketing strategy to promote independent student summer businesses

- 4 Create the Driving Question  
For example: Design a Café for Paris
- 5 How long does it last? When? How prominent is the project within the context of the year/curriculum?
- 6 Does it involve community responsibility/service? How?
- 7 Is it enhanced through community experts?
- 8 When could this get started?
- 9 On a scale of 1 to 10 (with 10 = most), how engaging is this?
- 10 What does this mean for facilities?
- 11 Do you think we should support P-BL as a regular educational delivery?  
YES or NO. Explain.
- 12 Identify the most effective places in our curriculum to increase use of P-BL as a regular delivery method?

Three Table Teams addressed this issue. Responses were:

### TABLE TEAM 3

#### Project-Based Learning

- 1 Identify the learning/curriculum goals
  - Physics/history (of rollercoasters)
- 2 Describe the content/subject areas. Bonus for interdisciplinary!
  - Gravity, Newton's laws, efficient collaboration
- 3 Conceive the project. The project should be sufficiently complex to have no single solution
  - Design and build a paper rollercoaster that includes several "challenge" features and create a video project showcasing the building process and explaining the physics behind it
- 4 Create the Driving Question  
For example: Design a Café for Paris
  - Can one create a working rollercoaster out of paper?
  - How can physics knowledge be applied to designing rollercoasters?





## Ch 5.2 Workshop Notes Day 2

- 5 How long does it last? When? How prominent is the project within the context of the year/curriculum?
  - Several weeks
  - In the Spring
  - During class!
  - 50% of grade
- 6 Does it involve community responsibility/service? How?
  - It can involve community feedback
- 7 Is it enhanced through community experts?
  - Senior physics student
  - Local professor, etc
- 8 When could this get started?
  - o Can already happen now
- 9 On a scale of 1 to 10 (with 10 = most), how engaging is this?
  - 8 or 9
- 10 What does this mean for facilities?
  - More storage space to hold/keep projects at school
- 11 Do you think we should support P-BL as a regular educational delivery? YES or NO. Explain.
  - Yes – promotes retention
- 12 Identify the most effective places in our curriculum to increase use of P-BL as a regular delivery method?
  - All – promotes retention

### TABLE TEAM 4

#### Project-Based Learning

- 1 Identify the learning/curriculum goals
  - Art
- 2 Describe the content/subject areas. Bonus for interdisciplinary!
  - Raise awareness about environment thru art
- 3 Conceive the project. The project should be sufficiently complex to have no single solution
  - Signs, posters, murals
- 4 Create the Driving Question
  - For example: Design a Café for Paris
  - Raise awareness about environment thru arg
- 5 How long does it last? When? How prominent is the project within the context of the year/curriculum?

- 4-6 weeks
- 6 Does it involve community responsibility/service? How?
    - Yes – conservation, water
  - 7 Is it enhanced through community experts?
    - Yes (Nancy)
  - 8 When could this get started?
    - o Already happening
  - 9 On a scale of 1 to 10 (with 10 = most), how engaging is this?
    - 10
  - 10 What does this mean for facilities?
    - Doing it now
  - 11 Do you think we should support P-BL as a regular educational delivery? YES or NO. Explain.
    - Yes
  - 12 Identify the most effective places in our curriculum to increase use of P-BL as a regular delivery method?
    - Any subject

### TABLE TEAM 5

#### Project-Based Learning

- 1 Identify the learning/curriculum goals
  - Self-powered car
- 2 Describe the content/subject areas. Bonus for interdisciplinary!
  - Physics calculations
- 3 Conceive the project. The project should be sufficiently complex to have no single solution
  - Physics project currently used in the high school in which a par must build a self powered car out of specified materials
- 4 Create the Driving Question
  - For example: Design a Café for Paris
  - No response
- 5 How long does it last? When? How prominent is the project within the context of the year/curriculum?
  - No response
- 6 Does it involve community responsibility/service? How?
  - Doesn't involve community service
- 7 Is it enhanced through community experts?







## Ch 5.2 Workshop Notes Day 2

- Doesn't involve outside experts
- 8 When could this get started?**
  - No response
- 9 On a scale of 1 to 10 (with 10 = most), how engaging is this?**
  - No response
- 10 What does this mean for facilities?**
  - No response
- 11 Do you think we should support P-BL as a regular educational delivery? YES or NO. Explain.**
  - No response
- 12 Identify the most effective places in our curriculum to increase use of P-BL as a regular delivery method?**
  - Good project for tying together all the concepts we had previously learned

## MAKING THINGS TO LEARN

Design Thinking

Agency by Design

The challenge was:

### MAKING THINGS TO LEARN

Design Thinking

Agency by Design

### Table Team discussion and report out.

- 1 Do you believe that making things can contribute to a student's cognitive growth?
  - A How and why?
  - B Does this apply to our highest achieving students?
- 2 Do you believe that "making things" can contribute to a student's sense of self-worth?
  - A How and why?
  - B Does this apply to our highest achieving students?
- 3 Develop a scenario for making things to learn

- A Who?
- B What?
- C When?
- D Where?
- E How?

4 On a scale of 1 to 10 (with 10 = most), how engaging is this?

5 Do you think we should support "making things to learn" on a regular basis **in core classes**? YES? NO?

- A If not all, which ones?
- B If not regularly, when?
- 6 What might this mean for facilities?

Four Table Teams addressed this challenge. Their thoughts were:

#### TABLE TEAM 1 Making Things

1 Do you believe that making things can contribute to a student's cognitive growth?

- YES

A How and why?

- Students need to apply what they learn; make connections, apply to real-world situation/problem

B Does this apply to our highest achieving students?

- YES

✓ Many high achieving students have achieved because they can retain facts + take traditional tests well. They need opportunities to apply their knowledge

2 Do you believe that "making things" can contribute to a student's sense of self-worth?

- Yes

A How and why?

- Students have tangible results
- They have gone through a process, taken risks, resolved problems



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### B Does this apply to our highest achieving students?

- o Yes – often high achieving students have relied on memorization (not always) or concrete learning experiences
- o Making things – problem-solving – taking risks – perhaps (gasp!) failing + having to recover – can lead to growth + pride

### 3 Develop a scenario for making things to learn

#### A Who?

- o Seniors

#### B What?

- o Re-design the Boston waterfront because by 2050 the water level will have increased by 30 feet

#### C When?

- o 4<sup>th</sup> quarter senior year
- o Capstone

#### D Where?

- o Replaces courses 4<sup>th</sup> quarter
- o Senior teachers serve as “expert” advisors, consultants, provide resources
- o Sharon, site visits
- o Courses:

- ✓ Environmental science
- ✓ Humanities (civics, caste/class)
- ✓ Math/statistics
- ✓ Art: digital, blue prints, mockups
- ✓ Architecture
- ✓ TV/media class

#### E How?

- o Research
  - ✓ Identify problem
  - ✓ History of problem
  - ✓ How to solve problem
- o Rubric, clear expectations
- o Present to community – student choice in manner of presentation with advisor approval
- o 4<sup>th</sup> quarter senior year grade based on project
  - ✓ Exceeds expectations
  - ✓ Meets

- ✓ Below/doesn't meet
- 4 On a scale of 1 to 10 (with 10 = most), how engaging is this?

- No response

- 5 Do you think we should support “making things to learn” on a regular basis in core classes?

- No response

- 6 What might this mean for facilities?

- No response

### TABLE TEAM 2

#### Making Things

- 1 Do you believe that making things can contribute to a student's cognitive growth?

- Yes

#### A How and why?

- o Reinforces concept addresses other learning styles
- o Builds dexterity + confidence
- o “Real world”

- B Does this apply to our highest achieving students?

- o Practice/practice
- o More well rounded
- o Take out of comfort zone
- o Promote healthy risk taking
- o Design/thinking skills

- 2 Do you believe that “making things” can contribute to a student's sense of self-worth?

- Yes

#### A How and why?

- o Sense of satisfaction
- o Confidence + competence
- o Resiliency

- B Does this apply to our highest achieving students?

- o Yes

- 3 Develop a scenario for making things to learn

#### A Who?

- o Humanities

#### B What?



## Ch 5.2 Workshop Notes Day 2

- Students will develop artifact that r/t era literature being studied
- Then explain how artifact relates
- C When?**
  - As part of unit
- D Where?**
  - Mixed
    - ✓ Planning in class
    - ✓ Development of artifact at home (???) or school work room with materials
- E How?**
  - Individual vs. group – free choice
  - Approval of teacher
  - ? financial concern
- 4 On a scale of 1 to 10 (with 10 = most), how engaging is this?**
  - 8
- 5 Do you think we should support “making things to learn” on a regular basis in core classes?**
  - No – only to who is comfortable
- 6 What might this mean for facilities?**
  - Cost
  - Tools

### TABLE TEAM 6 Making Things

- 1 Do you believe that making things can contribute to a student’s cognitive growth?
  - Yes

#### A How and why?

- Active way to engage + promote critical thinking/problem solving

- B Does this apply to our highest achieving students?
  - Yes

- ✓ All students

- 2 Do you believe that “making things” can contribute to a student’s sense of self-worth?
  - Yes

#### A How and why?

- Finished project

- B Does this apply to our highest achieving students?
  - Yes – all students

- 3 Develop a scenario for making things to learn

#### A Who?

- STEAM course

#### B What?

- Catapult

#### C When?

- 8<sup>th</sup> grade through high school

#### D Where?

- SHS

#### E How?

- Research + construct with a group

- 4 On a scale of 1 to 10 (with 10 = most), how engaging is this?
  - 10

- 5 Do you think we should support “making things to learn” on a regular basis in core classes?
  - Some classes – maybe difficult in some

- 6 What might this mean for facilities?
  - Tools
  - Equipment
  - Flexible space
  - Teaching (safety)

### TABLE TEAM 7 Making Things

- 1 Do you believe that making things can contribute to a student’s cognitive growth?
  - Yes

#### A How and why?

- Applications
- Further understanding
- Real-life problem solving
- Making connections
- Student centered learning
- Self-exploration

- B Does this apply to our highest achieving students?
  - More challenging



- ✓ Forced to apply knowledge + collaboration
- ✓ Forced to demonstrate perseverance

2 Do you believe that “making things” can contribute to a student’s sense of self-worth?

▪ Yes

A How and why?

- Self-confidence
- Satisfaction
- Empowered students

B Does this apply to our highest achieving students?

- Lets us dive deeper into a topic

3 Develop a scenario for making things to learn

A Who?

- Engineering class

B What?

- A practical product that is helpful to teachers

C When?

- Term 4

D Where?

- SHS or community

E How?

- Tools, design, 3-D printer

4 On a scale of 1 to 10 (with 10 = most), how engaging is this?

▪ 10

5 Do you think we should support “making things to learn” on a regular basis in core classes?

- Yes, when applicable as needed

6 What might this mean for facilities?

- Need bigger, safer

## SCHOOL STRUCTURE

This was the challenge:

**Table Team discussion and report out.**

**DEVELOP A DETAILED ORGANIZATIONAL CONCEPT  
CREATE THE MOST APPROPRIATE CONCEPT FOR  
THE FUTURE FROM AN EDUCATIONAL POINT OF VIEW**

1. Rank the following, from (1=) most appropriate to least appropriate
  - a. Elaborate on the structure to give it more definition
  - b. Combine possibilities if desired
  - c. Identify the Pros and Cons
  - d. What would you do to mitigate the Cons?
2. Analyze your most appropriate one:
  - a. Elaborate on the structure to give it more definition
  - b. Combine possibilities if desired
  - c. Identify the Pros and Cons
  - d. What would you do to mitigate the Cons?

## HIGH SCHOOL ORGANIZATIONAL MODELS

- A. Departmental model
- B. Interdisciplinary Small Learning Communities
- C. Career Pathways Small Learning Communities, such as Integrated Arts or STEM or Wellness
- D. Choice “C” within “A” or “B”
- E. Freshman House/Academy, followed by one of the choices above
- F. Any of the above with teachers looping
- G. Any of the above with synchronous teacher teaming, sharing students in real time

Responses were:

**TABLE TEAM 1**

**School Structure**

1 Rank the following, from (1=) most appropriate to least appropriate

A Departmental model

○ 2

B Interdisciplinary Small Learning Communities





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- 6
  - C Career pathways Small Learning Communities, such as Integrated Arts or STEM or Wellness
  - 5
  - D Choice "C" within "A" or "B"
  - 3
  - E Freshman House/Academy, followed by one of the choices above
  - 7
  - F Any of above with teachers looping
  - 8
  - G Any of above with synchronous teacher teaming, sharing students in real time
  - 4
  - H Other
  - 1
- 2 Analyze your most appropriate one:
- A Elaborate on the structure to give it more definition
- A and interdisciplinary teacher work - pace
- B Combine possibilities if desired
- n/a
- C Identify the Pros and Cons
- Pros
    - ✓ Allows vertical/horizontal articulation within departments
    - ✓ Allows interdisciplinary collaboration among teachers
    - ✓ Current common planning
      - Highly valued
  - Cons
    - ✓ Limits course choices?
- D What would you do to mitigate the Cons?
- No response

### TABLE TEAM 2

#### School Structure

1 Rank the following, from (1=) most appropriate to least appropriate

- A Departmental model
- 5
- B Interdisciplinary Small Learning Communities

- 6
  - C Career pathways Small Learning Communities, such as Integrated Arts or STEM or Wellness
  - 4
  - D Choice "C" within "A" or "B"
  - 3
  - E Freshman House/Academy, followed by one of the choices above
  - 2
  - F Any of above with teachers looping
  - 7
  - G Any of above with synchronous teacher teaming, sharing students in real time
  - 1
  - H Other
  - n/a
- 2 Analyze your most appropriate one:
- A Elaborate on the structure to give it more definition
- Maximum flexibility (GED)
  - Within choices from above, like "A" above "B" – felt that small learning communities would feel limiting to many students in high school (that's what we have at MS)
- B Combine possibilities if desired
- No response
- C Identify the Pros and Cons
- Pros
    - ✓ Flexibility
    - ✓ Provide transition (less stressful)
    - ✓ Can allow for career pathways but also for departmental model
    - ✓ Possibility for synchronous teacher teaming + sharing of students if we decide we want it in future
  - Cons
    - ✓ Underclassmen may feel limited (If we choose freshmen house/academy)
- D What would you do to mitigate the Cons?
- Provide exceptions for students who don't fit into designated group or academy









**B Combine possibilities if desired**

- o B + C

**C Identify the Pros and Cons**

- o **Pros**
  - ✓ Maintains departmental strengths
  - ✓ Greater emphasis on career readiness + personalization from smaller learning communities and pathways
  - ✓ High standards maintained
- o **Cons**
  - ✓ Cliques within larger school

**D What would you do to mitigate the Cons?**

- o Communal areas including teacher workspaces
- o Emphasis on complete school pride
- o Keep grade-based lunches

**TABLE TEAM 5**

**School Structure**

1 Rank the following, from (1=) most appropriate to least appropriate

**A Departmental model**

- o 1

**B Interdisciplinary Small Learning Communities**

- o 5

**C Career pathways Small Learning Communities, such as Integrated Arts or STEM or Wellness**

- o 4

**D Choice "C" within "A" or "B"**

- o 2

**E Freshman House/Academy, followed by one of the choices above**

- o 7

**F Any of above with teachers looping**

- o N/A / 8

**G Any of above with synchronous teacher teaming, sharing students in real time**

- o 6

**H Other**

- o 3 A within C or A/C

2 Analyze your most appropriate one:

A Elaborate on the structure to give it more definition

- o STEAM size dependent on popularity in enrollment

**B Combine possibilities if desired**

- o A within C or A/C

**C Identify the Pros and Cons**

- o **Pros**
  - ✓ Increase student choice
  - ✓ Cross in curricular engagement
- o **Cons**
  - ✓ Possible cost?
  - ✓ Enrollment might vary
  - ✓ Access/competition/inequity
  - ✓ Unity
  - ✓ Non-consistent curriculum

**D What would you do to mitigate the Cons?**

- o Why A is #1
- o Design flexibility

**TABLE TEAM 6**

**School Structure**

1 Rank the following, from (1=) most appropriate to least appropriate

**A Departmental model**

- o 2

**B Interdisciplinary Small Learning Communities**

- o 3

**C Career pathways Small Learning Communities, such as Integrated Arts or STEM or Wellness**

- o 2

**D Choice "C" within "A" or "B"**

- o 1

**E Freshman House/Academy, followed by one of the choices above**

- o 5

**F Any of above with teachers looping**

- o 6

**G Any of above with synchronous teacher teaming, sharing students in real time**

- o 6

**H Other**

2 Analyze your most appropriate one:

A Elaborate on the structure to give it more definition







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- C with department model
- B Combine possibilities if desired**
  - C with department model
- C Identify the Pros and Cons**
  - **Pros**
    - ✓ Less isolated
    - ✓ Career pathway
    - ✓ More interdisciplinary
    - ✓ Vocational academy/arts/STEAM
    - ✓ More collaborative
    - ✓ Engaging
  - **Cons**
    - ✓ Department – can be isolating
- D What would you do to mitigate the Cons?**
  - Planning space
  - Flexible space
  - PD – community-building

### TABLE TEAM 7

#### School Structure

1 Rank the following, from (1=) most appropriate to least appropriate

- A Departmental model**
  - 3
- B Interdisciplinary Small Learning Communities**
  - 2
- C Career pathways Small Learning Communities, such as Integrated Arts or STEM or Wellness**
  - 4
- D Choice “C” within “A” or “B”**
  - 1
- E Freshman House/Academy, followed by one of the choices above**
  - 5
- F Any of above with teachers looping**
  - 6
- G Any of above with synchronous teacher teaming, sharing students in real time**
  - 7
- H Other**
  - N/a

## 2 Analyze your most appropriate one:

### A Elaborate on the structure to give it more definition

- Given current structure/organization, this would allow flexibility with courses, teacher collaboration, small learning communities via a low-risk pilot program

### B Combine possibilities if desired

- N/A

### C Identify the Pros and Cons

- **Pros**
  - ✓ Flexibility
  - ✓ Builds off of what we have
  - ✓ Low risk
  - ✓ More learning styles met
- **Cons**
  - ✓ PD for staff
  - ✓ Recruit students/turn away
  - ✓ Community buy-in/student buy-in

### D What would you do to mitigate the Cons?

- Long-term research of other schools
- Steal models we like
- Be flexible

## SUMMARY

This chart shows the overall ranking of the organizational choices.

SCHOOL STRUCTURE								
	Table Team							Score
	1	2	3	4	5	6	7	
HIGH SCHOOL ORGANIZATIONAL MODELS								
H. Other	1				3			4.0
D. Choice "C" within "A" or "B"	3	3	2	1	2	1	1	13.0
A. Departmental model	2	5	5	4	1	2	3	22.0
G. Any of the above with synchronous teacher teaming, sharing students in real time	4	1	1		6	6	7	25.0
C. Career Pathways Small Learning Communities, such as Integrated Arts or STEM or Wellness	5	4	4	3	4	2	4	26.0
B. Interdisciplinary Small Learning Communities	6	6	3	2	5	3	2	27.0
E. Freshman House/Academy, followed by one of the choices above	7	2	4	5	7	5	5	35.0
F. Any of above with teachers looping	8	7		6	8	6	6	41.0

Note that Choice H was not scored as it had not been considered by all.





## AGENDA

The third Visioning Workshop was held on 4<sup>th</sup> October 2018. Notes of all activities follow:

- School Transformation + Development Map
- Places for Learning
- Defining Spaces
- Future Furniture
- Overall School Organization Diagram
- Key Words
- Next Steps

## SCHOOL TRANSFORMATION + DEVELOPMENT MAP

Workshop participants used the School Transformation + Development Map (ST+DM © 2018 Frank Locker Inc) to evaluate Sharon High School's current educational deliveries and facilities, and to project the desired future for both.

The ST+DM expresses the evolutionary shift in education in great detail, chronicling educational practices and facility design. Schools today are in different points of evolution, and many schools expect to be in different points of evolution in the long term future. The ST+DM characterizes schools and facilities on a 1 through 5 basis, with 1 as the most traditional category, and 5 as the most transformed.

Workshop participants worked in three-person Micro Teams to review the multiple educational practices and facilities concepts in the School Transformation + Development Map. District schools were scored in the following categories:

- Educational Delivery Now
- Facilities Now
- Future Educational Delivery
- Future Facilities

The scores are shown on the next page:



## Workshop Notes Day 3



## Ch 5.3 Workshop Notes Day 3

SCHOOL TRANSFORMATION + DEVELOPMENT MAP				
Micro Team	EDUCATION		FACILITIES	
	Now	Future	Now	Future
<b>Education</b>				
Maura, Miguel	1.83	4.46		
Carson, Ferdman, Snow	2.37	3.23		
JL, GER, JO, Jack	2.29	4.36		
GY, CF, K	2.4	4.81		
Amy, Jasmine, Janine	2.39	4.26		
	2.26	4.22		
<b>Facilities</b>				
WW, Scott, Shawn			1.90	4.59
LR, MR, JC			1.81	3.86
DM, JS, SL, PC			1.68	3.91
Christian, Heather, Tonia				3.00
MH, MK, KT			1.59	4.20
TM, SN, KB			1.90	4.24
AD, CS			2.00	4.10
			1.81	3.99
<b>AVERAGE</b>	<b>2.26</b>	<b>4.22</b>	<b>1.81</b>	<b>3.99</b>
	difference =		1.97	difference = 2.17

## PLACES FOR LEARNING

The workshop participants analyzed places for learning and established preferences for the future Sharon High School. Options were reviewed, ranked, and evaluated by Table Teams.

Workshop participants were asked to:

- Rank the choices
- Identify the three most appropriate for their future school
- Identify the one least appropriate
- Explain why

The physical places shown in the challenge were proxy for educational deliveries. While reviewing these physical places, participants were actually projecting the future of learning, and how to best support it.



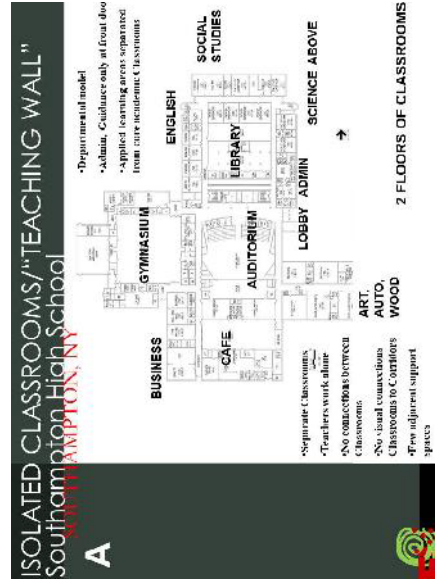
**Educational Visioning** Sharon High School Sharon, MA  
Frank Locker Educational Planning

Each of the exemplars reviewed by the workshop participants supports a range of learning modalities, and can best support different teaching deliveries and student activities. No single exemplar supports every possible delivery and activity.

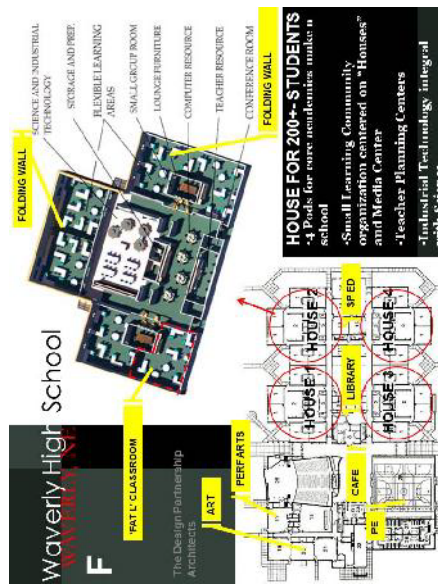
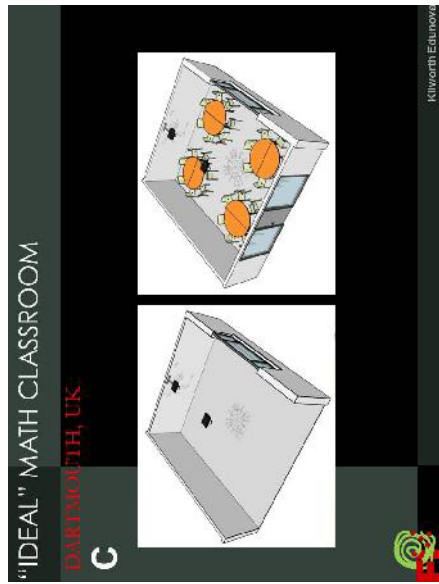
The contenders were:

- A Southampton High School
- B Grand Rapids Middle Schools
- C Ideal Math Classroom
- D Slate Magazine 5<sup>th</sup> Grade Exploratory Classroom
- E Ipswich Middle School
- F Waverly High School
- G Cristo Rey High School
- H Concord Elementary Schools
- I New Tech High
- J New Albany Grade 1-8 School
- K Forest Avenue K-2 Center
- L Wooranna Park Primary School
- +Milan HS Center for Innovative Studies

Images for these contenders are shown starting here and continuing on the next page:

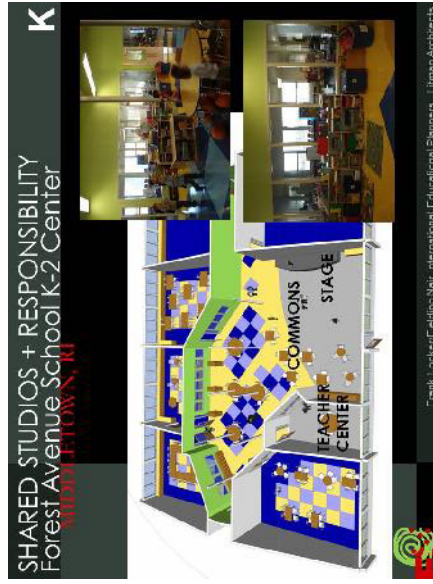
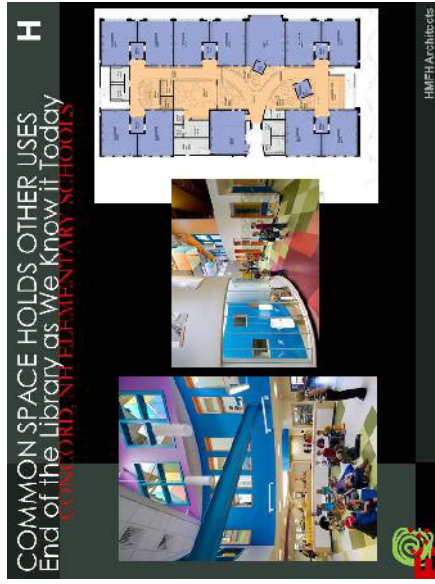








## Ch 5.3 Workshop Notes Day 3



## Ch 5.3 Workshop Notes Day 3

Table Team responses were:

### TABLE TEAM 1

- **Three Most Appropriate**
  - F Waverly High School
    - ✓ Foldable walls
    - ✓ Teacher space
    - ✓ Flexible spaces
  - D Slate Magazine 5<sup>th</sup> Grade Exploratory Classroom
    - ✓ Outside workspace
    - ✓ Openness
    - ✓ Connection to nature
  - H Concord Elementary Schools
    - ✓ Breakout spaces
    - ✓ Outside classrooms
    - ✓ Diverse work spaces
    - ✓ Constant access to media center

### ▪ **Least Appropriate**

- A Southampton High School
  - ✓ Little flexibility
  - ✓ No teacher collaboration
  - ✓ Little group learning

### TABLE TEAM 2

- **Three Most Appropriate**
  - L Wooranna Park Primary School
    - +Milan HS Center for Innovative Studies
    - ✓ Variety of classroom types + sizes
  - F Waverly High School
    - ✓ Flexibility of walls + spaces
    - ✓ ? "noise"
  - G Cristo Rey High School
    - ✓ Garage door – not clear glass
    - ✓ Writeable walls

### ▪ **Least Appropriate**

- D Slate Magazine 5<sup>th</sup> Grade Exploratory Classroom
  - ✓ Too open
  - ✓ Sound issues
  - ✓ Safety issues
  - ✓ Attention issues



### TABLE TEAM 3

- **Three Most Appropriate**
  - G Cristo Rey High School
    - ✓ Large productive spaces with a comfortable, cozy atmosphere
  - H Concord Elementary Schools
    - ✓ Library is easy to get to (accessible resources!)
  - C Ideal Math Classroom
    - ✓ No single "front"
    - ✓ All around are whiteboards
- **Least Appropriate**
  - E Ipswich Middle School
    - ✓ If flattened, could be more accessible

### TABLE TEAM 4

- **Three Most Appropriate**
  - D Slate Magazine 5<sup>th</sup> Grade Exploratory Classroom
  - H Concord Elementary Schools
  - L Wooranna Park Primary School
    - +Milan HS Center for Innovative Studies
  - REASONS FOR D, H + L
    - ✓ Flexible uses
      - Independent
      - Collaborative
    - ✓ Multi-purpose common areas
    - ✓ Indoor-outdoor movement
    - ✓ Differentiation
    - ✓ Personalization
    - ✓ Connecting people worldwide
- **Least Appropriate**
  - A Southampton High School
    - ✓ Current model

### TABLE TEAM 5

- **Three Most Appropriate**
  - G Cristo Rey High School
    - ✓ Openness to collaborative areas







- ✓ We like garage door flexibility as long as it is acoustically sound
- H Concord Elementary Schools
  - ✓ We like flexible/vast breakout spaces for every classroom + like larger corridors
  - ✓ Concerns about tripping over furniture between periods
- I New Tech High
  - ✓ Love connection to outdoor space + more centralized art spaces
  - ✓ But we would replace cafeteria with breakout spaces

## ▪ Least Appropriate

- E Ipswich Middle School
  - ✓ We dislike S.L.C's

## TABLE TEAM 6

### ▪ Three Most Appropriate

- I New Tech High
  - ✓ Central Café
  - ✓ Super clean + pretty
- L Wooranna Park Primary School
  - +Milan HS Center for Innovative Studies
  - ✓ Very versatile
  - ✓ Good for different types of learners
- F Waverly High School
  - ✓ Good use of space
  - ✓ Flexibility + grouping

### ▪ Least Appropriate

- D Ipswich Middle School
  - +C Ideal Math Classroom
  - +E Ipswich Middle School
  - ✓ Not suitable for Sharon's needs

## TABLE TEAM 7

### ▪ Three Most Appropriate

- F Waverly High School
  - + L Wooranna Park Primary School
  - + Milan HS Center for Innovative Studies

- ✓ Pod design
- ✓ Different furniture
- ✓ Flexible
  - I New Tech High
    - +L Wooranna Park Primary School
    - +Milan HS Center for Innovative Studies
    - ✓ Open media + café space
    - ✓ Common area
  - D Ipswich Middle School
    - + L Wooranna Park Primary School
    - + Milan HS Center for Innovative Studies
    - ✓ Good for SEL
    - ✓ Student engagement
    - ✓ Indoor/outdoor spaces
    - ✓ Flexible design

## ▪ Least Appropriate

- A Southampton High School
  - ✓ No 21<sup>st</sup> century vision
  - ✓ Traditional

## DISCUSSION

The Visioning Team acknowledged several exemplars that were cited multiple times:

### Most Appropriate

- F Waverly High School (cited by 4 of 7 Table Teams)
- H Concord Elementary Schools (4 of 7 Table Teams)
  - L Wooranna Park Primary School
  - +Milan HS Center for Innovative Studies (4 of 7)
- D Slate Magazine 5<sup>th</sup> Grade Exploratory Classroom (3 of 7)
- G Cristo Rey High School (3 of 7)
- I New Tech High (3 of 7)

### Least Appropriate

- A Southampton High School (cited by 3 of 7 Table Teams)
- E Ipswich Middle School (cited by 3 of 7 Table Teams)



## DEFINING SPACES

The workshop participants were given this challenge:

### DEFINING SPACES

#### Table Team discussion and report out

DEVELOP CONCEPTS FOR SPACES TO SUPPORT ONE OF THE FOLLOWING. PICK TWO:

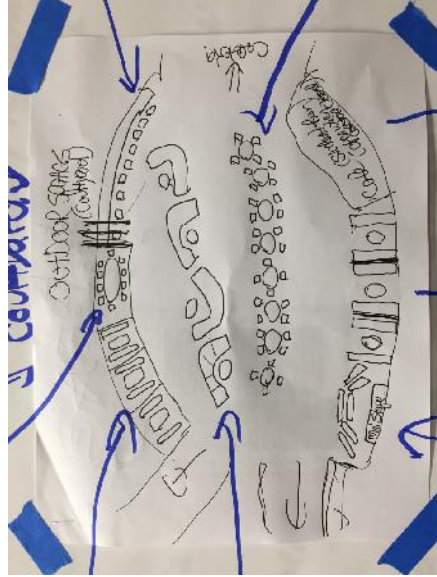
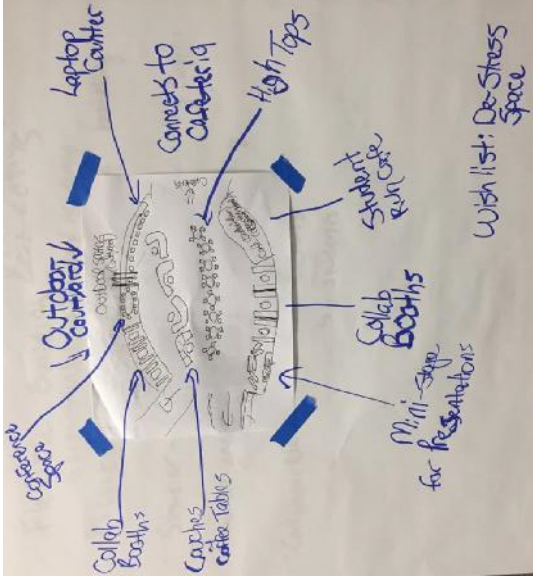
- 21<sup>st</sup> century Library/ Media Center/Learning commons
  - 21<sup>st</sup> century Dining/ Food Service
  - All forms of assembly/ presentations: students presenting their learning, small group presentations, bigger group presentations, whole building assembly
  - Supporting applied/ active learning, such as project-based learning, STEM, STEAM, Making Things to Learn, etc
  - Integrated/interdisciplinary learning, including Career Academies
  - Student collaboration
  - Student life before, during and after school
  - Teacher support including collaboration
  - Community in building: Family + Community support
  - Universal Design
  - Outdoor learning
  - Other
- Use drawings, bullets, narratives, or poems, as appropriate

Their responses were:

#### A 21<sup>st</sup> CENTURY LIBRARY/MEDIA CENTER/LEARNING COMMONS

##### Table Team 7

- Conference space
- Outdoor courtyard
- Laptop counter
- Connects to cafeteria
- High top tables
- Student run café
- Collaboration booths (x2)
- Mini-stage for presentations
- Couches + coffee tables
- Wish list: De-stress space



#### B 21<sup>st</sup> CENTURY DINING/FOOD SERVICE

##### Table Team 4

- Different areas to dine/eat
- Common area – cafeteria
- Mixed furniture/seating styles
- Quieter areas
- Indoor/outdoor
- Non-square; multiple floors

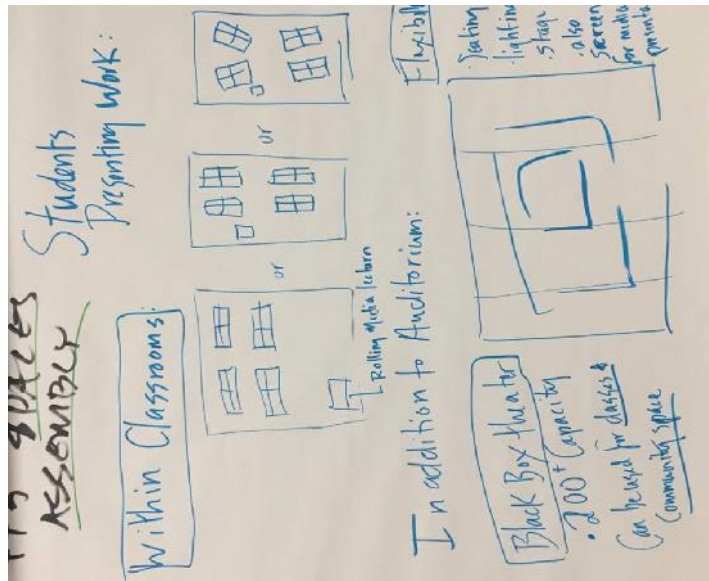


## Ch 5.3 Workshop Notes Day 3

- Sunlight/atrium
- Food choices – stations
- Easy in/out
- Internship opportunities
- Freight farming – vertical hydroponic – water
- Composting/sustainability/recycling

### C ALL FORMS OF ASSEMBLY/PRESENTATION: STUDENTS PRESENTING THEIR WORK, SMALL GROUP PRESENTATIONS, BIGGER GROUP PRESENTATIONS, WHOLE BUILDING ASSEMBLY

- Rolling media lectern
- In addition to auditorium:
  - Black box theater
  - ✓ 200+ capacity (can be used for classes + community space)



- Flexible
  - ✓ Seating
  - ✓ Lighting
  - ✓ Stage
  - ✓ Also screen for media presentations

### D SUPPORTING APPLIED/ACTIVE LEARNING, SUCH AS PROJECT-BASED LEARNING, STEM, STEAM, MAKING THINGS TO LEARN, ETC

Not selected.

### E INTEGRATED/INTERDISCIPLINARY LEARNING, INCLUDING CAREER ACADEMIES

Not selected

### F STUDENT COLLABORATION

#### Table Team 3

- Classrooms that allow for student collaboration in addition to spaces dedicated to collaboration (near/adjacent)
  - Convertible spaces
  - Adjustable walls
  - L-shape
  - White-board walls
- Multi-purpose rooms/flexible spaces that can accommodate different types of student collaboration
- All spaces are utilized 80% of the school day
  - Cafeteria
  - Media center
  - Gym
  - Auditorium
  - Outdoor (classroom)

### G STUDENT LIFE BEFORE, DURING AND AFTER SCHOOL

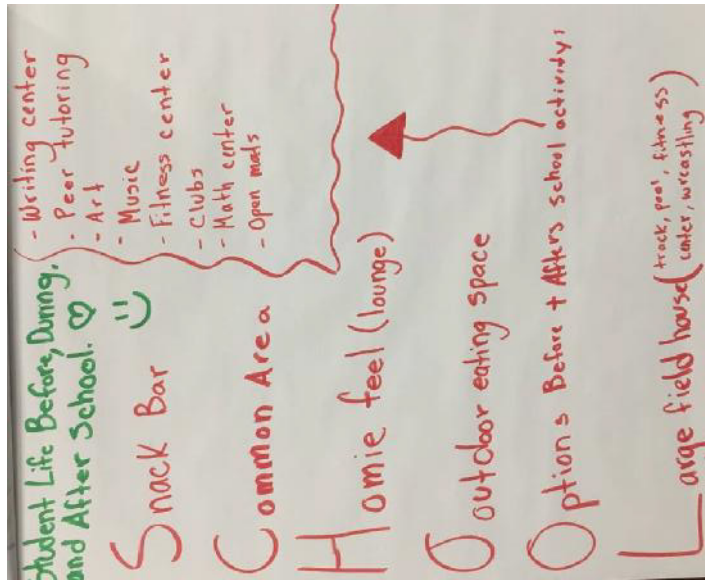
#### TABLE TEAM 6

- Snack bar
- Common area
- Homey feel (lounge)
- Outdoor eating space
- Options before + after school activities
  - Writing center
  - Peer tutoring



## Ch 5.3 Workshop Notes Day 3

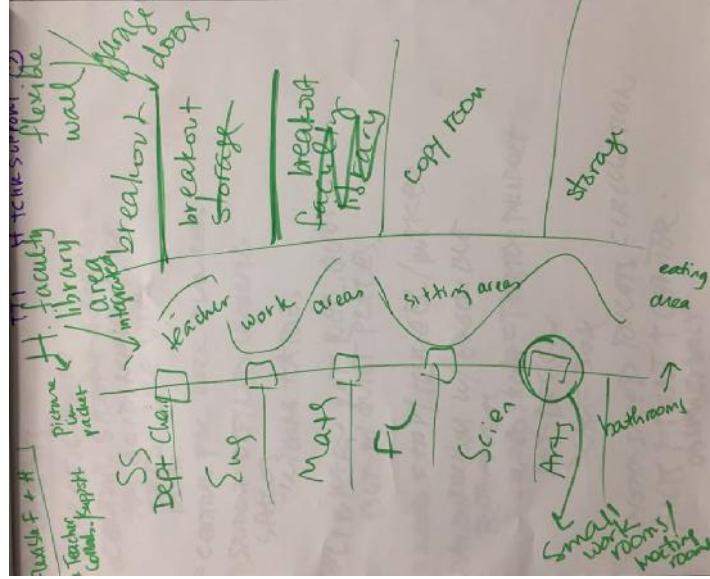
- o Art
- o Music
- o Fitness center
- o Clubs
- o Math center
- o Open mats
- Large field house (track, pool, fitness center, wrestling)



### H TEACHER SUPPORT INCLUDING COLLABORATION TABLE TEAM 1

- Social, work + collaboration space
  - o Breakout rooms on the side
- Individual desk/planning space
- Bathrooms, ventilation, clean
- Most teachers with "their" classrooms
  - o Flexible teachers space whenever necessary
- Goals:

- o Teachers each have a classroom that they use
  - ✓ Paired with other rooms that they can use (foldable walls, doors)
- Need areas for gathering + collaboration
- Resource, staff library + media center
- Integrate departments
- One central area where all teachers gather
- Quiet place or social
- Small offices
- Copy room
- Whole teacher wing/pod
- Teacher resource "library"
- Kitchenette in area
- Clean bathrooms





**I COMMUNITY IN BUILDING; FAMILY + COMMUNITY SUPPORT**  
Not selected

**J UNIVERSAL DESIGN**  
Not selected

- K. OUTDOOR LEARNING**  
**TABLE TEAM 2**
- Rooftop pavilion (ex: garden)
  - Solar panel farm
  - Outdoor dining/gaming boards (chess)
  - Outdoor white-boards
  - Outdoor exercise equipment + facilities
  - Environmental art
    - Murals + sculptures
  - Covered outdoor area
  - Sound amplification system
  - Outdoor paths/tracks
  - Outdoor workshop
  - Outdoor stage/theater (Amphitheater)
  - Hub for WiFi and electricity
  - Heat/amps for warming
  - Greenhouse

**FUTURE FURNITURE**

A breakout group of the Visioning Team reviewed 21 slides showing both 20<sup>th</sup> century and 21<sup>st</sup> century furniture choices for Classrooms, Breakout Spaces, and Maker Spaces. They scored each Option for its appropriateness for the future Sharon High School. The scoring sheet looked like this:

**FUTURE FURNITURE**

Record your quick responses to the furniture Options in the six columns below:

	Appro- p- riate	Mostly Know	Don't Know	Maybe Not Appro- p- riate
▪ 2 Classrooms Direct	—	—	—	—
▪ 3 Classrooms Step 1	—	—	—	—
▪ 4 Classrooms Step 2	—	—	—	—
▪ 5 Classrooms Step 3	—	—	—	—
▪ 6 FKa Classrooms Stp 4	—	—	—	—
▪ 7 FKa Classrooms Stp 5	—	—	—	—
▪ 8 FKa Classrooms: Wheels	—	—	—	—
▪ 9 FKa Classrooms: Modular	—	—	—	—
▪ 10 FKa Classrooms: Variety	—	—	—	—
▪ 11 FKa Classrms: Rounds	—	—	—	—
▪ 12 FKa Classrms: Stand Up	—	—	—	—
▪ 13 FKa Classrms: Node	—	—	—	—
▪ 14 FKa Classrms: Bean Bags	—	—	—	—
▪ 15 Breakout Spcs: Booths	—	—	—	—



### Ch 5.3 Workshop Notes Day 3

- 16 Breakout Spcs:  
Modules — — — — —
- 17 Breakout Spcs:  
Sprawl — — — — —
- 18 Breakout Spcs:  
Student — — — — —
- 19 Breakout Spcs:  
Electronic — — — — —
- 20 Breakout Spcs:  
Informal — — — — —
- 21 Breakout Spcs:  
Group — — — — —
- 22 Breakout Spcs:  
D School — — — — —
- 23 Breakout Spcs:  
D School — — — — —

A Breakout Group of seven participants rated the Options:

Future Furniture	Appropriate	Mostly	Don't Know	Maybe	Not Important
2 Classrooms		3	1	2	1
3 Classrooms Step 1		2	3		2
4 Classrooms Step 2		1	2	3	1
5 Classrooms Step 3		2	1	1	3
6 FKa Classrooms Step 4		5	2		
7 FKa Classrooms Step 5	2	2		1	1
8 FKa Classrooms: Wheels	4	3			
9 FKa Classrooms: Modular	4	2		1	
10 FKa Classrooms: Variety		5		1	1
11 FKa Classrooms: Rounds	1	3	1	1	1
12 FKa Classrooms: Stand Up	1	2	2	1	1
13 FKa Classrooms: Node	1	4	1	1	
14 FKa Classrooms: Bean Bags	1		2	4	
15 Breakout Spaces: Booths	3	2	1	1	
16 Breakout Spaces: Modules		2	3	1	1
17 Breakout Spaces: Sprawl		2	1		4
18 Breakout Spaces: Student	2	5			
19 Breakout Spaces: Electronic	3	4			
20 Breakout Spaces: Informal	3	1	3		
21 Breakout Spaces: Group	2	5			
22 Breakout Spaces: D School	5	1	1		
23 Breakout Spaces: D School	1	3	2		1

The Future Furniture Options are in Appendix Ch 5.6.







## Ch 5.3 Workshop Notes Day 3

# OVERALL SCHOOL ORGANIZATION DIAGRAM

Workshop participants guided Frank Locker in drawing an overall school organization diagram. Major functions were drawn as bubbles, in relative size, and in relative positioning.

As a prelude, Table Teams identified the following essential characteristics as requests in the plan:

### TABLE TEAM 1

- Teacher collaboration space
  - Accommodates all departments
  - Gathering space
  - Breakout space for interdisciplinary cooperation
  - Coordinator offices
- Free-flowing, student-defined (movable furniture, whiteboards, areas without teacher authority) spaces
  - Near classrooms
  - Dispersed throughout the school
  - Study space
  - Presentation space
  - OUTDOOR AREAS

- ✓ Work
- ✓ Eating
- ✓ Social
- ✓ Gardening
- ✓ Learning

- Outdoor lighting = priority
  - Open windows
  - Diffused lighting
  - Effective use of views + landscapes
- Student community
  - Project-based learning, interning + more
  - Spaces for presentations

### TABLE TEAM 6

- Two Gyms
- Large cafeteria
- Student lounge
- Teacher planning areas
- Fitness center/weight room

- Large auditorium + black box
- Open space library (loud + quiet locations)
- Lots of windows
  - Skylights?
- Flexible/changing furniture
- Flexible/adaptable space for different uses in long run
- White board walls
- Field house + pool
- Snack bar – coffee shop
  - Internship possibilities
- Departmental
- 2 floors

### TABLE TEAM 7

- Flexible building
  - Departmental
  - Schools
  - Academy
- Flexible classes within the building
- Student driven media center/learning commons
- Common areas throughout the building
- Collaboration areas for teachers and students

## WHOLE GROUP DISCUSSION

The Visioning Team identified the following essential characteristics in discussion:

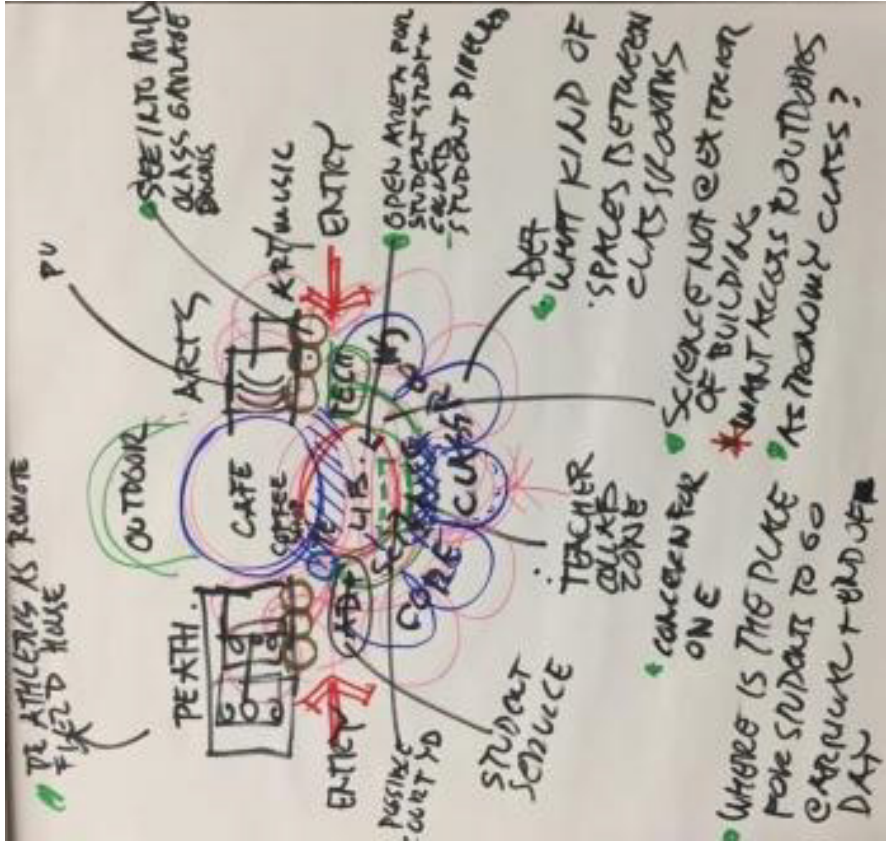
- Glacier High School plan
- Central Student Services
  - Guidance
  - Nurse
  - Psychology
  - Special Education
  - Like university
  - METCO
- Central faculty work planner
- Student defined learning spaces
  - Interns and aides
- Library not necessarily quiet
  - But with quiet places
- Wood shop/home economics/maker space
- Auditorium with ensemble rehearsal



### Ch 5.3 Workshop Notes Day 3

- Wood shop = theater product
- Set design
- Black Box Theater
- Right sized Toilets and circulation
- Arts front and center
  - Observed daily
- PE Athletics as remote field house
- See into arts – glass garage doors
- Open area for student study and collaboration
  - Student directed
- What kind of spaces between classrooms?
- Science at exterior of building
  - Want access to outdoors
  - Place for Astronomy classes?
- Where is the place for students to go at arrival and end of day
- Teacher collaboration zone
  - Concern for one
- Athletic and fitness
  - Variety Activity Rooms
- Flexible learning spaces/CRS
  - Interdisciplinary
- Cafeteria as “go to” space but connected to outside
- Coffee Shop
- Student Help Desk

The overall diagram is shown on the next page:



### KEY WORDS

As closure to the three days of workshops, participants were asked to identify one word or a two-word phrase that best represented their individual thoughts about the Educational Deliveries and Facilities for their future school. These words could be the basis of the “elevator speech” describing them.

Their key words are:





## Ch 5.3 Workshop Notes Day 3

### Education

- Engagement, engaging, student engagement, engagement = retention (cited 5 times)
- Collaboration, collaborative learning environment (cited 3 times)
- Interdisciplinary, interdisciplinary learning (3 times)
- Accommodating, accommodating for all (2 times)
- Challenging, challenges + changes (2 times)
- Flexible (2 times)
- PBL (2 times)
- All inclusive
- Combine classroom learning with PBL classes
- Creative, Critical thinking
- Ever changing
- Evolving
- Fun
- Guidance
- Hands-on
- Inclusive
- Innovation
- Integrated learning and social
- Interns
- Meets the needs of each learner
- Motivating + inspiring learning
- Reflection
- Spirited learning
- Student-centered
- Student-driven learning
- Student teaching + aides

### Facilities


- Flexible, flexibility, flexible building, flexible space (cited 17 times)
- Adaptable, adaptable spaces (cited 2 times)
- LEED – Engaging, Environment, Energy, Design (2 times)
- Happy (2 times)
- Beautiful surroundings
- Big
- Clean
- Innovation
- Field House
- Functionality

## NEXT STEPS

Superintendent Dr Virginia Greer outlined some next steps in the Massachusetts School Building Authority process of improving school facilities:


- The district will solicit feedback regarding the three Visioning days
- Next Wednesday 10<sup>th</sup> October:
  - School Committee meeting, summary presentation on:
    - ✓ Visioning
    - ✓ Phases
- By early November
  - Two community input meetings
- Superintendent and principal to meeting with curriculum leaders to craft Education Plan






21<sup>st</sup> Century Schools


Frank Locker PhD  
fl@franklocker.com  
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fl@franklocker.com  
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1




The History of Work + School


100 YEARS AGO

75 YEARS AGO

50 YEARS AGO

TODAY








1

The History of Work + School

100 YEARS AGO




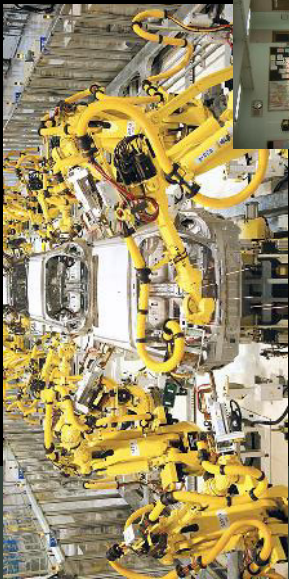


1




1

The History of Work + School



TODAY



1

The History of Work + School

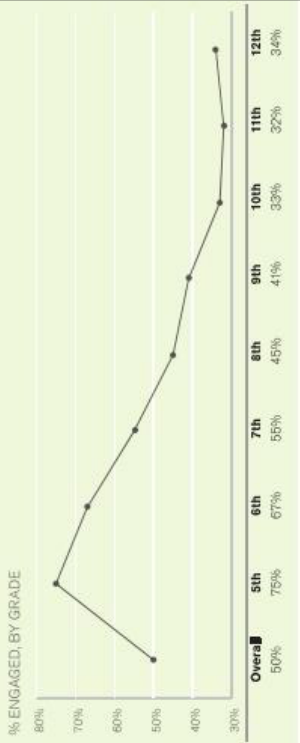


TODAY




2

Student Engagement



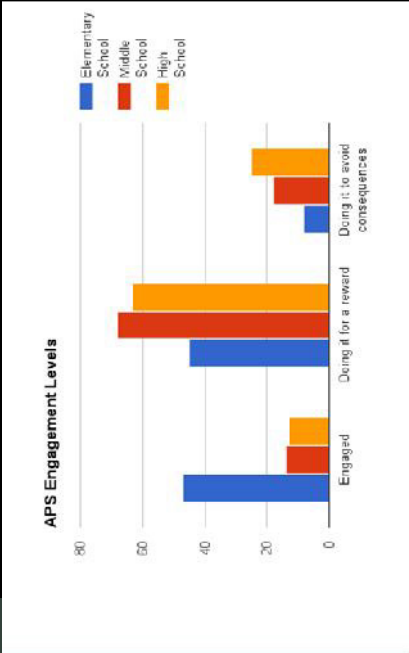
Grade	% Engaged
Overall	50%
5th	75%
6th	67%
7th	55%
8th	45%
9th	41%
10th	33%
11th	32%
12th	34%

**ENGAGEMENT:**  
The involvement in and enthusiasm for school. Engaged students are excited about what's happening at their school and what they're learning. These students contribute to the learning environment, and they are psychologically committed to their school.




2

Student Engagement



Level	Engaged	Doing it for a reward	Doing it to avoid consequences
Elementary School	45	55	10
Middle School	15	65	20
High School	10	60	30

Attleboro Public Schools research 2015



3

Futurist Thoughts  
**THOMAS FREY, FORMER GOOGLE FUTURIST**

**2030 Jobs**

1. Augmented Reality Architects
2. Alternative Currency Bankers
3. Seed Capitalists
7. Urban Agriculturalists
12. 3D Printing Engineers
13. 3D Food-Printer Engineers
17. Wind Turbine Repair Techs
19. Smart Dust Programmers
26. Elevated Tube Transport Engineers
32. College and University Dismantlers

As a rule of thumb, 60% of the jobs 10 years from now haven't been invented yet

3

Futurist Thoughts  
**THOMAS FREY, FORMER GOOGLE FUTURIST**

**2030**

Over 2 billion jobs will disappear by 2030

3

Futurist Thoughts  
**MARSHALL BRAIN, ROBOTIC NATION**

**Nine jobs humans may lose to robots:**

- Pharmacists
- Lawyers and paralegals
- Drivers
- Astronauts
- Store clerks
- Soldiers
- Babysitters
- Rescuers
- Sports writers and other reporters

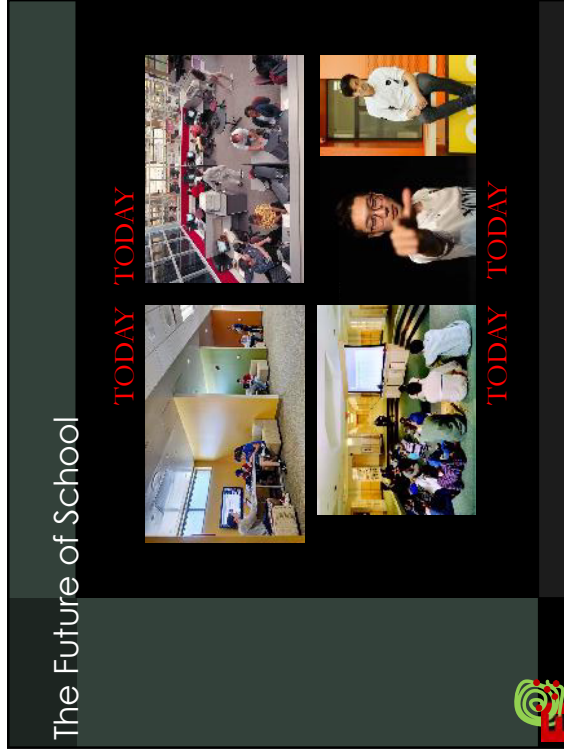
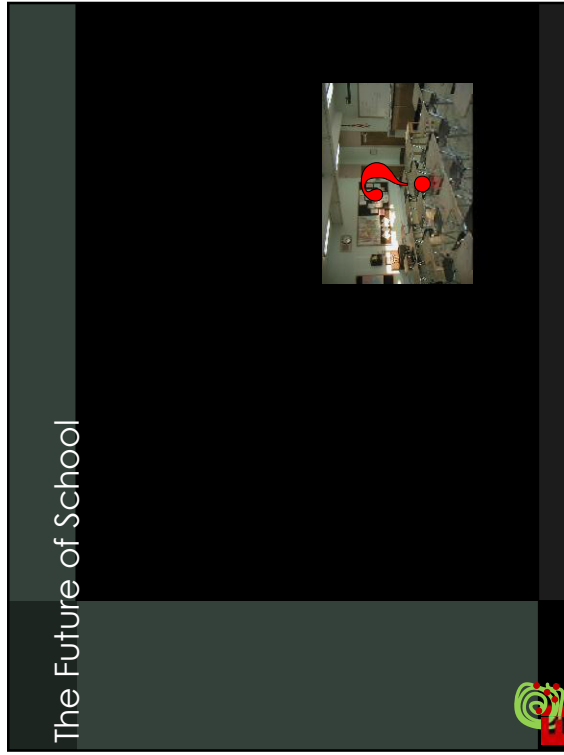
3

Futurist Thoughts  
**DAVID HOULE: SHIFT THINKING**

- Legacy thinking makes decisions about the future based on the past
- **Shift thinking makes decisions about the future based on the future**
- What should we do?

Shift Ed





## 4

### 20<sup>th</sup> + 21<sup>st</sup> Century Learning

<p><b>20<sup>th</sup> CENTURY</b></p> <p><b>TEACHER CENTERED</b></p> <ul style="list-style-type: none"> <li>• Focus on teaching efficiency</li> <li>• Producing workers for the industrial age</li> <li>• Content knowledge</li> <li>• "Broadcast" teaching</li> <li>• Students work alone</li> </ul>	<p><b>EARLY 21<sup>st</sup> CENTURY</b></p> <p><b>STUDENT CENTERED</b></p> <ul style="list-style-type: none"> <li>• Focus on learning effectiveness</li> <li>• Producing citizens for the digital age</li> <li>• Relationships + skills</li> <li>• Personalized learning</li> <li>• Collaborative learning</li> </ul>
---	---

<ul style="list-style-type: none"> <li>• Content is abstracted</li> <li>• Teacher is holder of knowledge</li> <li>• Teacher works alone</li> <li>• Subjects taught separately</li> <li>• Mostly direct instruction + papers</li> </ul>	<ul style="list-style-type: none"> <li>• Content is relevant</li> <li>• Teacher is a guide</li> <li>• Teacher collaboration + teams</li> <li>• Integrated/interdisciplinary learning</li> <li>• Project-based learning</li> </ul>
--	---

## Measures of Success?

**HOW DO WE KNOW WE ARE DOING THE RIGHT THING?**


- Standardized testing
- Course failure rates
- Attendance rates
- Graduation rates
- Student behavior
- Parent involvement
- College/post-secondary admission
- College/post-secondary graduation
- Others?

5

Measures of Success?

HOW DO WE KNOW WE ARE DOING THE RIGHT THING?

What do students want to talk about at the dinner table every night?




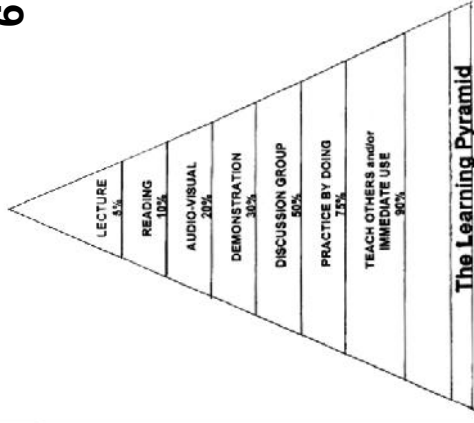
6

Learning Pyramid

Rate of retention of different modes of learning

ACTIVE LEARNING + RESPONSIBILITY CREATES MORE RETENTION THAN PASSIVE LEARNING





**The Learning Pyramid**

NTL Institute for Applied Behavioral Science


7

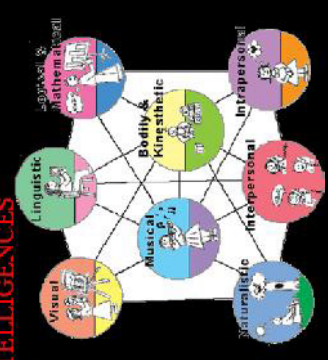
Learning Research

MULTIPLE INTELLIGENCES

Howard Gardner

- There are eight or more intelligences
- People are strong in some, not in others
- Every student's education should engage natural strengths, so they can develop others





Daileen Fabig Graduate Student, Educational Technology, SDSU


7

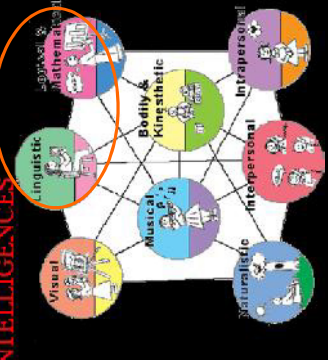
Learning Research

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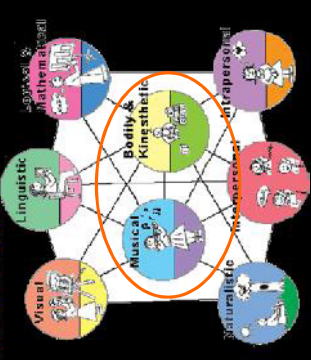


Daileen Fabig Graduate Student, Educational Technology, SDSU

# 7

## Learning Research

### MULTIPLE INTELLIGENCES



**Howard Gardner**

- There are eight or more intelligences
- People are strong in some, not in others
- Every student's education should engage natural strengths, so they can develop others


Darleen Fabila Graduate Student, Educational Technology, SDSU

# 8

## Social/ Emotional Learning

### SUCCESS IN LIFE

### Emotional Intelligences



**Daniel Goleman**  
**Emotional Intelligence**

“85% of success is based on your EQ, not your IQ”

# 9

## Relationships

### MAGIC OF 150

### Dunbar's Number

The theoretical cognitive limit to the number of people with whom one can maintain stable social relationships. These are relationships in which an individual knows who each person is, and how each person relates to every other person.

150 is really 100 to 225


## GOOGLE THE

## “MAGIC OF 150”


# 10

## Integrated Arts + Academics

Core learning goes up when arts are integrated in core classrooms, especially for English language learners



“Give me a classroom big enough to dance in.”




Frank Decker, Assistant Principal

10

Integrated Arts + Academics  
HIGHTECH HIGH

Art teacher co-teaches with ELA teacher



Storyboards not papers

11

STEM/ STEAM



STEM Program, Newton North High School


Hanover High School, Hanover, MA

12

Computers for Learning

DISRUPTING CLASS  
Clayton Christensen

- By 2014, 25% of HS courses will be on line
- By 2019, 50% of HS courses will be on line



12

Computers for Learning  
BLENDED LEARNING; FLIP THE CLASSROOM



## Deeper Learning

13

Special emphasis on the ability to apply knowledge to real-world circumstances and to solve novel problems

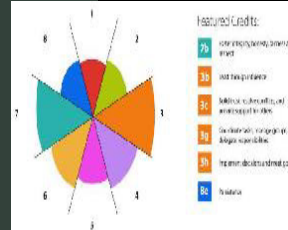


- Mastery of rigorous academic content
- Development of critical thinking and problem-solving skills
- The ability to work collaboratively
- Effective oral and written communication
- Learning how to learn
- Developing and maintaining an academic mindset

## Mastery Transcript Coalition

14

ALTERNATIVE/SUPPLEMENT TO THE SATs



Alternative model of assessment, crediting and transcript generation

Top universities and colleges have agreed to use the new system

Creativity, Critical Thinking, Communication, Collaboration

Self-Directed Learning

Humanities + Arts; Science, Technology, Engineering + Mathematics

## Creating Innovators

15

Tony Wagner  
Creating Innovators



“When a student can learn everything they need to know from the internet, the curriculum is no longer important.  
The school experience is.”

## Creating Innovators

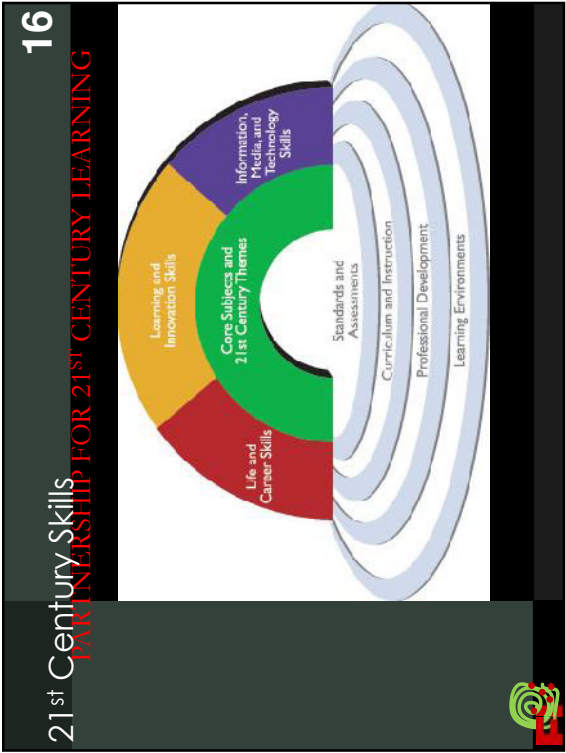
15

Tony Wagner  
Creating Innovators



“What you know is not important.  
What you do is.”



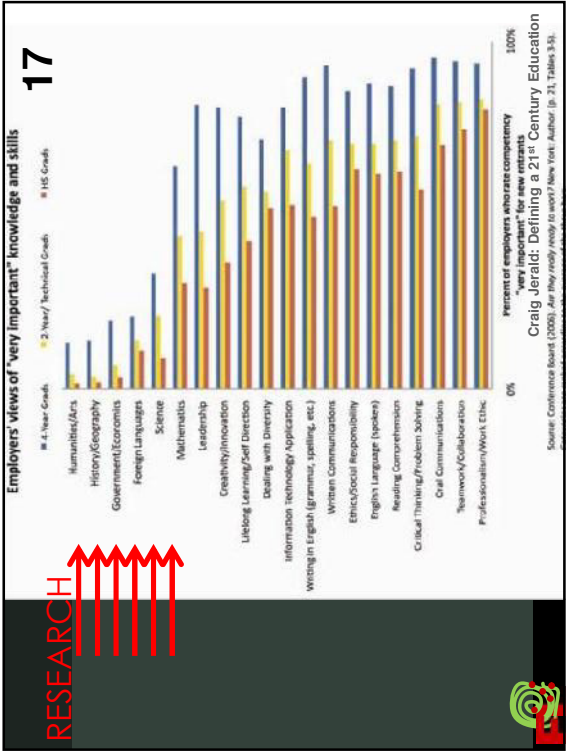
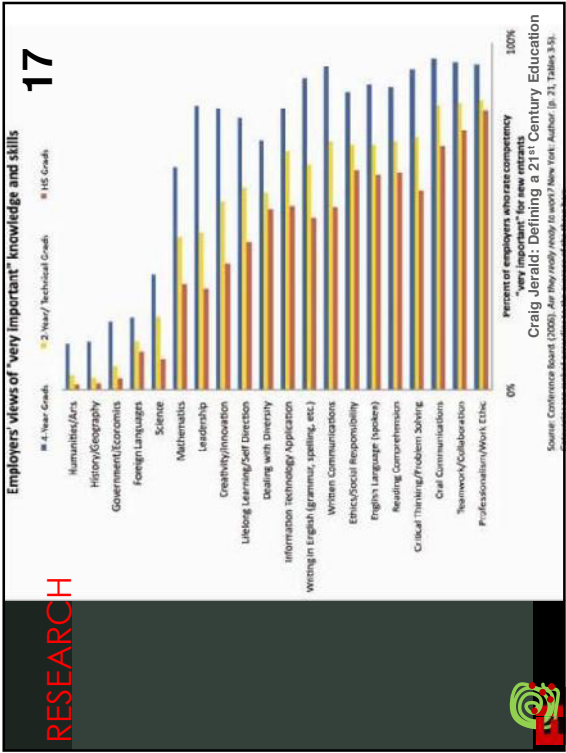


16

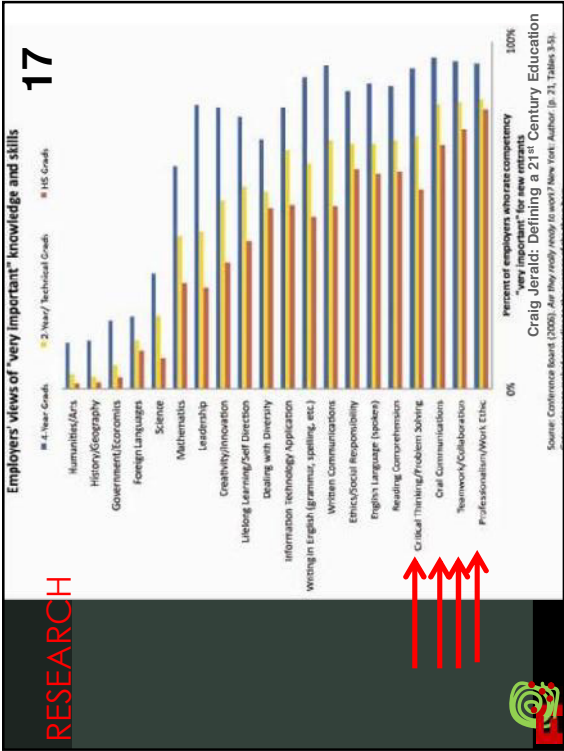
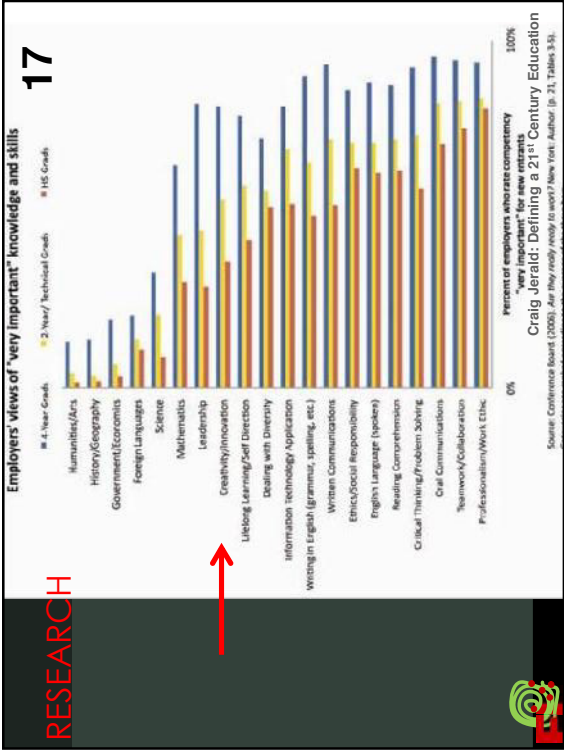
21<sup>st</sup> Century Skills  
PARTNERSHIP FOR 21<sup>ST</sup> CENTURY LEARNING  
THE FOUR 'Cs'

- Creativity + innovation
- Critical thinking + problem solving
- Communication
- Collaboration

21<sup>ST</sup> CENTURY SKILLS  
PARTNERSHIP FOR 21<sup>ST</sup> CENTURY LEARNING







**18**

**Project Based Learning**

**21<sup>st</sup> Century Skills in Action: Arlington High School, Gr. 11**

Honors French students were divided into small groups and asked to create a restaurant in France. Students used the Internet to research real estate listings, learned about the Euro to consider price options, selected a financial planning method based on interest rates and incentive programs, and used professional software to create a business and marketing plan aimed at their target clientele. Once the plans were complete students developed and priced their menus, sketched out the interior design and used architectural software to lay out the furniture. The project ended with oral presentations done in both English and French. Local restaurant designers and architects were invited in to hear the English presentations. The project lasted the entire year, and was conducted entirely in French. More on this project: <http://www.doe.mass.edu/edtech/practices/ar/intro.htm>.

*21<sup>st</sup> century skills used in this project: technology; collaboration; global awareness; media literacy; creativity; financial, economic, business and entrepreneurial literacy.*

**18**

**Project Based Learning**

**CAFE PAREEN, ARLINGTON, MA, HIGH SCHOOL**

**PROJECT REQUIREMENTS**

- Business plan
- Real estate analysis (in Paris)
- Café name
- Café space design
- Café menu design
- Nutrition analysis
- Set prices for menu (Euros)
- Correlation of location-market demographics-menu-space design
- Speak French
- Outside experts
- Talk to students in France
- Location mapping
- Business plan spreadsheets
- Menu graphics
- Model of design
- Presentation to "jury"

Arlington HS 11<sup>th</sup> Grade French Class

18


Project Based Learning  
CAPE PAREN, ARLINGTON, MA, HIGH SCHOOL



Arlington HS 11th Grade French Class

18

Project Based Learning  
CAPE PAREN, ARLINGTON, MA, HIGH SCHOOL



Arlington HS 11th Grade French Class

19

Design Thinking  
Making Things to Learn  
BRIGHT WORKS SCHOOL, San Francisco, CA



19

Design Thinking  
Making Things to Learn  
BRIGHT WORKS SCHOOL, San Francisco, CA







Design Thinking  
Making Things to Learn  
NU-VU STUDIO, Cambridge, MA

19




Design Thinking  
Making Things to Learn  
NU-VU STUDIO, Cambridge, MA

19








Break



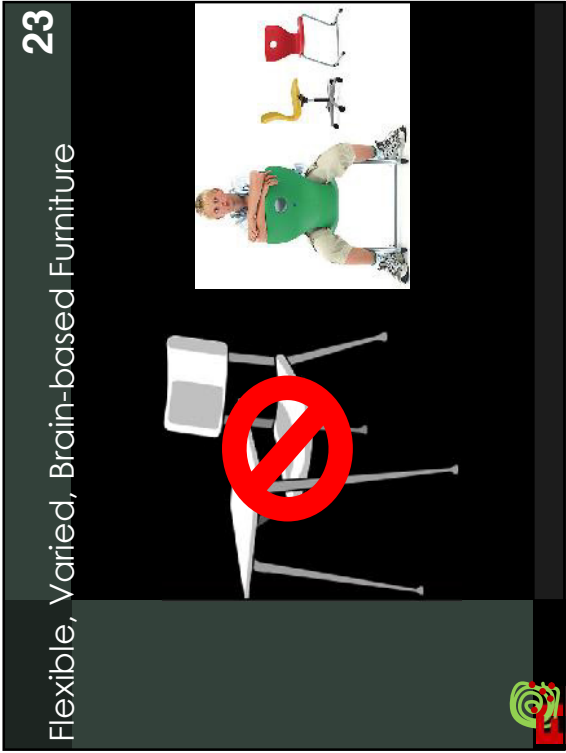
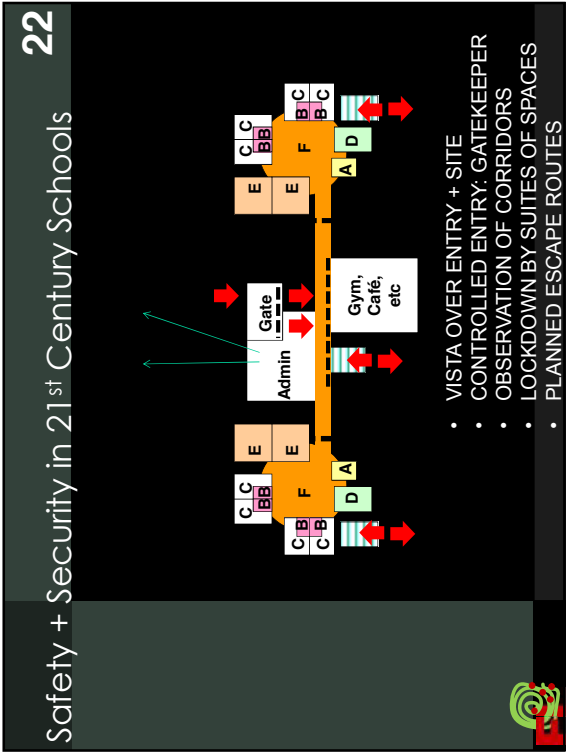
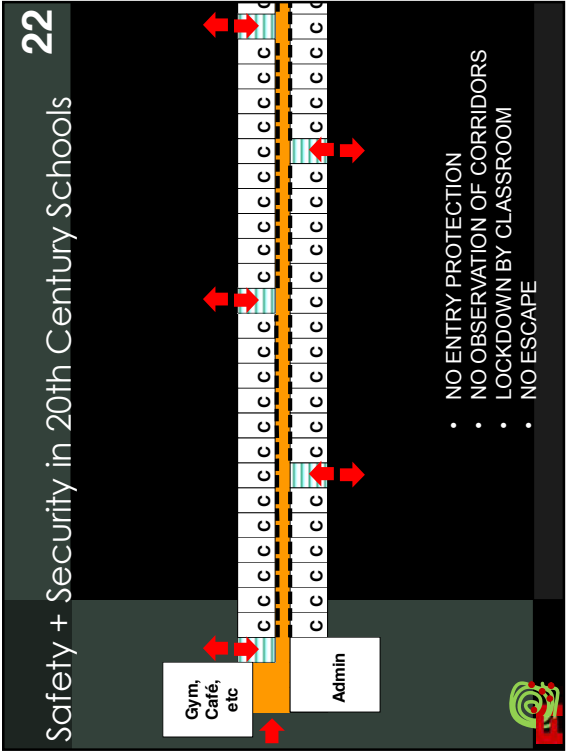
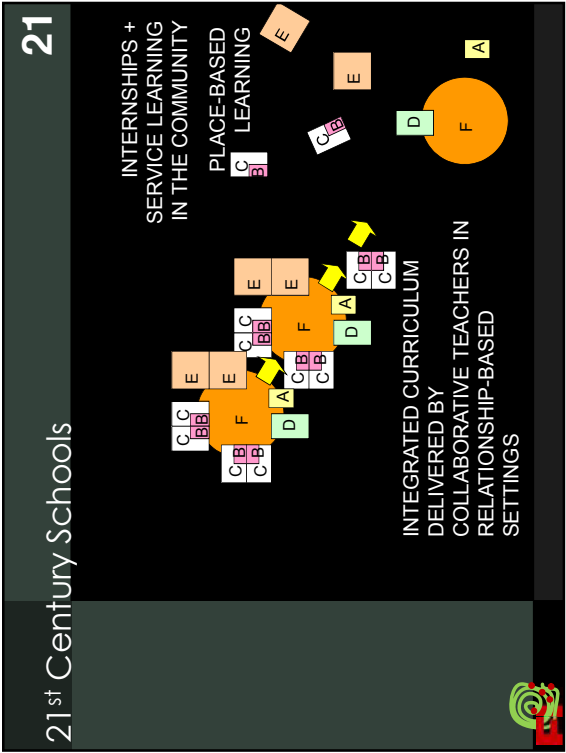
21<sup>st</sup> Century Schools  
NEW CLASSROOM CONCEPTS

- What is and where is a classroom?









23




Flexible, Varied, Brain-based Furniture  
**AGILE, FLEXIBLE**



VS Furniture

23

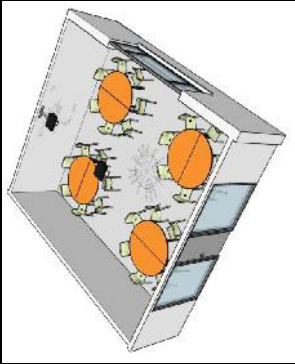

Flexible, Varied, Brain-based Furniture  
**STAND UP DESKS**



Safco AlphaBetter

24

21<sup>st</sup> Century Learning Studios  
**DARTMOUTH, UK**  
“IDEAL” MATH CLASSROOM



Kilworth Edunova

24


21<sup>st</sup> Century Learning Studios  
**STUDIOS NOT CLASSROOMS**





24


21<sup>st</sup> Century Learning Studios  
MAKE LEARNING VISIBLE

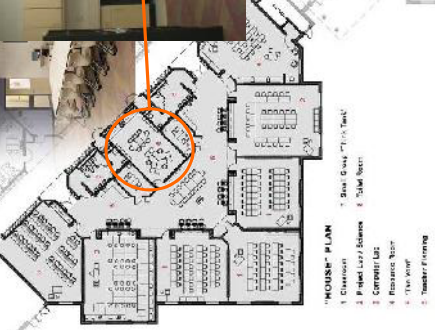


High Tech High, David Stephen, Designer

25

Teacher Planning Centers  
CEDAR SPRINGS MIDDLE SCHOOL, Cedar Springs, MI






- 1 Classroom
- 2 Student Lounge
- 3 Computer Lab
- 4 Resource Room
- 5 The Loft
- 6 Teacher Planning

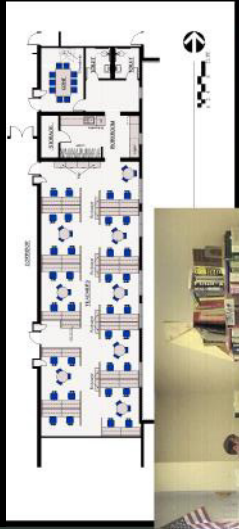
“KIDUS” PLAN  
1. Blue - Great “Tech Tent”  
2. Yellow - Learning Commons  
3. Green - Student Lounge  
4. Red - Teacher Planning

Frank Locker, DeJONG Educational Planners, BetaDesign Architects

25

Teacher Planning Centers  
OXFORD HILLS HIGH SCHOOL, South Paris ME





Frank Locker/PDT Architects

26

Small Learning Communities  
MULTIPLE LEARNING MODALITIES



Grand Rapids Christian High School, Frank Locker Educational Planning/AMDG Architects

26

### Small Learning Communities

**OLD TOWN HIGH MIDDLE SCHOOL, Old Town ME**

- Teacher Collaboration
- Community of Learners
- Authentic Assessments

- Variety of Learning Styles
- Small School Culture

Frank Locker educational planner, PDT Architects

26

### Small Learning Communities

**IPSWICH MS/HS, Ipswich MA**

Flansburgh Associates Architects

27

### Flexible Platform for Change

**GLACIER HS, KALISPELL, MT**

- Agile organizational planning
- 21st Century Skills
- Small Learning Communities
- College articulation

Frank Locker educational planner (DeJONG), CTA Architects

27

### Flexible Platform for Change

**GLACIER HS, KALISPELL, MT**

Frank Locker educational planner (DeJONG), CTA Architects



27

Flexible Platform for Chang  
GLACIER HS, KALISPELL, MT

TCHR PLAN CENTER  
SCIENCE  
COMMON/BREAKOUT  
CLASSRMS  
PE  
MEDIA CTR  
ART  
PERF ARTS  
BUSINESS CAREER ACADEMY  
WELLNESS CAREER ACADEMY  
9th YEAR TRANSITION  
CAREER ACADEMY

Frank Locker educational planner (Da) (ONG), CTA Architects

28

End of the Library as We Know it Today  
VICTORIA, AUSTRALIA DEPT EDUCATION

28

End of the Library as We Know it Today  
CONCORD, NH ELEMENTARY SCHOOLS

HMFH Architects

28

End of the Library as We Know it Today  
WEST MUSKINGUM ELEMENTARY SCHOOL, ZANESVILLE, OH

Frank Locker Educational Planner/Fanning/Howey Architects Engineers

29

End of the Cafeteria as We Know it Today

Glacier High School, Kalspell, MT  
C/A Architects



Fairfield, OH Freshman School  
SHP / Leading Design Architects

Frank Locker Educational Planning

30

The End of Isolated Teaching

BLUE POINT ELEMENTARY SCHOOL, Scarborough, ME  
K-2 MULTI-AGE CLASSROOMS



"How can we teach children collaboration if every adult they see in the building is working alone?"

POT Architects

31

The End of Isolated Teaching

K-2 CENTER, FOREST AVENUE ELEMENTARY SCHOOL,  
Middletown, RI



Teacher Teams,  
Multi-Age,  
Flexible  
Student Groups

Frank Locker/Felding Nair International Educational Planners Litman Architects

31

The End of Isolated Teaching

K-2 CENTER, FOREST AVENUE ELEMENTARY SCHOOL,  
Middletown, RI



Teacher Teams,  
Multi-Age,  
Flexible  
Student Groups

Frank Locker/Felding Nair International Educational Planners Litman Architects

19



31

The End of Isolated Teaching

K-2 CENTER, FOREST AVENUE ELEMENTARY SCHOOL,  
Middletown, RI

Teacher  
Teams,  
Multi-Age,  
Flexible  
Student  
Groups

Frank Locker/Fielding Nair International Educational Planners

Litman Architects

31

The End of Isolated Teaching

K-2 CENTER, FOREST AVENUE ELEMENTARY SCHOOL,  
Middletown, RI

4 Core  
Teachers +  
2 Spl Ed  
Teachers +  
Specialists  
with  
85 Students

Frank Locker/Fielding Nair International Educational Planners

Litman Architects

31

The End of Isolated Teaching

K-2 CENTER, FOREST AVENUE ELEMENTARY SCHOOL,  
Middletown, RI

Frank Locker/Fielding Nair International Educational Planners

Litman Architects

31

The End of Isolated Teaching

K-2 CENTER, FOREST AVENUE ELEMENTARY SCHOOL,  
Middletown, RI


Frank Locker/Fielding Nair International Educational Planners

Litman Architects

## The End of Isolated Teaching/ Project Based Learning

### NEW TECH HIGH/ NEW TECH NETWORK

- 21<sup>st</sup> Century Skills
- Standardized testing scores significantly higher than comparative schools
- High university acceptance/attendance: 89%
- 1.5X national average university graduation rate: 80%
- 2X national university enrollment in science + math: 40%




NTD Architects

## The End of Isolated Teaching/ Project Based Learning

### NEW TECH HIGH


- Geography + Language Arts
- Computer Applications + Science
- Biology + Literature
- Math + Environmental Science
- Computer Apps + Language Arts
- Political Studies (Language Arts + Government + Economics)
- Math + Engineering
- Technology + Math
- Communication Studies (Lang Arts + Drama)
- Global Studies (Lang Arts + World History)
- American Studies (Language Arts + US History)
- Bio-Fitness (Biology + Health + PE)
- Spatial Studies (Digital Media + Geometry)



## The End of Isolated Teaching/ Project Based Learning

### NEW TECH HIGH

- Solar Energy
  - Students research heat transfer and energy transformations to design a device that would capture the sun's energy and convert it into useful energy for cooking
- Down to Earth
  - Students investigate satellite orbits in order to determine the arc a satellite signal would cover, and use this information to find the number of satellites needed to cover the circumference of the Earth
- Iron Chef
  - Students discover how the logic of chemical stoichiometry can be used every day in the kitchen



## The End of Isolated Teaching/ Project Based Learning

### NEW TECH NETWORK

#### NEW TECH HIGH SCHOOL STUDENTS:

- **ATTAIN 92% GRADUATION RATE, 9 PERCENTAGE POINTS HIGHER THAN THE NATIONAL AVERAGE**
- **PERSIST IN COLLEGE AT A RATE OF 82%**
- **BROW 52% MORE IN CRITICAL THINKING SKILLS**
- **SCORE HIGHER ON ACADEMIC MEASURES AND EMPLOYABILITY SKILLS**
- **OUTPERFORM ON COLLEGE ENTRANCE AND END-OF-COURSE EXAMS**

Based on the most recent data available, supporting New Tech Network schools. We understand that the data is not perfect, but it is a strong indicator of the impact of the New Tech school model. Detailed information on this research is found on page 22-24.

NYA SCHOOLS HAD A HIGHER HIGH SCHOOL GRADUATION RATE OF 82% COMPARED TO THE NATIONAL AVERAGE OF 80%.

THE CLASS OF 2014'S PERSISTENCE RATE ACROSS ALL INSTITUTION TYPES IS 82%, COMPARED TO THE NATIONAL AVERAGE OF 76%.

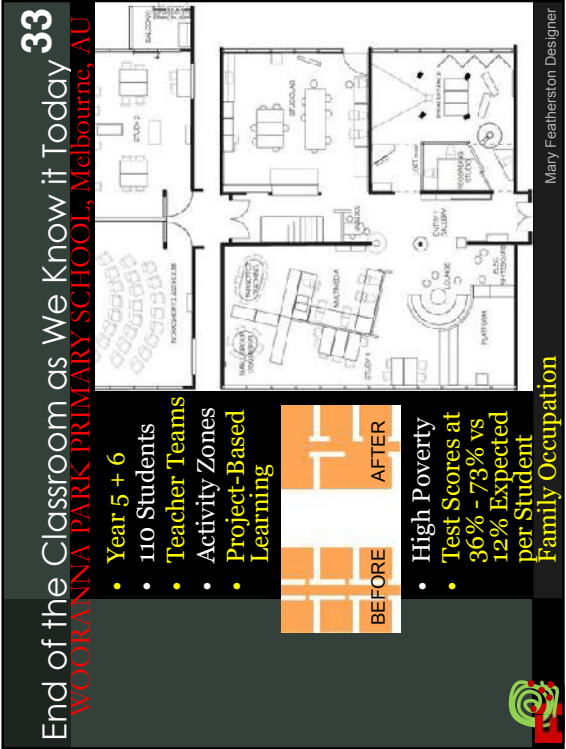
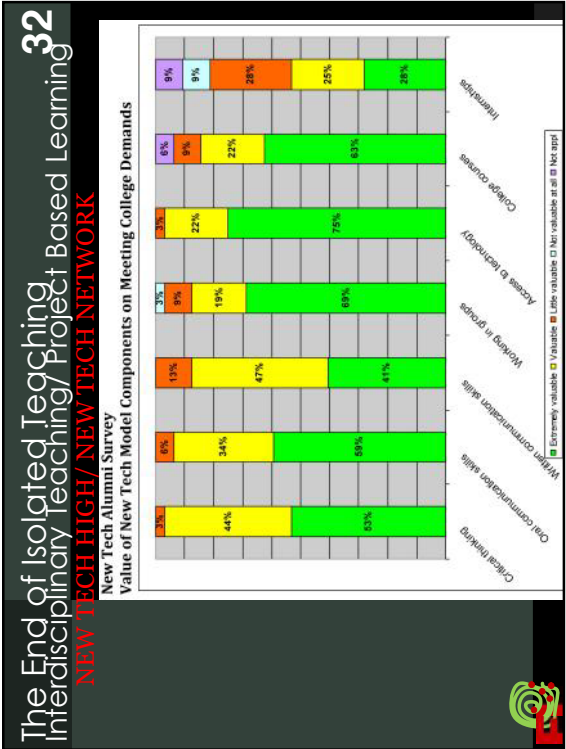
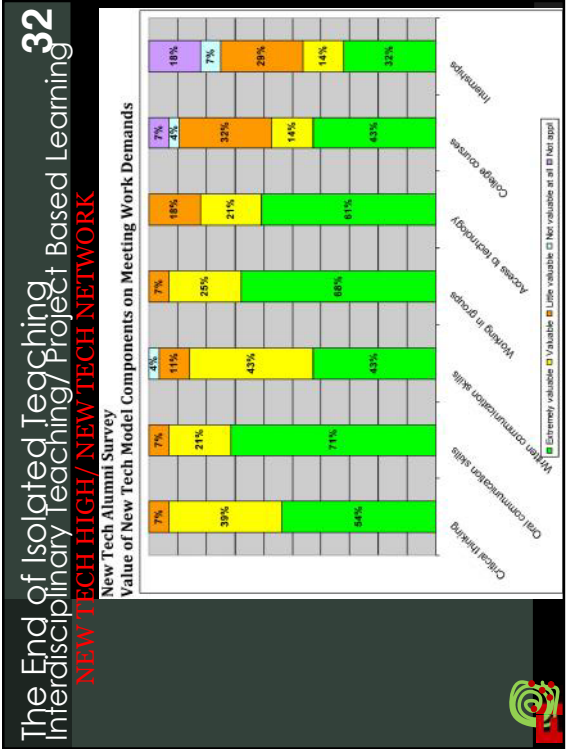
USING THE COLLEGE AND WORK READINESS ASSESSMENT WITH STUDENTS CONSISTENTLY DEMONSTRATED AN AVERAGE GROWTH OF 52% MORE THAN THE COMPARISON GROUPS OVER THE LAST 3 YEARS

STUDENTS WHO ATTENDED DEEPER LEARNING NETWORK SCHOOLS REPORTED HIGHER LEVELS OF INTERPERSONAL AND INTRAPROFESSORIAL COMPETENCIES, AS WELL AS COLLEGE ENGAGEMENT, INSTITUTION FOLLOW-UP, AND SELF-EFFICACY

87% OF GRADUATES OUTPERFORMED COMPARISON STUDENTS IN ENGLISH, MATH AND END-OF-COURSE, LANGUAGE ARTS EXAMS, AND OVER 17% GRADUATES OUTPERFORMED COMPARISON STUDENTS ON ART COMPUTE SCORES.

New Tech Network 2017 Annual Report





The End of the Classroom as We Know it Today

# Center for Innovative Studies

MILAN, MI

33

FANNING+HOWE

Milan's Center for Innovative Studies  
Milan's Arts Schools  
Milan, Michigan

Study Commons

Classroom

Lecture Hall

Meeting Room

Office

Reception

Kitchen

Bathroom

Garden

Parking Lot

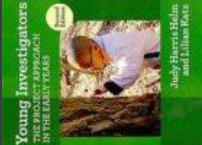
A collage of four photographs showing modern, open-plan classrooms. The top-left photo shows students sitting at a long table, looking at a large screen displaying a presentation. The top-right photo shows a student working at a desk in a bright, open-plan space. The bottom-left photo shows a student working at a desk in a bright, open-plan space. The bottom-right photo shows a student working at a desk in a bright, open-plan space.

# Project Based Learning

## 17


There is ample evidence that PBL is an effective method for teaching students complex processes and procedures such as planning, communicating, problem solving, and decision making.

There is some evidence that PBL, in comparison to other instructional methods, has value for enhancing the quality of students' learning in subject matter areas, leading to the tentative claim that learning higher-level cognitive skills via PBL is associated with increased capability on the part of students for applying that learning in novel, problem solving contexts.




Young Investigators  
in the Third Grade  
Judy Harris Helm  
and Lilian Katz

Third Grade



A REVIEW OF RESEARCH ON PROJECT-BASED LEARNING John W. Thomas, Ph. D., 2000



# Places for Learning

A TYPOLGY

Frank Locker PhD  
fl@franklocker.com  
© 2018 Frank Locker Inc

## Places for Learning- A Typology

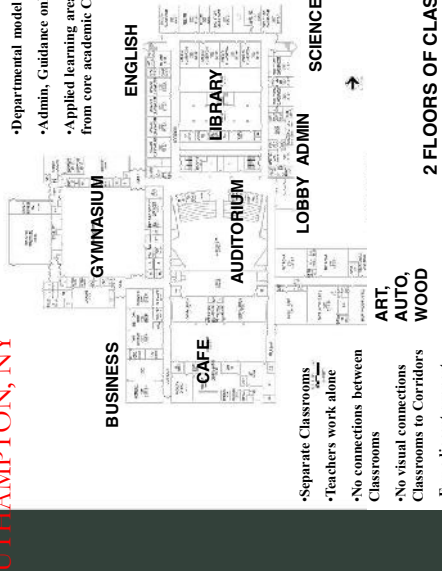
YOUR ASSIGNMENT RANK

- Work with your table team mates. Identify.
- The 3 most appropriate exemplars.
- Why? What qualities did you admire?
- The 1 least appropriate.
- Why? What qualities did you dislike?

## ISOLATED CLASSROOMS/“TEACHING WALL”

Southampton High School  
SOUTHAMPTON, NY

A



- Departmental model
- Admin, Guidance only at front door
- Applied learning areas separated from core academic Classrooms
- Separate Classrooms
- Teachers work alone
- No connections between Classrooms
- No visual connections Classrooms to Corridors
- Few adjacent support spaces

2 FLOORS OF CLASSROOMS

## STUDIO SPACE

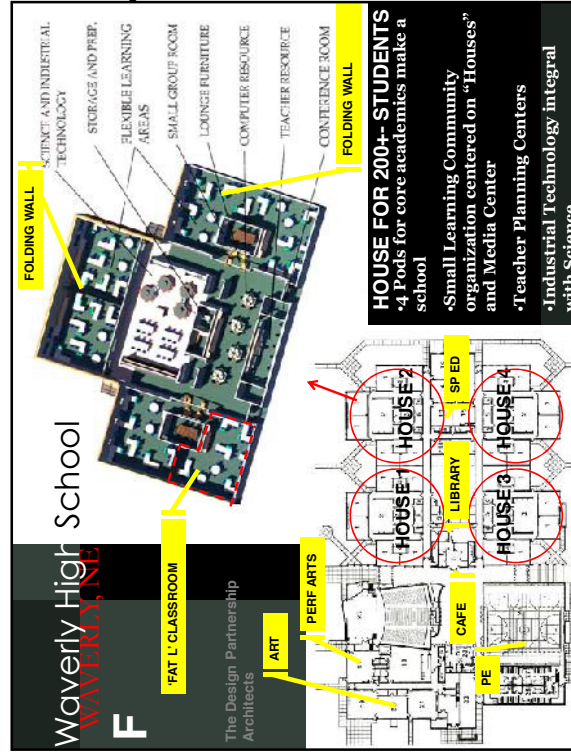
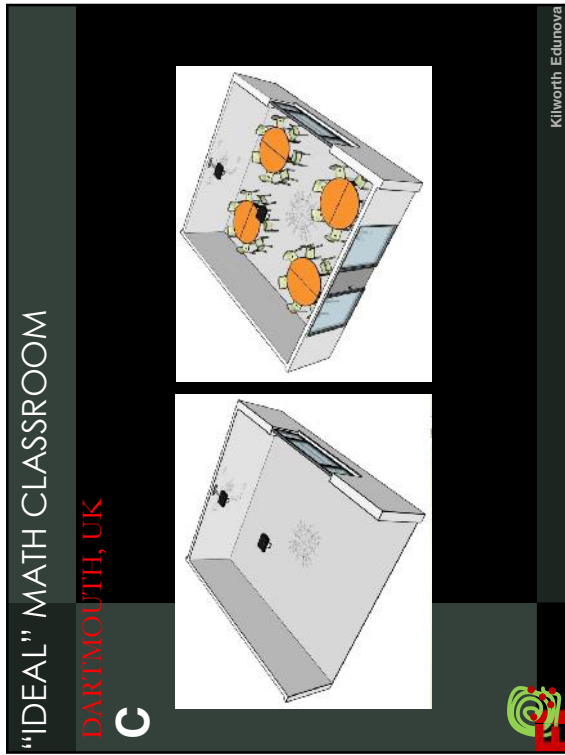
Grand Rapids Public Schools  
MIDDLE SCHOOLS

B



Frank Locker/DeJONG Inc





COMMON SPACE OTHER USES/FLEX WALLS

Cristo Rey High School

MINNEAPOLIS, MN

Overall plan showing common spaces, classrooms, and administrative offices. Key areas include: Learning Commons, Library, Cafeteria, Gymnasium, and various classrooms. The plan also shows the location of the new building and the existing building.

Fielding Nair International

COMMON SPACE OTHER USES/FLEX WALLS

Cristo Rey High School

MINNEAPOLIS, MN

Overall plan showing common spaces, classrooms, and administrative offices. Key areas include: Learning Commons, Library, Cafeteria, Gymnasium, and various classrooms. The plan also shows the location of the new building and the existing building.

Fielding Nair International

COMMON SPACE HOLDS OTHER USES

End of the Library as We Know it Today

CONCORD, NH ELEMENTARY SCHOOLS

LEARNING COMMONS

HMFH Architects

COMMON SPACE HOLDS OTHER USES

End of the Library as We Know it Today





CONCORD, NH ELEMENTARY SCHOOLS

LEARNING COMMONS

HMFH Architects





**END OF THE CAFETERIA AS WE KNOW IT TODAY**  
Strategic Interdisciplinary  
NEW TECH HIGH

NTD Architects

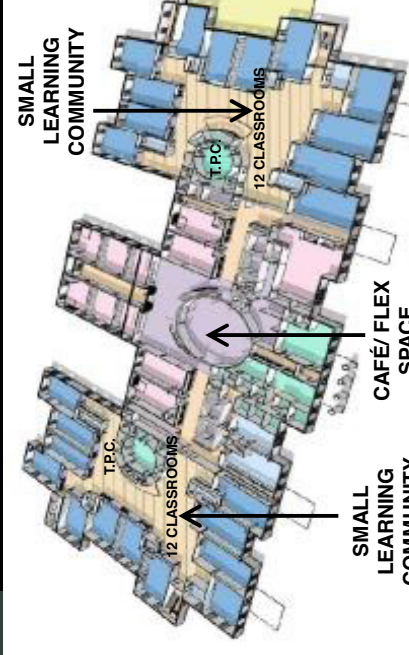
**END OF THE CAFETERIA AS WE KNOW IT TODAY**  
Strategic Interdisciplinary  
NEW TECH HIGH

- 1:1 student computer ratio
- Use of projects to engage students: achieve deeper learning
- Integrate 21<sup>st</sup> Century skills
- 2 Person synchronous team teaching

NTD Architects


**Grades 1-8 School**  
NEW ALBANY-PLAIN LOCAL SCHOOLS, New Albany



Moody Nolan Architects

**FLEXIBLE TEACHER + STUDENT CONTROLLED SPACES**  
Grade 1-8 School  
NEW ALBANY, OH





Moody Nolan Architects


Grade 1-8 School  
NEW ALBANY, OH




Moody Nolan Architects



Grade 1-8 School  
NEW ALBANY, OH



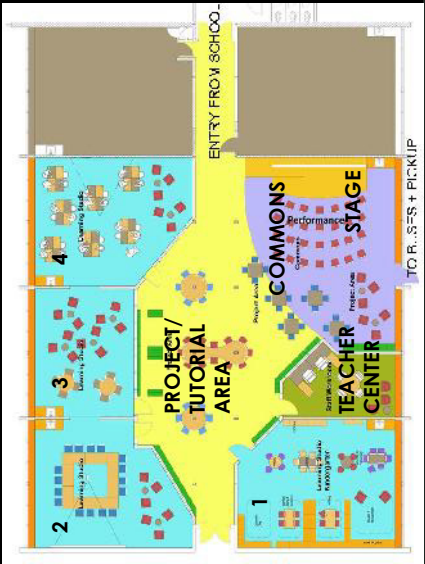
Moody Nolan Architects




SHARED STUDIOS + RESPONSIBILITY  
Forest Avenue School K-2 Center  
MIDDLETOWN, RI

Teacher Teams, Multi-Age, Flexible Student Groups


4 Core Teachers + 2 Spl Ed Teachers + Specialists with 85 Students




Frank Locker/Fielding Nair International Educational Planners Litman Architects



SHARED STUDIOS + RESPONSIBILITY  
Forest Avenue School K-2 Center  
MIDDLETOWN, RI



Frank Locker/Fielding Nair International Educational Planners Litman Architects










Future Furniture

Frank Locker Educational Planning

1

Classrooms

TRADITIONAL MODEL, PERFECT FOR LECTURE + DIRECT INSTRUCTION



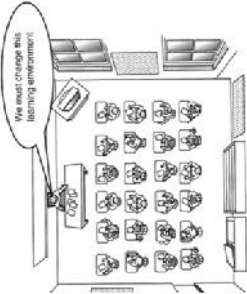
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2

Classrooms

SCHOOL FURNITURE: STUDENT CENTERED LEARNING – STEP 1

A Series of Steps for Reconfiguring the Classroom to Reflect Student Empowerment:  
From Teacher to Student Centered



Step 1: Recognize that the typical classroom configuration and the mode of teacher-centered learning are unsatisfactory for twenty-first-century student-centered learning.

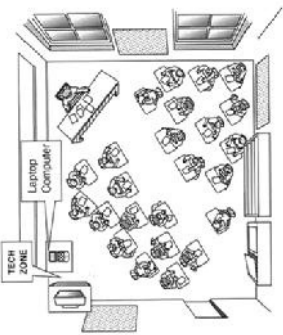
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Classrooms

SCHOOL FURNITURE: STUDENT CENTERED LEARNING – STEP 2

A Series of Steps for Reconfiguring the Classroom to Reflect Student Empowerment:  
From Teacher to Student Centered



Step 2: Try something as simple as putting desks on a diagonal at a forty-five-degree angle to the walls. Align desks so they are not all facing the teacher as sole provider of information. Define a tech zone.

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4



Classrooms

SCHOOL FURNITURE: STUDENT CENTERED LEARNING – STEP 3

Small Group Facilitation

**Step 3:** Replace the teacher's desk with a tech table, which enables the teacher to interact with students. This allows each group focused on its own problem to solve. The "power" has shifted to the student teams.

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(formerly known as) Classrooms

SCHOOL FURNITURE: STUDENT CENTERED LEARNING – STEP 5

Diffused Technology, Presentation, Display, Storage

**Step 5:** Technology use is diffused throughout the learning space while maintaining a tech zone for storage and display. Tech zones include work display space and a floor-to-ceiling work surface, suspended one-foot display, storage, and drop-down elements.

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(formerly known as) Classrooms

SCHOOL FURNITURE: STUDENT CENTERED LEARNING – STEP 4

Learning Flexibility: Individual, Small/Large Group, Presentation

**Step 4:** Expand the technology zone. Provide configurations that support the entire learning process: research and exploration, presentation and reflection. Support individual, small group, and large group learning. The balance of power has shifted to the "gainfully employed" student.

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(formerly known as) Classrooms


FURNITURE ON WHEELS

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8

**MODULAR RE-CONFIGURABLE STUDENT DESKS**

**(formerly known as) Classrooms**



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9

**VARIETY OF FURNITURE IN EACH ROOM**

**(formerly known as) Classrooms**

Creating multiple learning centers.

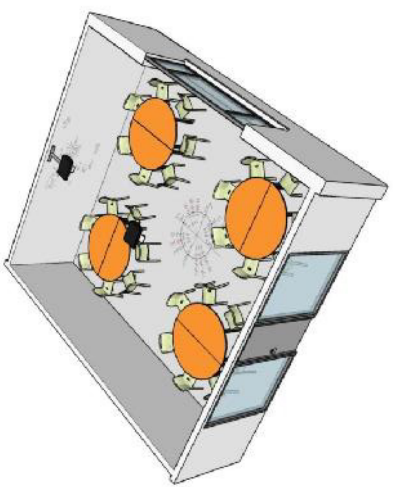


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**ROUND TABLES: THE QUINTESSENTIAL COLLABORATION STATEMENT**

**(formerly known as) Classrooms**



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11

**STAND UP DESKS**

Research shows student behavior improves when students can move while learning.

**(formerly known as) Classrooms**



Safco AlphaBetter

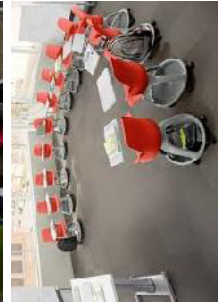
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**FLEXIBLE FURNITURE**  
Steelcase Node Chair



**(formerly known as) Classrooms**



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13

**BEAN BAG CHAIRS**  
Every student's wish. Every teacher's fear.



**(formerly known as) Classrooms**

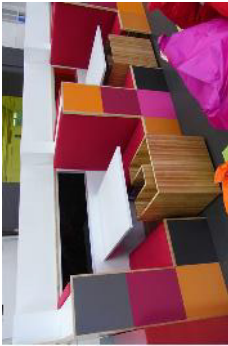




VS Furniture

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**COLLABORATION BOOTHS**



**Breakout Spaces**

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**INSTRUCTIONAL MODULES**



**Breakout Spaces**

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16



Breakout Spaces

CARPETED PLACES TO SPRAWL OUT ON THE FLOOR



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17

Breakout Spaces

VARIED TYPES OF STUDENT CONTROLLED FURNITURE

GRADE 1 – 8 SCHOOL, New Albany, OH

Chairs with handles




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18

Breakout Spaces

ELECTRONIC FURNITURE

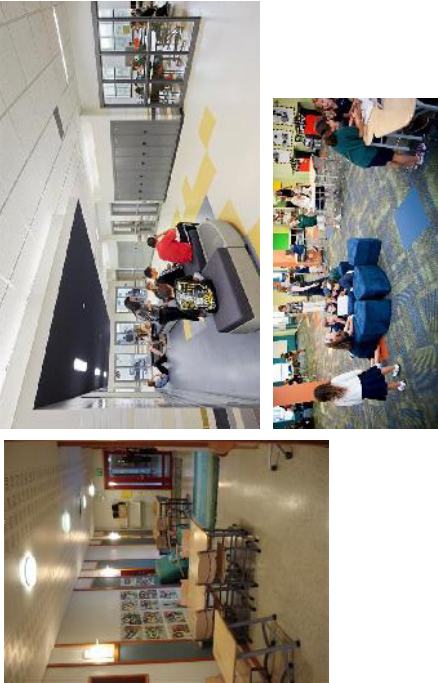


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Breakout Spaces

INFORMAL SITTING/STUDY AREAS

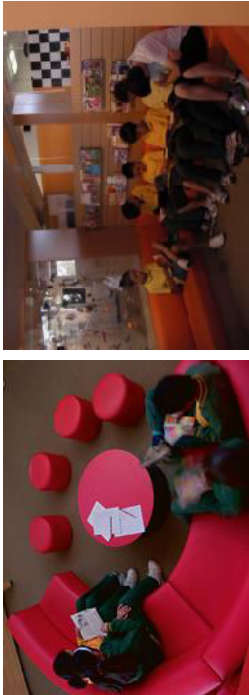


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**GROUP DISCUSSION AREAS**

**Breakout Spaces**



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21

**Maker Space**

**D SCHOOL, STANFORD UNIVERSITY, PALO ALTO, CA**  
Probably the most famous university-level school in USA for PBL and Making Things to Learn




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22

**Maker Space**

**D SCHOOL, STANFORD UNIVERSITY, PALO ALTO, CA**  
Probably the most famous university-level school in USA for PBL and Making Things to Learn



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SCHOOL TRANSFORMATION + DEVELOPMENT MAP 3.1.7														
Name(s) _____ School (District) _____														
	MAINTAINING TRADITION 1		INITIATING CHANGE 2		PROGRESSIVE 3		TRANSFORMING 4		TRANSFORMED 5					
	INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		TOTALS			
	EDUCATIONAL DELIVERY	ALL GRADES INSTRUCTION	EDUCATIONAL DELIVERY	ALL GRADES INSTRUCTION	EDUCATIONAL DELIVERY	ALL GRADES INSTRUCTION	EDUCATIONAL DELIVERY	ALL GRADES INSTRUCTION	EDUCATIONAL DELIVERY	ALL GRADES INSTRUCTION	N	F	NOW	FUTURE
1 LEARNING THEME	No focused learning theme/expression		Themes to designate internal sub-schools w/ little impact on instruction				Thematic curricular component w/ school		Choice thematic, magnet school					
2 EXHIBITS	Student work is rarely actively expressed outside Classroom		Students present work in regular exhibitions				Exhibitions feature outside "experts"		Exhibitions recorded for portfolios + resource					
3 DIFFERENCES	Little or no recognition of learning differences among students except "tracking"		Multiple intelligences + learning styles honored thru differentiated instruction: no tracking						Mult int- learning styles used as a basis of student social learning					
4 PERSONAL LEARNING	"Broadcast" teaching: same to all students in the classroom		Occasional differentiated instruction in assignments, assignments made						Personalized learning plans; student initiated projects					
5 COLLABORATION	Students learn alone		Occasional 2 person teams				Students regularly work in larger teams		Students learn 75% in teams					
6 TEACHER TEAMS	Self contained classroom teaching exclusively		Common planning to coordinate curriculum/know students				Teachers occasionally integrate curriculum by teaching together in same place + same time		Teachers regularly teach synchronously in coordinated teams					
7 OWNERSHIP	Most teachers have "own" classrooms; others on carts		Teachers share "own" Classrooms with specialist teachers				Small groups of teachers share small # of Classrooms based on schedule		Teachers control suite of spaces with corollary teachers					
8 AWARENESS	Students know very little about activities in neighboring classrooms		Students aware of other Classrooms through occasional sharing				Learning spans several classrooms and related spaces		Learning takes place in coordinated manner in variety of shared spaces					
9 TECHNOLOGY	Virtually no computer use		Computers seen as sophisticated writing/math tools				Computers are common in learning		Learning programs, web, virtual access are inseparable from learning					
10 DISPLAY	Best student work is displayed on bulletin boards		All student work on bulletin boards, but second to sports in Lobbies				Each student's work is presented + critiqued		Building is rich with 2D + 3D display of student projects					
11 DELIVERY	Almost exclusive direct instruction		Predominantly direct instruction w/ some discussion				Direct instruction, group discussion, + some problem solving		Project-based learning, discussions, + "just-in-time" direct instruction					
12 INTEGRATION	Core instruction subject based; not all "exploratories" taught		Exploratories (Art, Music, PE, Family) taught separate from non-integrated core				Occasional integration of core learning +/or exploratories		Regular integrated learning includes core + exploratories					
13 LEARNING LOCATION	Learning exclusively in Classrooms, Labs		Learning exclusively in Classrooms with some field trips				Occasional internships/service learning for some students		Regular internships/service learning are integral to learning					
14 WHO TEACHES	Teacher does the teaching		Teacher with aides do teaching				Students teach each other in project based environment		Students regularly teach others; outside "experts" for projects					
15 MAKING LEARNING VISIBLE	No attempt to make learning visible; hidden behind corridor walls		Learning visible through occasional (mostly arts) entertainment/events				Learning visible through authentic evaluations, educational "trophies"		Learning highly visible through all aspects of school life					

SCHOOL TRANSFORMATION + DEVELOPMENT MAP 3.1.7										
School (District)										
Name(s)										
MAINTAINING TRADITION 1			INITIATING CHANGE 2		PROGRESSIVE 3		TRANSFORMING 4		TRANSFORMED 5	
INCLUDES PRACTICES BELOW			INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW	
		CURRICULUM/ ASSESSMENT		CURRICULUM/ ASSESSMENT		CURRICULUM/ ASSESSMENT		CURRICULUM/ ASSESSMENT		CURRICULUM/ ASSESSMENT
16	ASSESS- MENTS	Students poorly informed about standards for tests, papers, worksheets		Students informed about standards for tests, papers, worksheets		Students know rubrics for exhibitions, performances, displays + exams		Authentic teaching and learning: teach the "whole" child; 21st Cent Skills		Outside "experts" + students also assess with rubrics
17	CURRIC FLEX	Delivery method and curriculum is rigid and uniform		Teachers have high discretion over delivery in Classrm w/ little oversight		Teachers learn to review assessment data		Teachers team to review data, create units + lessons, + evaluate success		Teachers share data as part of regular school improvement
18	SOCIAL/ EMOTIONAL	Focus on academic learning exclusively		Guidance counselor responsible for any social-emotional learning disconnected from Classroom				Social/emotional learning a regular part of curriculum		Advisor-advisee + wellness courses for all students
19	21st CENT SKILLS	No recognition of 21st Century Skills		Some skills acknowledged but taught as separate content area, like advisor-advisee				Skills integrated in curriculum in random manner subject to teacher initiative		Full integration of skills in all aspects of curriculum
20	CURRIC- ULUM	Teaching objectives determined by items to be tested		Curriculum objectives traditional and/or standards driven		Curriculum mostly standards-based with occasional inquiry + social skills; 21st Cent Skills		Objectives: inquiry based, social skills, project learning, critical thinking		Objectives: inquiry based, social skills, project learning, critical thinking
21	KNOW- LEDGE	Curriculum oriented to teachers teaching known answers			Occasional indeterminate answer assignments				Issues that have no single answers; problem solving is the focus	
22	TEXT BOOKS	"Textbook is the curriculum", few or no connections among subjects/disciplines; sequential		Textbooks supplemented with original materials		Variety of curricular approaches, largely teacher determined		Variety of curricular approaches, largely district determined		Textbooks used only as data resource support local delivery decisions
23	PACE + VEHICLES	District/state determine what all students learn + what learning vehicles will be		Teacher determines what all students learn + what learning vehicles will be		Teacher teams determine what students learn + what learning vehicles will be		Students have some determination in learning vehicles		Students determine own personalized learning plan within a rubric
24	GRADING	Individual teacher responsible for determining policy + grades		School determines policy; teachers determine student grades		Grades established by team of teachers at exhibitions		Grades established by teachers, peers, outside experts + student self assessment		Grades established by teachers, peers, outside experts + student self assessment
25	FRE- QUENCY	Occasional testing seen as record keeping		Lag time between testing + feedback		Feedback on tests is quick + formative		Students receive frequent, immediate formative + summative feedback		Students receive frequent, immediate formative + summative feedback
		LEADERSHIP		LEADERSHIP		LEADERSHIP		LEADERSHIP		LEADERSHIP
26	DISTRIBU- TION	Central Admin + Guidance at front door		Central Guidance but distributed Admin (VP/AP at learning areas)				Admin + Guid at learning areas		Admin + Guid at learning areas
27	SCHEDUL- ING	Room scheduling done by Central Administration		Central room scheduling but occasional teacher discretion		Room scheduling done by Distributed Administration		Room scheduling done by affected teachers		Room scheduling done by affected teachers
		PROFESSIONAL DEVELOPMENT		PROFESSIONAL DEVELOPMENT		PROFESSIONAL DEVELOPMENT		PROFESSIONAL DEVELOPMENT		PROFESSIONAL DEVELOPMENT
28	PROF DEVELOP- MENT	Central admin & state reqmts determine school wide prof. development, uncoordinated		Coordinated state/district PD program		Teachers lead school in prof. development with district/state guidance		Teachers actively reflect on classroom practices, direct prof development within school vision/mission		Teachers actively reflect on classroom practices, direct prof development within school vision/mission
29	COMMON PLANNING	No common planning time		Departmental planning time		Teacher team planning time		Teachers develop research projects to inform their own instruction		Teachers develop research projects to inform their own instruction
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		Col 1 = 1 point Col 2 = 2 points Col 3 = 3 points Col 4 = 4 points Col 5 = 5 points Average point value for multi-column issues								
		TOTALS								

SCHOOL TRANSFORMATION + DEVELOPMENT MAP 3.1.7										
Name(s) _____ School (District) _____										
MAINTAINING TRADITION 1		INITIATING CHANGE 2		PROGRESSIVE 3		TRANSFORMING 4		TRANSFORMED 5		TOTALS
INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		
	RELATIONSHIP BUILDING	RELATIONSHIP BUILDING	RELATIONSHIP BUILDING	RELATIONSHIP BUILDING	RELATIONSHIP BUILDING	RELATIONSHIP BUILDING	RELATIONSHIP BUILDING	RELATIONSHIP BUILDING	RELATIONSHIP BUILDING	
30	ADVISORS	Guidance counselors believed sufficient to advise students	Group discussions led by guidance counselors	Teachers lead occasional Advisor-Advisee programs w/ vague curriculum	Teachers lead frequent Advisor-Advisee programs w/ vague curriculum	Teachers lead frequent Advisor-Advisee programs with consistent curriculum	Teachers lead frequent Advisor-Advisee programs with consistent curriculum	Teachers lead frequent Advisor-Advisee programs with consistent curriculum	Teachers lead frequent Advisor-Advisee programs with consistent curriculum	
31	KNOWING	Principal does not now names of all students	Students known individually by individual teachers; sharing of knowledge of students among teachers is circumstantial	Student known by teacher team focused on relationship building	Student known by teacher team focused on relationship building	Student known by teacher team focused on relationship building + personalizing learning	Student known by teacher team focused on relationship building + personalizing learning	Student known by teacher team focused on relationship building + personalizing learning	Student known by teacher team focused on relationship building + personalizing learning	
32	ADULTS	PTO lends valued support to school; community members not sought out	Parents sought as volunteers for program support	Community members sought as experts and mentors	Community members sought as experts and mentors	Community members sought as experts, tutors, role models	Community members sought as experts, tutors, role models	Community members sought as experts, tutors, role models	Community members sought as experts, tutors, role models	
33	ARTICULATION	K-12 educational delivery not highly articulated	Occasional curricular connections to sending/receiving school	Occasional educational delivery + guidance connections to schools with lower or higher grade levels	K-12 educational delivery highly articulated	PK-16 educational delivery highly articulated; dual degree programs	PK-16 educational delivery highly articulated; dual degree programs	PK-16 educational delivery highly articulated; dual degree programs	PK-16 educational delivery highly articulated; dual degree programs	
34	COMMUNITY	Community uses seen as detrimental to student safety	Evening/weekend community use of limited spaces	Community use of limited spaces	Community use of limited spaces	Community users during school day embraced as learning opportunity for students	Community users during school day embraced as learning opportunity for students	Community users during school day embraced as learning opportunity for students	Community users during school day embraced as learning opportunity for students	
35	TECHNOLOGY	No computer use	Computer keyboarding	Students regularly make electronic presentations	Students show teachers use of technology	Regular virtual learning in all modes	Regular virtual learning in all modes	Regular virtual learning in all modes	Regular virtual learning in all modes	
36	GROUPING	Students grouped by age/year level	Students grouped by age/year level; regrouped for RTIs	Age/year groupings, RTIs; teachers loop with students	Age/year groupings, RTIs; teachers loop with students	Multi grade instruction for developmental reasons	Multi grade instruction for developmental reasons	Multi grade instruction for developmental reasons	Multi grade instruction for developmental reasons	
37	EXPLORATORY	Phys Ed, Music are exploratory	Art added as exploratory	Science added as exploratory program	STEM/STEAM added as exploratory program	Exploratory learning inherent in all curricular areas	Exploratory learning inherent in all curricular areas	Exploratory learning inherent in all curricular areas	Exploratory learning inherent in all curricular areas	
38	TRACKING	Students are ability tracked	Students ability tracked w/ G+T	MIDDLE YEARS	MIDDLE YEARS	MIDDLE YEARS	MIDDLE YEARS	MIDDLE YEARS	MIDDLE YEARS	
39	SCHOOL CONCEPT	Junior High format even though may be called "Middle School"	Middle School without consistent Houses	Students ability tracked w/ G+T + learning dfs	Students heterogeneously grouped	All students on personal learning plans	Perhaps K-8 for developmental + family reasons	Perhaps K-8 for developmental + family reasons	Perhaps K-8 for developmental + family reasons	
40	TRACKING	Students are ability tracked	Students ability tracked w/ G+T	Students ability tracked w/ G+T + learning dfs	Students heterogeneously grouped	All students on personal learning plans	All students on personal learning plans	All students on personal learning plans	All students on personal learning plans	
41	SCHOOL ORGNZTN	Departmental organizational structure + facility plan	Departmental w/ special program (Senior Project)	Mixed school organization: i.e. departmental w/9th grade house	Mixed school organization: i.e. departmental w/9th grade house	Small learning communities; virtual departments to maintain curriculum standards	Small learning communities; virtual departments to maintain curriculum standards	Small learning communities; virtual departments to maintain curriculum standards	Small learning communities; virtual departments to maintain curriculum standards	
42	ELECTIVES	Limited or no elective courses				Thematic learning; career clusters; magnet schools	Thematic learning; career clusters; magnet schools	Thematic learning; career clusters; magnet schools	Thematic learning; career clusters; magnet schools	
Goal: wide range of unrelated electives										
TOTALS										

Cd 1 = 1 point  
Cd 2 = 2 points  
Cd 3 = 3 points  
Cd 4 = 4 points  
Cd 5 = 5 points  
Average point value for this column is \_\_\_\_\_

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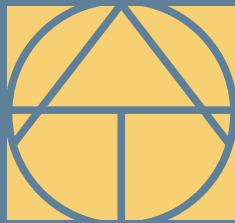
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	INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		INCLUDES PRACTICES BELOW		TOTALS
43	INTERDISCIPLINARY	Content areas are not intentionally linked	Occasional teacher driven interdisciplinary links		Core content areas linked: Science-Math, English-Soc Studies				Core content areas and exploratory areas linked		
44	APPLIED LEARNING	No applied learning in school	Tech Ed, Vocational, Career-Tech present but unrelated to core academics		Academics related to Career-Tech programs				Academics imbedded in Career-Tech		
45	CLASS SIZE	Class size based on equity; teaching alone, available # students	Variety in class sized based also on exclusiveness of subject area		Variety in class size based on team teaching				Variety in class sizes based on project teams		
46	TIME TABLE	45 to 60 minute class period	Block schedule, 90 minute class periods		Mega-blocks within schedule				No uniform schedule; determined by teachers (students)		
EDUCATIONAL DELIVERY AVERAGE OVERALL SCORE											
	FACILITIES		FACILITIES		FACILITIES		FACILITIES		FACILITIES		
	N	F	N	F	N	F	N	F	N	F	NOW FUTURE
	ALL GRADES OVERALL PLANNING		ALL GRADES OVERALL PLANNING		ALL GRADES OVERALL PLANNING		ALL GRADES OVERALL PLANNING		ALL GRADES OVERALL PLANNING		
1	Circumstantial overall building size/capacity		School size set for administrative/operational efficiency, no small schools within		Efficient school size/capacity, non-autonomous schools within school		Efficient school size/capacity, semi-autonomous schools within school		Intentional building size/capacity to foster relationships; autonomous small schools/teacher teams within		
2	Spaces/furniture inappropriate for current educational methods; wrong sizes, locations, services, equipment		Spaces/furniture rigid; conceived to serve one concept of current educational models		Spaces/furniture allow several current educational deliveries with difficulty		Spaces/furniture allow several current educational deliveries with ease		Spaces/furniture flexible/agile to anticipate future educational trends		
3	Facility makes it almost impossible for teachers to collaborate		Facility supports occasional/non-synchronous teacher collaboration		Facility supports regular/non-synchronous teacher collaboration		Facility supports regular/synchronous teacher collaboration		Facility supports teacher collaboration + control of schedule + space		
4	No attempt to make learning visible		Bulletin boards in corridors		Bulletin boards, display cases for academics		Bulletin boards, display cases, windows to classrooms, video monitors		Learning highly visible through transparency, display, activities		
5	Spaces rigid in design; no flexibility		Flexibility only in some folding partitions; never used		Flexibility in folding partitions; often used		Many spaces are flexible for multiple uses		Spaces measure w/ minimum error, agile for reuse w/o physical alterations		
6	Circulation conceived in minimal terms of moving people; Corridors + lobbies only		Functional circulation with notable public expression at Lobbies		Circulation centers on social gathering space(s) as focus of school		Central gathering space(s) + "hang out" spaces		Central social gathering space(s), "hang out" spaces + student centric social/work spaces		
7	No intentional building expression		School colors are primary school signature		Special effort made at Main Entry, school colors prevail		School signature expressed in occasional places		School signature widely expressed throughout building		
8	Plan based on single idea traditional of school organization; departmental, grade level, etc		Traditional planning but allows mixed grade levels		Flexible/agile school plan allows several school organizations; 9th grade house				Relationship-based plan to best support Column 5 educational delivery		
9	Building plan: highly separate, unrelated functional areas; does not facilitate public access to community uses		Building plan: highly separate, unrelated functional areas; zoned for public access to community spaces		Building plan strategically relates functional areas; zoned for public access to community spaces		Building plan links different program areas to facilitate interdisciplinary learning within core; zoned public uses		Building plan links program areas for interdisciplinary learning among core + specials; zoned public uses		
10	Student movement expected to be across entire building; hall passes		Student movement controlled by teachers; hall passes		Building guides student movement within non-autonomous subzones		Building guides student movement within intentional focused subzones		Small school or movement only within relationship zones; hall passes are passe		

SCHOOL TRANSFORMATION + DEVELOPMENT MAP 3.1.7						
Name(s) _____ School (District) _____						
	MAINTAINING TRADITION 1	INITIATING CHANGE 2	PROGRESSIVE 3	TRANSFORMING 4	TRANSFORMED 5	
	INCLUDES PRACTICES BELOW	INCLUDES PRACTICES BELOW	INCLUDES PRACTICES BELOW	INCLUDES PRACTICES BELOW	INCLUDES PRACTICES BELOW	TOTALS
11 AUTONOMY	Self-contained school but missing some functional spaces	Self contained school with all appropriate functions	Intended as self-contained but relies occasionally on nearby institutions for program use	Intentionally not self-contained; relies heavily on neighboring institutions		
12 COMMUNITY	No spaces for community use	Gym, Café, Auditorium occasional community use	Community access well planned + zoned	Public + private community spaces used regularly by students		
13 MIXED USE	Single use school building	School shares site with other public uses: Library, Recreation	School shares site with business/residential	School planned to partly convert to other uses when enrollments drop		
14 LEADERSHIP	Admin + Guid central but hard to find	Central Admin + Guid at front door	Central Admin; distributed Guidance spaces	Distributed Guid + Admin		
15 PARENTS/VOLUNTRS	No spaces oriented to parents	Parents access Library or Admin	Parent Room	Parent Room + Volunteer Room		
	SPECIFIC SPACES	SPECIFIC SPACES	SPECIFIC SPACES	SPECIFIC SPACES		
16 TRANSPARENCY	No windows to corridors	View panels at doors	Windows to Commons spaces, other Classrooms allow teachers to observe students working separately/independently	Abundant windows connecting all spaces, including Teacher + Admin		
17 GROUPING	Building conceived as unrelated Classrooms along Corridors	Classrooms related to others of similar use	Separate Classrooms arranged with others of different use to support interdisciplinary, multi age/grade learning	Building conceived as suites of flexible learning spaces		
18 SMALL GROUPS	No small learning spaces	Few small group learning spaces irregularly located		Variety of small learning spaces closely related to core spaces + Med Ctr		
19 ARTS	No Visual/Perf Arts spaces	Inadequate Visual/Perf Arts spaces	Spaces adequate, related to other "specials" but not related to core spaces	Adequate arts spaces located to integrate w/ core learning		
20 SPECIAL ED	Separate Spl Ed spaces	Spl Ed in ad hoc spaces converted from other uses, too big/too small	Spl Ed "pull out" model; Resource Rooms + Self Contained	Inclusion model; minimal exclusive Spl Ed spaces		
21 PE/ATHLETICS	Inadequate space for Phys Ed	Gym for Phys Ed/intramurals/Athletics	Multipurpose Gym designed with good acoustics for assembly use	Gym/PE/Athletics facilities used by community		
22 TECH ED	No Tech Ed or "hands on" applied learning spaces	Tech Ed spaces, unrelated to core spaces	Tech Ed spaces easy access from core spaces	Tech Ed spaces integrated with core curriculum + spaces		
23 SCIENCE/STEM/STEAM	None in Elementary; marginal in Middle and High	Science Labs specific to sub-science: chemistry, physics etc. Not flexible	Multi-purpose, flexible Science Labs	STEM/STEAM Lab integrated with Science and/or Arts		
24 ROOM SIZES	Irregular Classroom sizes seen as inequitable	Uniform Classroom size: equitable	Classroom sizes vary to match size of student groups	Variety of learning spaces supporting teachers collaborating with varied learning		
25 COMPUTER LABS	Insufficient Computer Labs	Sufficient Computer Labs	Computer/Dry Labs flexible for future conversion to other uses	Laptop computers; no Labs needed		
26 MEDIA CTR	Media Ctr contains print media only	Media Ctr contains print + electronic media	Media Ctr demand reduced by classrooms contain electronic media	Media Ctr partly virtual, distributed in several locations		
27 ASSEMBLY	Assembly needs not served by facilities	Assembly needs served poorly; in Gym or Café, no Stage	Cafetorium with adequate Stage	Auditorium stage sized for teaching & learning, seating as few as possible		

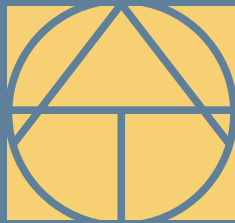


Frank Locker Educational Planning [www.franklocker.com](http://www.franklocker.com) [fl@franklocker.com](mailto:fl@franklocker.com) 617.412.7444





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