FULLER

Schematic Design

Fuller Middle School, Framingham, Massachusetts

Owner

City of Framingham, Massachusetts

Client

City of Framingham, Massachusetts

Architect

Jonathan Levi Architects LLC

Owner's Project Manager

SMMA

September 12. 2018

Volume 1:

Volume 2:
SCHEMATIC DESIGN PROJECT MANUAL

SMMA

Project Management

September 12, 2018

Ms. Mary Pichetti
Director of Capital Planning
Massachusetts School Building Authority (MSBA)
40 Broad Street, Suite 500
Boston, Massachusetts 02109

Re: Fuller Middle School **Framingham, Massachusetts**

DESE Submission *SMMA No. 17050*

Dear Ms. Pichetti:

The District is pursuing execution of a Project Scope and Budget Agreement for the MSBA approved Schematic Design for the Fuller Middle School project in Framingham, Massachusetts. The District's 2017/2018 enrollment is 8,739. The design enrollment for the proposed school project is 630 students. The existing Fuller Middle School currently serves grades 6-8.

In accordance with M.G.L. c.70B, MSBA staff assembled the documents required for the review of the special education program at Fuller Middle School. The following are attached per the "Submittal Requirements":

1. A letter from Superintendent Robert Tremblay of the Framingham Public School District describing its special education program.
2. Proposed space summary that includes the existing facility, proposed spaces, and MSBA guidelines based on the agreed upon design enrollment. The first page of this summary indicates a total of 9,150 square feet of space dedicated to the delivery of special education.
3. The floor plans for the proposed 136,790 square foot Fuller Middle School.
4. A complete Special Education Adjacency Table.

I have reviewed the attached documents and confirm that the District's School Building Committee has officially approved the attached submittal on September 11, 2018 and verify that the space summary match the floor plan and is complete and conform to the MSBA requirements as described in Module 4 – Schematic Design Guidelines.

Very truly yours,

SMMA

Joel G. Seeley
Project Director

cc: School Building Committee (MF)

enclosures: See above.

1000 Massachusetts Avenue
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Framingham Public Schools

Robert A. Tremblay, Ed.D., Superintendent of Schools

73 Mount Wayte Avenue, Suite #5
Framingham, Massachusetts 01702
Telephone: 508-626-9118 Fax: 508-877-4240

August 28, 2018

Mathew Deninger
Planning and Implementation Coordinator
Massachusetts Department of Elementary and
Secondary Education
75 Pleasant Street
Malden, MA. 02148-4906

RE: Fuller Middle School
4B.2 Special Education Delivery Methodology Letter

Dear Mr. Deninger:

Framingham Public Schools provides a broad array of services for children and youth identified with disabilities from the ages of three through twenty-two. State and federal special education laws and regulations, namely The Individuals with Disabilities Education Act (IDEA), govern the referral, evaluation and placement procedures. Framingham Public Schools is committed to the goal of providing an appropriate education for students with needs in the least restrictive environment.

Services Available in All Schools

- Resource Room/In-Class Support
- Partial Inclusion Opportunities
- Occupational Therapy
- Speech and Language Therapy
- Physical Therapy
- Adaptive Physical Education
- BCBA/ABA Services
- Teacher of the Visually Impaired
- Orientation and Mobility

In addition to the services provided in all schools, we also have forty-nine substantially separate classrooms, PreK-12 in the district.

Fuller Middle School currently has four multi-grade classrooms supporting a substantially separate program for students with Intellectual Impairments. It is anticipated that we will not need to expand this program and four classroom spaces will continue to meet the needs of the program. Fuller

Middle School also has a substantially separate program for students with Autism. Currently there is one multi-grade classroom. It is anticipated that we will need an additional classroom in the next 2-3 years due to an increased Autism population in the elementary school programs.

4B.2.1 Current Program

The Framingham Public Schools currently serves approximately 2,100 special education students from the age of 3 until the age of 22 years in placements within the district and in out of district schools. The Framingham Public Schools is committed to providing services for students in the least restrictive setting and offers a continuum of services and programs designed to meet students needs. The district currently supports a range of inclusive and substantially separate programming across buildings and grade levels to meet the uniques needs of the students. We have substantially separate classrooms for students Autism, Developmental Delays, Intellectual Impairments, Specific Learning Disabilities, Emotional Impairments and Multiple Disabilities. Students in these programs may also have sensory impairments- hearing, sensory impairment-vision, and physical impairments. The district maintains appropriate small group content area classrooms at the secondary level and provides both inclusion and pull out instruction across grade levels and all fifteen schools.

Direct services as well as consultation services are provided by special educators, speech and language pathologists, occupational therapist, physical therapists, board certified behavior analysts, applied behavior analysis, a vision specialist, an orientation and mobility specialist, an adaptive physical education specialist, an audiologist, counselors, social workers, and school psychologists.

The vision of Fuller Middle School is to provide all children with a project-based learning experience through a STEAM model that engages students through inquiry and emphasizes the 21st Century skills of critical thinking, communication, collaboration, creativity and citizenship. The educational program, envisioned by the Fuller Middle School community along with school and district leadership, emphasizes project-based, student-centered learning; collaboration (student-student, student-staff, staff-staff); flexible groupings and space configurations; and strategic use of technology. STEAM instruction at Fuller Middle School blurs subject area boundaries, engages students in learning by doing, encourages students to ask and investigate meaningful questions, and places students at the center of their own learning. Furthermore, it provides a vehicle for fully engaging ALL students by providing multiple entry points, connecting to real-world contexts, and developing a strong culture of accomplishment and accountability.

Presently, the Fuller School serves students in the following programmatic areas:

Programmatic Area	Description	Abbreviation	Total Students (June 25, 2018)
Regular (or General Education)	A general education program for mainstreamed students, gifted students, and all students who receive most of their instruction through general education classrooms	REG or GenEd	235

Sheltered English Immersion	English learners receive instruction to support their English language development and access their core content through the general curriculum	SEI	72
Transitional Bilingual Education	A bilingual program for English learners that uses the student's first language and English for instruction	TBE	123
Students with Disabilities (special education)	Students with disabilities who receive their education services	SWD or SPED	131
		Total	561

The Fuller School presently provides the following range of special education services:

Students Receiving Services	Educational Setting	Total Students
The team identified that IEP services are provided outside the general education classroom less than 21% of the time (80% inclusion) **OR** The team identified that IEP services are provided outside the general education classroom at least 21% of the time, but no more than 60% of the time.	Inclusion	88
The team identified that IEP services are provided outside the general education classroom for more than 60% of the time.	Substantially Separate	34-Intellectually Impaired Program
		9- Autism Program
	Total	131

Inclusion Classroom Description

The inclusion classroom consists of a certified special educator who rotates through the student's schedule in order to ensure that the student on an IEP understands the curriculum and is meeting his/her responsibilities. Individual and small group assistance is provided within the standard

curriculum classroom. In addition, the student has a daily support class with their special educator on their team. The special educator provides consultation to standard curriculum teachers regarding student's learning style and educational needs. The special educator and teacher assistant ensure that accommodations are being implemented in the standard curriculum classroom.

Substantially Separate Classroom Descriptions

Autism Spectrum Disorders (ASD): The program serves students on the Autism Spectrum who require social-pragmatic, academic, and behavioral support. The programs provide intensive behavioral training relying upon ABA principles and total communication techniques in order to develop social skills and academic readiness skills. The program blends social/developmental as well as behavioral approaches whenever possible to address the educational challenges faced by this population of students. In addition to the special education teacher and teacher assistant, there is at minimum one teacher aide in the classroom.

Intellectual Impairments (II): This program serves students who have significant intellectual and learning challenges. Some students in the program have significant weaknesses in the areas of social skills activities of daily living. The program focuses on functional life skills and knowledge about community, in order to function as independently as possible. Other students in the program have excellent social skills and benefit from a more traditional academic curriculum, with the academic curriculum provided in a slower rate. This program has the capacity to work with both types of students, as we offer both a functional life skills curriculum and a curriculum, which mirrors and provides access to the standard curriculum. Students are grouped into multi-grade classes according to ability levels. There is a three-year curriculum sequence. Students receive academic instruction in language arts, reading, math, science, and social studies. Students also take an academic support class for review and reinforcement of academic content. Students receive all academic instruction from certified special educators. Students take different subjects with different special education teachers, so they have the middle school experience of moving from class to class. Students who are in the functional life skills group participate in a vocational program. Performing various jobs around the building (e.g., delivering newspapers, emptying recycling bins) helps them to develop greater independence and provides opportunity for hands on, practical learning. Students in this program run a café that is open on selected Fridays throughout the school year.

It is important to note that the current one floor layout of Fuller Middle School creates accessibility for our students in the program who have physical limitations and are in wheelchairs. Students also require handicap accessible bathrooms and may need specialized lifts to help with toileting. Any new facility will need elevator access and handicap accessible bathrooms on each floor.

In addition to the programs at Fuller Middle School, Cameron Middle School has a program for students with learning disabilities and a program for students with emotional disabilities. Walsh Middle School has a program for students with learning disabilities. Descriptions for the programs are below.

- *Learning and Language Disabilities (LLD):* This program is geared for students with low average to high average intelligence with significant reading, writing, math, and communication disabilities. Students participate in a curriculum that mirrors the standard curriculum, but at a slower pace. The curriculum is modified to meet the significant

academic needs of the students. Certified special educators and an assistant teacher provide small group instructions in all academic areas- math, language arts, science, and social studies. Inclusion into standard curriculum classes is available when the TEAM determines a student is ready. Students attend related art classes- art, technology education, physical education, health, and chorus outside their classroom.

- *Emotional and Behavioral Disabilities (ED/BD)*: This comprehensive and therapeutic program is for students who have emotional and behavioral disabilities. A certified special educator and provides support in the general education setting and in small group settings when necessary in order to address: anger management, conflict resolution, relaxation techniques, social skills, group process, peer pressure, bullying, strategies for managing behavior and self-advocacy. The program is supported by a comprehensive, incentive-based behavioral system. The program staff works directly with the student's families and coordinates treatment efforts with providers outside of the school. A Behavior Specialist and a Social Worker also support the program full time. .

4B.2.2 Proposed Program

Fuller Middle School currently has four multi-grade classrooms supporting a substantially separate program for students with Intellectual Impairments. It is anticipated that we will not need to expand this program and four classroom spaces will continue to meet the needs of the program. Fuller Middle School also has a substantially separate program for students with Autism. Currently there is one multi-grade classroom. It is anticipated that we will need an additional classroom in the next 2-3 years due to an increased Autism population in the elementary school programs.

Framingham's previous Coordinated Program Review was during the 2014-2015 school year. There are fifty-nine areas reviewed. Framingham was found to be partially implementing eighteen of those areas, requiring corrective action plans and a year of progress monitoring. The Mid-Cycle review occurred in May, 2018 to review the previous eighteen areas that were previously partially implemented. The Department found two areas that require follow up and a progress monitoring plan are in place for the 2018-2019 school year. The two areas of improvement are:

- SE7: age of majority- need to add a step of asking students to review their IEP when they turn 18.
- SE18B: determination of placement; provision of IEP to parent- parents are not all receiving IEPs within the timelines.

The special education department reviews the student and program needs of the district regularly by examining enrollment, level of student needs, disability categories, performance data and referral data. In reviewing this information at Fuller, the current programming is continuing at Fuller and is appropriately meeting the individual student needs. All classrooms, inclusion and substantially separate should be a part of the cohorts in the new Fuller Middle School design and are flexible to move as needed in the building year to year.

The Framingham Public Schools is a pre-kindergarten through 12th grade district with an enrollment of 9369 students. The District includes 1 preschool, 9 elementary schools, 3 middle schools, and 1 high school with an alternative campus for students identified as benefiting from a modified school day. Fuller Middle School houses students in grades 6-8, including Sheltered

English Immersion (SEI), Transitional Bilingual Education (Spanish and Portuguese), Intellectually Impaired and Autism Spectrum Disorder programs. Student assignment and grade configurations are based on several complicated factors including feeder systems, school neighborhoods, school choice, school programming (STEAM and Two-Way Bilingual), English Learner status, and disability status.

4B.2.3
Below are descriptions of the specialized programming we have at each level.

PRE-SCHOOL PROGRAM

B.L.O.C.K.S. Preschool coordinates referrals, assessment and identification of children from age 3 to 5 years of age who may be in need of special education services. For eligible children, the continuum of options includes Therapy Services, Inclusion Classrooms, and Substantially Separate Classrooms. Special Education services for preschool age children are a combination of the recommended practices of Early Childhood Education and Early Childhood Special Education with the emphasis on high quality curriculum with systematic individual interventions to meet the child's IEP goals and objectives.

Substantially Separate Classrooms

Substantially separate classrooms serve students who require a highly modified preschool curriculum in separate classrooms rather than in general education programs. Each classroom is comprised of 6-10 students with special education needs. In each classroom there is a certified special education teacher and one teacher assistant. Additional classroom aides and/or assistants are assigned as required for individual students. Specialists' services include but are not limited to speech/language therapy, occupational therapy, and physical therapy, vision and orientation & mobility. Dependent upon the set educational goal(s), services may be provided through in-class and/or pullout model.

- *Autism Spectrum Disorders (ASD)*: Specialized language-based classrooms for children on the Autism Spectrum, who may benefit from intensive staff to student ratio and support. The preschool curriculum utilizes approaches based on the principles of Applied Behavioral Analysis (ABA) techniques, including discrete trial training and task analysis, positive behavioral support and total communication techniques.
- *Emotional Disabilities (ED)*: This classroom offers a highly structured self-contained program with a strong behavioral support component. These classes work on academic and social skills training.
- *Developmental Delays (DD)*: These classrooms service preschoolers identified with developmental delays. The program focuses on developing cognitive, social/emotional communication, physical, and self-help skills.

- *Multiple Disabilities (MD)*: This program provides services to students who have multiple severe disabilities. Some may have medical needs. This program is designed to address the development of communication, mobility, social, and independent daily living skills.

Inclusion Classrooms

Inclusion classrooms serve students with special needs and are able to access the standard preschool curriculum with minor accommodations. The students are educated with typically developing same age peers. The inclusion classroom is generally composed of 7 special education students and 8 typically developing students. Each classroom is staffed with a certified special education teacher and an assistant teacher. Speech/language pathologists, occupational therapists, physical therapists, and behavioral support are provided to students when needed in and out of the classroom environment.

ELEMENTARY SCHOOL PROGRAM

Resource Room Classrooms

The resource room serves students who are placed in general education settings with mild to moderate disabilities. A certified special education teacher and/or instructional assistant work with groups composed of no more than twelve students. Educational instruction is provided consistent with the service recommendations of the student's IEP. Support may be provided for reading, math, written language, organizational and/or other education needs. Instructional methodologies vary but meet student needs and curriculum goals, which are aligned with the Massachusetts Curriculum Frameworks.

Grade Level Inclusion

All of the elementary schools are inclusive. Inclusion is the educational practice of educating children with disabilities in classrooms with children without disabilities. Special education teachers are matched and responsible for providing services at particular grade levels. This helps the special educators build grade level expertise and create partnerships with other grade level teachers. This model provides an increase in opportunities for carry over and generalization of skills in the least restrictive environment.

Substantially Separate Classrooms

Substantially separate classrooms serve students who require a highly modified curriculum in separate classrooms rather than in general education programs. Each programs' aim is to provide academic, behavioral and social support to students within a self-contained environment on modified curriculum goals. In each classroom there is a certified special

education teacher and one teacher assistant. Additional classroom aides and/or assistants are assigned as required for individual students.

Instructional methodologies vary but match student needs and modified curriculum goals, which are aligned with the Massachusetts Curriculum Frameworks. Special education instruction is provided throughout the students' school day. Instruction is provided through small individual or small group instruction. Students participate in some general education environments (e.g., music, art, physical education, recess, and lunch), including academic instruction with support from the substantially separate class staff. Individualized inclusion programs within the general education classroom are implemented based on a student's progress and skill level.

- *Learning and Language Disabilities (LLD)*: The program serves students with learning and language (receptive and expressive) disabilities. The class provides specialized reading instruction with a multi-sensory sequenced phonetic based reading program. Instruction incorporates strategies to address expressive and receptive language skills across the curriculum.

- *Emotional Disabilities (ED)*: The program serves students with a primary disability in emotional and/or behavioral disorders. Students are provided with a level behavior management program to address anger management, impulse control, compliance issues, and/or social skills.

- *Autism Spectrum Disorders (ASD)*: The program serves students on the Autism Spectrum who require more social-pragmatic, academic, and behavioral support. The programs provide intensive behavioral training relying upon ABA principles and total communication techniques in order to develop social skills and academic readiness skills. The program blends social/developmental as well as behavioral approaches whenever possible to address the educational challenges faced by this population of students. In addition to the special education teacher and teacher assistant, there is a teacher aide in the classroom.

- *Developmental Delays (DD)*: The program serves students with moderate to severe developmental delays (ages 3-9) or intellectual impairments (ages 9+). Students in this program may participate in general education environments including lunch, recess, assemblies, and special events. In grades K-5, there is one full-time certified special educator and at least one full-time teacher assistant, with additional staff as necessary.

- *Multiple Disabilities(MD)*: The program serves students with moderate to severe multiple disabilities. This program is designed to address the development of

communication, mobility, social, and independent daily living skills. *The staffing in this program is comprised of one full-time certified special educator, one teacher assistant, with additional staff as necessary.

MIDDLE SCHOOL PROGRAMS

Resource Room Classrooms

The resource room serves students who are placed in general education settings with mild to moderate disabilities. A certified special education teacher and/or instructional assistant work with groups composed of no more than twelve students. Educational instruction is provided consistent with the service recommendations of the student's IEP. Support may be provided for reading, math, written language, organizational and/or other education needs. Instructional methodologies vary but meet student needs and curriculum goals, which are aligned with the Massachusetts Curriculum Frameworks. Resource room supports may occur both in and out of the general education classroom.

Inclusion Classrooms

The inclusion classroom consists of a certified special educator who rotates through the student's schedule in order to ensure that the student on an IEP understands the curriculum and is meeting his/her responsibilities. Individual and small group assistance is provided within the standard curriculum classroom. In addition, the student has a daily support class with their special educator on their team. The special educator provides consultation to standard curriculum teachers regarding student's learning style and educational needs. The special educator and teacher assistant ensure that accommodations are being implemented in the standard curriculum classroom.

Substantially Separate Classrooms

- *Learning and Language Disabilities (LLD)*: This program is geared for students with low average to high average intelligence with significant reading, writing, math, and communication disabilities. Students participate in a curriculum that mirrors the standard curriculum, but at a slower pace. The curriculum is modified to meet the significant academic needs of the students. Certified special educators and an assistant teacher provide small group instructions in all academic areas- math, language arts, science, and social studies. Inclusion into standard curriculum classes is available when the TEAM determines a student is ready. Students attend related art classes- art, technology education, physical education, health, and chorus outside their classroom.

- *Autism Spectrum Disorders (ASD)*: The program serves students on the Autism Spectrum who require more social-pragmatic, academic, and behavioral support. The programs provide intensive behavioral training relying upon ABA principles and total communication techniques in order to develop social skills and academic readiness skills. The program blends social/developmental as well as behavioral approaches whenever possible to address the educational challenges faced by this population of students. In addition to the special education teacher and teacher assistant, there is a teacher aide in the classroom.

- *Emotional and Behavioral Disabilities (ED/BD)*: This comprehensive and therapeutic program is for students who have emotional and behavioral disabilities. A certified special educator and provides support in the general education setting and in small group settings when necessary in order to address: anger management, conflict resolution, relaxation techniques, social skills, group process, peer pressure, bullying, strategies for managing behavior and self-advocacy. The program is supported by a comprehensive, incentive-based behavioral system. The program staff works directly with the student's families and coordinates treatment efforts with providers outside of the school. A Behavior Specialist and a Social Worker also support the program full time. .

- *Intellectual Impairments (II):* This program serves students who have significant intellectual and learning challenges. Some students in the program have significant weaknesses in the areas of social skills activities of daily living. The program focuses on functional life skills and knowledge about community, in order to function as independently as possible. Other students in the program have excellent social skills and benefit from a more traditional academic curriculum, with the academic curriculum provided in a slower rate. This program has the capacity to work with both types of students, as we offer both a functional life skills curriculum and a curriculum, which mirrors the standard curriculum. Students are grouped into multi-grade classes according to ability levels. There is a three-year curriculum sequence. Students receive academic instruction in language arts, reading, math, science, and social studies. Students also take an academic support class for review and reinforcement of academic content. Students receive all academic instruction from certified special educators. Students take different subjects with different special education teachers, so they have the middle school experience of moving from class to class. Students who are in the functional life skills group participate in a vocational program. Performing various jobs around the building (e.g., delivering newspapers, emptying recycling bins) helps them to develop greater independence and provides opportunity for hands on, practical learning. Students in this program run a café that is open on selected Fridays throughout the school year.

HIGH SCHOOL PROGRAMS

Specialized Instruction Classrooms

Students who require specialized education in the areas of English, Literacy, math, Speech and Language, and/or Study Strategies are provided with small group support from a certified special educator and/or speech-language pathologist. The instruction parallels the standard curriculum and includes MCAS preparation.

Inclusion Classrooms

This program provides support in the areas of Language Arts, History, Math, and Science. The inclusion classroom consists of a certified special educator who co-teaches with a standard curriculum teacher who is certified in the specific subject area. Individual and small group assistance is provided within the standard curriculum classroom. The special educator provides consultation to standard curriculum teachers regarding student's learning style and educational needs. The special educator ensures that accommodations are being implemented in the standard curriculum classroom.

The Phoenix Program

The Phoenix Program is a highly structured, behaviorally oriented therapeutic special education program. The goal of the program is to work on solutions for the behavior and emotional issues of students with behavioral and emotional disabilities as well as to provide these students with equal access to the traditional academic program of standard curriculum students. The academic curriculum parallels the standard curriculum across all content areas and is aligned with the Massachusetts Curriculum Frameworks. Related services such as literacy support and speech-language services are provided according to the student's IEP. Two social workers and two behavior specialists support the program full time.

The Learning Center

This program is designed for children on the Autism Spectrum. The program is designed to provide services with small class sizes and a curriculum specific to the student's individual needs. A certified special education teacher, a speech/language pathologist, and teacher assistant(s), as necessary, staff the Learning Center Program. Each staff member receives in house training for the Social Skills Program. Academics within the program follow the Massachusetts Curriculum Frameworks and students will be mainstreamed for elective and academics whenever possible. Students have opportunities to practice skills learned within the Framingham community.

Framingham Public Schools are members of the ACCEPT Collaborative and the TEC Collaborative. We currently have thirty-one students at ACCEPT programs and four students at TEC programs.

We do not have any alternate programs.

Framingham has a large preschool program at the Juniper Hill School. Students who attend the program are between the ages of 3-5 and receive therapy only services, half day inclusion programs and full and half day substantially separate programs.

Sincerely,

Robert A. Tremblay, Ed.D
Superintendent of Schools

Jose Duarte
Fuller Middle School Principal

Laura Spear
Director of Special Education

CC: Anne Ludes, Assistant Superintendent of Secondary Education

Proposed Space Summary - Middle Schools

0.3 Signed Educational Space Summary and narrative

Date: 9/12/2018 Schematic Design Submittal

FULLER Middle School 630 Students Grades 6-8	Existing Conditions			PROPOSED									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
				Existing to Remain/Renovated			New			Total						
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**31,685**			**0**			**36,000**			**36,000**			**29,580**	
(List classrooms of different sizes separately)																
Classroom - General	775	20	15,500				900	21	18,900	900	21	18,900	950	22	20,900	850 SF min - 950 SF max
ELL Classrooms	675	9	6,075				900	6	5,400	900	6	5,400				
Teacher Planning	0	0	0				90	15	1,350	90	15	1,350				Shared between classrooms
Classroom Breakout	0	0	0				290	7	2,030	290	7	2,030				Shared between classrooms. Includes SPED use
Small Group Seminar (20-30 seats) / Resource	0	0	0				400	1	400	400	1	400	500	2	1,000	Professional Development/ Itinerant / Workspace. Some uses served in Admin "Teachers Work Rooms"
Science Classroom / Lab	915	10	9,150				1,195	6	7,170	1,195	6	7,170	1,200	6	7,200	
Prep Room	240	4	960				80	6	480	80	6	480	80	6	480	
Science Teacher Planning	0	0	0				90	3	270	90	3	270				Shared between classrooms
SPECIAL EDUCATION			**10,875**			**0**			**9,150**			**9,150**			**7,550**	
(List classrooms of different sizes separately)																
Self-Contained SPED	930	5	4,650				900	6	5,400	900	6	5,400	950	5	4,750	assumed 8% of pop. in self-contained SPED
SPED Teacher Planning	0	0	0				90	3	270	90	3	270				Dedicated to SPED classrooms
SPED Classroom Breakout	620	7	4,340				300	2	600	300	2	600				Shared between classrooms. SPED use also in Gen Classroom Breakout
Self-Contained SPED Toilet	0	0	0				95	3	285	95	3	285	60	5	300	For medically fragile students
Resource Room	935	1	935				520	3	1,560	520	3	1,560	500	3	1,500	Should be divisible
Small Group Room / Reading	0	0	0				345	3	1,035	345	3	1,035	500	2	1,000	Allows division into 2 smaller spaces
SPED Office w/Storage	190	5	950				0	0	0	0	0	0				
ART & MUSIC			**5,620**			**0**			**3,675**			**3,675**			**3,250**	
Art Classroom	600	2	1,200				1,185	1	1,185	1,185	1	1,185	1,200	1	1,200	assumed use - 50% population 2 times / week
Art Workroom w/ Storage & kiln	0	0	0				150	1	150	150	1	150	150	1	150	
Band / Chorus - 100 seats	2,120	2	4,240				970	2	1,940	970	2	1,940	1,500	1	1,500	To accommodate 60 to 70 students, Includes Teacher Planning space
Music Practice / Ensemble	60	3	180				200	2	400	200	2	400	200	2	400	
VOCATIONS & TECHNOLOGY			**3,350**			**0**			**3,170**			**3,170**			**6,400**	Distributed V&T in Cohort Commons
Tech Clrm. - (E.G. Drafting, Business)	1,660	1	1,660				950	0	0	950	0	0	1,200	2	2,400	Functions to be served in Fab Lab
Tech Shop - (E.G. Consumer, Wood)	1,690	1	1,690				1,980	1	1,980	1,980	1	1,980	2,000	2	4,000	Assumed use - 25% Population - 5 times/week
Fab Lab	0	0	0				1,190	1	1,190	1,190	1	1,190				Includes closed off area for 3D printers
HEALTH & PHYSICAL EDUCATION			**24,265**			**0**			**9,985**			**9,985**			**8,400**	
Gymnasium	9,680	1	9,680				8,300	1	8,300	8,300	1	8,300	6,000	1	6,000	Gym enlarged to fit 2 MS BB Courts
Gym Storeroom	260	2	520				300	1	300	300	1	300	150	1	150	
Health Instructor's Office w/ Shower & Toilet	685	3	2,055				150	2	300	150	2	300	250	1	250	PE instructor - no shower or toilet
Locker Rooms - Boys / Girls w/ Toilets	3,500	2	7,000				500	2	1,000	500	2	1,000	1,000	2	2,000	3 Shower, 1 toilet, 25 lockers
Unisex Toilet / Shower	140	1	140				85	1	85	85	1	85				Include 4 lockers
Fitness Center	4,870	1	4,870													
MEDIA CENTER			**3,720**			**0**			**6,280**			**6,280**			**4,003**	
Media Center / Reading Room	3,720	1	3,720				1,990	1	1,990	1,990	1	1,990	4,003	1	4,003	
Cohort Commons	0	0	0				1,430	3	4,290	1,430	3	4,290				Distributed Media Center and Vocations and Technology functions
DINING & FOOD SERVICE			**13,740**			**0**			**8,960**			**8,960**			**8,922**	
Cafetorium / Dining	8,570	1	8,570				4,725	1	4,725	4,725	1	4,725	4,725	1	4,725	2 seatings - 15SF per seat
Stage	0	0	0				1,590	1	1,590	1,590	1	1,590	1,600	1	1,600	
Chair / Table / Equipment Storage	440	1	440				430	1	430	430	1	430	410	1	410	
Kitchen	3,485	1	3,485				1,915	1	1,915	1,915	1	1,915	1,930	1	1,930	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	1,245	1	1,245				300	1	300	300	1	300	258	1	258	Allows teacher collaboration
MEDICAL			**1,560**			**0**			**610**			**610**			**610**	
Medical Suite Toilet	50	3	150				60	1	60	60	1	60	60	1	60	
Nurses' Office / Waiting Room	930	1	930				250	1	250	250	1	250	250	1	250	
Examination Room / Resting	160	3	480				100	3	300	100	3	300	100	3	300	
ADMINISTRATION & GUIDANCE			**4,600**			**0**			**5,250**			**5,250**			**3,430**	
General Office / Waiting Room / Toilet	1,540	1	1,540				425	1	425	425	1	425	415	1	415	
Teachers' Mail and Time Room	100	1	100				95	1	95	95	1	95	100	1	100	
Duplicating Room	130	1	130				200	1	200	200	1	200	200	1	200	
Records Room	90	1	90				200	1	200	200	1	200	200	1	200	
Principal's Office w/ Conference Area	560	1	560				375	1	375	375	1	375	375	1	375	
Principal's Secretary / Waiting	80	1	80				125	1	125	125	1	125	125	1	125	
Assistant Principal's Office - AP1	110	1	110				150	1	150	150	1	150	150	1	150	
Assistant Principal's Office - AP2	0	0	0				150	0	0	150	0	0	150	1	150	
Supervisory / Spare Office	170	1	170				150	1	150	150	1	150	150	1	150	
Conference Room	310	1	310				350	1	350	350	1	350	350	1	350	
Small Conference Room	0	0	0				210	1	210	210	1	210				For parent meetings
Guidance Office (Student Support)	170	8	1,360				150	6	900	150	6	900	150	4	600	Distributed 2 per cohort
Guidance Waiting Room W/ Sto Closet	0	0	0				75	3	225	75	3	225	100	1	100	Distributed 1 per cohort
Guidance Storeroom	60	1	60				15	3	45	15	3	45	50	1	50	Distributed 1 per cohort
Teachers' Work Room			0				300	3	900	300	3	900	465	1	465	Distributed 1 per cohort. Serves uses of removed Small Seminar Rooms

Proposed Space Summary - Middle Schools

Date: 9/12/2018 Schematic Design Submittal

FULLER Middle School 630 Students Grades 6-8	Existing Conditions			PROPOSED									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
				Existing to Remain/Renovated			New			Total						
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
Dept Head / Coach offices	90	1	90				150	6	900	150	6	900				Distributed 2 per cohort
CUSTODIAL & MAINTENANCE			**3,515**			**0**			**2,140**			**2,140**			**2,105**	
Custodian's Office	100	1	100				165	1	165	165	1	165	150	1	150	
Custodian's Workshop	250	1	250				250	1	250	250	1	250	250	1	250	
Custodian's Storage	105	9	945				130	3	390	130	3	390	375	1	375	
Recycling Room / Trash	0	0	0				400	1	400	400	1	400	400	1	400	
Receiving and General Supply	220	1	220				310	1	310	310	1	310	310	1	310	
Storeroom	1,240	1	1,240				145	3	435	145	3	435	420	1	420	
Network / Telecom Room	380	2	760				190	1	190	190	1	190	200	1	200	Includes head end and IDF rooms
OTHER			**27,670**			**0**			**6,700**			**6,700**			**0**	
Other *(specify)*																
Adult ESL Offices	2,370	1	2,370				0	0	0	0	0	0				
City Offices, (PIC, Bldg& Grounds, BOH)	17,300	1	17,300													
Auditorium	5,400	1	5,400				4,200	1	4,200	4,200	1	4,200				420 seat auditorium
Stage	1,900	1	1,900				1,600	1	1,600	1,600	1	1,600				
Auditorium Storage	160	1	160				400	1	400	400	1	400				
Dressing Rooms	270	2	540				250	2	500	250	2	500				
Total Building Net Floor Area (NFA)			**130,600**			**0**			**91,920**			**91,920**			**74,250**	
Proposed Student Capacity / Enrollment															**630**	
NON-PROGRAMMED SPACES					% of GFA	**0**		% of GFA	**44,870**		% of GFA	**44,870**				
Other Occupied Rooms (list separately)					#DIV/0!			0%			0%					Non-Programmed space areas are
					#DIV/0!			0%			0%					required to be included in the
					#DIV/0!			0%			0%					following submittals:
					#DIV/0!			0%			0%					Schematic Design Submittal
Unoccupied MEP/FP Spaces					#DIV/0!			1%	1,685		0%					Design Development Submittal
Unoccupied Closets, Supply Rooms & Storage Rooms					#DIV/0!			0%	235		0%	235				60% Construction Documents
Toilet Rooms					#DIV/0!			3%	3,560		3%	3,560				90% Construction Documents
Circulation (corridors, stairs, ramps & elevators)					#DIV/0!			25%	34,175		25%	34,175				Final Construction Documents
Remaining[3]					#DIV/0!	**0**		4%	**5,215**		5%	**6,900**				
Total Building Gross Floor Area (GFA)[2]			195,900			**0**			**136,790**			**136,790**			**107,280**	
Grossing factor (GFA/NFA)			**1.50**			**#DIV/0!**			**1.49**			**1.49**			**1.44**	

[1] **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.

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

[3] **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

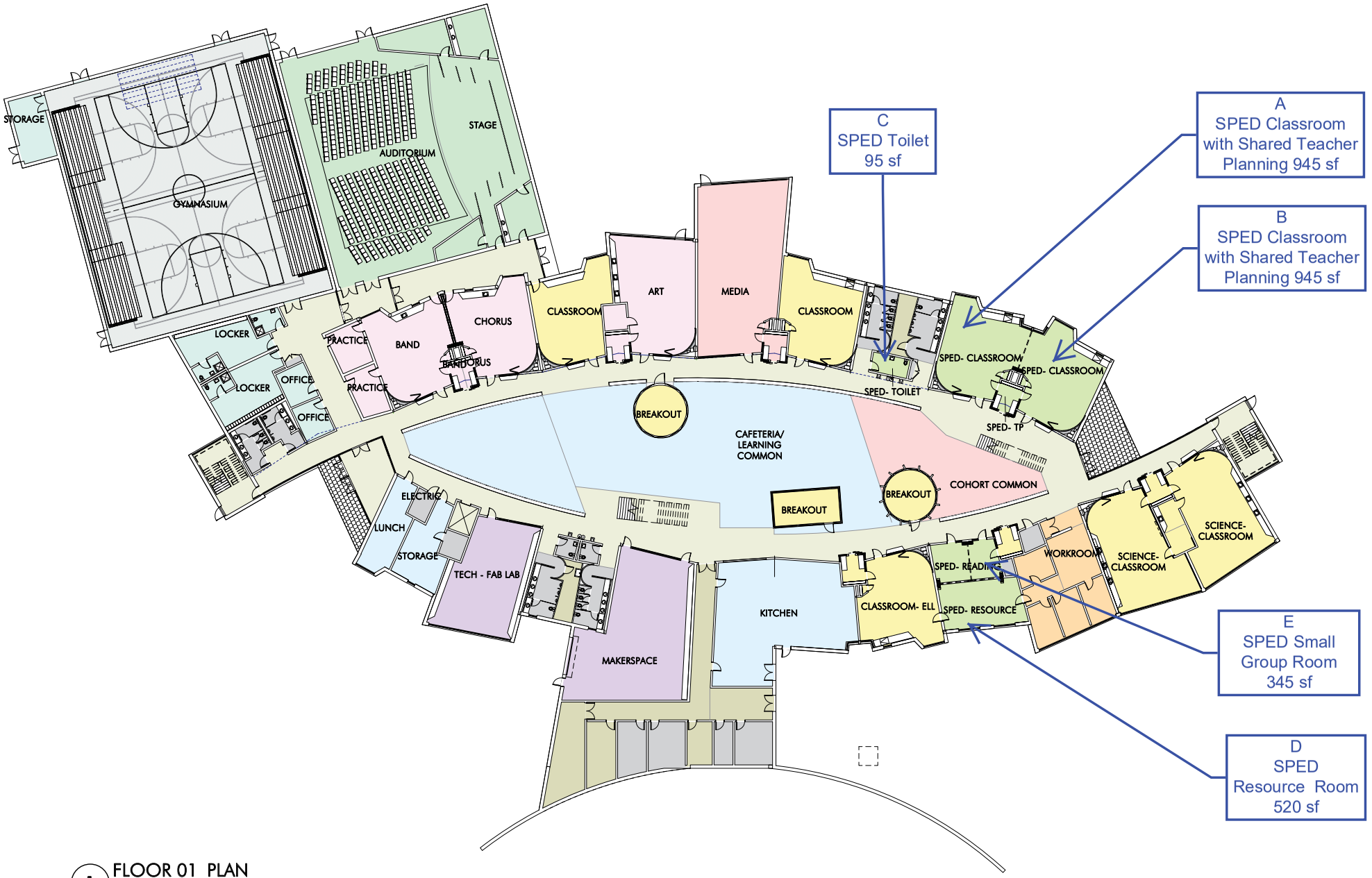
I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building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

Name of Architect Firm: Jonathan Levi Architects

Name of Principal Architect: Jonathan Levi

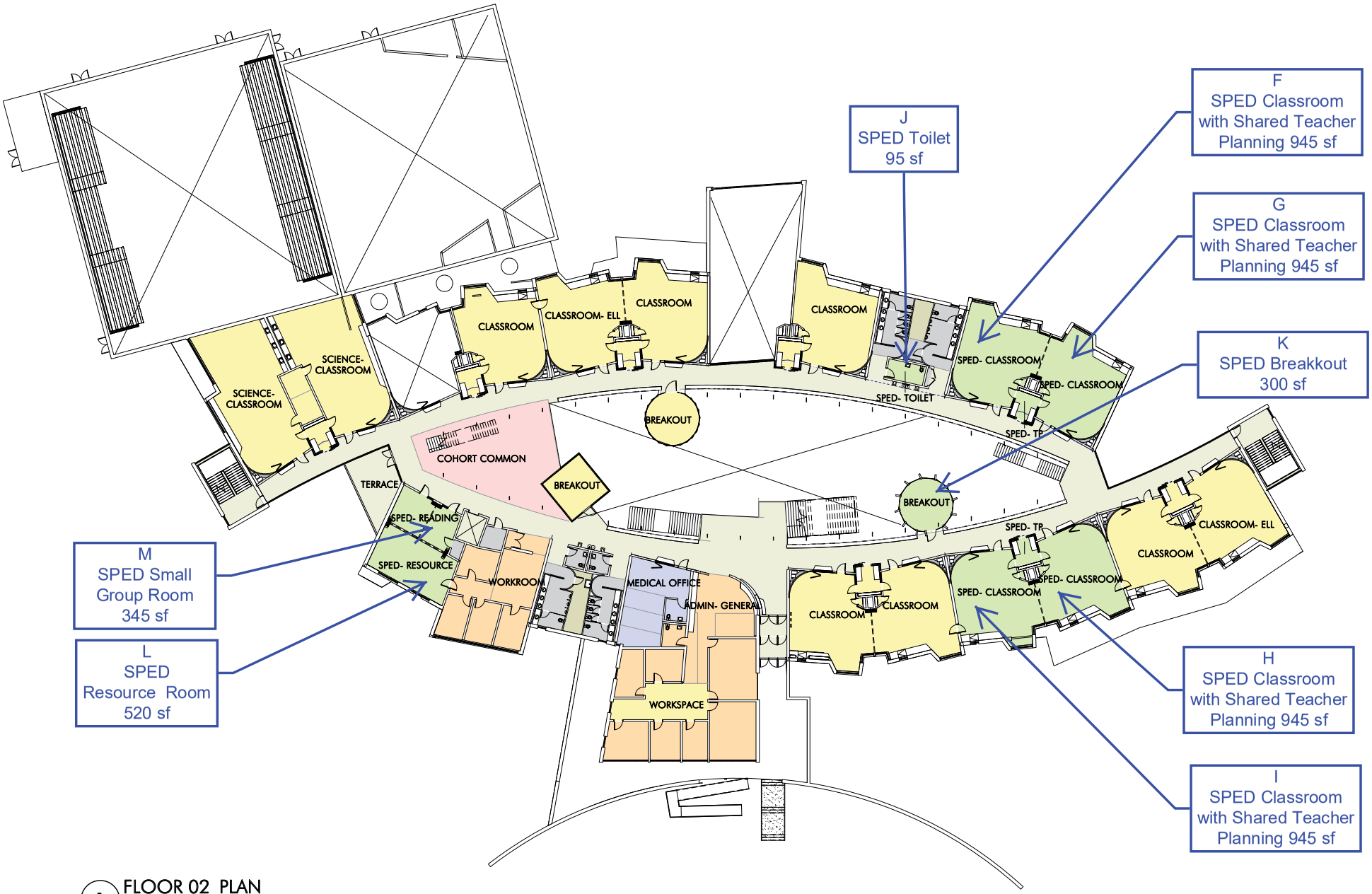
Signature of Principal Architect:

Date: 9/6/18



1 FLOOR 01_PLAN

1/32" = 1'-0"



1 FLOOR 02_PLAN

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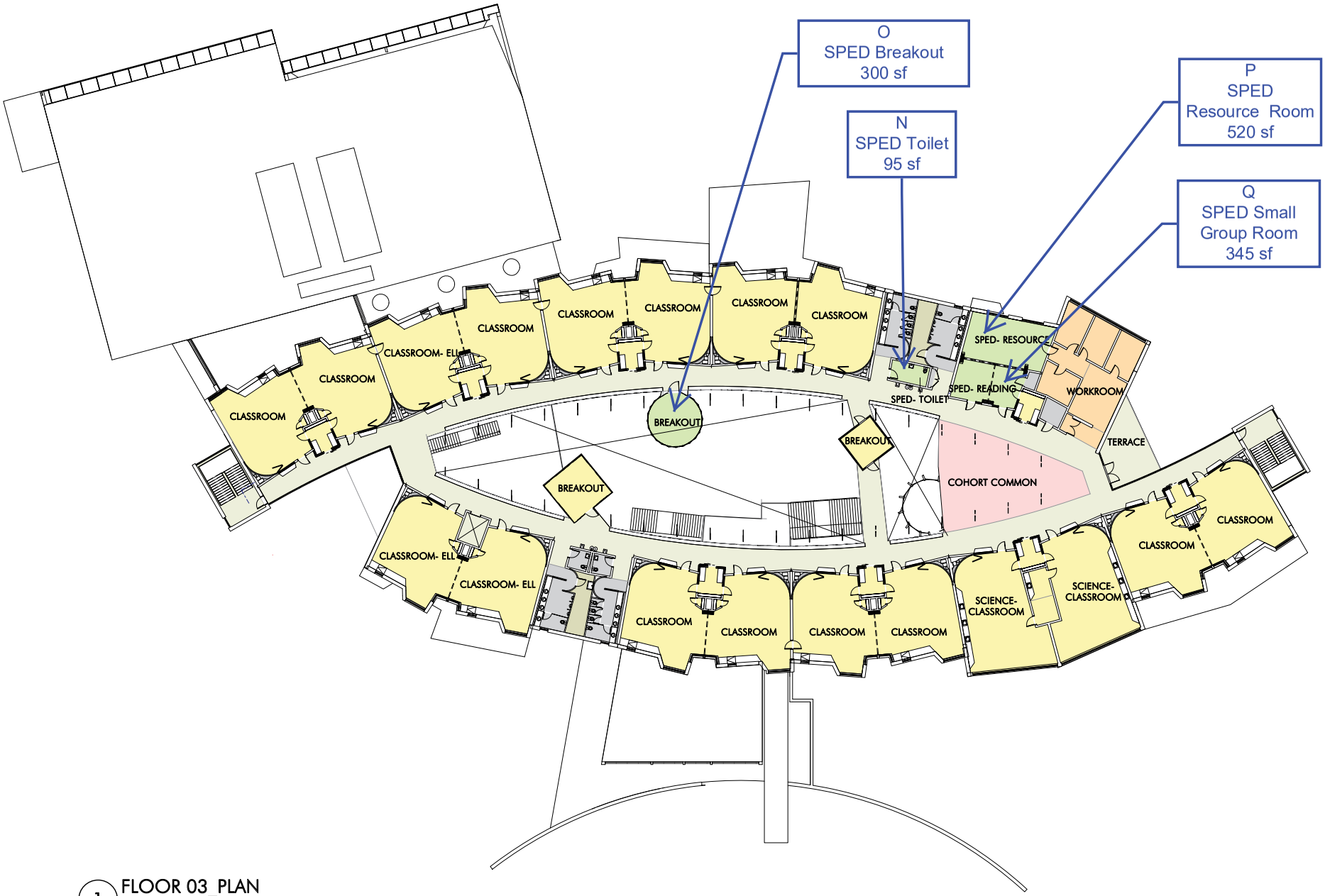


1 FLOOR 03_PLAN
1/32" = 1'-0"

Special Education Adjacency Table
Framingham Fuller Middle School

MSBA Guidelines Space	MSBA Guidelines SF	Proposed Room Name	Floor Plan Designation (A-Z)	Proposed SF	Proposed Space Description and Reasoning for Adjacencies
Floor 1					
Self-Contained Special Education	950	Self-Contained Special Education	A	945 sf Including Shared Teacher Planning	Substantially separate service delivery. Effectively identical to a general classroom. Students in a substantially separate classroom are not able to access the curriculum in a general classroom due to their disabilities; therefore, specialized instruction, accommodations and modifications to the curriculum content are needed throughout the academic day. Students in the specialized program require a combination of large group instruction, small group instruction and individual support. The two self-contained classrooms (A and B) make up a team and having the shared teacher planning between both classrooms allows for an increase in communication and collaboration.
Self-Contained Special Education	950	Self-Contained Special Education	B	945 sf Including Shared Teacher Planning	Substantially separate service delivery. Effectively identical to a general classroom. Students in a substantially separate classroom are not able to access the curriculum in a general classroom due to their disabilities; therefore, specialized instruction, accommodations and modifications to the curriculum content are needed throughout the academic day. Students in the specialized program require a combination of large group instruction, small group instruction and individual support. The two self-contained classrooms (A and B) make up a team and having the shared teacher planning between both classrooms allows for an increase in communication and collaboration.
Self-Contained SPED Toilet	60	Self-Contained SPED Toilet	C	95	Shared between 2 Self-Contained Special Education Classrooms. Larger area allows for greater ability for maneuvering of medically fragile students.
Resource Room	500	Resource Room	D	520	Substantially separate service delivery. Approximately half the size of a general classroom. To allow students to receive services in occupational, physical and speech therapies as prescribed. Supports that are currently in place, such as speech and language therapists, occupational therapists, physical therapists, BCBA, ABA technicians, school psychologists, schools adjustment counselors, and any additional staff required to meet the needs of the students with disabilities will be available. Adjacent to General Academic Spaces, and directly adjacent to Cohort Office area. Movable partitions to allow Combination with Small Group Room for additional flexibility. The adjacency of the resource room and the small group reading room to the guidance and support staff workroom is important as many of the student with special education services receive support from staff who will work in both spaces.
Small Group Room / Reading	500	Small Group Room / Reading	E	345	Substantially separate service delivery; divisible in 2 to allow for reduced distractions and greater acoustical seperation and privacy for smaller groups. To allow students to receive services in occupational, physical and speech therapies as prescribed. Supports that are currently in place, such as speech and language therapists, occupational therapists, physical therapists, BCBA, ABA technicians, school psychologists, schools adjustment counselors, and any additional staff required to meet the needs of the students with disabilities will be available. The adjacency of the resource room and the small group reading room to the guidance and support staff workroom is important as many of the student with special education services receive support from staff who will work in both spaces.
Floor 2					
Self-Contained Special Education	950	Self-Contained Special Education	F	945 sf Including Shared Teacher Planning	Substantially separate service delivery. Effectively identical to a general classroom. Students in a substantially separate classroom are not able to access the curriculum in a general classroom due to their disabilities; therefore, specialized instruction, accommodations and modifications to the curriculum content are needed throughout the academic day. Students in the specialized program require a combination of large group instruction, small group instruction and individual support. The four self-contained classrooms (F, G, H and I) make up a team and having the shared teacher planning between both sets of classrooms allows for an increase in communication and collaboration. The students on this team rotate to the four teachers classrooms so the close proximity of the classrooms will assist with these transitions.
Self-Contained Special Education	950	Self-Contained Special Education	G	945 sf Including Shared Teacher Planning	Substantially separate service delivery. Effectively identical to a general classroom. Students in a substantially separate classroom are not able to access the curriculum in a general classroom due to their disabilities; therefore, specialized instruction, accommodations and modifications to the curriculum content are needed throughout the academic day. Students in the specialized program require a combination of large group instruction, small group instruction and individual support. The four self-contained classrooms (F, G, H and I) make up a team and having the shared teacher planning between both sets of classrooms allows for an increase in communication and collaboration. The students on this team rotate to the four teachers classrooms so the close proximity of the classrooms will assist with these transitions.
Self-Contained Special Education	950	Self-Contained Special Education	H	945 sf Including Shared Teacher Planning	Substantially separate service delivery. Effectively identical to a general classroom. Students in a substantially separate classroom are not able to access the curriculum in a general classroom due to their disabilities; therefore, specialized instruction, accommodations and modifications to the curriculum content are needed throughout the academic day. Students in the specialized program require a combination of large group instruction, small group instruction and individual support. The four self-contained classrooms (F, G, H and I) make up a team and having the shared teacher planning between both sets of classrooms allows for an increase in communication and collaboration. The students on this team rotate to the four teachers classrooms so the close proximity of the classrooms will assist with these transitions.

Self-Contained Special Education	950	Self-Contained Special Education	I	945 sf Including Shared Teacher Planning	Substantially separate service delivery. Effectively identical to a general classroom. Students in a substantially separate classroom are not able to access the curriculum in a general classroom due to their disabilities; therefore, specialized instruction, accommodations and modifications to the curriculum content are needed throughout the academic day. Students in the specialized program require a combination of large group instruction, small group instruction and individual support. The four self-contained classrooms (F, G, H and I) make up a team and having the shared teacher planning between both sets of classrooms allows for an increase in communication and collaboration. The students on this team rotate to the four teachers classrooms so the close proximity of the classrooms will assist with these transitions.
Self-Contained SPED Toilet	60	Self-Contained SPED Toilet	J	95	Shared between 4 Self-Contained Special Education Classrooms. Larger area allows for greater ability for maneuvering of medically fragile students.
*	*	SPED Classroom Breakout	K	300	Shared between inclusive general clasrooms and Self-Contained Special Education Classrooms. Larger area allows for greater ability for maneuvering of medically fragile students.
Resource Room	500	Resource Room	L	520	Substantially separate service delivery. Approximately half the size of a general classroom. To allow students to receive services in occupational, physical and speech therapies as prescribed. Supports that are currently in place, such as speech and language therapists, occupational therapists, physical therapists, BCBA, ABA technicians, school psychologists, schools adjustment counselors, and any additional staff required to meet the needs of the students with disabilities will be available. Adjacent to General Academic Spaces, and directly adjacent to Cohort Office area. Movable partitions to allow Combination with Small Group Room for additional flexibility. The adjacency of the resource room and the small group reading room to the guidance and support staff workroom is important as many of the student with special education services receive support from staff who will work in both spaces.
Small Group Room / Reading	NA	Small Group Room / Reading	M	345	Substantially separate service delivery; divisible in 2 to allow for reduced distractions and greater acoustical seperation and privacy for smaller groups. To allow students to receive services in occupational, physical and speech therapies as prescribed. Supports that are currently in place, such as speech and language therapists, occupational therapists, physical therapists, BCBA, ABA technicians, school psychologists, schools adjustment counselors, and any additional staff required to meet the needs of the students with disabilities will be available. The adjacency of the resource room and the small group reading room to the guidance and support staff workroom is important as many of the student with special education services receive support from staff who will work in both spaces.
Floor 3					
Self-Contained SPED Toilet	60	Self-Contained SPED Toilet	N	95	Larger area allows for greater ability for maneuvering of medically fragile students.
*	*	SPED Classroom Breakout	O	300	Shared between inclusive Classrooms. Larger area allows for greater ability for maneuvering of medically fragile students.
Resource Room	500	Resource Room	P	520	Substantially separate service delivery. Approximately half the size of a general classroom. To allow students to receive services in occupational, physical and speech therapies as prescribed. Supports that are currently in place, such as speech and language therapists, occupational therapists, physical therapists, BCBA, ABA technicians, school psychologists, schools adjustment counselors, and any additional staff required to meet the needs of the students with disabilities will be available. Adjacent to General Academic Spaces, and directly adjacent to Cohort Office area. Movable partitions to allow Combination with Small Group Room for additional flexibility. The adjacency of the resource room and the small group reading room to the guidance and support staff workroom is important as many of the student with special education services receive support from staff who will work in both spaces.
Small Group Room / Reading	NA	Small Group Room / Reading	Q	345	Substantially separate service delivery; divisible in 2 to allow for reduced distractions and greater acoustical seperation and privacy for smaller groups. To allow students to receive services in occupational, physical and speech therapies as prescribed. Supports that are currently in place, such as speech and language therapists, occupational therapists, physical therapists, BCBA, ABA technicians, school psychologists, schools adjustment counselors, and any additional staff required to meet the needs of the students with disabilities will be available. Adjacent to General Academic Spaces and combinable with Resource Room P. May also be used for parent conferences and IEP meetings. The adjacency of the resource room and the small group reading room to the guidance and support staff workroom is important as many of the student with special education services receive support from staff who will work in both spaces.

Square Footage Summary:

The proposed overall gross square footage of the new building is 136,790 gsf; Average square feet of General Classrooms is 945 sf
MSBA guidelines include 7,550 net square feet of dedicated special education space. The proposed program is 1,600 nsf in excess of the guidelines.
***Indicates that space is unique to District's program and does not appear in MSBA space guidelines.**

Symmes Maini & McKee Associates
PROJECT MANAGEMENT

SMMA

September 12, 2018

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

Re: Fuller Middle School **Framingham, Massachusetts**

Schematic Design Submission to the MSBA *SMMA No. 17020*

Dear Fenton:

Attached please find the Module 4 Schematic Design submission to the MSBA. The team has followed the guidelines set forth in Module 4 to develop this submission.

As Owner's Project Manager, we certify that we have reviewed and coordinated the materials, the submittal is complete and conforms to MSBA requirements and confirm that the District has approved the materials for submission to the MSBA.

We look forward to reviewing the information contained in this submission with you and your team.

Please contact me at 617-520-9403 if you have any questions, comments, or would like to schedule a meeting.

Very truly yours,

SMMA

Joel G. Seeley, AIA
Principal

cc: Jennifer Pratt, SBC Members (MF)

enclosures: Schematic Design Report

JGS/sat /P:\2017\17050\03-DESIGN\3.4 Submissions\3-SD Submission\OPM Deliverable\00 Coverletter\L_Fentonbradley@MSBA_SD_Submission12September2018.Docx

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

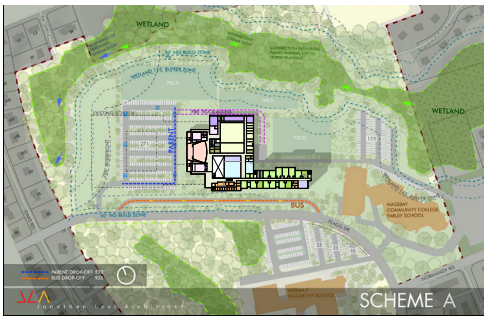
www.smma.com

1.1 Introduction

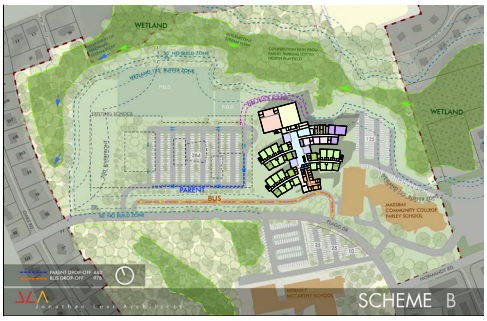
The proposed Fuller Middle School project is anticipated to serve 630 students in grades 6-8 on the existing middle school site. The proposed building program based on Framingham's Educational Program comprises 16,790 GSF. On 4/30/18 the School Building Committee (SBC) voted to advance the Preferred Solution into Schematic Design.

Proposed Fuller School

Arial of existing Fuller School and site

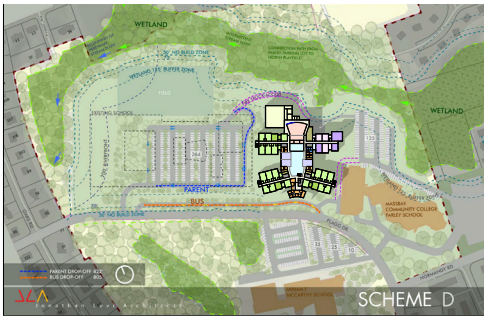


PSR Scheme A -Addition/Renovation



PSR Scheme B -Tree Branches

PSR Scheme C -Folded Hands



PSR Scheme D -Butterfly

1.2 Preferred Solution Summary

The Preferred solution approved by the MSBA Board of Directors was described in the Preferred Schematic Report as Scheme C – 'Folded Hands'.

Compared to the other alternatives presented in the PSR, this three-story scheme significantly reduces the building's footprint while at the same time conserving building envelope surface area and increasing lifecycle cost performance. Three tiers of classrooms are arrayed around a central Learning Common/Cafeteria atrium and are visually related to one another both horizontally and vertically, underpinning the kind of visible learning which enhances STEAM education. The Gymnasium and Auditorium are clustered at the west end of the building, creating a community use entry node which at the same time is axially connected to the main Learning Common atrium. Because of the visual connectivity, cohort configurations can be readily adapted to changes in the future. Cohort collaboration spaces are located on balconies visible to one another and forming the nuclei of cohort clusters. Because the building's footprint is reduced, the building is set back further from the street which allows for a broad, sloped lawn which, it is hoped, may be developed into a campus connector serving all three buildings on the site. This new campus green space will be sloped from Flagg Drive up almost one-story so that students and visitors will enter the building at level two with only one flight of stairs to travel to reach any level of the school. All Common Core areas will be located on the lowest level of the shared atrium so that they can work in concert with one another while being highly visible from every corner of the school.

1.3 Community Outreach

Overview of Community Outreach

The Committee has focused on public relations and getting the word out to the community as the project has moved through the Schematic Design Phase.

Members of the Committee have participated in a Project Information Committee and have been responsible for website updates, flyers, public forums and attending community events to share information with the residents of Framingham.

There is a building project webpage on the Framingham Public Schools website designed to give the community a single place to go for information: www.fullerbuildingproject.com. The webpage is made up of several sections, which include: Design Information, Community Information, Project Schedule, Meeting Minutes, Community Meetings, and MSBA documentation. The meeting minutes summarize the key activities or votes for each meeting. A dynamic FAQ document tracks critical questions and responses from each community meeting. Visitors to the website can download all information handed out at any of the public forums that have occurred.

The Committee has held a total of seven (7) public forums, three (3) of which occurred in the Schematic Design Phase, on June 11, 2018, July 23, 2018 and September 6, 2018. The Committee has publicized its on-going meetings and public forums through posting all meetings and events on the City website.

The Committee has made multiple presentations to the City Council and the School Committee, all of which were public meetings and broadcast on the Framingham Government Channel. The Committee has also attended and provided tours of the existing Fuller Middle School for the public.

1.4 District Total Project Budget

The estimated project budget is $98,276,878 and represents the District's Total Project Budget. The District will bring the project to an appropriation vote by the City Council in November 2018 and then the City will hold a debt exclusion vote under Proposition 2 ½ in order to exclude the debt service costs from the levy limit on December 11, 2018.

1.5 Project Budget

The project budget is $98,276,878.

1.6 List of Alternatives

There are no alternates included in this project.

1.7 Construction Delivery Method

The project will be constructed under the Construction Management at Risk methodology in accordance with M.G.L. Chapter 149A.

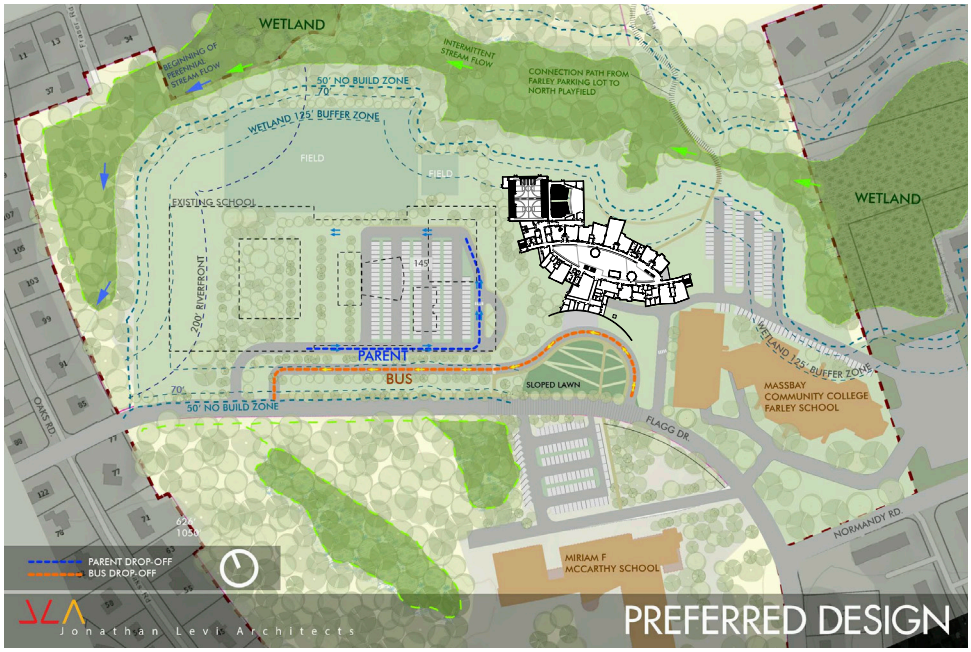
1.8 Schedule Summary

The project schedule anticipates MSBA Board of Director's approval of the Project Scope and Budget Agreement at their October 31, 2018 meeting. City Council appropriation voting will occur in November 2018, with the debt exclusion vote occurring on December 11, 2018. Following the District voting, the Design Documents will be developed, leading to construction commencement in the summer of 2019 with the building being completed in June 2021 and the final sitework and playfields in December 2021.

1.9 Project Description

The preferred solution builds on the District's Educational Program, first and foremost, by embodying the District's stated commitment to a 21st century STEAM, student centered approach to education (see below), a commitment which is already been acted upon through advanced teaching and learning programs at the elementary school level in preparation for this project. STEAM compatible educational environments are achieved through the creation of student driven, problem-based, "hands-on project space" at three different scales within the proposed floor plan. These spaces are provided together with a high degree of visual and functional connectedness both in plan and in section.

As described above, the District's preferred solution is a three-story building oriented for energy efficiency and sustainability purposes to the south and to the north which utilizes a compact footprint in order to conserve site space and allow for the creation of a sloped campus open space which will unify the District's three buildings in this location



Preferred Solution - site diagram

Front Elevation showing main Entry with Administration.

into a cohesive educational grouping. The building is located on the open space which now exists as a parking lot between the existing Fuller Middle School footprint to the west Farley School to the east. This location makes it possible to eliminate temporary swing space expenses and minimize disruption to ongoing educational activities by leaving the existing school in operation during the construction phase.

The site is organized with vehicular movements removed entirely from the public Flagg Drive. A bus drop-off lane with sufficient queuing space for 17 buses to be parked simultaneously is located directly in front of the school and stretches to the west with a separate exit from the main parking area. Upon demolition of the existing school a new single parking area will be built sufficient in size to accommodate the needs of the school staff and visitors.

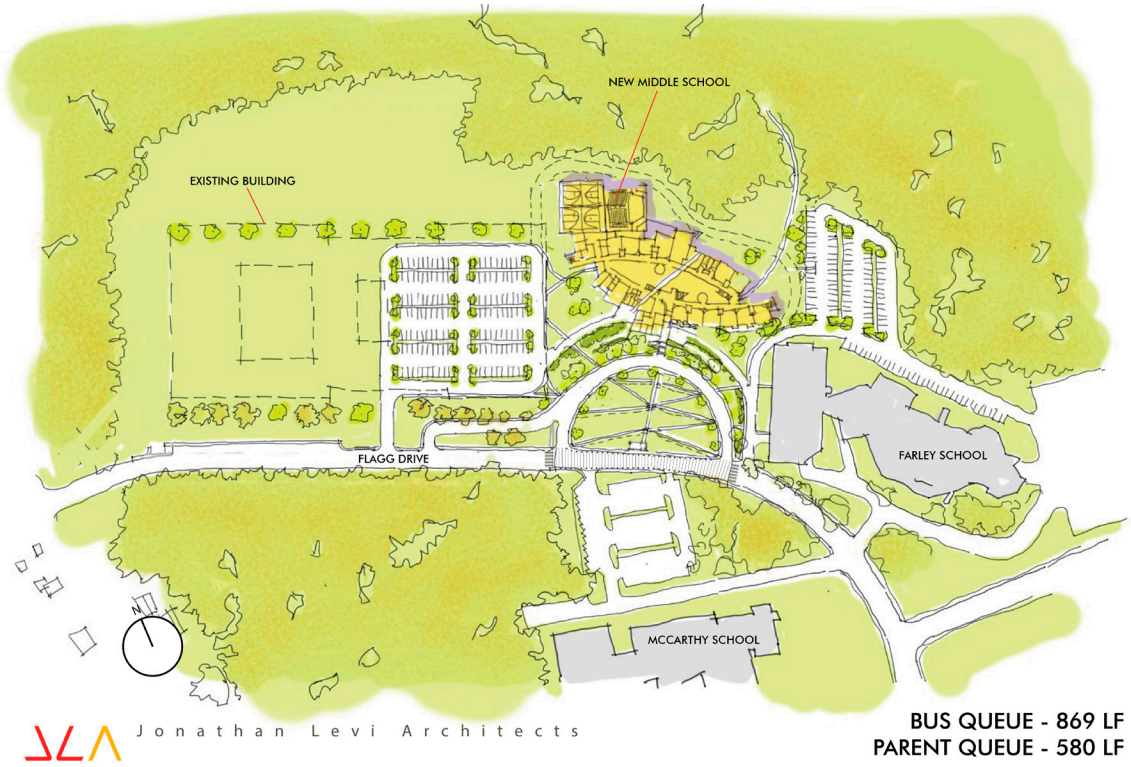
The new school floor plan is characterized by two segmented arcs of classrooms facing one another across an open three-story Learning Common atrium. Classroom clusters can be flexibly arranged within the floors or by utilizing monumental stairs, aggregating floors of cohort classrooms. At the center of each one of these cohorts will be located in medium size or cohort collaboration space which is co-located with a cohort satellite station area. These medium size collaboration spaces are located on balconies overlooking the main Learning Common and relate visually to one another. Also located on balconies directly adjacent to the classrooms which they serve will be a number of multi-use breakout spaces also highly visible to one another and to the Learning Common. Each cohort cluster also includes at its center a pair of science Exploratories or classrooms.

3-D model of massing. showing the two segmented arcs of classrooms and the Gymnasium/Auditorium.

The school was entered at the second floor level through the administration suite where one will arrive on a balcony overlooking the entire array schools educational program all at once. Stairs will branch off from this location either upwards or downwards for ease of communication between floors. Arriving at the lowest ground-floor level Learning Common one will be surrounded by an array of common shared spaces for the school community including the Media Center, Cafeteria, Maker Space, Music and Art classrooms, Fabrication Lab, Gymnasium and Auditorium. All are arrayed around a single open space

will serve as a food court but also as a flexible use whole community collaboration and potential assembly space.

The eastern end of the Learning Common opens three-story high glass wall to views of the landscape and for access to outdoor classroom spaces. At the west end of the space is located the community access lobby joining the Gymnasium and the Auditorium together and offering access both from the outdoors and from the Learning Common to the shared large span event spaces.

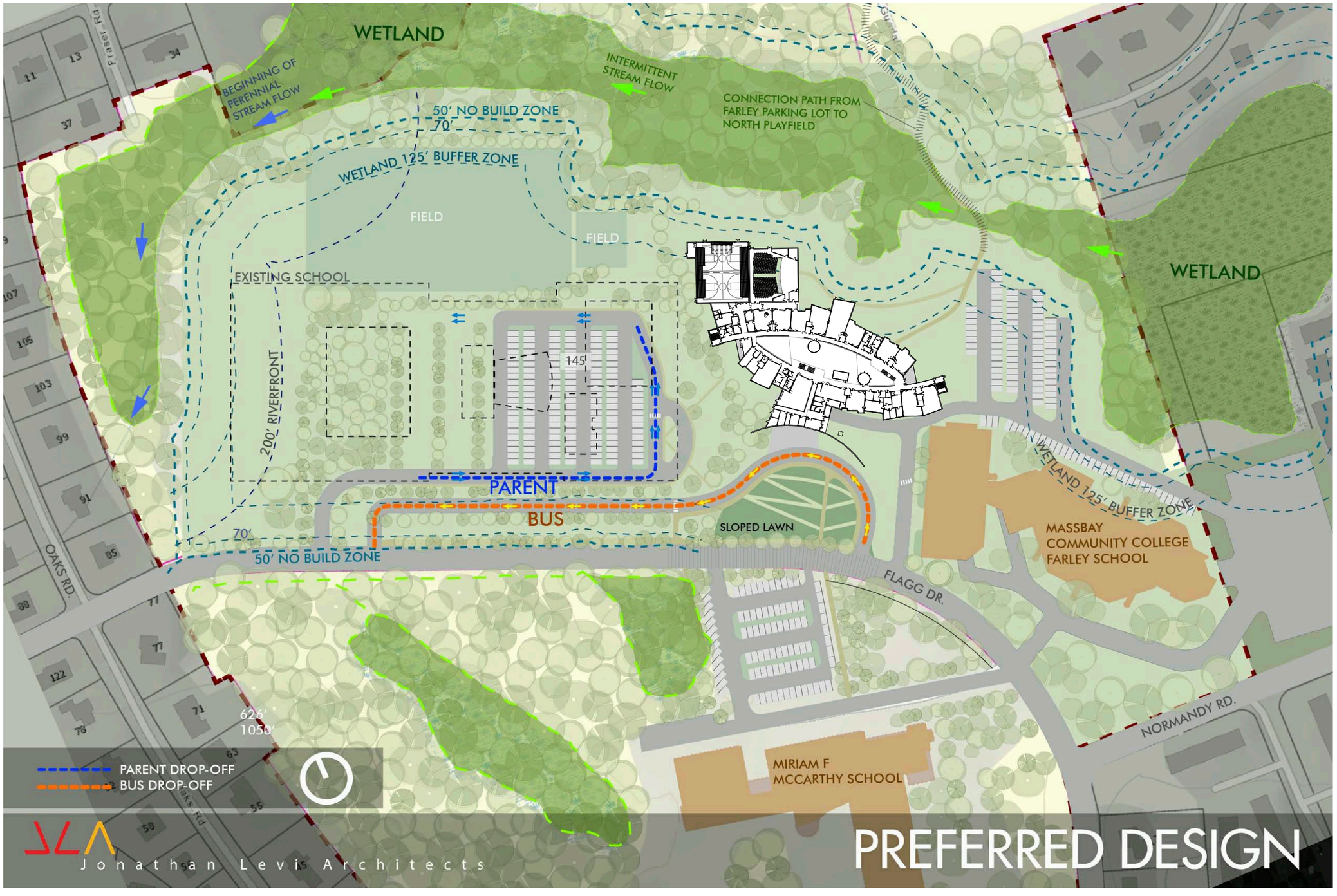


Proposed site and landscape features.

1.10 Visual Aids

Following are supporting visual aid documents:

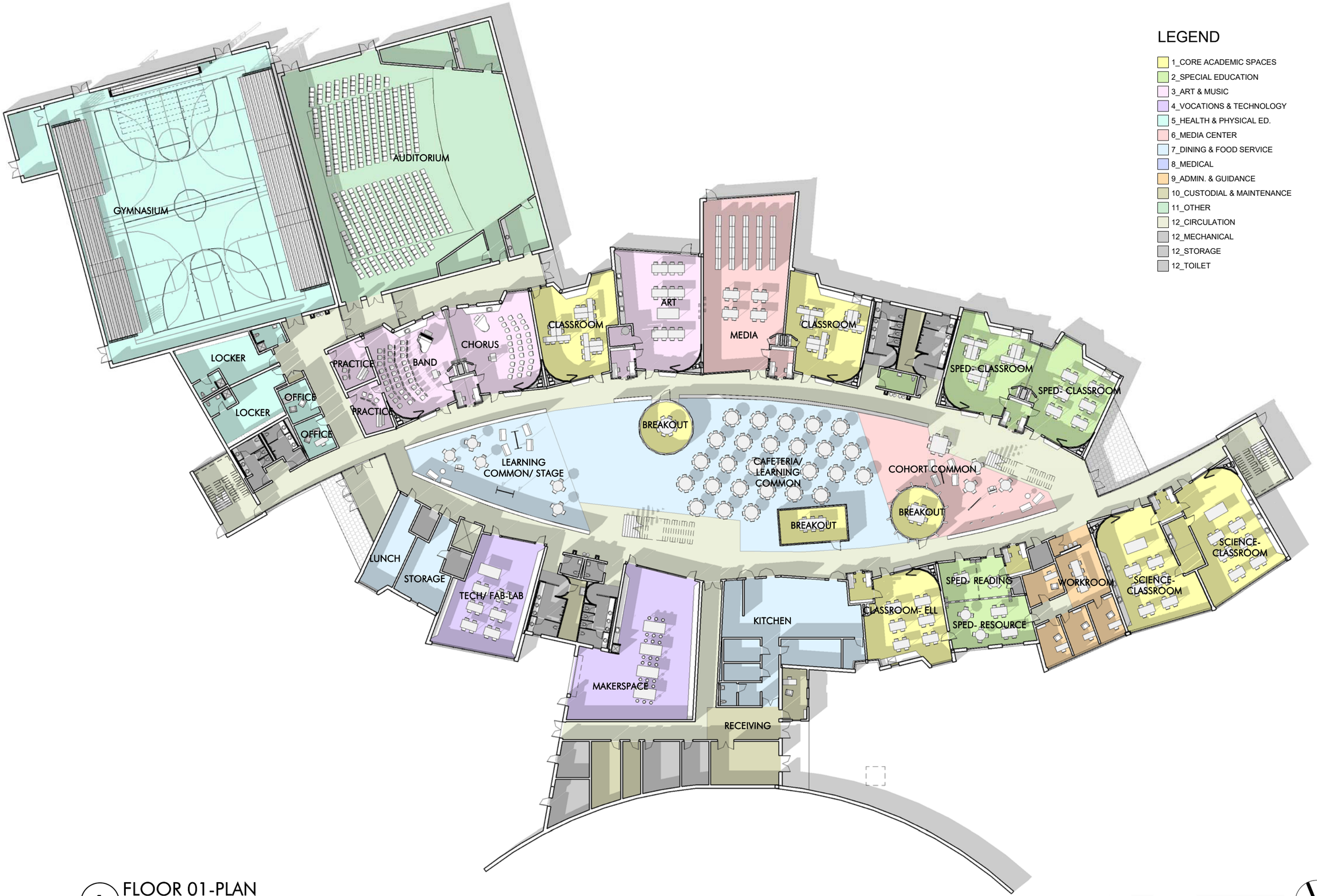
- diagrammatic Site Plan
- Floor Plan - Level 1
- Floor Plan - Level 2
- Floor Plan - Level 3
- Floor Plan - Roof



1 SITE PLAN

1" = 160'-0"

0' 80' 160' 320'



1 FLOOR 01-PLAN

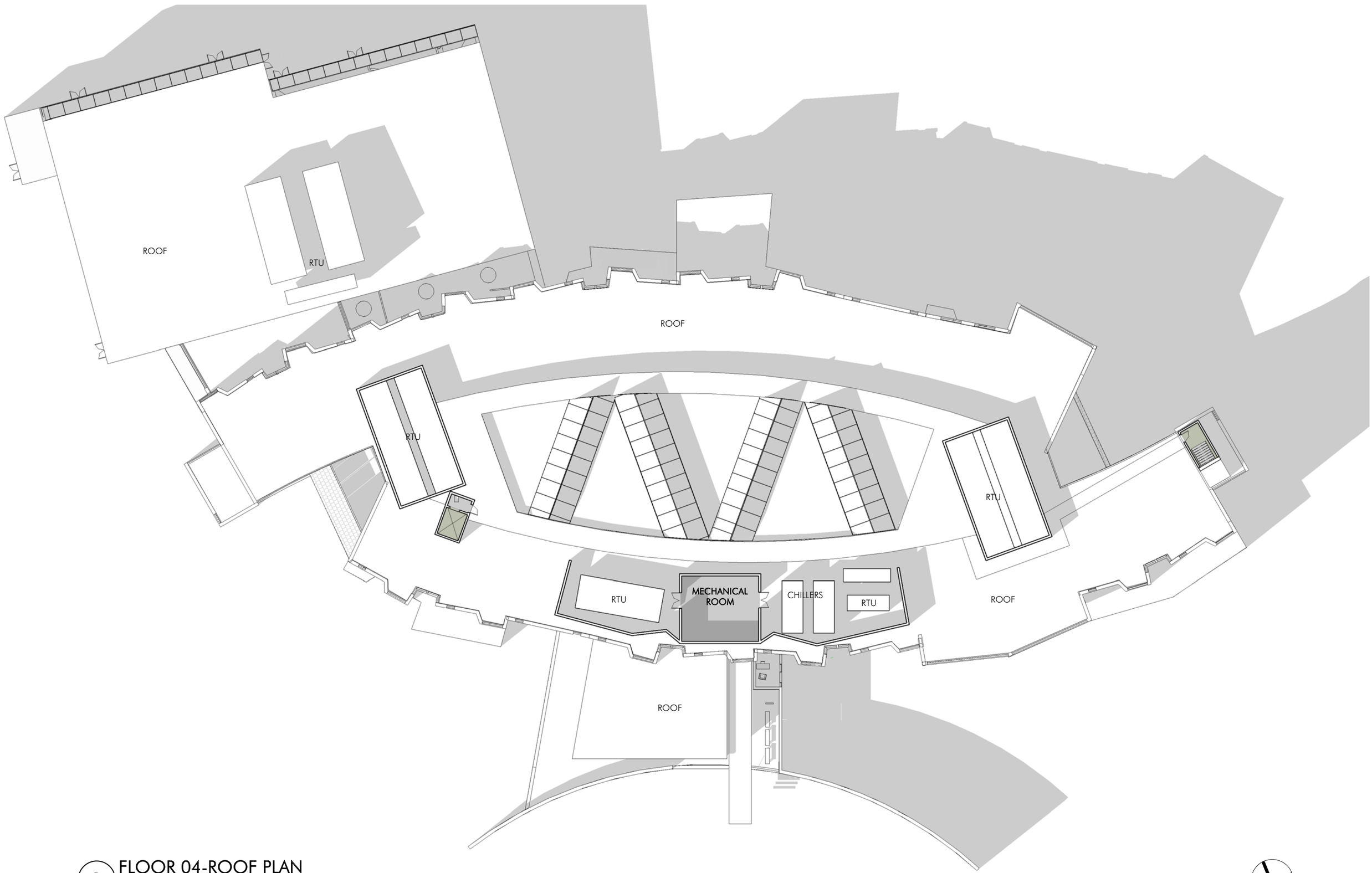
1/32" = 1'-0"

1 FLOOR 02-PLAN

1/32" = 1'-0"

1 FLOOR 03-PLAN

1/32" = 1'-0"



1 FLOOR 04-ROOF PLAN

1/32" = 1'-0"

1.11 MSBA Preliminary Design Program Review and District Response

SMMA

Project Management

June 21, 2018

Fenton Bradley
Project Manager
Massachusetts School Building Authority
40 Broad Street, Fifth Floor
Boston, Massachusetts 02109

Re: Fuller Middle School Feasibility Study **Framingham, Massachusetts**

District's Response to the Preferred Schematic Report Review Comments *SMMA No. 17050*

Dear Fenton:

Please find the District's Response to the MSBA's Preferred Schematic Report Review Comments of June 7, 2018.

Very truly yours,

SMMA

Joel G. Seeley
Principal

cc: School Building Committee, Jonathan Levi, JLA (MF)

enclosures: District's Response to the Preferred Schematic Report Review Comments of June 7, 2018

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

JGS/sat /P:\2017\17050\05-TRANS\L_Fentonbradley_Psrsubmission_District'sResponse21June2018.Docx

ATTACHMENT A
MODULE 3 – PREFERRED SCHEMATIC REPORT REVIEW COMMENTS

District: City of Framingham
School: Fuller Middle School
Owner's Project Manager: Symmes Maini & McKee Associates, Inc.
Designer Firm: Jonathan Levi Architects, LLC
Submittal Due Date: May 9, 2018
Submittal Received Date: May 9, 2018
Review Date: May 9- June 5, 2018
Reviewed by: F. Bradley, C. Alles, J. Jumpe

MSBA REVIEW COMMENTS

The following comments[1] on the Preferred Schematic Report submittal are issued pursuant to a review of the project submittal document for the proposed project presented as a part of the Feasibility Study submission in accordance with the MSBA Module 3 Guidelines.

3.3.1 INTRODUCTION

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Overview of the process undertaken since submittal of the Preliminary Design Program that concludes with submittal of the Preferred Schematic Report, including any new information and changes to previously submitted information	☒	☐	☐	☐
2	Summary of updated project schedule, including				
	a) Projected MSBA Board of Directors Meeting for approval of Project Scope and Budget Agreement	☒	☐	☐	☐

	b) Projected Town/City vote for Project Scope and Budget Agreement	☒	☐	☐	☐
	c) Anticipated start of construction	☒	☐	☐	☐
	d) Target move in date	☒	☐	☐	☐
3	Summary of the final evaluation of existing conditions	☒	☐	☐	☐
4	Summary of final evaluation of alternatives	☐	☒	☐	☐
5	Summary of District's preferred solution	☒	☐	☐	☐
6	A copy of the MSBA Preliminary Design Program project review and corresponding District response	☒	☐	☐	☐

MSBA Review Comments:

4) Although a detailed "Concept Options Evaluation Matrix" was included, it is noted that subsequent to receiving this submittal, the MSBA requested additional information that further describes and summarizes the Final Evaluation of Options. Information was requested for each option identified in the preferred schematic phase including a detailed narrative that clearly documents the reason(s) why each option was eliminated from further consideration. Please acknowledge.

Response: Please see attached Options Evaluation Memo

3.3.4 PREFERRED SOLUTION

Provide the following Items		Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Educational Program				
	a) Summary of key components and how the preferred solution fulfills the educational program	☐	☒	☐	☐
	b) Design responses including desired features and/or layout considerations	☒	☐	☐	☐
	c) Proposed variances to, and benefits of, any changes to the current grade configuration (if any) and a related transition plan	☐	☐	☐	☐
2	Preferred Solution Space Summary				
	a) Updated MSBA Space Summary spreadsheet	☐	☒	☐	☐
	b) Itemization and explanation of variations from the initial space summary (and MSBA review) included in the Preliminary Design Program	☒	☐	☐	☐
3	Preliminary NE-CHPS or LEED-S scorecard	☐	☒	☐	☐

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
4	Conceptual floor plans of the preferred solution, in color that are clearly labeled to identify educational spaces	☒	☐	☐	☐
5	Clearly labeled site plans of the preferred solution including, but not limited to:				
	a) Structures and boundaries	☒	☐	☐	☐
	b) Site access and circulation	☒	☐	☐	☐
	c) Parking and paving	☒	☐	☐	☐
	d) Zoning setbacks and limitations	☒	☐	☐	☐
	e) Easements and environmental buffers	☐	☒	☐	☐
	f) Emergency vehicle access	☒	☐	☐	☐
	g) Safety and security features	☒	☐	☐	☐
	h) Utilities	☐	☐	☒	☐
	i) Athletic fields and outdoor educational spaces (existing and proposed)	☐	☒	☐	☐
	j) Site orientation	☒	☐	☐	☐
6	An overview of the Total Project Budget and local funding including the following:				
	a) Estimated total construction cost	☐	☒	☐	☐
	b) Estimated total project cost	☐	☒	☐	☐
	c) Estimated funding capacity	☒	☐	☐	☐
	d) List of other municipal projects currently planned or in progress	☒	☐	☐	☐
	e) District's not-to-exceed Total Project Budget	☒	☐	☐	☐
	f) Brief description of the local process for authorization and funding of the proposed project	☒	☐	☐	☐
	g) Estimated impact to local property tax, if applicable	☒	☐	☐	☐
	h) Completed MSBA Budget Statement	☐	☒	☐	☐
7	Updated Project Schedule including the following projected dates:				
	a) Massachusetts Historical Commission Project Notification Form	☒	☐	☐	☐
	b) MSBA Board of Directors meeting for approval to proceed into Schematic Design	☒	☐	☐	☐

Provide the following Items		Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
c)	MSBA Board of Directors meeting for approval of project scope and budget agreement and project funding agreement	☒	☐	☐	☐
d)	Town/City vote for project scope and budget agreement	☒	☐	☐	☐
e)	Design Development submittal date	☒	☐	☐	☐
f)	MSBA Design Development Submittal Review (include required 21-day duration)	☒	☐	☐	☐
g)	60% Construction Documents submittal date	☒	☐	☐	☐
h)	MSBA 60% Construction Documents Submittal Review (include required 21-day duration)	☒	☐	☐	☐
i)	90% Construction Documents submittal date	☒	☐	☐	☐
j)	MSBA 90% Construction Documents Submittal Review (include required 21-day duration)	☒	☐	☐	☐
k)	Anticipated bid date/GMP execution date	☒	☐	☐	☐
l)	Construction start	☒	☐	☐	☐
m)	Move-in date	☐	☐	☒	☐
n)	Substantial completion	☒	☐	☐	☐

MSBA Review Comments:

1a) The submittal indicates the District may develop a new school scheduling method as the school transitions to a S.T.E.A.M. model. Please note that modifying the school scheduling method may change the building's utilization rate. In response to these review comments, please list alternative scheduling methods that may be proposed as the school transitions to a S.T.E.A.M. model.

Response: As the school transitions to a STEAM model, the Fuller administration will consider modified block and block schedules as ways to provide longer periods of time for student learning experiences. Alternatively, the administration will consider providing teacher teams with the flexibility to determine the use of instructional time to cater to the needs of individual projects. With that said, there is no predicted net change to the utilization of space under any of these scheduling methods.

The information provided also indicates that the nine ELL classrooms and nine science classrooms proposed by the District will be occupied for classroom instruction four out of the six scheduling blocks. It appears that based on the information provided, this may result in a utilization rate of 66% for these spaces. The MSBA notes that the overall utilization associated with the proposed program is approximately 64% inclusive of academic classrooms, art room, and the three vocations and

technology spaces. Further, if one of two gym stations and one of the two music rooms is in use, and a class is conducting research in the media center, then the overall utilization drops below 60%. Please note the MSBA targets an overall utilization rate of 85%. Please seek additional opportunities to increase efficiencies by reducing the overall number of classrooms; and increase flexibility and utilization by furnishing 'Maker Space' features into the science classrooms and reducing project areas in the common areas by providing larger science classrooms; in addition, indicate the average class sizes that will be anticipated for the English Second Language and Transitional Bilingual Education classes.

Response: The Educational Program has been revised to reduce the number of Science Rooms to 6 rather than the originally proposed 9 Science Rooms. Under this new configuration, every Science Room will be at 100% utilization. If the Maker Space equipment is added to the Science Rooms, it becomes virtually inaccessible to anyone other than the Science teachers during the day. This would contradict the Educational Program since the expectation is that all staff--not just Science teachers--should be providing students with the appropriate tools for their projects. Furthermore, the Technology Education teacher would also need this equipment for various units of instruction but would need to displace Science teachers in order to conduct these lessons. This creates an inequity of access for staff and students. To ensure proper use and maintenance of the equipment, the district has invested in a STEAM coach to support staff in the use of the Maker Space. The average class size for Transitional Bilingual Education Classes is 20 and for English Second Language classes is 22.

Please see attached revised Educational Program (2 versions: one indicating revisions from PSR submission and one "clean copy").

2a) Please refer to detailed comments in "Attachment B". Additionally, MSBA staff has updated its space summary template to include a new section titled Non-Programmed Spaces, which includes the following categories:

- *Other occupied rooms;*
- *Unoccupied MEP spaces;*
- *Unoccupied closets, supply rooms, and storage rooms;*
- *Toilet rooms;*
- *Circulation, which includes: corridors, stairs, ramps, and elevators; and*
- *Remaining areas, which includes exterior walls, interior partitions, chases, and other areas not listed above.*

Areas associated with the 'non-programmed spaces' are required for schematic design and all subsequent submittals that include a space summary. Please see Project Advisory 52 for additional information. Please acknowledge.

Response: Acknowledged. Non-programmed areas will be documented for Schematic Design and subsequent submittals per Project Advisory 52.

3) The submittal indicates a total goal of 43 credits using USGBC LEED-V4, including 6 credits in the Energy & Atmosphere "Optimize Energy Performance" category. Note that 43 points in LEED-V4

reaches the minimum required for all MSBA core projects. The proposed credits in 'Optimize Energy' are below the apparent threshold to achieve the minimum requirements (exceeding code by 20%) required applying additional (provisional) incentives to the District's reimbursement rate, additional information is required. If the District intends that MSBA provide a grant that includes the 2% additional reimbursement in the following project Scope and Budget phase of the study, please provide detailed information that illustrates how the minimum thresholds intend to be achieved.
Refer to MSBA Project Advisory #41"Update to the MSBA's Sustainable Building Design Policy" for more information. Acknowledge and confirm the District's intent and that the proposed project will be designed to meet or exceed the criteria set forth in project Advisory #41.

Response: Acknowledged. The proposed project will be designed to meet or exceed the criteria set forth in project Advisory #41 to qualify for the 2% additional reimbursement. Please see attached revised LEED scorecard.

5e) In response to these review comments, please confirm whether or not easements exist on the site that may impact further site development for a potential project.

Response: no easements have been located on record that may impact further site development for a potential project.

5h) Not provided. Please submit.

Response: Please see attached Utility Location Plan

5i) Provide information associated with the proposed outdoor education spaces in subsequent submissions. Please acknowledge.
Response: acknowledged. Information associated with the proposed outdoor education spaces shall be provided in subsequent submissions.
6a, b) Subsequent to receiving this submittal, the MSBA requested additional information associated with the increased estimated project costs from the Preliminary Design Program (PDP) phase to the Preferred Schematic Report (PSR) phase, including, but not limited to a high level description and summary of any changes in project scope, square footage, and site development. It is noted MSBA received the requested information on May 18, 2018 by email. Please incorporate this information as part of the response to these review comments.

Response: Please see attached Supplemental Information on Project Costs

6h) A budget statement was included with this submittal; however the post-construction budget column has not been completed. Please complete and submit to MSBA.

Response: Please see attached Budget Statement

7m) Not provided. Please submit.

Response: Please see attached Project Schedule

- *The MSBA offers the following information to assist the District and its Owner's Project Manager in completing the total project budget template that is required as part of its Schematic Design submittal.*

    - *The MSBA issues project advisories from time to time, as informational updates for Districts, Owner's Project Managers ("OPM"), and Designers in an effort to facilitate the efficient and effective administration of proposed projects currently pending review by the MSBA. The advisories can be found on the MSBA's website. In response to these review comments, please confirm that the District's consultants have reviewed all project advisories and they have been incorporated into the proposed project as applicable.*

      Response: Confirmed

    - *The District must include negotiated costs for OPM and Designer fees for the remainder of the project as part of their Total Project Budget. In response to these review comments, please confirm that the District and its consultants will negotiate fees for the remainder of the project that are to be included in the District's Schematic Design documents to the MSBA.*

      Response: Confirmed. The District and its consultants will negotiate fees for the remainder of the project that are to be included in the District's Schematic Design documents to the MSBA.

End

ATTACHMENT B
MODULE 3 – PREFERRED SCHEMATIC SPACE SUMMARY REVIEW

District: City of Framingham
School: Fuller Middle School
Owner's Project Manager: Symmes Maini & McKee Associates, Inc.
Designer Firm: Jonathan Levi Architects, LLC
Submittal Due Date: May 9, 2018
Submittal Received Date: May 9, 2018
Review Date: May 9- June 5, 2018
Reviewed by: F. Bradley, C. Alles, J. Jumpe

The MSBA review comments are as follows:

- **Core Academic** – The District is proposing to provide a total of 45,170 net square feet (nsf) which exceeds the MSBA guidelines by 13,590 nsf. The proposed area in this category decreased by 2,400 nsf since the Preliminary Design Program submittal.

The MSBA offers the following comments regarding the proposed program:

- (21) 900 nsf general classrooms, and (9) 900 nsf ELL classrooms which exceeds the MSBA guidelines by (8) classrooms and 6,100 nsf.
- (9) Science classrooms which is 3,150 nsf and (3) classrooms in excess of the guidelines.

Based on the information provided along with the District's reported high percentage of non-English speaking students, the MSBA understands the need to provide educational spaces to support delivery of this curriculum and student support services; however, the proposed program includes (39) academic classrooms, (11) beyond the (28) include in the guidelines. This significantly contributes to the 13,590 nsf overage proposed for this category, and to an overall program with a utilization rate below 65% (refer to Attachment A Section 3.3.4 for more information). Please review the proposed program and seek opportunities to increase the efficiency of the proposed program.

- (9) Science Prep rooms which is 240 nsf and (3) rooms in excess of the guidelines.
- (5) Science Teacher Planning rooms which is 450 nsf and (5) rooms in excess of the guidelines.

The MSBA looks to the district and its Designer to continue to explore opportunities to provide shared spaces that can support delivery of the science curriculum in a more efficient program.

Response: Please see attached revised Space Summary Template. In order to increase the efficiency of the program and overall utilization rate of the proposed Fuller School, the district proposes to reduce the number of ELL classrooms from (9) to (6) and the number of Science Classrooms from (9) to (6), along with corresponding reductions in Teacher Planning and Science Prep rooms. These changes will be incorporated in the Schematic Design Submittal.

- (15) 90 nsf Teacher Planning rooms which is 1,350 nsf in excess of the guidelines. Based on the information provided the MSBA accepts this variation to the guidelines. (For clarification, please indicate where larger 'Teacher Workstations' are located on the conceptual plans and further describe how theses spaces differ from the proposed Teacher Planning rooms).

  Response: Understood and agreed. The larger "Teacher Work Rooms" are centralized within each cohort and are shared by all staff serving that cohort. They support small conferences for professional development, itinerant teachers, and large workspace for teacher printing and assembly. The small teacher planning spaces adjoin and support individual classrooms and take the place of the traditional fixed "Teacher's Desk" area in the classroom. This gives the classroom itself much greater flexibility to accommodate several alternative furniture configurations. Additionally, the teacher planning spaces are shared by 2 or more teachers using the

adjacent classrooms, facilitating coordination and joint projects between the classrooms, which are designed with movable walls to be opened up to each other when desired.

- (3) Small Group Seminar/Resource spaces which is (1) space and 200 nsf beyond that included in the guidelines. Prior to the MSBA accepting this variation to the guidelines please provide additional information that demonstrates why purpose of these spaces could not be met in the media center, conference room, one of the three teacher workrooms, a classroom or one of the student cohorts when not in use by the students.

  Response: Please see revised Space Summary Template. In order to increase efficiency, (2) of the (3) Small Group Seminar/Resource spaces have been deleted, with those functions now proposed to be served in the remaining Small Group Seminar/Resource Room, centralized to be shared by all staff, and the (3) Teachers' Work Rooms (enlarged from 200 sf to 300 sf each)

- **Art and Music** – The District is proposing to provide a total of 3,650 nsf which exceeds the MSBA guidelines by 400 nsf. Based on the information provided, which documents and supports a high student participation in the music program, and the future combining of the concert band and orchestra, the MSBA accepts this variation to the guidelines. The District should continue to seek ways to reduce overall area to align with guidelines. Please note that in subsequent submissions the MSBA will consider area beyond 400 nsf in excess of guidelines as ineligible for reimbursement. Please acknowledge.

  Response: Acknowledged

- **Vocations &Technology** – The District is proposing to provide a total of 4,150 nsf which is below the MSBA guidelines by 2,250 nsf. The proposed area in this category has not changed since the Preliminary Design Program submittal. Based on the information provided the District's intent is to include (3) Cohort Commons spaces totaling 4,353 nsf in the Media Center category, and reducing the square footage in this category by 2,250 nsf. The MSBA accepts this variation to the guidelines. Please note that MSBA will consider area beyond 4,150 nsf in this category as ineligible for reimbursement. Please acknowledge.

  Response: Understood and agreed. Please see attached revised Space Summary Template. In order to increase the efficiency of the program and overall utilization rate of the proposed Fuller School, the district proposes to delete (1) Tech Classroom and design the Fab Lab to be able to accommodate the Tech Classroom functions as well as Fabrication functions.

- **Media Center** – The District is proposing to provide a total of 6,250 nsf which exceeds the MSBA guidelines by 2,247 nsf. The proposed area in this category has increased by 4,350 nsf since the Preliminary Design Program submittal. This increase is due to the District moving (3) Cohort Commons spaces from the core academic category. The MSBA does not object to the District combining the 2,250 not used under the vocations and technology category with area allocated to this category to allow for the proposed cohort common spaces. Square footage in

excess of the 6,250 nsf will be considered ineligible for reimbursement. Refer to vocations and technology above for additional information. Do not adjust MSBA guidelines in future space summary submittals just indicate the District's intent. Please acknowledge.

Response: Understood and agreed.

Please note the MSBA released an updated space summary template Project Advisory #52. This new template will be required to be used for the Schematic Design submittal. Please acknowledge.

Response: Acknowledged. Updated template will be used for Schematic Design per Project Advisory 52.

Attachments

1. MSBA response memo - Options Evaluation
2. Updated LEED Scorecard
3. Site Utility Plan
4. Supplemental Information on Project Costs
5. Budget Statement
6. Project Schedule
7. Updated Space Summary Template
8. Updated Education Program (showing revisions)
9. Updated Education Program (clean copy)

Jonathan Levi Architects, LLC
266 beacon street boston ma 02116 tel 617.437.9458 fax 617.437.1965 www.leviarc.com

Memorandum

18 May 2018

To: Mr. Fenton Bradley
Project Manager
Massachusetts School Building Authority
40 Broad Street
Boston, MA 02109

From: Jonathan Levi

Re: Feasibility Study for Fuller Middle School
Description of Option Rejection Rationale

The Fuller School Building Committee's process for evaluation of alternatives and, specifically, its rationale for the rejection of alternatives is best summarized in the 'Concept Options Evaluation Matrix' document (attached) which, in addition to the evaluation narratives, accompanies this section of the full PSR submission. The submitted matrix is a record of a 'live' document which was prepared in draft form by the design team and then discerned, deliberated and updated in real time by committee members during the decisive April 30, 2018 meeting which concluded the PSR phase.

Highlights of the evaluations recorded in the matrix which resulted in the rejection of alternatives are as follows:

<u>Option 0 - 'Full Renovation'</u>

Disadvantages:

- Radical cost premium
- Extended schedule due to phasing and swing space
- Negative impact to education in modular classroom school during construction
- Poor fit to educational program
- Inferior long term maintenance and operating costs
- Sub-optimal sustainability potential

<u>Option A - 'Addition/Renovation'</u>

Disadvantages:

- Cost premium
- Extended schedule due to phasing
- High negative impact to education due to occupied construction

- Sub-optimal fit to educational program
- Sub-optimal long term maintenance and operating costs
- Increased risk due to potential hidden conditions
- Reduced design scope flexibility
- Reduced future cohort grouping flexibility
- Poor campus relationships due to remote parking and lack of shared open space

Option B -' Tree Branches'

Disadvantages:

- Increased construction impact to neighbors due to closeness to street
- Lack of campus open space connecting district facilities
- Poor future cohort grouping flexibility due to isolated wings
- Sub-optimal visible learning environment due to isolated wings
- Sub-optimal STEAM configuration due to separate wing STEAM areas
- Comparatively large footprint resulting in diminished open space
- Less optimal solar orientation

Option D – Butterfly

Disadvantages:

- Increased construction impact to neighbors due to closeness to street
- Lack of campus open space connecting district facilities
- Poor future cohort grouping flexibility due to isolated wings
- Sub-optimal visible learning environment due to isolated wings
- Sub-optimal STEAM configuration due to separate wing STEAM areas
- Comparatively large footprint resulting in diminished open space
- Less optimal solar orientation
- Reduced design scope flexibility due to embedded auditorium

FULLER MIDDLE SCHOOL

Concept Options Evaluation Matrix

RATINGS:

+	Advantageous
-o-	Neutral
-	Disadvantageous
- -	Very Disadvantageous

	Option 0 Repair to Code Baseline	Option A Add / Reno	Option B Tree Branch New Constr.	Option C Folded Hands New Constr.	Option D Butterfly New Constr.	Comments
PROJECT EVALUATION CRITERIA						
1 Total Project Cost	- -	-	+	+	+	See costs below
2 Schedule	- -	-	+	+	+	Renovation options will require phasing and additional construction time. Swing space requires additional time
3 Construction Impact to Education	- -	-	+	-o-	+	Swing space will be disruptive and smaller than current Fuller use
4 Construction Impact to Campus and Neighbors	-o-	-	-	+	-	Swing space / trailers will be disruptive to neighbors. Options A, B and D close to Flagg Drive so potentially disruptive
5 Educational Program Accommodation	- -	-o-	+	+	+	Options vary on ability to provide 3 appropriate cohort locations and identity
6 Flexibility-Fixed Classroom Count per Cohort	-o-	-	-	+	-	Option C allows each cohort to increase or decrease the number of SPED and general classrooms because they are not aggregated in a defined wing or floor.
7 STEM Enhancement-Visible learning	- -	-	-o-	+	-o-	Open atrium has greatest visibility within and between cohorts. All options to facilitate project based learning.
8 Flexibility-Building Systems	- -	-	+	+	+	New construction would be designed for flexible use and improved MEP accessibility
9 Open Space /Building Massing / Footprint	- -	-	-o-	+	-o-	3 story Option C has smallest footprint, resulting in largest open area.
10 Security	- -	-o-	+	+	+	All options A-D would be substantially more secure than existing
11 Community Use	-o-	-	+	+	+	All alternatives allow community use. New Construction options allow increased access to playfields.
12 Academic Campus	-	-	-o-	+	-o-	Locating Fuller closer to Farley and McCarthy improves ability to create identifiable campus. Option C most successful.
13 Outdoor Theater	-o-	-o-	-o-	+	-o-	South-facing sloped outdoor space inherent in Option C design
14 Natural Light and Views	- -	-o-	+	+	+	one-story "Pancake" massing creates interior rooms with limited access to windows
15 LEED / Sustainability	-	-o-	-o-	+	-o-	Option C has best solar orientation
16 Risk	- -	- -	+	+	+	Options requiring renovation and/or swing space have more inherent risk due to unforeseen conditions
17 Long Term Maintenance and Repair Costs	-	-o-	+	+	+	3 story Option C has smallest roof area.
18 Operating Costs	-	-o-	+	+	+	Solar orientation and ext skin quantity impact energy loads
19 Design Scope Flexibility	- -	- -	+	+	-	Options B and C would most readily allow a modification to the Auditorium and/or Gym size in upcoming Schematic Design phase
Total GSF	196,000	167,000	154,000	154,000	154,000	
Swing Space Cost ($Million)	$6	$2	-	-	-	Option 0 would require swing space at Farley. Option A could have swing space in Fuller. Other options require no swing space.
Order of Magnitude Project Cost ($Million)	$131	$117	$111	$110	$111	This existing building is particularly expensive to renovate due to its construction assembly and degree of deterioration
MSBA Share		$49	$44	$44	$44	
Framingham Share	$131	$68	$67	$66	$67	

LEED for Schools v4 Project Scorecard

Project Name: **Fuller Middle School**
Project Addres 31 Flagg Dr, Framingham MA
Date Updated: June 26, 2018

	Yes	?	No			
	1	0	0		**Integrative Process**	1
D	1			Credit 1	**Integrative Process**	1

	Yes	?	No			
	1	6	8		**Location & Transportation**	15
D			N/A	Credit 1	**LEED for Neighborhood Development Location**	15
D	1			Credit 2	**Sensitive Land Protection**	1
D			2	Credit 3	**High Priority Site**	2
D		2	3	Credit 4	**Surrounding Density and Diverse Uses**	5
D		1	3	Credit 5	**Access to Quality Transit**	4
D		1		Credit 6	**Bicycle Facilities**	1
D		1		Credit 7	**Reduced Parking Footprint**	1
D		1		Credit 8	**Green Vehicles**	1

	Yes	?	No			
	4	7	1		**Sustainable Sites**	12
C	Y			Prereq 1	**Construction Activity Pollution Prevention**	Required
D	Y			Prereq 2	**Environmental Site Assessment**	Required
D	1			Credit 1	**Site Assessment**	1
D		2		Credit 2	**Site Development - Protect or Restore Habitat**	2
D		1		Credit 3	**Open Space**	1
D		3		Credit 4	**Rainwater Management**	3
D	1	1		Credit 5	**Heat Island Reduction**	2
D	1			Credit 6	**Light Pollution Reduction**	1
D			1	Credit 7	**Site Master Plan**	1
D	1			Credit 8	**Joint Use of Facilities**	1

	Yes	?	No			
	5	5	2		**Water Efficiency**	12
D	Y			Prereq 1	**Outdoor Water Use Reduction**	Required
D	Y			Prereq 2	**Indoor Water Use Reduction**	Required
D	Y			Prereq 3	**Building-level Water Metering**	Required
D	2			Credit 1	**Outdoor Water Use Reduction**	2
D	2	5		Credit 2	**Indoor Water Use Reduction**	7
D			2	Credit 3	**Cooling Tower Water Use**	2
D	1			Credit 4	**Water Metering**	1

	Yes	?	No			
	17	12	2		**Energy & Atmosphere**	31
C	Y			Prereq 1	**Fundamental Commissioning and Verification**	Required
D	Y			Prereq 2	**Minimum Energy Performance**	Required
D	Y			Prereq 3	**Building-level Energy Metering**	Required
D	Y			Prereq 4	**Fundamental Refrigerant Management**	Required
C	5	1		Credit 1	**Enhanced Commissioning**	6
D	11	5		Credit 2	**Optimize Energy Performance**	16
D	1			Credit 3	**Advanced Energy Metering**	1
C			2	Credit 4	**Demand Response**	2
D		3		Credit 5	**Renewable Energy Production** (1%/5%/10%)	3
D		1		Credit 6	**Enhanced Refrigerant Management**	1
C		2		Credit 7	**Green Power and Carbon Offsets** (50%/100%)	2

	Yes	?	No		Materials & Resources	13
	6	2	5			
D	Y			Prereq 1	**Storage & Collection of Recyclables**	Required
C	Y			Prereq 2	**Construction and Demolition Waste Management Planning**	Required
C	3		2	Credit 1	**Building Life-cycle Impact Reduction**	5
C	1		1	Credit 2	**Building Product Disclosure and Optimization**-Environmental Product	2
C		1	1	Credit 3	**Building Product Disclosure and Optimization**-Sourcing of Raw Matls.	2
C		1	1	Credit 4	**Building Product Disclosure and Optimization**-Material Ingredients	2
C	2			Credit 5	**Construction and Demolition Waste Management**	2

	Yes	?	No		Indoor Environmental Quality	#REF!	16
	10	5	1				
D	Y			Prereq 1	**Minimum IAQ Performance**		Required
D	Y			Prereq 2	**Environmental Tobacco Smoke (ETS) Control**		Required
D	Y			Prereq 3	**Minimum Acoustical Performance**		Required
D	2			Credit 1	**Enhanced IAQ Strategies**		2
C	1	1	1	Credit 2	**Low-Emitting Materials** (3/5/6)		3
C	1			Credit 3	**Construction IAQ Management Plan**		1
C	1	1		Credit 4	**IAQ Assessment**		2
D		1		Credit 5	**Thermal Comfort**		1
D	1	1		Credit 6	**Interior Lighting**		2
D	2	1		Credit 7	**Daylight**		3
D	1			Credit 8	**Quality Views**		1
D	1			Credit 9	**Acoustic Performance**		1

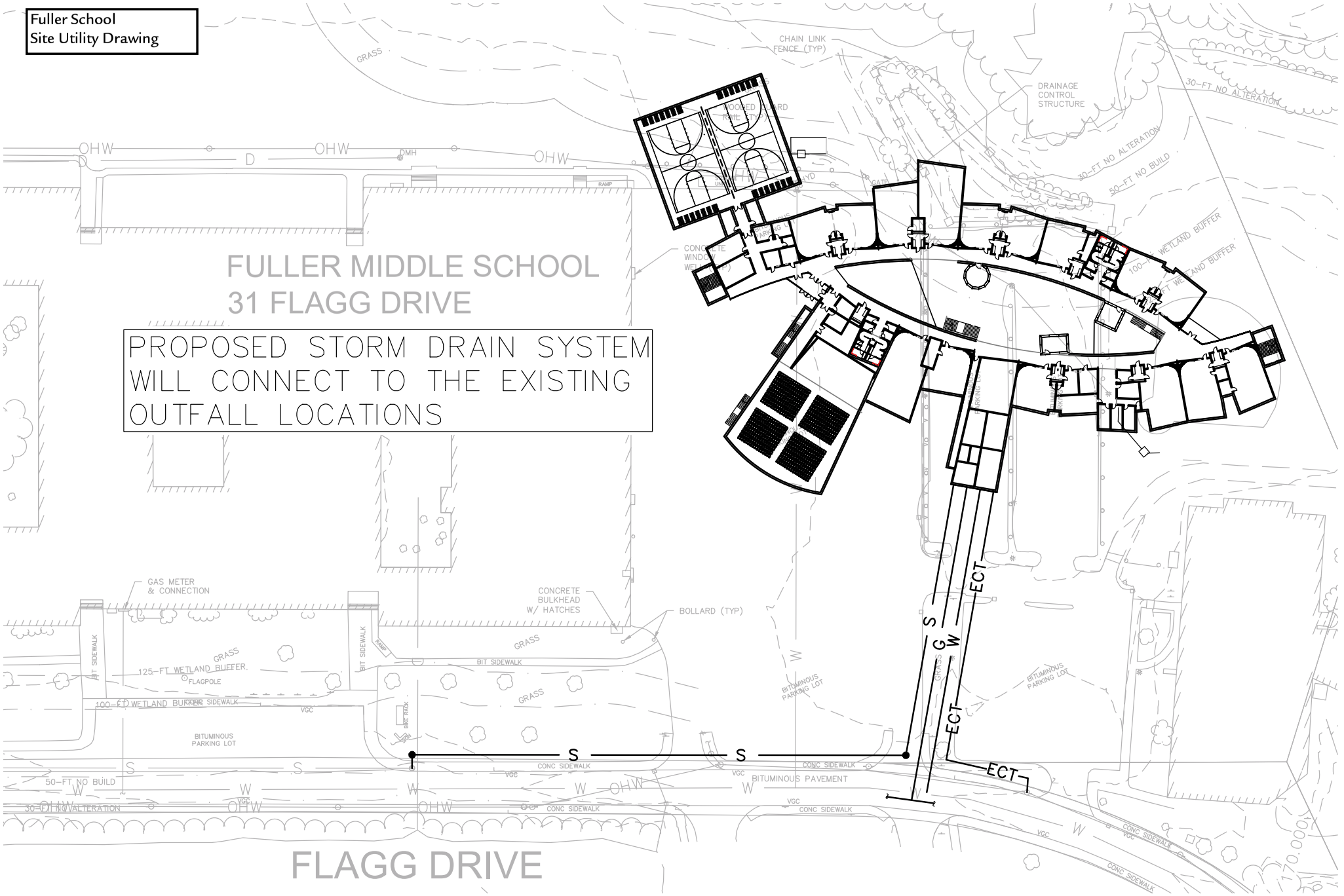
	Yes	?	No		Innovation	6
	3	3	0			
D	1			Credit 1	**Innovation: TBD**	1
D		1		Credit 2	**Innovation: TBD**	1
D		1		Credit 3	**Innovation: TBD**	1
C	1			Credit 4	**Innovation: EP**	1
C		1		Credit 5	**Innovation: Pilot Credit**	1
C	1			Credit 6	**LEED Accredited Professional**	1

	Yes	?	No		Regional Priority Credits - earn up to 4 points	4
	1	3	0			
		1		Credit 1	**EAc5 Renewable Energy Production (2pt / 3%)**	1
		1		Credit 2	**WEc2 - Indoor Water Use Reduction (4 pts)**	1
	1			Credit 3	**MRc1 Building Life-Cycle Impact Reduction (2pts)**	1
		1		Credit 4	**EAc2 Optimize Energy Performance (8pts)**	1
			N/A	*Credit 5*	*SSc4 - Rainwater Management (2 pts)*	
			N/A	*Credit 6*	*LTc3 - High Priority Site (2 Pts)*	

Yes	?	No	Project Totals (Certification Estimates)	110
48	43	19		

Certified: 40-49 points, **Silver:** 50-59 points, **Gold:** 60-79 points, **Platinum:** 80+ points

Fuller School
Site Utility Drawing



SMMA

Project Management

Memorandum

To: Fenton Bradley
Project Manager
Massachusetts School Building Authority
40 Broad Street
Boston, MA 02109

From: Joel Seeley
Project: Feasibility Study for the Fuller Middle School
Re: Project Cost Increase
Distribution: School Building Committee, JLA, (MF)

Date: 5/18/2018
Project No.: 17050

This memorandum provides an overview of the increases in the total project costs from the Preliminary Design Program (PDP) phase submission to the Preferred Schematic Report (PSR) phase submission for Options B, C and D.

The PDP phase Options B.2, C.2 and D correspond to the PSR phase Options B, C and D.

The changes in the total project costs can be attributed to six distinct project areas: 1) the addition of a 750 seat auditorium or in the case of Option B increasing the auditorium from 650 seats to 750 seats, 2) increases in the site work costs due to a combination of under estimating the scope in the PDP phase and the addition of soil remediation work for the building foundation system as a result of the soil borings performed in the PSR phase, 3) the complexities of demolishing the existing building were better understood in the PSR phase, 4) increasing the gymnasium size from 6,500 net square feet to 8,300 net square feet, 5) providing air conditioning throughout the school, and 6) more developed building design and systems information. The breakdown of the cost increases is as follows:

Total Project Cost Increase Breakdown			
	Option B	**Option C**	**Option D**
Auditorium	$3M	$10M	$10M
Site Work	$7M	$7M	$7M
Building Demolition	$1M	$1M	$1M
Larger Gymnasium	$2M	$2M	$2M
Full Air Conditioning	$1M	$1M	$1M
Building Cost	$2M	$1M	$2M
Total	**$16M**	**$22M**	**$23M**

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

The City has determined that the project scope included for the PSR phase Options B, C and D meets the needs of the Fuller Middle School and understands that the auditorium and area of the enlarged gymnasium would represent project costs ineligible for MSBA reimbursement.

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Budget Statement for Preferred Schematic - Expenditures

As reported on the school district's most recent three end of year information, please updated to the 3 latest fiscal year periods and complete the fields below.

Category	2014-2015 FY2015 Staff (FTE)	2014-2015 FY2015 Budget	2015-2016 FY2016 Staff (FTE)	2015-2016 FY2016 Budget	2016-2017 FY2017 Staff	2016-2017 FY2017 Budget	Change from Previous Year Staff (FTE)	Change from Previous Year Budget	Post-Construction Budget Staff	Post-Construction Budget Budget	New Facility vs. Current Staff (FTE)	New Facility vs. Current Budget
Salaries												
Administration												
Admin. Secretary	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Assistant Principal	1.00	110,221	1.00	118,740	1.00	123,371	0.00	4,631	2.00	260,000	1.00	136,629
Business Office	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Curriculum Director/Coord.	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Custodians/Maintenance Staff	6.00	284,180	7.00	333,944	6.00	356,550	-1.00	22,606	7.00	430,000	1.00	73,450
Executive Secretary	3.00	132,616	3.00	134,012	3.00	138,967	0.00	4,955	3.00	142,000	0.00	3,033
Facilities Manager	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Guidance	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Adjustment Counselor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Guidance Counselors	5.00	304,937	4.50	316,913	4.00	334,156	-0.50	17,243	5.00	425,000	1.00	90,844
Guidance Director	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Legal	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Nurse	1.00	45,580	1.00	47,192	1.00	51,159	0.00	3,967	1.00	54,000	0.00	2,841
Other	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Principal	1.00	116,150	1.00	125,000	1.00	130,362	0.00	5,362	1.00	135,000	0.00	4,638
Special Education Admin	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Superintendent/Asst. Superintendent	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Transportation	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Treasurer	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Total Administration	**17.00**	**993,684**	**17.50**	**1,075,801**	**16.00**	**1,134,565**	**-1.50**	**58,764**	**19.00**	**1,446,000**	**3.00**	**311,435**
Instruction - Teaching Services												
Arts	1.00	51,706	1.00	78,145	1.00	83,222	0.00	5,077	1.50	125,000	0.50	41,778
Business	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Communications	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Coping Instructor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Culinary Arts	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
ELL	9.00	695,426	11.00	779,909	14.00	944,521	3.00	164,612	16.00	1,100,000	2.00	155,479
English Language	5.00	320,694	4.00	281,757	6.00	399,925	2.00	118,168	7.00	470,000	1.00	70,075
Family Consumer Services	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Foreign Language	3.00	193,403	3.00	176,009	3.00	207,677	0.00	31,668	4.00	285,000	1.00	77,323
Health Services	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
History & Social Science	6.50	373,279	5.25	360,473	5.25	379,789	0.00	19,316	6.25	460,000	1.00	80,211
Instructional Assistant/Paraprofessionals	1.50	52,940	1.50	53,037	0.50	27,013	-1.00	(26,024)	3.00	110,000	2.50	82,987
Library/Media	0.00	7,444	0.00	7,482	0.00	9,088	0.00	1,606	1.00	70,000	1.00	60,912
Mathematics	6.50	433,701	6.50	455,376	6.50	459,334	0.00	3,958	8.00	580,000	1.50	120,666
MCAS	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Music	2.50	154,627	1.75	98,153	1.70	102,099	-0.05	3,946	2.50	160,000	0.80	57,901
Other	2.00	148,960	2.00	145,941	2.00	155,991	0.00	10,050	2.00	160,000	0.00	4,009
Physical Education	3.00	257,126	3.00	263,862	3.00	276,265	0.00	12,403	4.00	370,000	1.00	93,735
Reading	1.00	78,979	1.00	88,514	1.00	91,433	0.00	2,919	1.00	95,000	0.00	3,567
School Adjustment Counselor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Science												
Biology	5.25	336,538	5.25	344,932	5.25	363,073	0.00	18,141	7.00	490,000	1.75	126,927
Botany	0.00	-	0.00		0.00		0.00	-	0.00	-	0.00	-
Chemistry	0.00	-	0.00		0.00		0.00	-	0.00	-	0.00	-
Geology	0.00	-	0.00		0.00		0.00	-	0.00	-	0.00	-
Physics	0.00	-	0.00		0.00		0.00	-	0.00	-	0.00	-
Special Education	23.50	1,107,079	24.00	1,219,295	25.50	1,249,651	1.50	30,356	28.00	1,400,000	2.50	150,349
Substitute Teachers	0.00	54,112	0.00	65,250	0.00	-	0.00	(65,250)	0.00	-	0.00	-
Technology	0.00	1,179	0.00	1,350	0.00	-	0.00	(1,350)	0.00	1,500	0.00	1,500
Vocational Tech.	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Total Instruction - Teaching Services	**69.75**	**4,267,193**	**69.25**	**4,419,485**	**74.70**	**4,749,081**	**5.45**	**329,596**	**91.25**	**5,876,500**	**16.55**	**1,127,419**
Total Salaries Administration & Instruction	**86.75**	**5,260,877**	**86.75**	**5,495,286**	**90.70**	**5,883,646**	**3.95**	**388,360**	**110.25**	**7,322,500**	**19.55**	**1,438,854**
Employee Benefits												
All employee-related fringe (health insurance, retirement etc)		-		-		-		-		-		-
Materials & Services												
Materials												
Audio-Visual Materials		-		-		-		-		-		-

January 2014

Budget Statement for Preferred Schematic - Expenditures

Category	2014-2015 FY2015 Staff (FTE)	2014-2015 FY2015 Budget	2015-2016 FY2016 Staff (FTE)	2015-2016 FY2016 Budget	2016-2017 FY2017 Staff	2016-2017 FY2017 Budget	Change from Previous Year Staff (FTE)	Change from Previous Year Budget	Post-Construction Budget Staff	Post-Construction Budget Budget	New Facility vs. Current Staff (FTE)	New Facility vs. Current Budget
Culinary Arts Materials		-		-		-		-		-		-
General Office Supplies		1,648		2,648		2,648		-		3,000		352
Information technology		-		-		-		-		-		-
Hardware		3,905		2,935		2,935		-		3,500		565
Software		-		1,285		1,285		-		2,000		715
Library Materials		1,545		2,045		2,045		-		7,560		5,515
Non info-tech equipment		-		-		-		-		-		-
Testing Materials & Supplies		-		-		-		-		-		-
Textbooks		-		1,141		1,141		-		3,000		1,859
Vocational Program Materials		-		-		-		-		-		-
Total Materials		**7,098**		**10,054**		**10,054**		**-**		**19,060**		**9,006**
Services												
Athletics		-		-		-		-		-		-
Attendance		-		-		-		-		-		-
Food Service		515		515		515		-		-		(515)
Health Services		-		-		-		-		-		-
Other Student Activities		16,800		19,600		20,000		400		22,000		2,000
Psychological Services		-				-		-		-		-
School Security		-		-		-		-		-		-
Student Transportation		1,030		800		800		-		1,500		700
Total Services		**18,345**		**20,915**		**21,315**		**400**		**23,500**		**2,185**
Total Material & Services		**25,443**		**30,969**		**31,369**		**400**		**42,560**		**11,191**
Facility Costs & Capital Improvements												
Facility Costs												
Custodial Supplies		-		-		-		-		-		-
Electricity		105,116		111,759		101,158		(10,601)		125,000		23,842
Heating Oil		-		-		-		-		-		-
Maintenance												
Building Security Maintenance		-		20,961		-		(20,961)		-		-
Elevator		-		-		-		-		5,000		5,000
Equipment Maintenance		-		-		-		-		-		-
Exterminating		9,300		9,630		9,630		-		10,000		370
Facility Maintenance		46,023		31,969		20,502		(11,467)		10,000		(10,502)
Fire Alarm		1,500		-		1,500		1,500		2,000		500
Fire Extinguisher Inspection		2,688		2,162		1,763		(399)		2,000		237
Generator		-		-		-		-		-		-
HVAC Maintenance		21,481		8,687		-		(8,687)		-		-
Other		-		-		-		-		-		-
Site Maintenance (Grouds)		-		-		-		-		-		-
Technology		-		-		-		-		-		-
Trash Removal		-		-		-		-		-		-
Natural Gas		134,865		80,134		74,133		(6,001)		70,000		(4,133)
Snow Removal		-		-		-		-		-		-
Telephone		-		289		-		(289)		-		-
Water/Sewer		-		-		-		-		-		-
Total Facility Costs		**320,973**		**265,591**		**208,686**		**(56,905)**		**224,000**		**15,314**
Captial Improvements												
Captial Improvements		**-**		**21,200**		**100,000**		**78,800**		**-**		**(100,000)**
Total Facility Costs & Capital Improvements		**320,973**		**286,791**		**308,686**		**21,895**		**224,000**		**(84,686)**
Debt Service												
Short-term		-		-		-		-		-		-
Long-term		-		-		-		-		-		-
Total Debt Service		**-**		**-**		**-**		**-**		**-**		**-**
Total Budget & Staff	**86.75**	**5,607,293**	**86.75**	**5,813,046**	**90.70**	**6,223,701**	**4**	**410,655**	**110**	**7,589,060**	**20**	**1,365,359**

Budget Statement for Preferred Schematic - Revenue

As reported on the school district's most recent three End of Year Pupil and Financial Reports schedule 1, please update to the 3 latest fiscal year periods and report sources of revenue in the fields below.

	FY15 End of Year Financial Report							FY16 End of Year Financial Report							FY17 End of Year Financial Report						
	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un-distributed	Total	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un-distributed	Total	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un-distributed	Total
A. Revenue from Local Sources																					
Assessments received by Regional Schools	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E&D Fund Appropriations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition from Individuals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition from Other Districts in Comm.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition from Districts in Other States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Previous Year Unexpended Encumbrances (Carry Forward)	-	-	-	-	-	1,841	1,841	-	-	-	-	-	3,617	3,617	-	-	-	-	-	5	5
Transportation Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Earnings on Investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rental of School Facilities	-	-	-	-	-	692,083	692,083	-	-	-	-	-	847,917	847,917	-	-	-	-	-	800,000	800,000
Other Revenue	-	-	-	-	-	3,652	3,652	-	-	-	-	-	5,397	5,397	-	-	-	-	-	2,139	2,139
Medical Care and Assistance	-	1,750,598	-	-	-	-	1,750,598	-	1,445,850	-	-	-	-	1,445,850	-	1,770,961	-	-	-	-	1,770,961
Non Revenue Receipts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue From Local Sources	**-**	**1,750,598**	**-**	**-**	**-**	**697,576**	**2,448,174**	**-**	**1,445,850**	**-**	**-**	**-**	**856,931**	**2,302,781**	**-**	**1,770,961**	**-**	**-**	**-**	**802,144**	**2,573,105**
B. Revenue from State Aid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
School Aid (Chapter 70)	-	-	-	-	-	33,596,455	33,596,455	-	-	-	-	-	37,729,858	37,729,858	-	-	-	-	-	42,091,391	42,091,391
Mass School Building Authority - Construction Aid	-	2,510,995	-	-	-	-	2,510,995	-	2,129,671	-	-	-	-	2,129,671	-	2,129,672	-	-	-	-	2,129,672
Pupil Transportation (Ch. 71, 71A,71B,74)	-	-	-	-	-	172,479	172,479	-	-	-	-	-	172,479	172,479	-	-	-	-	-	219,060	219,060
Charter Tuition Reimbursements & Charter Facilities Aid	-	679,059	-	-	-	283,675	962,734	-	212,769	-	-	-	281,331	494,100	-	455,695	-	-	-	305,047	760,742
Circuit Breaker	-	-	-	-	-	4,399,265	4,399,265	-	-	-	-	-	4,579,065	4,579,065	-	-	-	-	-	4,902,240	4,902,240
Foundation Reserve	-	-	-	-	-	-	-	-	-	-	-	-	1,000,000	1,000,000	-	-	-	-	-	-	-
Total Revenue From State Aid	**-**	**3,190,054**	**-**	**-**	**-**	**38,451,874**	**41,641,928**	**-**	**2,342,440**	**-**	**-**	**-**	**43,762,733**	**46,105,173**	**-**	**2,585,367**	**-**	**-**	**-**	**47,517,738**	**50,103,105**
C. Revenue from Federal Grants																					
ESE Administered Grants	1,895,497	2,193,860	49,580	-	-	607,271	4,746,208	1,273,851	2,133,560	59,207	-	-	534,050	4,000,668	1,717,205	2,089,232	63,546	-		930,257	4,800,240
Other Federal Grants	-	53,719	-	-	-	-	53,719	-	50,671	-	-	-	-	50,671	-	55,010	-	-	-	-	55,010
Total Revenue Federal Grants	**1,895,497**	**2,247,579**	**49,580**	**-**	**-**	**607,271**	**4,799,927**	**1,273,851**	**2,184,231**	**59,207**	**-**	**-**	**534,050**	**4,051,339**	**1,717,205**	**2,144,242**	**63,546**	**-**	**-**	**930,257**	**4,855,250**
D. Revenue from State Grants																					
ESE Administered Grants	-	-	-	-	-	323,435	323,435	-	-	-	-	-	299,979	299,979	-	-	-	-	-	24,000	24,000
Other State Grants	485,979	-	-	-	-	-	485,979	492,630	4,579,065	-	-	-	1,005,000	6,076,695	361,479	-	-	-	-	2,500	363,979
Total Revenue From State Grants	**485,979**	**-**	**-**	**-**	**-**	**323,435**	**809,414**	**492,630**	**4,579,065**	**-**	**-**	**-**	**1,304,979**	**6,376,674**	**361,479**	**-**	**-**	**-**	**-**	**26,500**	**387,979**
E. Revenue - Revolving & Special Funds																					
School Lunch Receipts	-	-	-	-	-	2,948,005	2,948,005	-	-	-	-	-	3,012,368	3,012,368	-	-	-	-	-	3,135,006	3,135,006
Athletic Receipts	-	-	-	-	-	298,785	298,785	-	-	-	-	-	294,630	294,630	-	-	-	-	-	200,341	200,341
Tuition Receipts - School Choice	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition Receipts - Other	-	1,557,366	-	-	-	311,775	1,869,141	-	1,731,035	-	-	-	270,534	2,001,569	-	1,778,747	-	-	-	361,852	2,140,599
Other Local Receipts	-	-	-	-	572,338	500,801	1,073,139	-	-	-	-	599,350	1,101,918	1,701,268	-	-	-	-	571,967	407,871	979,838
Private Grants	108,356	-	-	-	-	15,193	123,549	84,467	2,737	-	-	-	141,280	228,484	148,555	-	-	-	-	143,017	291,572
Total Revenue Revolving & Special Funds	**108,356**	**1,557,366**	**-**	**-**	**572,338**	**4,074,559**	**6,312,619**	**84,467**	**1,733,772**	**-**	**-**	**599,350**	**4,820,730**	**7,238,319**	**148,555**	**1,778,747**	**-**	**-**	**571,967**	**4,248,087**	**6,747,356**
Total Revenue All Sources	**2,489,832**	**8,745,597**	**49,580**	**-**	**572,338**	**44,154,715**	**56,012,062**	**1,850,948**	**12,285,358**	**59,207**	**-**	**599,350**	**51,279,423**	**66,074,286**	**2,227,239**	**8,279,317**	**63,546**	**-**	**571,967**	**53,524,726**	**64,666,795**

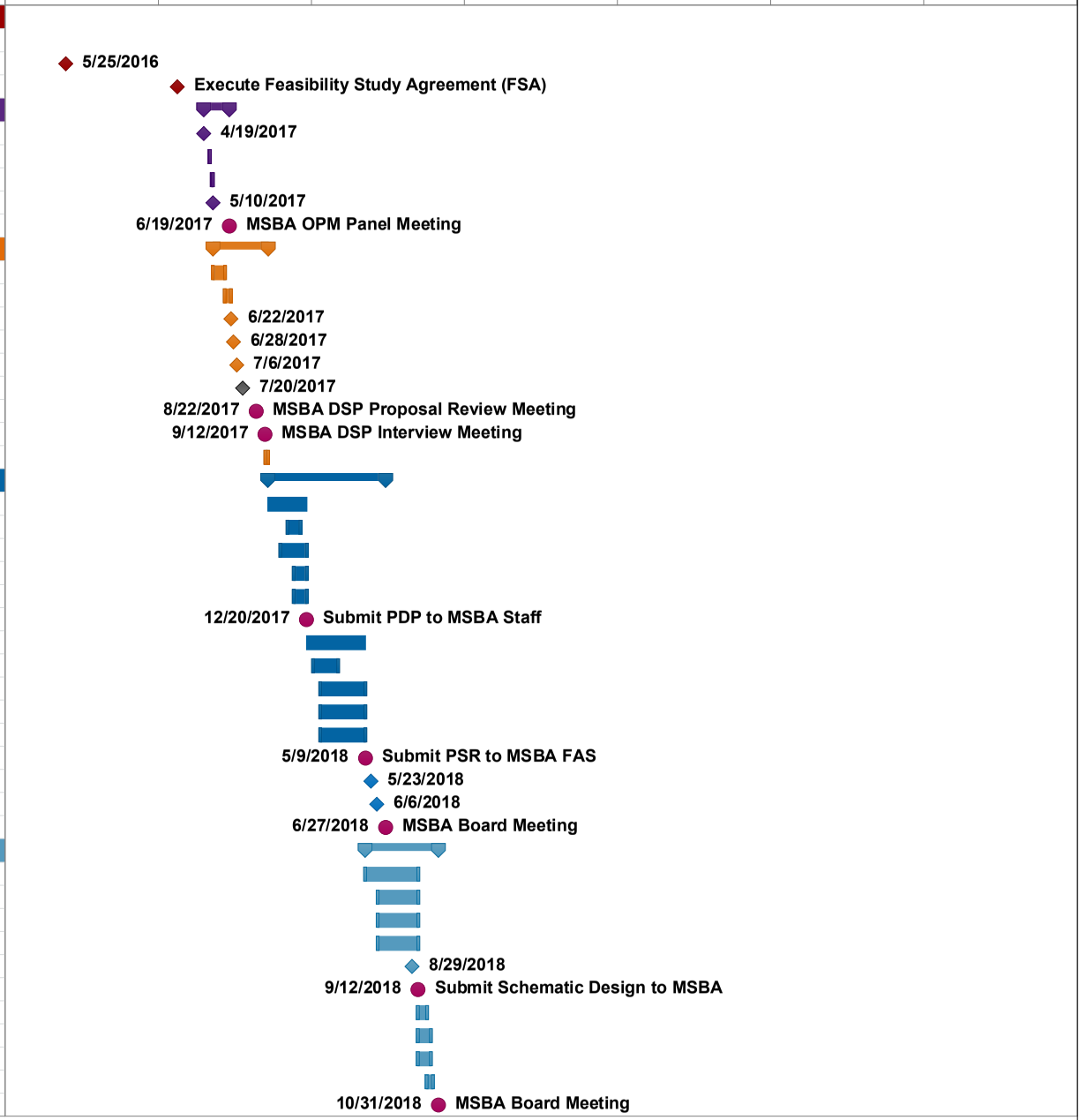
May 9, 2018
Updated June 15, 2018

FULLER MIDDLE SCHOOL
Feasibility Study
Preliminary Project Schedule - PSR Submission

PROJECT MANAGEMENT

SMMA

ID	Task Name	Duration	Start	Finish
1	**MSBA PREREQUISITES**	**500 days**	**3/13/2015**	**2/15/2017**
2	Original Statement of Interest (SOI) Submission	0 days	3/13/2015	3/13/2015
3	MSBA Invite into Eligibility	0 days	5/25/2016	5/25/2016
4	Execute Feasibility Study Agreement (FSA)	0 days	2/15/2017	2/15/2017
5	**RETAIN OPM**	**43 days**	**4/19/2017**	**6/19/2017**
6	Submit OPM Proposals	0 days	4/19/2017	4/19/2017
7	OPM Interview	1 day	5/3/2017	5/3/2017
8	Negotiate OPM Contract	3 days	5/8/2017	5/10/2017
9	Submit Documents to MSBA OPM Panel	0 days	5/10/2017	5/10/2017
10	**MSBA OPM Panel Meeting**	**0 days**	**6/19/2017**	**6/19/2017**
11	**RETAIN DESIGNER**	**94 days**	**5/11/2017**	**9/19/2017**
12	Draft Designer RFS and Submit to MSBA	21 days	5/11/2017	6/8/2017
13	MSBA Approve Draft RFS	11 days	6/8/2017	6/22/2017
14	Submit to Central Register	0 days	6/22/2017	6/22/2017
15	Notice in Central Register	0 days	6/28/2017	6/28/2017
16	Briefing Session	0 days	7/6/2017	7/6/2017
17	Submit Designer Proposals	0 days	7/20/2017	7/20/2017
18	**MSBA DSP Proposal Review Meeting**	**0 days**	**8/22/2017**	**8/22/2017**
19	**MSBA DSP Interview Meeting**	**0 days**	**9/12/2017**	**9/12/2017**
20	Negotiate Designer Contract	5 days	9/13/2017	9/19/2017
21	**FEASIBILITY STUDY (FS)**	**201 days**	**9/19/2017**	**6/27/2018**
22	Develop Preliminary Design Program (PDP)	67 days	9/19/2017	12/20/2017
23	Submit PNF to MHC	23 days	11/5/2017	12/5/2017
24	Community Presentations	45 days	10/19/2017	12/20/2017
25	Town Council Presentations	23 days	11/20/2017	12/20/2017
26	School Committee Presentations	23 days	11/20/2017	12/20/2017
27	**Submit PDP to MSBA Staff**	**0 days**	**12/20/2017**	**12/20/2017**
28	Develop Preferred Schematic Report (PSR)	101 days	12/20/2017	5/9/2018
29	Receive MHC Clearance	42 days	1/5/2018	3/5/2018
30	Community Presentations	78 days	1/22/2018	5/9/2018
31	City Council Presentations	78 days	1/22/2018	5/9/2018
32	School Committee Presentations	78 days	1/22/2018	5/9/2018
33	**Submit PSR to MSBA FAS**	**0 days**	**5/9/2018**	**5/9/2018**
34	**FAS Presentation**	**0 days**	**5/23/2018**	**5/23/2018**
35	**FAS Presentation**	**0 days**	**6/6/2018**	**6/6/2018**
36	**MSBA Board Meeting**	**0 days**	**6/27/2018**	**6/27/2018**
37	**SCHEMATIC DESIGN (SD)**	**125 days**	**5/9/2018**	**10/31/2018**
38	Develop Schematic Design	91 days	5/9/2018	9/12/2018
39	Community Presentations	69 days	6/8/2018	9/12/2018
40	City Council Presentations	69 days	6/8/2018	9/12/2018
41	School Committee Presentations	69 days	6/8/2018	9/12/2018
42	Submit Final Budget to MSBA	0 days	8/29/2018	8/29/2018
43	**Submit Schematic Design to MSBA**	**0 days**	**9/12/2018**	**9/12/2018**
44	MSBA Review SD Submission	16 days	9/12/2018	10/3/2018
45	PS&B Agreement Execution	23 days	9/12/2018	10/12/2018
46	DESE Review	23 days	9/12/2018	10/12/2018
47	Respond to MSBA Comments	11 days	10/3/2018	10/17/2018
48	**MSBA Board Meeting**	**0 days**	**10/31/2018**	**10/31/2018**

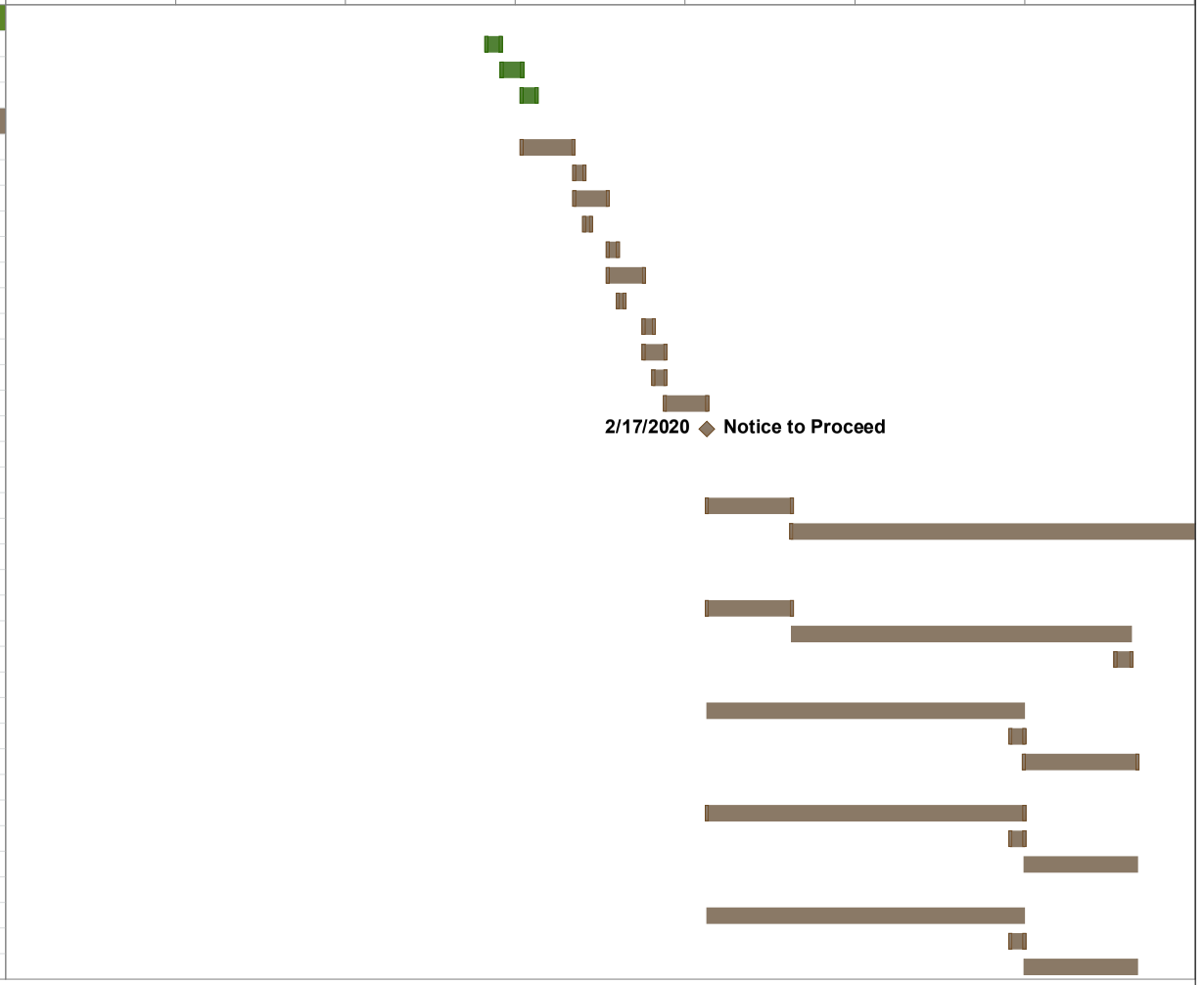


May 9, 2018
Updated June 15, 2018

FULLER MIDDLE SCHOOL
Feasibility Study
Preliminary Project Schedule - PSR Submission

PROJECT MANAGEMENT SMMA

ID	Task Name	Duration	Start	Finish
49	**LOCAL APPROPRIATION**	**78 days**	**10/31/2018**	**2/15/2019**
50	City Council Appropriation	23 days	10/31/2018	11/30/2018
51	Debt Exclusion Votes	32 days	12/3/2018	1/15/2019
52	Project Funding Agreement Execution	24 days	1/15/2019	2/15/2019
53	**DESIGN AND CONSTRUCTION**	**1198 days**	**1/15/2019**	**8/17/2023**
54	Design Development	80 days	1/15/2019	5/5/2019
55	MSBA Review of DD Submission	16 days	5/8/2019	5/29/2019
56	60% Construction Documents	52 days	5/8/2019	7/18/2019
57	Incorporate MSBA DD Comments	11 days	5/29/2019	6/12/2019
58	MSBA Review of 60% CD Submission	16 days	7/19/2019	8/9/2019
59	90% Construction Documents	56 days	7/19/2019	10/4/2019
60	Incorporate MSBA 60% CD Comments	11 days	8/10/2019	8/23/2019
61	MSBA Review of 90% CD Submission	16 days	10/4/2019	10/25/2019
62	100% Construction Documents	33 days	10/4/2019	11/19/2019
63	Incorporate MSBA 90% CD Comments	18 days	10/25/2019	11/19/2019
64	Bidding and Award	65 days	11/19/2019	2/17/2020
65	**Notice to Proceed**	**0 days**	**2/17/2020**	**2/17/2020**
66	**Construction**	**914 days**	**2/17/2020**	**8/17/2023**
67	**Option 0.0: Repair Only**	**914 days**	**2/17/2020**	**8/17/2023**
68	Create Swing Space	131 days	2/17/2020	8/17/2020
69	Renovation/Site Work	784 days	8/17/2020	8/17/2023
70	Move-in Date	25 days	7/15/2023	8/17/2023
71	**Option A: Renovation and Addition**	**653 days**	**2/17/2020**	**8/17/2022**
72	Create Swing Space	131 days	2/17/2020	8/17/2020
73	Renovation and Addition/Demo/Site Work	523 days	8/17/2020	8/17/2022
74	Move-in Date	24 days	7/15/2022	8/17/2022
75	**Option B: New Construction**	**662 days**	**2/17/2020**	**8/30/2022**
76	New Construction	489 days	2/17/2020	12/30/2021
77	Move-in Date	22 days	12/1/2021	12/30/2021
78	Demolition/Site Work	174 days	12/30/2021	8/30/2022
79	**Option C: New Construction**	**662 days**	**2/17/2020**	**8/30/2022**
80	New Construction	489 days	2/17/2020	12/30/2021
81	Move-in Date	22 days	12/1/2021	12/30/2021
82	Demolition/Site Work	174 days	12/30/2021	8/30/2022
83	**Option D: New Construction**	**662 days**	**2/17/2020**	**8/30/2022**
84	New Construction	489 days	2/17/2020	12/30/2021
85	Move-in Date	22 days	12/1/2021	12/30/2021
86	Demolition/Site Work	174 days	12/30/2021	8/30/2022



6/19/2018

Proposed Space Summary - Middle Schools

Legend

= Change from MSBA Template

= Change from Previous Submission

FULLER Middle School 630 Students Grades 6-8	Existing Conditions			Preliminary Design Program MSBA Comment Response Set 2/1/2018			PSR Submission 5/9/2018			PROPOSED Existing to Remain/Renovated			PROPOSED New			PROPOSED Total			MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**31,685**			**45,570**			**43,170**			**0**			**35,710**			**35,710**			**29,580**	
(List classrooms of different sizes separately)																						
Classroom - General	775	20	15,500	900	21	18,900	900	21	18,900				900	21	18,900	900	21	18,900	950	22	20,900	850 SF min - 950 SF max
ELL Classrooms	675	9	6,075	900	9	8,100	900	9	8,100				900	6	5,400	900	6	5,400				
Teacher Planning	0	0	0	90	15	1,350	90	15	1,350				90	14	1,260	90	14	1,260				Shared between classrooms
Classroom Breakout	0	0	0	300	15	4,500	300	7	2,100				300	7	2,100	300	7	2,100				Shared between classrooms. Includes SPED use
Small Group Seminar (20-30 seats) / Resource /Professional Development/ Itinerant / Workspace	0	0	0	400	3	1,200	400	3	1,200				400	1	400	400	1	400	500	2	1,000	Professional Development/ Itinerant / Workspace. Some uses served in Admin "Teachers Work Rooms"
Science Classroom / Lab	915	10	9,150	1,150	9	10,350	1,150	9	10,350				1,150	6	6,900	1,150	6	6,900	1,200	6	7,200	
Prep Room	240	4	960	80	9	720	80	9	720				80	6	480	80	6	480	80	6	480	
Science Teacher Planning	0	0	0	90	5	450	90	5	450				90	3	270	90	3	270				Shared between classrooms
SPECIAL EDUCATION			**10,875**			**9,090**			**8,820**			**0**			**8,820**			**8,820**			**7,550**	
(List classrooms of different sizes separately)																						
Self-Contained SPED	930	5	4,650	900	6	5,400	900	6	5,400				900	6	5,400	900	6	5,400	950	5	4,750	assumed 8% of pop. in self-contained SPED
SPED Teacher Planning	0	0	0	90	6	540	90	3	270				90	3	270	90	3	270				Dedicated to SPED classrooms
SPED Classroom Breakout	620	7	4,340	300	3	900	300	2	600				300	2	600	300	2	600				Shared between classrooms. SPED use also in Gen Classroom Breakout
Self-Contained SPED Toilet	0	0	0	60	0	0	100	3	300				100	3	300	100	3	300	60	5	300	For medically fragile students
Resource Room	935	1	935	500	3	1,500	500	3	1,500				500	3	1,500	500	3	1,500	500	3	1,500	Should be divisible
Small Group Room / Reading	0	0	0	250	3	750	250	3	750				250	3	750	250	3	750	500	2	1,000	1/2 size Genl. Clrm.
SPED Office w/Storage	190	5	950			0			0						0	0	0	0				
ART & MUSIC			**5,620**			**3,250**			**3,650**			**0**			**3,650**			**3,650**			**3,250**	
Art Classroom	600	2	1,200	1,200	1	1,200	1,200	1	1,200				1,200	1	1,200	1,200	1	1,200	1,200	1	1,200	assumed use - 50% population 2 times / week
Art Workroom w/ Storage & kiln	0	0	0	150	1	150	150	1	150				150	1	150	150	1	150	150	1	150	
Band / Chorus - 100 seats	2,120	2	4,240	750	2	1,500	950	2	1,900				950	2	1,900	950	2	1,900	1,500	1	1,500	To accommodate 60 to 70 students
Music Practice / Ensemble	60	3	180	200	2	400	200	2	400				200	2	400	200	2	400	200	2	400	
VOCATIONS & TECHNOLOGY			**3,350**			**4,150**			**4,150**			**0**			**3,200**			**3,200**			**6,400**	Distributed V&T in Cohort Commons
Tech Clrm. - (E.G. Drafting, Business)	1,660	1	1,660	950	1	950	950	1	950				950	0	0	950	0	0	1,200	2	2,400	Functions to be served in Fab Lab
Tech Shop - (E.G. Consumer, Wood)	1,690	1	1,690	2,000	1	2,000	2,000	1	2,000				2,000	1	2,000	2,000	1	2,000	2,000	2	4,000	Assumed use - 25% Population - 5 times/week
Fab Lab	0	0	0	1,200	1	1,200	1,200	1	1,200				1,200	1	1,200	1,200	1	1,200				Includes closed off area for 3D printers
HEALTH & PHYSICAL EDUCATION			**24,265**			**8,185**			**9,985**			**0**			**9,985**			**9,985**			**8,400**	
Gymnasium	9,680	1	9,680	6,500	1	6,500	8,300	1	8,300				8,300	1	8,300	8,300	1	8,300	6,000	1	6,000	Gym enlarged to fit 2 MS BB Courts
Gym Storeroom	260	2	520	300	1	300	300	1	300				300	1	300	300	1	300	150	1	150	
Health Instructor's Office w/ Shower & Toilet	685	3	2,055	150	2	300	150	2	300				150	2	300	150	2	300	250	1	250	PE instructor - no shower or toilet
Locker Rooms - Boys / Girls w/ Toilets	3,500	2	7,000	500	2	1,000	500	2	1,000				500	2	1,000	500	2	1,000	1,000	2	2,000	3 Shower, 1 toilet, 25 lockers
Unisex Toilet / Shower	140	1	140	85	1	85	85	1	85				85	1	85	85	1	85				Include 4 lockers
Fitness Center	4,870	1	4,870			0			0						0							
MEDIA CENTER			**3,720**			**6,250**			**6,250**			**0**			**6,250**			**6,250**			**4,003**	
Media Center / Reading Room	3,720	1	3,720	1,900	1	1,900	1,900	1	1,900				1,900	1	1,900	1,900	1	1,900	4,003	1	4,003	
Cohort Commons	0	0	0	1,450	3	4,350	1,450	3	4,350				1,450	3	4,350	1,450	3	4,350				Distributed Media Center and Vocations and Technology functions
DINING & FOOD SERVICE			**13,740**			**8,923**			**8,923**			**0**			**8,923**			**8,923**			**8,922**	
Cafetorium / Dining	8,570	1	8,570	4,725	1	4,725	4,725	1	4,725				4,725	1	4,725	4,725	1	4,725	4,725	1	4,725	2 seatings - 15SF per seat
Stage	0	0	0	1,600	1	1,600	1,600	1	1,600				1,600	1	1,600	1,600	1	1,600	1,600	1	1,600	
Chair / Table / Equipment Storage	440	1	440	410	1	410	410	1	410				410	1	410	410	1	410	410	1	410	
Kitchen	3,485	1	3,485	1,930	1	1,930	1,930	1	1,930				1,930	1	1,930	1,930	1	1,930	1,930	1	1,930	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	1,245	1	1,245	258	1	258	258	1	258				258	1	258	258	1	258	258	1	258	20 SF/Occupant
MEDICAL			**1,560**			**610**			**610**			**0**			**610**			**610**			**610**	
Medical Suite Toilet	50	3	150	60	1	60	60	1	60				60	1	60	60	1	60	60	1	60	
Nurses' Office / Waiting Room	930	1	930	250	1	250	250	1	250				250	1	250	250	1	250	250	1	250	
Examination Room / Resting	160	3	480	100	3	300	100	3	300				100	3	300	100	3	300	100	3	300	
ADMINISTRATION & GUIDANCE			**4,600**			**4,940**			**4,940**			**0**			**5,240**			**5,240**			**3,430**	
General Office / Waiting Room / Toilet	1,540	1	1,540	415	1	415	415	1	415				415	1	415	415	1	415	415	1	415	
Teachers' Mail and Time Room	100	1	100	100	1	100	100	1	100				100	1	100	100	1	100	100	1	100	
Duplicating Room	130	1	130	200	1	200	200	1	200				200	1	200	200	1	200	200	1	200	
Records Room	90	1	90	200	1	200	200	1	200				200	1	200	200	1	200	200	1	200	
Principal's Office w/ Conference Area	560	1	560	375	1	375	375	1	375				375	1	375	375	1	375	375	1	375	

Proposed Space Summary - Middle Schools

Legend

= Change from MSBA Template

= Change from Previous Submission

FULLER Middle School 630 Students Grades 6-8	Existing Conditions			Preliminary Design Program MSBA Comment Response Set 2/1/2018			PSR Submission 5/9/2018			PROPOSED Existing to Remain/Renovated			PROPOSED New			PROPOSED Total			MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
Principal's Secretary / Waiting	80	1	80	125	1	125	125	1	125				125	1	125	125	1	125	125	1	125	
Assistant Principal's Office - AP1	110	1	110	150	1	150	150	1	150				150	1	150	150	1	150	150	1	150	
Assistant Principal's Office - AP2	0	0	0	150	0	0	150	0	0				150	0	0	150	0	0	150	1	150	
Supervisory / Spare Office	170	1	170	150	1	150	150	1	150				150	1	150	150	1	150	150	1	150	
Conference Room	310	1	310	350	1	350	350	1	350				350	1	350	350	1	350	350	1	350	
Small Conference Room	0	0	0	200	1	200	200	1	200				200	1	200	200	1	200				For parent meetings
Guidance Office (Student Support)	170	8	1,360	150	6	900	150	6	900				150	6	900	150	6	900	150	4	600	Distributed 2 per cohort
Guidance Waiting Room W/ Sto Closet	0	0	0	75	3	225	75	3	225				75	3	225	75	3	225	100	1	100	Distributed 1 per cohort
Guidance Storeroom	60	1	60	50	1	50	50	1	50				50	1	50	50	1	50	50	1	50	
Teachers' Work Room			0	200	3	600	200	3	600				300	3	900	300	3	900	465	1	465	Distributed 1 per cohort. Serves uses of removed Small Seminar Rooms
Dept Head / Coach offices	90	1	90	150	6	900	150	6	900				150	6	900	150	6	900				Distributed 2 per cohort
CUSTODIAL & MAINTENANCE			**3,515**			**2,105**			**2,105**			**0**			**2,105**			**2,105**			**2,105**	
Custodian's Office	100	1	100	150	1	150	150	1	150				150	1	150	150	1	150	150	1	150	
Custodian's Workshop	250	1	250	250	1	250	250	1	250				250	1	250	250	1	250	250	1	250	
Custodian's Storage	105	9	945	375	1	375	375	1	375				375	1	375	375	1	375	375	1	375	
Recycling Room / Trash	0	0	0	400	1	400	400	1	400				400	1	400	400	1	400	400	1	400	
Receiving and General Supply	220	1	220	310	1	310	310	1	310				310	1	310	310	1	310	310	1	310	
Storeroom	1,240	1	1,240	420	1	420	420	1	420				420	1	420	420	1	420	420	1	420	
Network / Telecom Room	380	2	760	200	1	200	200	1	200				200	1	200	200	1	200	200	1	200	
						0			0						0							
OTHER			**27,670**			**13,000**			**10,000**			**0**			**10,000**			**10,000**			**0**	
Other *(specify)*																						
Adult ESL Offices	2,370	1	2,370	3,000	1	3,000	0	0	0				0	0	0	0	0	0				
City Offices, (PIC, Bldg& Grounds, BOH)	17,300	1	17,300																			
Auditorium	5,400	1	5,400	7,500	1	7,500	7,500	1	7,500				7,500	1	7,500	7,500	1	7,500				750 seat auditorium
Stage	1,900	1	1,900	1,600	1	1,600	1,600	1	1,600				1,600	1	1,600	1,600	1	1,600				
Auditorium Storage	160	1	160	400	1	400	400	1	400				400	1	400	400	1	400				
Dressing Rooms	270	2	540	250	2	500	250	2	500				250	2	500	250	2	500				
Total Building Net Floor Area (NFA)			**130,600**			**106,073**			**102,603**			**0**			**94,493**			**94,493**			**74,250**	
Proposed Student Capacity / Enrollment																					**630**	
Total Building Gross Floor Area (GFA)[2]			195,900			159,110			**153,905**						**141,740**			**141,740**			**107,280**	
Grossing factor (GFA/NFA)			**1.50**			**1.50**			**1.50**						**1.50**			**1.50**			**1.44**	

[1] **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.

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

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: Jonathan Levi Architects

Name of Principal Architect: Jonathan Levi, FAIA

Signature of Principal Architect:

Date: 6/19/2018

Framingham Public Schools

Where every child can and will reach high levels of achievement.

Fuller Middle School
Educational Program
June, 2018

Table of Contents

Executive Summary

Fuller Middle School is in its fourth year of STEAM (Science, Technology, Engineering, Arts and Mathematics) design and implementation as part of a district-wide effort to deliver instruction through a project-based, interdisciplinary model that engages students through inquiry and emphasizes 21st Century skills. The Framingham Public Schools envisions the new or renovated Fuller Middle School, together with its educational program, as a model for both the district and the state.

This educational program hinges on six design principles:

- Transdisciplinary Instruction
- Personalized and Collaborative Learning
- Whole Child, Whole Community
- Visible Learning
- Community and Civic Hub
- Adaptability

At the heart of this program is the individual child: by providing opportunities for students to engage in inquiry, collaborate with peers, integrate learning across content areas, utilize technology effectively, and make their thinking and learning visible, students will develop and/or strengthen their growth mindset and feel ready to tackle any future challenge.

An important aspect of STEAM instruction is the ability for students to explore challenges and build physical representations. A Fabrication Laboratory and MakerSpace are fundamental components of the program. Students will use these spaces to engage in the engineering design model, where they develop and test a prototype of their idea and then make modifications as needed until they are ready to present their solution.

Collaboration will be the foundation of all progress as Fuller Middle School continues its transformation to a STEAM model. Teachers will need regular, frequent opportunities to meet with colleagues to develop interdisciplinary lessons, co-plan, review curriculum and analyze data. Students will work collaboratively with peers to perform investigations, research topics, complete projects, and present their work. Thus, ample meeting space and the flexible use of space are key elements of the new or renovated facility.

The Fuller Middle School student population includes 161 English Learners (ELs) and 49 Former English Learners (FELs, one or two years out of the English Language Development program), representing 41% of the total school population. More than 50% of the school's students speak a language other than English at home. The current Fuller Middle School has 9 dedicated classrooms for ELs, and will need at least this many classrooms in the future as the EL population continues to rise.

Fuller Middle School supports students with disabilities through inclusion services as well as two substantially separate programs: Intellectual Impairments and Autism Spectrum Disorders. There are 126 students with active Individualized Education Programs (IEPs), representing 24% of the student population. Of this total, 44 students are provided instruction in the substantially

separate programs. The current Fuller Middle School has 5 dedicated classrooms for the substantially separate programs; however, given the growing Autism program at the elementary level, it is expected that an additional classroom will be necessary in the next couple of years. Inclusion services are provided through standard curriculum classrooms that are assigned a special education co-teacher whose primary role is to deliver the necessary accommodations and instructional support.

To create smaller learning communities within the large Fuller Middle School, the new facility should consist of three neighborhoods (cohorts), one for each grade level. All grade-specific classes (ELA, Math, Social Studies and Science) will be taught within these areas. In addition, each neighborhood shall include designated English as a Second Language and Special Education classrooms to fully integrate all students within the whole school community. To provide easy access to support services and school leaders, small auxiliary administrative suites should be located within each neighborhood. By moving guidance counselors and other support staff into these "satellite" administrative suites, support staff will be closer to students, thus ensuring increased access. This will also allow support staff to better know their students so they can more proactively address concerns.

Welcome to the Framingham Public Schools

The mission of the Framingham Public Schools, a system that understands and values our diversity, is to educate each student to learn and live productively as a critically-thinking, responsible citizen in a multicultural, democratic society by providing academically challenging instructional programs taught by a highly-qualified and diverse staff and supported by comprehensive services in partnership with our entire community.

We envision a school district in which every child is engaged as an active learner in high-quality educational experiences and is supported, at their level, to ensure growth over time. We believe in an educational model that is steeped in meeting the individual needs of every student in our care through the personalization of learning as an ongoing effort to address achievement and opportunity gaps. We believe that with effective effort, time, and practice, all of our students can and will reach high levels of achievement.

Our diversity is our strength. Our city is enriched and strengthened by its diverse cultural heritage, multinational population, and welcoming attitude toward newcomers. Within our classrooms and neighborhoods, and on our stages and athletic fields, we want learning to be relevant and connected to developing our students into value-centered citizens who are able to navigate a complex and inequitable world. We aim to address these inequities--including racism, socio-economic status and language barriers--to create an environment in which every child can and will succeed.

The Framingham Public Schools adapts instruction to meet the learning and developmental needs of all students through appropriately challenging, high quality, standards-based instruction connected to practical applications. We are an inclusive learning community in which students feel safe taking academic risks while mindfully respecting diversity of opinions. We foster supportive and collaborative partnerships between families, the community and the school district so that every child reaches a high level of achievement. The foundation of our work is collaboration, mutual respect, and high expectations, where all educators are reflective of their practice and feel supported as they continually adjust instruction to improve student performance.

The District's Three-Year Strategic Plan focuses on providing all students with high-quality instruction whose foundation is a standards-based curriculum. Goals in the strategic plan include:

Goal 1. Developing a shared understanding of high quality instruction, including content and instructional strategies, by all staff and executed in all classrooms and instructional settings.

Theory of Action: If we develop a common understanding of high quality instruction (HQI) including standards-based content knowledge in ELA and Math, pedagogy and high leverage strategies among all staff, then students will have equitable access to rigorous and engaging standards-based instruction to increase student achievement (
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Creating a system and culture of consistent and accurate assessment, data analysis, reflection and feedback.

Theory of Action: If we create a system and culture of data-based assessment including analysis, reflection and feedback, then educators will be able to effectively target the individual needs of students and purposefully adjust their instructional practices accordingly.

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Promoting academic achievement and social and emotional growth for all students.

Theory of Action: If we promote academic achievement and social and emotional growth for all students, then we are underscoring and making real the central mission of the Framingham Public Schools.

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Delivering targeted supports and interventions based on the analysis of data and identification of student-specific needs.

Theory of Action: If we deliver targeted supports and interventions using a data-driven approach, then students will receive differentiated instruction aligned with individual needs to optimize their success.

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Supporting a culture of rigor and excellence for all students in all settings.

Theory of Action: If there is an emphasis on rigor and excellence in all aspects of our educational system, then we are establishing appropriately challenging expectations for all students. This promotes the growth mindset by communicating our belief that all students can and will reach high levels of achievement.

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Each of these goals has played a pivotal role in the decision-making process for the plan of the new Fuller Middle School. By focusing on standards-based curriculum, student-centered instruction, teacher collaboration, social and emotional well-being, and the growth mindset, we have ensured the educational plan and new facility are aligned with the district's high-impact goals for student achievement.

STEAM Education at Fuller Middle School

The Framingham Public Schools is in its fourth year of implementation of its STEAM (Science, Technology, Engineering, Arts and Mathematics) program. In 2014, the King Elementary School opened its doors as a STEAM school, welcoming four classrooms of kindergarten students. Each year, the school has continued to grow, welcoming a new kindergarten group. The original cohort, currently in 3rd grade, has been immersed in project-based learning, explorations and exhibitions. When the King Elementary School students graduate from elementary school at the end of 5th grade, they will enter Fuller Middle School. In anticipation of this incoming class, Fuller Middle School is preparing itself to provide a comprehensive STEAM education to students.

Fuller Middle School, in its fourth year of STEAM design and implementation, is in the process of transforming its instructional delivery through a STEAM model that engages students through inquiry and emphasizes 21st Century skills. The school leadership is building student and staff capacity as it shifts to a project-based learning environment. Having recently reviewed its progress and recalibrated its work, Fuller Middle School has entered the first year of its new four-year plan, establishing clear and measurable goals to monitor growth of this model.

This innovative educational program, envisioned by the Fuller Middle School community along with school and district leadership, emphasizes project-based, student-centered learning; collaboration (student-student, student-staff, staff-staff); flexible groupings and space configurations; and strategic use of technology. To this end, the new Fuller Middle School building must embrace inventive and creative use of space to achieve these goals.

STEAM at Fuller Middle School is an approach to project-based learning that blurs subject area boundaries, engages students in learning by doing, encourages students to ask and investigate meaningful questions, and places students at the center of their own learning.

STEAM at Fuller Middle School provides a vehicle for fully engaging ALL students, connecting to real-world contexts, and developing a strong culture of accomplishment and accountability.

Fuller Middle School students practice and demonstrate the 21st century skills of critical thinking, communication, collaboration, creativity and citizenship through dynamic student projects, presentations of learning and mindful reflection.

Our Visioning Process

In June 2016, approximately 50 teachers, administrators, parents, school committee members, school building committee members, municipal representatives, and community members came together as an Educational Visioning Team. Together, they collaborated during three days of intense workshops facilitated by Frank Locker to create a prekindergarten through 8th grade educational vision. The following "Places for Learning" have been excerpted from the Executive Summary of the District-Wide PreK-8 Educational Visioning Report prepared by Frank Locker Educational Planning in June 2016.

PLACES FOR LEARNING

Several exemplars were highly favored, selected by three or four of the six Table Teams as most appropriate.

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 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 connections between the rooms and strategic placement of related functions
- Teacher Planning Centers to support teacher collaboration and sense of community

The following Guiding Principles, District Planning Goals and Effective Learning Modalities have been excerpted from Executive Summary of the District-Wide PreK-8 Educational Visioning Report prepared by Frank Locker Educational Planning in June 2016.

GUIDING PRINCIPLES

1. Extend Innovative 21st Century Practices

This future-oriented Educational Vision incorporates a number of innovative 21st century educational practices such as STEM programs already in operation in classrooms in Framingham Public Schools. Extend those practices.

2. Achieve Equity and Equal Opportunities

Achieve equity and equal opportunities for all students, no matter where they reside in town or what their socioeconomic background is 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.

3. Prepare Students for Success

Prepare students for success in the 21st century, an emerging world of global competition, uncertain employment prospects, infinite access to information, and rapid change in technology.

4. Teach 21st Century Skills

Teach 21st century skills at the same time as traditional content.

5. Build Relationships with Students, Families and Communities

Build relationships with students, families, and communities through school structure and programs

6. Foster Independent Lifelong Learning

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 lifelong sense of wonder and purpose. Create independent, lifelong learners.

7. Provide Professional Development

Establish a program of staff Professional Development to support the educational deliveries outlined here.

In October 2017, the Framingham Public Schools Educational Working Group (EWG), a group of approximately 20 Framingham Public Schools administrative leaders, teachers, administrators, students, parents, and community partners, participated in a two-day Educational Visioning Workshop facilitated by New Vista Design and Jonathan Levi Architects. The workshop was a collaborative session aimed at informing the Fuller Middle School design process. Participants were led through a step-by-step visioning process to capture their best thinking about FPS's current and future educational goals and priorities, and connect them to previous visioning work done by the district, as well as to best practices and possibilities in innovative school facility design.

On October 20, 2017, the Framingham Public Schools EWG participated in Educational Visioning Workshop One and explored the following topics:

• Priority Goals for the renovated/new facility
• 21st Century and Future Ready Teaching and Learning Practices that are key to the district's forward thinking educational vision
• Future Ready Learning Goals that distill the group's best thinking with regard to Framingham Public Schools and Fuller Middle School's current and future educational programming and priorities
• Strengths, Challenges, Opportunities, and Goals (SCOG Analysis) associated with Framingham Public Schools and Fuller Middle School's current academic programs as well as the vision for its new facility

On October 26, 2017, the Framingham Public Schools EWG participated in Educational Visioning Workshop Two and explored the following topics:

• Design Patterns that innovative schools throughout the country have put into practice in order to make their forward-thinking learning goals come alive on the level of facility design
• Guiding Principles 1.0 for design of the new facility

Priority Goals

The following list of priority goals for the design of the renovated and/or new Fuller Middle School was recorded during the participant introduction section of the Educational Working Group's (EWG) Workshop One that took place on October 20, 2017. The EWG is a group of approximately 20 participants that includes Framingham Public Schools leadership, as well as Fuller Middle School administrators, teachers, and community partners.

- Understand the long-range vision of district and how it aligns with that of FMS
- Define what the school's vision means at each level - beyond jargon
- Ensure that Fuller Middle School connects to the Elementary and High School
- This is a K-12 initiative
- Create a central hub for the school
- Explore different ways to think about the new school's media center
- A school that integrates media and technology in a comprehensive way
- A school that integrates across disciplines (now we are compartmentalized and siloed)
- A schedule and building that allows for STEAM to happen
- Promote flexibility, connectivity, and sustainability
- Be mindful of and adapt to future change
- Facilitate collaboration within the district and the facility
- Create strong community connections: they are very important, especially for FMS
- A building that is environmentally and aesthetically friendly, appealing, inviting, warm
- Allows creativity to blossom
- Relates well with young learners
- A building that serves as a "second home" for all stakeholders
- A sense of ownership and buy-in from everyone
- Beyond ownership of "your" space, everyone takes ownership of the facility as a whole
- A building and program the honors diversity and equity
- Students
- Staff
- Resources and materials
- Make sure the cafeteria and food service is a priority - second home piece
- Over 50% of students are free and reduced lunch
- This needs to be their second home
- We need spaces that help us work with kids that are lost and traumatized, and that have social emotional and special needs
- Create a school that offers students the possibility of developing a range of skills
- Support alternative ways of motivating and teaching students
- Multiple means of teaching and learning
- Integration of disciplines
- Not just a place that houses students; the building itself becomes a learning tool for students
- Student learning is at the center
- A building that is multicultural in its design and openness
- Families that are not American-cultured can feel connection
- Robust areas for staff collaboration
- Interdisciplinary co-planning
- Promote inter/trans disciplinary teaching and learning
- Inclusive
- From SPED perspective - ensure accessibility for everyone

- A building that supports differentiated instruction
- Beyond academic support - community connections and services
- Social services – counseling
- Building designed as environment friendly and learning instrument
- Outdoor classrooms
- Extended day / adult education / ESL
- Community ED
- Fuller Middle School is central location
- Idea of open space and connection to nature
- Courtyard, open space
- Pond - water sampling
- Outdoor space as part of learning enrichment
- Adaptable to adult education
- Open from 7 - 11
- Board of Health is now in building but we lost the vision center
- A really important element - kids remain in school
- Immunizations
- Have a lot of newcomers - don't know how to access
- Consider the possibility of a childcare center
- Determine what we may want to fund beyond the MSBA template
- See this as a way of reaching our new identity
- We are all a product of the Horace Mann model and it's hard to see beyond it
- Explore what kind of environment we want
- Provide some space in the school that is equipped to engage a global classroom lesson
- Also, something like actually seeing surgery happening real time
- Higher ED is struggling with bricks and mortar – the world that students will occupy is changing so rapidly
- Our current FMS is largely lecture model
- Time for us not to try same, same thing

21st Century Learning Goals

The following set of priority "21st Century Learning Goals 1.0" for Fuller Middle School students was developed by the Educational Working Group (EWG) during Workshop One. Four teams of five participants each reviewed Fuller 5 Cs Learning Goals, as well as assorted other 21st century learning goals created by various school networks around the country, then worked to create their own set of learning goals. Each team presented their learning goals to the larger group. These goals are grouped below by like goals.

Whole Child Learning

- As an Organizing Principle for all Other Learning Goals

Collaboration and Communication

- Effective Communication
- Have a Voice
- To Effect Positive Change
- Emerge from Language Isolation to Collaborative Participation
- Staff and Students
- Understand How, What and Why we Communicate

Social and Civic Competence

- Within Fuller and in the Community
- Civic and Community Engagement
- Local, Community-Based Project Learning
- Community
- Empathy, Ethics and Civic Responsibility

Creativity and Imagination

- Imaginative and Joyous Risk-Taking
- Initiative and Curiosity
- Create Joy and Ownership

Critical Thinking

- Higher Order Thinking
- Permeated with Habits of Mind
- Problem Solving
- Analyze Information
- Executive Function – Ability to Prioritize and Strategize

Love of Learning

- Content is Not as Important as the Ability to Love Learning
- Self-Motivation
- Student Driven and Owned

Multicultural Literacy

Technology Transforming the Basics

Opportunities and Goals 2.0

The following Opportunities and Goals for the design of the renovated and/or new Fuller Middle School were brainstormed by the Educational Working Group (EWG) during Workshop Two.

- Deliver Special Education services in innovative ways that are welcoming and integrative
- Don't define Special Education too much
- Flexible use of space
- Disperse support staff, including specialists, throughout the school facility
- Create smaller learning communities as "sacred spaces"
- Provide centrally located Breakout Spaces
- Create a flexible building with movable walls
- Classrooms not "owned" by teachers
- Professional collaboration spaces for teachers
- Discover what it really means to be a "STEAM" school
- Utilize the STEAM experience of King Elementary School
- Think about how to "even the playing field" for non-King students entering FMS
- Position the Media Lab as the hub of the school
- Build with the larger community in mind
- FMS project as community development project
- Think about how to best facilitate community use as well as create bigger picture connections to the community
- Make decisions holistically about what is included in the design
- Whatever we create here connects to the FPS vision
- Include what we do in the rest of the district as part of the visioning process
- See Farley building as a resource for this project for things that cannot be accommodated at FMS
- Support FMS staff in terms of professional development and training
- Support a mindset shift
- Ongoing support on how to collaborate
- New mindset to share classrooms
- Support Habits of Success, Universal Design for Learning (UdL), and cognitive skill development
- Approaches to personalized learning should be horizontally and vertically aligned

21st Century Design Patterns 1.0

The following set of priority "21st Century Design Patterns" for the design of the new Fuller Middle School was developed by the Educational Working Group (EWG) during Workshop Two. Three teams of five participants each worked to create their own set of priority Design Patterns, after which each team presented to the larger group.

Open and Welcoming Entry
- First Impression Greeting Space

Distributed Dining
- Distributed Gathering Spaces
- Satellite Cafeterias / Café Style
- Cyber Dining

Learning Commons
- With Art, Music and Health, etc.
- Flexible Learning Styles
- Quiet Spaces

Classroom as MakerSpace
- Maker and Collaboration Spaces
- Collaborative Learning Spaces Including MakerSpaces

Display and Exhibition
- Walls Built for Display of Student Work
- Entire School as Display

Outdoor Connectivity
- Outdoor Space Use

Ubiquitous Learning

Professional Teacher Spaces
- Shared with Colleagues
- Teacher Collaboration Space

Breakout Spaces
- Non-Learning Spaces
- Accessible to Classrooms

Distributed Resources
- Distributed Adults

Flexible Furniture
- Variable Seating

Universal Access and Equity

Push-In Special Education

Visible Learning
- Spaces to Show Work in Progress

Paired/Flexible Classrooms

Vertically Integrated

Fuller Middle School's Guiding Design Principles

The following set of "Guiding Design Principles" for design of the renovated and/or new Fuller Middle School was developed by the Educational Working Group (EWG) during the Educational Visioning Workshop Two. Guiding Design Principles offer a framework of educational priorities that prove invaluable in helping stakeholders and design team members to set design goals and focus their work. This first iteration of Guiding Principles may continue to develop as the design process unfolds.

1. Transdisciplinary Instruction

- Project-Based and Real-World Learning
- Mastery-Based and Applied Learning

2. Personalized and Collaborative Learning

- Addresses Varied Learning Styles
- Personalized Learning Plans
- Student Voice and Choice

3. Whole Child, Whole Community

- Educating All Aspects of a Child
- Social Emotional Learning Skills
- Pride Within Cohort and Larger School

4. Visible Learning

- Connectivity
- Indoor/Outdoor Transparency and Connections

5. Community and Civic Hub

- Civic Campus and Community Resource
- Symbolic Hub of South Framingham
- Intergenerational and Community Connections

6. Adaptability

- Planned for Evolution
- Future Ready

While most of the stakeholders around the table for the PreK-8 Educational Visioning workshops were distinct from those at the Fuller Educational Visioning sessions, there are several very clear commonalities among each group's desire for how students will learn in this district. This solidifies our belief that this Educational Program represents the voice of our community and best interests of the students in our care.

Fuller Middle School

Mission Statement

The community of Fuller Middle School is committed to the academic, social, physical, and emotional development of every student. This commitment is supported by a philosophy based on differentiation, participation, high expectations, cooperation and respect for all.

School Overview

Fuller Middle School, established in September 1994, was named in honor of Dr. Solomon Fuller, a psychiatrist, and his wife Meta Fuller, a sculptor. A pioneering African-American family, the Fullers lived on Warren Road, near the current location of the Fuller Middle School, during the early part of the twentieth century. Dr. and Mrs. Fuller were leaders in their professions and in the Framingham community during their lives. They serve as models for the students of the school named in their memory.

Every student at Fuller Middle School is part of an academic team. A team consists of a group of teachers: teachers of academic subjects as well as educators for inclusion instruction and/or English Learner (EL) instruction and support as needed. All ELs receive English as a Second Language (ESL) instruction, regardless of the program model in which they are enrolled. Programs supported at Fuller Middle School include: Sheltered English Immersion (SEI), Transitional Bilingual Education (TBE), and Students with Limited or Interrupted Formal Education (SLIFE). ESL teachers teach foundational and transitional level students across the continuum of WIDA English proficiency levels. TBE teachers teach content-specific subjects to beginner and intermediate ELs. Academic teaming and team-based homerooms allow students to be part of a small, cohesive group of students who share the same classes and teachers. Teachers have collaboration time every day in the six-day rotation in order to plan integrated learning activities, address topics related to improving teaching and learning, discuss student concerns, and meet with parents. The goal of this model is to foster collaboration and shared accountability as we solve learning challenges together.

In addition to attending classes within their team, students also participate in Unified Arts courses – Art, Music, Health, Physical Education, Design and Engineering, World Language (French or Spanish), and Drama.

Demographics

A strength of our school is the rich diversity of our students and families, with the highest population of non-native English speakers among the three middle schools in the district. Fuller Middle School houses a TBE program using Spanish or Portuguese as a mode of instruction for content-area subjects (Math, Science and Native Language) and a SLIFE program. These programs consist of 13 staff, many of whom are native speakers of Spanish and Portuguese.

There are currently 161 English Learners and 49 Former English Learners (FELs, students who are one or two years out of the ELD program) at Fuller Middle School, representing 41% of the total school population. Also of note, more than 50% of the school's students speak a language other than English at home. Fuller Middle School has 9 dedicated classrooms for English language instruction, but this number may increase at any given time depending on the number of additional English Learners who enroll during the academic year.

Fuller Middle School supports students with disabilities through inclusion services as well as two substantially separate programs: Intellectual Impairments and Autism Spectrum Disorders. There are 126 students with Individualized Education Programs (IEPs), representing 24% of the student population. Currently, 44 students are provided instruction in the substantially separate programs. The 4 classrooms for the Intellectual Impairments program and one classroom for the Autism program each require a dedicated space with distinct specifications, as outlined later in this document. Inclusion services are provided in the standard curriculum classroom by assigning a special education co-teacher to the class. Often, the special educator determines it is necessary to work with a small group of students to support their individual needs. This is best accomplished in a separate room, in close proximity to the students' classroom, so students can receive immediate and effective personalized instruction and then rejoin their class as quickly as possible.

School-wide implementation of a positive behavioral interventions and supports (PBIS) system, including Restorative Practice, is unifying our community as we embrace our cultural, social, emotional, and academic diversity both in and out of the classroom.

Our approach is to foster healthy and positive relationships among and between students and adults, combined with comprehensive social and emotional supports and targeted instructional strategies for personalized learning. This work involves professional development, parent outreach and education, increasing student support systems, and regular collaborative use of data to inform instruction across all program areas and staff. Success will be realized when all of Fuller Middle School's students develop confidence and competence, with all students meeting or exceeding expectations.

Grade and School Configuration Policies

Current:

The Framingham Public Schools is a pre-kindergarten through 12th grade district with an enrollment of 9369 students. The District includes 1 preschool, 9 elementary schools, 3 middle schools, and 1 high school with an alternative campus for students identified as benefiting from a modified school day.

Juniper Hill School (Preschool)
- Pre-kindergarten
- 291 students

Brophy Elementary School
- Grades K-5
- 470 students
- Transitional Bilingual Education Program (Spanish)

Barbieri Elementary School
- Grades K-5
- 683 students
- Two-Way Bilingual (Spanish)

Dunning Elementary School
- Grades K-5
- 473 students

Hemenway Elementary School
- Grades K-5
- 570 students

King Elementary School
- Grades K-3
- 279 students
- STEAM School
- Transitional Bilingual Education Program (Portuguese)

McCarthy Elementary School
- Grades K-5
- 563 students

Potter Road Elementary School
- Grades K-5
- 510 students

Stapleton Elementary School
- Grades K-5
- 369 students
- Emotional Disability Program

Woodrow Wilson Elementary School
- Grades K-5
- 574 students
- Transitional Bilingual Education Program (Portuguese)

Cameron Middle School
- Grades 6-8
- 540 students
- Emotional Disability Program

Fuller Middle School
- Grades 6-8
- 516 students
- Transitioning to a STEAM School
- SLIFE Program
- Transitional Bilingual Education Program (Spanish and Portuguese)

Walsh Middle School
- Grades 6-8
- 760 students
- Two-Way Bilingual (Spanish)

Framingham High School
- Grades 9-12
- 2158 students
- Alternative High School Campus: 44 students

Student assignment and grade configurations are based on several complicated factors including feeder systems, school neighborhoods, school choice, school programming (STEAM and Two-Way Bilingual), English Learner status, and special education programs. This has resulted in space and inequity issues that are at the early stages of being addressed by the district.

Proposed:

The District has spent considerable time and resources in reviewing the current and future needs of the Framingham Public Schools. Grade and school configurations are not being revised at this time. However, school programs continue to expand. For example, due to the overwhelming success of our Two-Way Bilingual (Spanish) Program at Barbieri Elementary School, the Framingham Public Schools will be welcoming its first Two-Way Bilingual (Portuguese) kindergarteners in the fall of 2018 at Potter Road Elementary School. With the growing English Learner population and the increased capacity of educators through their Sheltered English Immersion (SEI) training, ELs are more frequently being placed at their neighborhood schools. Lastly, Fuller Middle School is continuing its transition to becoming a STEAM middle school. As the students in King Elementary School's oldest class are already in third grade, they are only 3 years away from entering Fuller Middle School. These students and their families expect and deserve a continuation of the STEAM education they have experienced since kindergarten.

Class Size Policies

Current:

While contractual guidelines ensure class sizes do not exceed 25 students for grades 6 through 8, the diverse range of needs of the students at Fuller Middle School necessitate keeping class sizes as small as possible. Whenever feasible, class sizes are reduced and co-teaching is incorporated to provide instructional supports for all students, particularly our English Learners and students with disabilities. Currently, class sizes for general education and inclusion classes range between 17 and 26 students, with an average of approximately 20 students per class.

Due to student migration that occurs throughout the year, our English as a Second Language (ESL) and Transitional Bilingual Education (TBE) classes tend to be the most impacted by class size concerns as the year progresses. This can lead to splitting classes, creating new classes, and reconfiguring schedules during the year. While school and district administrators cannot predict the number and needs of students at any given grade level in a particular year, the district consistently enrolls English Learners all year long, some of whom have limited or interrupted formal education. Fuller Middle School is prepared to meet these needs through the support of an ESL Department Head, English Language Development (ELD) coach, and Students with Limited or Interrupted Formal Education (SLIFE) teacher. With continuous, year-long student enrollment as a constant factor, the staff at Fuller Middle School work hard to maintain a safe and welcome learning environment at all times. This requires multiple venues for teachers to work with small groups of students, as well as the flexibility to create additional classes as needed.

Proposed:

There are no proposed changes to class sizes.

School Scheduling Method

Current:

Fuller Middle School follows a traditional bell schedule. The school day runs from 8:08 AM to 2:25 PM and consists of 2 45-minute periods, 3 50-minute periods, 1 60-minute period and 30 minutes for lunch. In addition, there is a 25-minute What I Need (WIN) block each day for intervention and extension of learning. Since the school is 1:1 with technology, the day begins with a 5-minute homeroom where students hear morning announcements and pick up their Chromebooks, and ends with a 3-minute homeroom to return their Chromebooks. The periods rotate through a 6-day cycle so that each class meets for the same number of minutes over the course of those 6 days.

The current school bell schedule is detailed below:

Time	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
8:08 - 8:13	Homeroom					
8:15 - 9:05 50	A (8th Specials)	B(7th Specials)	C (6th Specials)	D (8th Specials)	F (7th Specials)	G 6th Specials)
9:07 - 9:57 50	B	C	D	F	G	A
9:59-10:49 50	C	D	F	G	A	B
10:50 - 11:18	WIN - Social Comp					
11:20 - 11:50	Lun E / D / D / F / F / Lun E / G / Lun E / G / Lun E / A / A / B / B / Lun E / C / Lun E / C					
11:50 - 12:20	D / Lun E / Lun E / F / G / Lun E / A / Lun E / Lun E / B / C / Lun E					
12:20 - 12:50	D / Lun E / F / Lun E / Lun E / G / A / Lun E / B / Lun E / Lun E / C					
12:50 -1:35 45	F	G	A	B	C	D
1:37-2:22 45	G	A	B	C	D	F
2:22 - 2:25	Homeroom					

Proposed:

The proposed Fuller Middle School will be able to support two 30-minute lunch servings due to the size of the commons area, which is also being designated as the cafeteria. In order to coordinate two lunch servings for three grade levels, students will be assigned lunch by subject area rather than grade. This means students will attend lunch based on which class period meets during the lunch block. The two lunch servings will occur during the first 30 minutes of the period and the last 30 minutes of the period in order to provide an uninterrupted lesson for all students. This is an improvement over the current lunch program as students who have second lunch under the existing model lose valuable instructional time since they must leave class in the middle of the period and return to finish their lesson after lunch.

While no other proposed changes are being made at this time, a new schedule may need to be developed as the school transitions to a STEAM model. This would be considered if it was determined that the current bell schedule does not provide the necessary structure to guide teaching while also maintaining flexibility to allow students appropriate access to all curricular areas, instruct through an interdisciplinary approach, and promote staff collaboration. The school schedule should provide teaching staff with the flexibility to combine classes or create extended blocks of instruction as a means of delivering interdisciplinary lessons or providing longer periods for projects.

Teaching Methodology and Structure

Current:

The Fuller Middle School faculty and staff are committed to preparing students for success beyond middle and high school, so that all students are equipped to take on the ever-changing landscape of future college and career options. Teachers follow district-approved curriculum that is aligned with state frameworks. Through data-driven decision making based on student conduct, formative assessments, attendance rates, teacher feedback and student growth rates, the staff determine the appropriate interventions for each student.

The current model at Fuller Middle School is a team model within grade levels. Each grade level consists of two general education/inclusion teams (Grade 6--Lime and Opal; Grade 7--Platinum and Tangerine; Grade 8--Blue and Green). In addition, Fuller Middle School has the Crimson Team (substantially separate) and the Gold Team (Bilingual). For the most part, each staff member is assigned within only one team, which allows educators to truly know their students. The staff for each team meet three times per six-day cycle to discuss student data including academic performance, social and emotional concerns, conduct, attendance and any other issues that may impede student learning. In addition to these grade-level team meetings, each teacher participates in departmental meetings twice per six-day cycle to review curriculum, monitor vertical alignment, develop goals, plan lessons and discuss instructional strategies.

All staff are assigned to 4 classes and a What I Need (WIN) group. On 4 days of the six-day cycle, teachers work with small groups of students during the WIN block to provide interventions and extensions, and to conference with students. On the other 2 days of the six-day cycle, teachers provide social/emotional curriculum during this block. This WIN time is critical to meeting the specific, targeted needs of individual students and to reinforce school-wide behavior expectations.

In addition to their academic courses, students rotate through a series of specials subjects intended to provide a broad enrichment and addition to the core academics. In 6th grade, students can elect to take band or string orchestra; all other students take one trimester each of chorus, drama and music. Students in grades 7 and 8 choose either band, string orchestra, drama or chorus, which meets once per cycle for the year. In addition to a performing art, students rotate through fine art, health, and technology education for approximately 6 weeks each, and physical education for two sessions of six weeks.

The Framingham Public Schools meet students' curricular needs through a comprehensive, standards-based program. At this time, some curriculum units are taught concurrently within different content areas to provide a richer and more integrated learning experience. An example of this more interdisciplinary approach is the Holocaust Unit in which students read literature, conduct research, and study the history of the Holocaust in both their English Language Arts and Social Studies classes.

English Language Arts

The ELA curriculum is fully aligned with the Massachusetts Curriculum frameworks and provides students with opportunities to develop their reading and writing skills while simultaneously helping students grow as critical thinkers. The district has provided professional development to the staff on the gradual release of responsibility, including providing training for administrators on the "look fors" so they can provide continual feedback and support to educators in their implementation of this instructional practice. The curriculum for each grade level includes the following thematic units of instruction:

Grade 6:
Folktales around the World, The Craft and Composition of Argument/Persuasion, Survival: Decisions and Consequences (unit on theme, characterization, setting, conflict, point of view as studied through various fictional and nonfictional texts), Civil Rights, and Poetry

Grade 7:
Greek Mythology, Perseverance, Poetry, Civil Rights and The Art of Argument

Grade 8:
Short Stories, Civil Rights, Poetry, Shakespeare's Midsummer Night's Dream and Hope Endures (Holocaust)

Mathematics

The district's middle school Mathematics curriculum aligns with the Massachusetts Curriculum Frameworks and provides an opportunity for students to follow an accelerated pathway which allows them to enter high school ready to study Geometry. All students complete the traditional 6th grade mathematics course to provide students with time to develop more mature thinking and reasoning skills. At the end of 6th grade, students' MCAS scores, formative assessment data, school achievement and teacher recommendations are reviewed to determine if the traditional path or accelerated path is indicated. In the accelerated program, students complete the 7th grade, 8th grade and Algebra 1 standards over the course of their two remaining years in middle school. The mathematics teachers emphasize the Standards of Mathematical Practice as overarching goals in their lessons, and have recently implemented skills-based performance tasks that assess these practice standards.

Science

The district's Science curriculum is currently in transition as we adopt the 2016 Massachusetts Science and Technology/Engineering Curriculum Frameworks. This is the last of our transition years, with full integration of the standards (Earth, Space, Life and Physical Sciences) in all grades. The focus of professional development has been on the Science and Engineering Practice Standards, both in terms of what the skills associated with these standards look like in the Science classroom and how to embed these skills into daily lessons.

Social Studies

The district's Social Studies curriculum is aligned with the Massachusetts Curriculum Frameworks, while emphasizing important themes including freedom, respect for human dignity, the impact of geography on civilization, and the rise and fall of civilizations. In 6th grade, students learn about the foundations of geography, economics and world religions. Students then explore each continent through a geographic, cultural and civic lens. In 7th

grade, students study the evolution of humankind through an exploration of ancient civilizations including Mesopotamia, Greece, Rome, Egypt and others. Students will also study the fall of Rome, the encounters between Christianity and Islam, and medieval Europe. In 8th grade, students are formally introduced to United States History and Government. Areas of focus include the American Revolution and its causes, the formation of the United States government, westward expansion, the Civil War and its causes, Reconstruction, Immigration and Civil Liberties, World War I, the Great Depression and the causes World War II. Teachers receive professional development on such topics as civil discourse, identity, and rights and liberties to promote civic engagement in the classroom.

Proposed:

As the current model has proven itself to be effective, Fuller Middle School intends to continue with this structure in the new facility. Aside from the substantially separate and transitional bilingual teams, each grade-level team will consist of an ELA teacher, a Mathematics teacher, a Science teacher, a Social Studies teacher, a Special Education teacher and an English as a Second Language teacher. The World Language teachers will continue to work in a cross-teaming model.

To improve upon this model, the proposed facility should create grade-level neighborhoods (cohorts) to create smaller communities within the larger Fuller Middle School. This design will be essential to ensuring students and staff feel a sense of belonging and connectedness, while also providing the necessary supervision of all students within the cohort.

Team meetings will still focus on individual student interventions, but will also provide opportunities for co-planning within and across disciplines. Teachers will work collaboratively to design projects with an interdisciplinary approach as often as possible. To this end, the proposed Fuller Middle School will have an auxiliary suite of offices within each cohort which contains a small group seminar space. These spaces provide a quiet place for team meetings, department planning sessions, professional development, itinerant use and staff work area.

Whenever practical, teachers will regroup students using the classroom breakout spaces to accommodate individual needs, teach mini-lessons, work on projects, and conference with student collaboration teams. By providing movable classroom walls to create larger learning environments, teachers can join classes for a truly interdisciplinary lesson. This helps to nurture the understanding that all teachers are responsible for

a child's success, not just within their own particular class, but across the entire spectrum of that child's education.

The Classroom Breakout Spaces are intended to be used for instructional purposes, both by students collaborating on projects and by co-teachers working with a subset of a class. The breakout spaces give teachers and students the flexibility necessary for inquiry- and project-based learning opportunities, while also providing staff with a quiet place to differentiate instruction for our English learners, students with disabilities and other students in need of intervention. This practice of splitting a co-taught class to differentiate based on student need is well established at Fuller Middle School, so it is expected that these breakout spaces will be used regularly throughout the day. The Small Group Seminar Spaces, on the other hand, are meant to provide staff with a dedicated space for research, collaboration, professional development and team meetings. These seminar spaces will be furnished with computers, curricular materials and a variety of resources, making them the hub for interdisciplinary co-planning and collaboration.

The proposed Fuller Middle School will continue to follow the district curriculum as currently written. As more units and projects are developed over time, students will be provided additional opportunities to learn through interdisciplinary lessons that are aligned with real-world situations. As Fuller Middle School continues its transition to a STEAM school, it promises to present more project-based learning opportunities tailored to student interests as a means of providing engaging, relevant and contemporary challenges. By providing options (choice and voice) to students, instruction becomes personalized and differentiated to match the interests, backgrounds and readiness levels of students. This will ensure optimal learning occurs through flexible groupings that allow educators to individualize instruction to meet the unique needs of students. Furthermore, it will support Fuller's inclusive model that focuses on each child's intellectual, social and emotional needs. The proposed Fuller Middle School, therefore, includes smaller classroom breakout spaces to allow groups of students to collaborate or conference, while also providing the cohort commons for larger groups to come together for co-teaching, interdisciplinary lessons, presentations, investigations, visits with scientists and other experts from the field, cross-team collaborations and other tasks. Along the same lines, the proposed facility should include outdoor learning spaces so students can explore their environment and make appropriate connections to their learning. Each cohort is to be provided with convenient access to an outdoor learning area to study living systems, environmental science, botany and other subjects related to elements of the environment, as well as to provide teachers the opportunity to teach traditional subjects outside. Depending on the weather, these spaces may also be used for activities which affect air quality, such as painting.

Project-based tasks, which require the flexible large- and small-group learning spaces described above, are critical to student achievement at Fuller Middle School. Since more than 50% of the students speak a language other than English in their home, and since 24% of students have an Individualized Educational Program (IEP), project-based tasks provide an entry point to learning regardless of a students' background and level of readiness. Furthermore, these tasks provide real-world, hands-on experiences for students and give meaning to the content students are learning. These tasks will integrate curriculum from multiple content areas and require students to investigate topics, develop their own hypotheses, conduct research and present solutions or resolutions. Such projects will require higher-level thinking and reasoning skills, particularly the ability to analyze, critique, synthesize, and design in a variety of

modalities. Students will develop their skills in articulation, debate, written and oral argument, presentation, building physical representation, and public speaking. They will also become better listeners and collaborators as they learn to appreciate the talents and ideas their peers bring to the group. Above all, students will learn the value of asking questions, the first step in paving the way for one's own learning. Through inquiry, students will understand not only what they are learning, but they are learning it. This, in turn, helps students gauge their own progress and assess their own skills. These are the skills we want all students to acquire so they will be successful beyond high school.

Visible learning is essential to promoting the growth mindset, therefore students and teachers will emphasize process as well as product with all tasks. Thus, student thinking will be seen and heard in every way possible. Students' works-in-progress will be on display, classroom workspace (tables and desks) will encourage student dialogue and collaboration, and breakout and common areas will provide opportunities to see and hear students interacting with each other as they engage in meaningful tasks. Additionally, building some level of transparency, to and from classroom and lab spaces and into shared learning commons, will be important.

The school district recognizes that teachers will need support in building their own confidence as they shift their instructional practice to match this model. The district is committed to providing educators with the professional development and ongoing support to develop these skills and build their own capacity. This will include training in project-based and personalized learning, effective Professional Learning Communities (PLCs), data-based decision making, and the growth mindset.

Teacher Planning and Room Assignment Policies

Current:

Teachers at Fuller Middle School are assigned teaching schedules, duties and planning periods in accordance with the Framingham Teachers' Association contract. All teachers have one planning period per day. Teachers are provided with their own individual classrooms, including ESL teachers and special educators. Classrooms are arranged by cross-discipline grade level teams. Teachers regularly meet for team and department meetings in classrooms as there does not exist adequate planning and work space for the staff. For the purpose of these collaboration meetings, teachers' schedules provide for common planning time.

Proposed:

At the foundation of interdisciplinary instruction and project-based learning is an understanding of the importance of providing teachers with sufficient time and the appropriate resources for collaborating. A large, dedicated space for materials, computers, printers, and conference tables is essential to this design. Breakout spaces, small offices and individual teacher desks are also necessary to provide quieter space for independent work or co-planning. Smaller conference spaces should be located within each cohort neighborhood to provide opportunities for teachers to meet regularly for team meetings and co-planning. By integrating these conference spaces into the cohort neighborhoods, the rooms become easily accessible to staff which increases the likelihood they will be used by teachers during their regular planning time.

Classrooms should be well-lit, using natural light whenever possible, and provide adequate space to reconfigure tables and chairs to fit the needs of any lesson (cooperative tasks, investigations, labs, assessment, learning centers, etc). To increase the flexibility of the space, classrooms should have the added feature of combining to create one larger room through the existence of a removable wall to provide for larger interactions between multiple groups. Furniture should be adaptable and flexible as well, allowing students to work independently or collaboratively, depending on the task.

While the traditional model assigns a separate classroom to each teacher, the district recognizes this does not always represent the best utilization of space. Furthermore, such a practice encourages teachers to remain at their desks in their classrooms during planning periods rather than seek out opportunities to work with colleagues. For this reason, the Fuller Middle School design does not provide for a separate classroom for each teacher. Rather, classrooms will be shared when necessary to more efficiently use space, increase collaboration, and promote peer observations. Thus, it is critical that the new facility provide teachers with a quiet place to work by arranging teacher desks within small teacher planning rooms (shared between two staff members), while also including the larger teacher workspaces to foster collaboration.

Due to the large number of English learners (41% of students) and students with disabilities (24% of students), Fuller Middle School will continue to use a co-teaching model whenever possible to most effectively meet the needs of students while providing the least restrictive and most inclusive environment possible for all students. To this end, the co-teachers often design

lessons that allow them to conference with smaller groups of students or teach separate lessons to different groups based on student readiness. To maximize the use of space and reduce the number of classrooms in the proposed Fuller Middle School, our facility design should contain classroom breakout spaces large enough for an inclusion or ESL co-teacher to work with approximately half of a co-taught class (12 students) while the rest of the students remain in the classroom with the general education teacher. By creating these small-group instruction spaces that can also be used for team meetings and co-planning sessions, we have eliminated the need for additional classrooms and simultaneously increased opportunities for teacher and/or student collaboration.

Each grade level will have its own designated area ("cohort neighborhood") in the new Fuller Middle School. All grade-specific classes (ELA, Math, Social Studies and Science) will be taught within these areas. In addition, each cohort neighborhood shall include designated ESL and Special Education classrooms to fully integrate all students within the whole school community. Thus, in each grade-level cohort, 2 Science classrooms will be designated for the general education Science classes. In addition, each cohort will be assigned 1 Science classroom for either the EL or Substantially Separate program. While the proposed model does not meet the minimum usage requirement of 85%, we believe these rooms are necessary in order to deliver our educational program. Science lessons involve hands-on experiments that must be set up in advance of the class period. These labs must remain intact for the duration of the day since all classes that rotate through the room will need the same set-up. Based on enrollment, Fuller Middle School will need 8 general education Science sections for each grade level. Having only one Science classroom would not suffice.. Thus, two general education Science classrooms will be necessary for each grade. Since our Transitional Bilingual Education (TBE) Science classes will need additional resources including translated materials, labels, and posters, and since the TBE classes may follow a modified scope and sequence depending on the educational background and needs of the students in this program, a separate Science classroom is necessary to provide the appropriate supports, resources and lab set-ups for the students. Thus, a TBE (Portuguese) Science classroom and a TBE (Spanish) Science classroom are essential to our educational program. Finally, for reasons similar to the TBE Science needs, our Substantially Separate program follows a modified curriculum and therefore needs its own Science classroom. If the TBE and Substantially Separate Science classes were to be moved into the general education Science classrooms during the unused periods, it would be necessary for teachers to break down and set up the labs throughout the day in order to create a safe and secure learning environment for all students.

Regarding the English Learner Classrooms, the TBE classrooms are language-specific (Spanish and Portuguese). The resources, including textbooks, reference materials, posters, and word walls are completely different and require separate spaces depending on the language. Thus, separate classrooms for the TBE-Spanish and TBE-Portuguese programs are necessary. Additionally, the district believes in providing an equitable educational experience for all students, regardless of program. This includes, for example, providing a designated Math classroom that looks and feels the same for our TBE students as for a general education student. The reference materials, manipulatives, posters, and student work on display should all be related to Mathematics. This same rationale applies to Social Studies and Language Arts. The district is able to provide this model in the current Fuller Middle School and believes it is important to continue providing the same experience in the new Fuller Middle School.

To provide greater access to support services and school leaders, it is essential that small auxiliary administrative suites be located within each grade-level cohort neighborhood. These auxiliary suites will house two student support personnel, a department head and an instructional coach, thus providing students with immediate access to the necessary social and emotional supports while simultaneously increasing teacher access to instructional resources. Each auxiliary suite shall also contain a small group seminar space for professional development, department planning sessions and grade-level team meetings. This design also helps the school move away from the more traditional model of the instructional hub separated from the administrative offices located at the front of the school. Since the district emphasizes that students' academic growth and social-emotional well-being are the responsibility of all adults, it is crucial to create these pockets of support and instructional leadership throughout the building, closer to the students.

An essential component of the Fuller Middle School program must be state-of-the-art science laboratories that provide the space to conduct experiments in a safe and fully-equipped environment. This includes lab benches, equipment and the appropriate technology to allow for science exploration of the life, space, earth and physical sciences.

As a STEAM school, Fuller Middle School needs designated space for students to develop their technological skills, design and build models, and generally explore, invent and create. To this end, Fuller Middle School requires three unique spaces: a classroom with computers equipped with the latest software for engineering, programming, video production and graphic design; a fabrication laboratory (FabLab) with 3-D printers and computers; and a large open classroom outfitted with large tables, tools, equipment and various supplies for a designated MakerSpace to provide hands-on project experience. These "creative" spaces must be large enough to provide students with the ability to safely move about the room as they design and build their projects, whether individually or in teams. While the Technology Education teacher will teach classes out of the computer classroom, she will utilize the FabLab and MakerSpace as part of her instruction whenever feasible. Furthermore, upon completion of the new facility, Fuller Middle School will need a STEAM instructional coach whose primary responsibilities will be to teach digital technology lessons to students as they work on projects in the FabLab and MakerSpace, and to work with teachers to design interdisciplinary projects aligned with the Fuller STEAM vision.

It should be noted that every teaching space, classroom breakout space and cohort common will be designed to accommodate hands-on project experiences. The cohort commons will be equipped with computers, whiteboards, and large work surfaces to support technical collaboration as well as hands-on project work. This provides flexibility so that, regardless of whether a Vocational Technology classroom is already in use, students can still immerse themselves in hands-on tasks. The 2,000 square foot MakerSpace is intended to accommodate large, specialized, noisy and/or potentially hazardous equipment that is not appropriate for the classroom. The MakerSpace will be provided with both woodworking and metalworking equipment, a vacuum exhaust system, and overhead electric power drops for flexibility. It will be located with a large exterior door easily accessible to the deliveries area for receipt of oversized materials. To complement the MakerSpace, the Fabrication Lab will be for digital fabrication, utilization of computers, 3-D printing, and other equipment use such as laser cutting to fabricate from digital files. Since the digital fabrication lab requires less space than a traditional wood shop, the Fabrication Lab is 1,200 square feet rather than 2,000 square feet.

It is complemented by the Tech Classroom, where many of the digital files for fabrication will be created by students.

The arts are an integral part of the Fuller Middle School STEAM program. Thus, adequate space, storage and resources are essential in the consideration of both configuration and location of the arts rooms. The arts classrooms should be centralized within the building, ideally near the large commons/cafetorium, so the arts are recognized for its contributions to the STEAM program. By strategically placing these classrooms around the common/cafetorium, this larger open space becomes an extension of the classroom which allows students to easily showcase their work and perform for large audiences throughout the day.

Outlined below is a room utilization chart to further illustrate many of our needs:

Classroom	Use	New or Existing Program
General Classroom 1	4 Grade 6 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 2	4 Grade 6 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 3	4 Grade 7 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 4	4 Grade 7 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 5	4 Grade 8 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 6	4 Grade 8 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 7	4 Grade 6 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 8	4 Grade 6 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 9	4 Grade 7 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 10	4 Grade 7 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 11	4 Grade 8 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 12	4 Grade 8 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 13	4 Grade 6 Social Studies Classes, WIN Block, SLIFE Portuguese Literacy	Existing
General Classroom 14	4 Grade 6 Social Studies Classes, WIN Block	Existing
General Classroom 15	4 Grade 7 Social Studies Classes, WIN Block, Grade 7 Spanish Language Arts, Grade 8 Spanish Language Arts	Existing
General Classroom 16	4 Grade 7 Social Studies Classes, WIN Block, Grade 8 Portuguese Language Arts	Existing
General Classroom 17	4 Grade 8 Social Studies Classes, WIN Block, Grade 8 ESL 1 Social Studies	Existing

General Classroom 18	4 Grade 8 Social Studies Classes, WIN Block	Existing
General Classroom 19	Health Classroom, WIN Block	Existing
General Classroom 20	Drama Classroom, WIN Block	Existing
General Classroom 21	3 World Language Classes, WIN Block	Existing
EL Classroom 1	1 Spanish Language Arts Class, 5 ESL Classes, ~~4 Spanish Language Arts Classes,~~ WIN Block	Existing
EL Classroom 2	2 Portuguese Language Arts Classes, 4 ESL Social Studies Classes, ~~4 Portuguese Language Arts Classes~~, WIN Block	Existing
EL Classroom 3	1 Portuguese Language Arts Classes, 5 ESL Social Studies Classes, ~~4 Spanish Math Classes~~, WIN Block	Existing
EL Classroom 4	1 SLIFE Class, 3 ESL Classes, 1 ESL Social Studies Class, ~~4 Portuguese Math Classes~~, WIN Block	Existing
EL Classroom 5	1 SLIFE Class, 3 Spanish Math Classes, ~~4 ESL/Social Studies Classes~~, WIN Block	Existing
EL Classroom 6	4 Portuguese Math Classes, ~~4 ESL/Social Studies Classes~~, WIN Block	Existing
~~EL Classroom 7~~	~~4 ESL/Social Studies Classes, WIN Block~~	~~Existing~~
~~EL Classroom 8~~	~~4 ESL/Social Studies Classes, WIN Block~~	~~Existing~~
~~EL Classroom 9~~	~~4 SLIFE Classes, WIN Block~~	~~Existing~~
SPED Classroom 1	4 Sub Separate ELA Classes, WIN Block	Existing
SPED Classroom 2	4 Sub Separate Math Classes, WIN Block	Existing
SPED Classroom 3	4 Sub Separate Social Studies Classes, WIN Block	Existing
SPED Classroom 4	Autism Classroom, WIN Block	Existing
SPED Classroom 5	Autism Classroom, WIN Block	New, Anticipated Need
SPED Classroom 6	Life Skills/Vocational Substantially Separate Classroom for Students with Intellectual Impairments	Existing
Science Classroom 1	4 Grade 6 Science Classes, 2 Grade 7 Science Classes, WIN Block	Existing
Science Classroom 2	4 Grade 6 Science Classes, 2 Grade 7 Science Classes, WIN Block	Existing

Science Classroom 3	2 Grade 7 Science Classes, 4 Grade 8 Science Classes, ~~4 Grade 7 Science Classes~~, WIN Block	Existing
Science Classroom 4	2 Grade 7 Science Classes, 4 Grade 8 Science Classes, ~~4 Grade 7 Science Classes~~, WIN Block	Existing
Science Classroom 5	3 Substantially Separate Science Classes, 3 TBE Spanish Science Classes, ~~4 Grade 8 Science Classes~~, WIN Block	Existing
Science Classroom 6	1 Substantially Separate Science Class, 1 SLIFE Science Class, 4 TBE Portuguese Science Classes, ~~4 Grade 8 Science Classes~~, WIN Block	Existing
~~Science Classroom 7~~	~~4 Substantial Separate Science Classes, WIN Block~~	~~Existing~~
~~Science Classroom 8~~	~~4 TBE Spanish Science Classes (Grades 6, 7, 8 and SLIFE), WIN Block~~	~~Existing~~
~~Science Classroom 9~~	~~4 TBE Portuguese Science Classes (Grades 6, 7, 8 and SLIFE), WIN Block~~	~~Existing~~
~~Technology Education Classroom~~	~~4 Technology Education Classes, WIN Block~~	~~Existing~~
Technology Shop	MakerSpace for instructional use as needed for projects* and to support the Technology Education curriculum, scheduled for district review in 2018-2019. *Note: The district has hired a STEAM coach for the 2018-2019 academic year. This individual would be able to support the academic programming of this space.	Existing
Fabrication Laboratory	4 Technology Education Classes, WIN Block; Instructional space for 3-D model design and printing as needed	New/Replaces existing Technology Education Classroom
Art Classroom	4 Art Classes, WIN Block	Existing
Band Classroom	4 Band Classes, WIN Block, 1 Strings Instrumental Class	Existing
Chorus Classroom	4 Chorus Classes, WIN Block	Existing

Below is a sample schedule to indicate room usage for the EL Classrooms. It should be noted that all of these classrooms will also be assigned a What I Need (WIN) class during the intervention block (not listed here).

	EL Room 1	EL Room 2	EL Room 3	EL Room 4	EL Room 5	EL Room 6	Moved to Gen. Classrooms (see Utilization Chart above)		
A	ESL 4 (7-8)	Port LA (7)	ESL 2 (8)	ESL 1 (8)	Span Math (6)	Port Math (6)	~~Span LA (7)~~		
B	Span LA (6)	Port LA (6) 2001	PLA (6)						
C	ESL 1 (6)	ESL 3 Soc St (8)	ESL 2 (6)	ESL 1 (6)	Span Math (8)	Port Math (8)			
D	ESL 3 (7-8)	ESL 2 Soc St. (6-7)	ESL 1 Soc St (6-7)	ESL 1 Soc St (6-7)					
F	ESL 3 (6)	ESL 3 Soc St (7)	ESL 2 (7)	ESL 1 (7)	SLIFE Numeracy (Multi)	Port Math (6)	~~Span LA (8)~~	~~Port LA (8)~~	
G	ESL 4 (6-7)	ESL 3 Soc St (6)	ESL 2 Soc St (8)	SLIFE Spanish Literacy	Span Math (7)	Port Math (7)		~~SLIFE Portuguese Literacy~~	~~ESL 1 Soc St (8)~~

	~~EL Room 1~~	~~EL Room 2~~	~~EL Room 3~~	~~EL Room 4~~	~~EL Room 5~~	~~EL Room 6~~	~~EL Room 7~~	~~EL Room 8~~	~~EL Room 9~~
~~**A**~~	~~ESL 4 (7-8)~~		~~ESL 2 (8)~~	~~ESL 1 (8)~~	~~Span Math (6)~~	~~Port Math (6)~~	~~Span LA (7)~~	~~Port LA (7)~~	
~~**B**~~							~~Span LA (6)~~	~~Port LA (6) 2001~~	~~Port LA (6)~~
~~**C**~~		~~ESL 3 Soc St (8)~~	~~ESL 2 (6)~~	~~ESL 1 (6)~~	~~Span Math (8)~~	~~Port Math (8)~~			~~ESL 1 (6)~~
~~**D**~~	~~ESL 3 (7-8)~~	~~ESL 2 Soc St. (6-7)~~		~~ESL 1 Soc St (6-7)~~					~~ESL 1 Soc St (6-7)~~
~~**F**~~	~~ESL 3 (6)~~	~~ESL 3 Soc St (7)~~	~~ESL 2 (7)~~	~~ESL 1 (7)~~	~~SLIFE Numeracy (Multi)~~	~~Port Math (6)~~	~~Span LA (8)~~	~~Port LA (8)~~	
~~**G**~~	~~ESL 4 (6-7)~~	~~ESL 3 Soc St (6)~~	~~ESL 2 Soc St (8)~~		~~Span Math (7)~~	~~Port Math (7)~~	~~SLIFE Spanish Literacy~~	~~SLIFE Portuguese Literacy~~	~~ESL 1 Soc St (8)~~

Below is a sample schedule to indicate room usage for the Science Classrooms. It should be noted that all of these classrooms will also be assigned a What I Need (WIN) class during the intervention block (not listed here). We carefully considered the recommendation to furnish Maker Space features into the science classrooms. However, given the anticipated 100% utilization of the science classrooms under our revised program, this would prohibit the use of that equipment by any of the other teachers. Therefore, we instead chose to consolidate the Technology Classroom into the Fabrication Lab to increase efficiencies.

	Science Room 1	Science Room 2	Science Room 3	Science Room 4	Science Room 5	Science Room 6	~~Science Room 7~~	~~Science Room 8~~	~~Science Room 9~~
A	Gr. 6 Science	Gr. 6 Science	Gr. 7 Science	Gr. 7 Science	Sub Separate Science	Gr. 6 Port Science			
B	Gr. 6 Science	Gr. 6 Science	Gr. 8 Science	Gr. 8 Science	Gr. 8 Spanish Science	Gr. 8 Port Science			
C	Gr. 7 Science	Gr. 7 Science	Gr. 8 Science	Gr. 8 Science	Gr. 7 Spanish Science	Gr. 7 Port Science			
D	Gr. 6 Science	Gr. 6 Science	Gr. 7 Science	Gr. 7 Science	Sub Separate Science	SLIFE Science (multi)			
F	Gr. 6 Science	Gr. 6 Science	Gr. 8 Science	Gr. 8 Science	Gr. 6 Spanish Science	Sub Separate Science			
G	Gr. 7 Science	Gr. 7 Science	Gr. 8 Science	Gr. 8 Science	Sub Separate Science	Gr. 6 Port Science			

	~~Science Room 1~~	~~Science Room 2~~	~~Science Room 3~~	~~Science Room 4~~	~~Science Room 5~~	~~Science Room 6~~	~~Science Room 7~~	~~Science Room 8~~	~~Science Room 9~~
~~**A**~~	~~Gr. 6 Science~~	~~Gr. 6 Science~~	~~Gr. 7 Science~~	~~Gr. 7 Science~~			~~Sub Separate Science~~		~~Gr. 6 Port Science~~
~~**B**~~	~~Gr. 6 Science~~	~~Gr. 6 Science~~			~~Gr. 8 Science~~	~~Gr. 8 Science~~	~~Sub Separate Science~~	~~Gr. 8 Spanish Science~~	~~Gr. 8 Port Science~~
~~**C**~~			~~Gr. 7 Science~~	~~Gr. 7 Science~~	~~Gr. 8 Science~~	~~Gr. 8 Science~~		~~Gr. 7 Spanish Science~~	~~Gr. 7 Port Science~~
~~**D**~~	~~Gr. 6~~	~~Gr. 6~~	~~Gr. 7~~	~~Gr. 7~~			~~Sub~~	~~SLIFE~~	

	~~Science~~	~~Science~~	~~Science~~	~~Science~~			~~Separate Science~~	~~Science (multi)~~	
F	~~Gr. 6 Science~~	~~Gr. 6 Science~~			~~Gr. 8 Science~~	~~Gr. 8 Science~~	~~Sub Separate Science~~	~~Gr. 6 Spanish Science~~	~~Gr. 6 Port Science~~
~~G~~			~~Gr. 7 Science~~	~~Gr. 7 Science~~	~~Gr. 8 Science~~	~~Gr. 8 Science~~			

Lunch Programs

Current:

The Fuller Middle School lunch program provides 3 lunch servings per day to up to 210 students at a time. In addition, Fuller Middle School provides breakfast to students each morning before school.

Proposed:

The proposed Fuller Middle School must continue to provide breakfast and lunch service each school day. The proposed facility will be able to support two 30-minute lunch servings per day (315 students each) due to the size of the central commons area, which is also being designated as the cafeteria. In order to coordinate two lunch servings for three grade levels, students will be assigned lunch by subject rather than grade. This means students will attend lunch based on which class period meets during the lunch block. The two lunch servings will occur during the first 30 minutes of the period and the last 30 minutes of the period in order to provide an uninterrupted lesson for all students. This is an improvement over the current lunch program as students who have second lunch under the existing model lose valuable instructional time since they must leave class in the middle of the period and return to finish their lesson after lunch.

The new or renovated Fuller Middle School should have a full kitchen as well as several serving stations to provide a variety of meal options for students.

The cafeteria should provide plenty of natural light as well as access to an outdoor space. Since the cafeteria will be used throughout the day as a common area, the space should easily transform from dining hall to meeting space. It should have breakout areas for groups to collaborate, plenty of tables, charging stations for devices and full internet capabilities.

Finally, the cafeteria should be designed with noise-reducing features due to its large size and anticipated use.

Technology Instruction Policies and Program Requirements

Current:

The mission of the Middle School Technology Education Program for the Framingham Public Schools is to provide opportunities for interdisciplinary learning experiences where students can apply and reinforce math, science, computer literacy, and other specialized skills through the use of technology-based applications. In grades six through eight, students pursue engineering questions and technological solutions that emphasize research and problem solving. Students develop skills in Engineering Design by learning to conceptualize a problem, design, construct, and test prototypes, making modifications as necessary. Through these engineering challenges, students are given the unique opportunity to collaboratively apply numerous academic concepts through practical hands-on applications.

Fuller Middle School is 1:1 with its technology. Students start and end their day in homeroom where they pick up and drop off their assigned Chromebooks. The school's infrastructure is sound, with students and staff having internet access throughout the building.

Fuller Middle School's library is regularly used as the location for larger group meetings, workshops and presentations. It is also frequently used for community meetings in the evening. When these events take place during the school day, the library is closed, reducing students' access to its resources. While the library has some computer stations, it primarily serves as a traditional library. The school's librarian has made programmatic improvements to increase the library's inventory, circulation and traffic, but he is limited by these current constraints.

The Technology Education classroom is significantly lacking in the proper tools for learning in the 21st Century. The teacher does not use the current set of computers because they are slow, inefficient and lack the proper software. While the Technology Education teacher does have a 3-D printer, the Technology Education teacher does not utilize this regularly due to her lack of other adequate equipment.

The classrooms at Fuller Middle School are not equipped with Smartboards or other technology. At best, teachers use portable projectors and document cameras to teach their lessons.

Proposed:

The Framingham Public Schools is in the process of revising its Technology Education curriculum so it aligns with the 2016 Massachusetts Science and Technology Education Frameworks. As part of a STEAM program, Technology Education at Fuller Middle School will incorporate project-based learning through science, technology, engineering, arts and mathematics. The goal of Technology Education is to spread technological literacy by providing a variety of hands-on activities using current technology. Technology Education emphasizes

both design and problem-solving skills while raising students' awareness of career options in the technical fields.

In order to prepare students for the technological "unknowns" of our future society, we must equip our students not only with technical skills but with the ability to adapt in this rapidly-changing world. Fuller Middle School's educational program continues to expand students' opportunities to utilize technology, and its educators recognize that placing a device in students' hands is not enough to reach our goals. By increasing instruction around digital literacy, computer programming, technology education and communication technology, students will become more comfortable exploring new technological advances.

Since Fuller Middle School is transitioning to a STEAM model, all spaces must be equipped with internet so students can access their learning in any corner of the building. Daily, students are encouraged to be resourceful in their problem solving and technology plays a key role in this process. At the center of project-based learning in a STEAM setting is the engineering design model where students must identify and research a problem, brainstorm possible solutions, select a solution and develop a prototype, test the solution and make improvements, and ultimately communicate findings. This requires not only a technological infrastructure and a MakerSpace for students to build their models, but also an outlet for disseminating and presenting results to a larger audience. The commons/cafetorium should be equipped with high-quality sound and lighting equipment to provide such a venue. Additionally, while the square footage for the MakerSpace and Fabrication Lab areas falls below the MSBA guidelines, this reduced figure only meets the District's needs provided the cohort commons are included in the program. The cohort commons are intended to accommodate both Media Center and Vocations and Technology functions. Per the education plan, the cohort commons will have computer stations and large work surfaces to support both "hands-on" projects and technology collaboration. In an effort to coordinate with MSBA guidelines, the PDP space summary included a reduction in the Media Center category of 2,103 nsf along with this 2,250 nsf reduction in Vocations and Technology, for a total of 4,353 nsf below MSBA guidelines. In the attached revised space summary, the district proposes that the size of the 3 cohort commons be reduced from 1,500 sf to 1,450 sf for an aggregate 4,350 nsf, just below the aggregate MSBA guidelines.

While the entire school should be considered a "media center," Fuller Middle School must still dedicate a space for a true library to nurture a love of reading, provide a variety of digital resources, and facilitate both online and traditional research. This Library/Media Center should divide its space between shelves of books, computer stations and tables. Ideally, this Library/Media Center will be adjacent to a larger common area to expand the space available for groups to work collaboratively. Please reference the district's response to the Vocations and Technology comment in the paragraph above. The cohort commons has been moved to the Media Center Category and reduced to 1,450 nsf to comply with aggregate MSBA guidelines for Media Center and Vocations and Technology.

To support 21st Century instruction, classrooms should be equipped with state-of-the-art technology for presenting information. Interactive boards or LCD screens that provide connectivity to a computer or laptop are essential to allow teachers to present the latest digital images, videos or graphical displays to their students. All science laboratories should also be

equipped with wireless internet so students can record data, create accurate graphs, view videos, share information and conduct research in real time.

As described above, the FabLab and Technology Education classrooms require a classroom set of computers with the latest software for engineering, programming, video production and graphic design.

Art, Music and Theater Programs

Current:

The Framingham Public Schools is proud of its Fine and Performing Arts program, including its award winning Band and Drama programs. Fuller Middle School is no exception. Students of all ages are exposed to visual arts, music, and theater in a rich, inclusive, and culturally proficient program at all grade levels. A primary goal of the district's middle school Fine and Performing Arts program is to spark a passion for the arts in all of our students so they pursue not only the academic offerings but also the extracurricular programs at Framingham High School, where our students perform competitively each year and often earn national recognition.

The Arts teachers are incredibly special to our instructional program since they each impact child in the school. By serving as the sole providers of their particular content area within the school, they are tasked with instilling an enthusiasm and appreciation for the arts to over 500 students. This requires a well-furnished, inviting and spacious teaching environment.

Art:
In the Fine Art classes, all learning is project-based and student-centered. Students build their technical and observational skills, deepen their understanding of artistic styles, and learn that every person is an artist. They increase their confidence through creativity, curiosity and self-reflection. Throughout the program, students develop a deeper understanding of the Elements of Art and the Principles of Design. Students are not graded on artistic ability, but rather on effort and craftsmanship. Students create projects to demonstrate their understanding of foreground/background, silhouettes, perspective, printmaking, and mandalas. Students work both individually and collaboratively as they develop skill and confidence.

Music/Chorus/Band:
In Music, Chorus and Band classes, students learn about music theory and history while developing their skills as a musician and a performer. Above all else, students learn about themselves and their individual responsibility as a member of a team. Students are taught a range of musical concepts including rhythm, tonality, expression, composition, musical form, improvisation, and music's impact on culture around the world.

Theater:
The Drama curriculum increases language development, analytical skills, social skills, collaboration and team building fluency, articulation, self-confidence and problem solving. Students develop their voice and ways of expressing their voice to achieve a goal. Working cooperatively, students recognize their contributions to a greater community both within their classroom and globally. The primary objective of the middle school Drama program is to teach students basic techniques through guided, creative, play so they can begin to feel more confident using their voice to express ideas on stage and with practical applications in life as

they move on to high school. Students are introduced to a wide variety of concepts including stage basics, theater etiquette, the evolution of storytelling, non-verbal communication, choral poetry, focus and concentration, improvisation and perspective.

The Arts classrooms are not integrated with the rest of the school. They are virtually hidden and segregated from the rest of the instruction that takes place in the school. The rooms lack the appropriate resources to teach the curriculum beyond the basics. For example, the Fine Arts classroom lacks a kiln, even though another middle school has one.

The current Fuller Middle School has a dedicated auditorium that is used regularly for school plays and concerts, school-wide assemblies, and community forums and events. While the auditorium is out-of-date, it is a space that has come to be depended upon by both the school itself and the greater Framingham community.

Proposed:

Fuller Middle School is ready to embrace its identity as a true STEAM school by incorporating the arts into its project-based, student-centered learning. Whether through the study of instrument design, building of sets, the mathematics behind music, or the impact of sound waves on music, the arts will be a focal point of the Fuller Middle School instructional program. We wholeheartedly believe adequate space should be included in the design of the new facility to achieve this goal to its fullest potential. In any building design, it will be imperative that students are provided multiple venues to display and exhibit their art and academic work.

Fuller Middle School will serve its students best with the following spaces, which should be centrally located near the commons/cafetorium for maximum visibility:

- One large Art classroom with large workspaces, plenty of storage, and a kiln to align with another middle school
- One Band classroom with an additional small practice room for individual or small-group rehearsal
- One Chorus classroom with an additional small practice room for individual or small-group rehearsal
- One Theater classroom for Drama instruction and after-school play rehearsals.

In considering the inclusion of a dedicated auditorium in the new facility, we are reviewing options that will allow us to continue to provide the same opportunities and access so the school and district can support the performing arts programs at Fuller Middle School as well as the needs of the greater community.

Health and Physical Education Programs

Current:

The Framingham Public Schools recognizes the importance of providing a high-quality and comprehensive Health and Physical Education curriculum to all students. The district's Physical Education program is carefully crafted to be an enjoyable, productive, and beneficial experience for students of all skill levels. Teachers establish an environment that is safe, welcoming, and energetic so students are able to practice important life skills including teamwork, cooperation, problem solving, and process orientation. The goal is to help all students identify activities they enjoy so they will lead a healthy and active lifestyle. The Health curriculum promotes wellness, positive attitudes, communication skills, healthy behaviors, and decision-making skills. Building off the curriculum from earlier grades, students learn how good health can impact all areas of growth, development and lifestyle. Our middle school program meets or exceeds all National Health Education Standards including the Massachusetts Curriculum Frameworks, with the goal of empowering students to be critical thinkers when it comes to decisions regarding their personal behavior.

Fuller Middle School provides outdoor recreational space in the area surrounding the building. This includes a large football/soccer field, a small lacrosse field and an adult-sized softball field. These fields are used for instructional purposes during Physical Education classes as well as recreational areas during school recess. The fields are used by the Framingham community for athletic practices and sporting events throughout the warmer seasons.

Proposed:

There are no proposed changes to the Health and Physical Education program at Fuller Middle School.

The Health and Physical Education program at Fuller Middle School requires:

- a spacious and welcoming Health classroom where students can move around, engage in dialogue with one another, explore topics and interact with physical models;
- a full-sized gymnasium with adequate storage so students can regularly engage in cooperative, physical activities
- Two separate locker rooms (Boys/Girls), each with enough space to secure the belongings of approximately 40 students at any given time
- a gender-neutral changing room accessible to anyone, with a shower and space to secure the belongings of approximately 5 individuals at any given time
- Two small offices located outside the gymnasium for the Physical Education teachers where they can plan lessons, store additional equipment and meet with students

Since the athletic fields and green space are used not only by the students during the school day, but also by the Framingham community as a recreational outlet, it is vital to the school and

district that the outdoor facilities are not compromised by a new school facility. Therefore, the educational program supports the preservation of all athletic fields and green space whenever possible. For any field or green space that is impacted by the construction of the new Fuller Middle School, the educational program supports the relocation of such space to another area of the school property upon completion of the project.

Special Education Programs

Current:

Framingham Public Schools provides a broad array of services for children and youth identified with disabilities from the ages of three through twenty-two. State and federal special education laws and regulations, namely The Individuals with Disabilities Education Act (IDEA), govern the referral, evaluation and placement procedures. Framingham Public Schools is committed to the goal of providing an appropriate education for students with needs in the least restrictive environment.

- Resource Room/In-Class Support
- Partial Inclusion Opportunities
- Occupational Therapy
- Speech and Language Therapy
- Physical Therapy
- Adaptive Physical Education
- BCBA/ABA Services
- Teacher of the Visually Impaired
- Orientation and Mobility

The inclusion classroom consists of a certified special educator who rotates through the student's schedule in order to ensure that the student on an Individualized Educational Program (IEP) understands the curriculum and is meeting his/her responsibilities. Individual and small group assistance is provided within the standard curriculum classroom. In addition, the student has a daily support class with their special educator on their team. The special educator provides consultation to standard curriculum teachers regarding student's learning style and educational needs. The special educator and teacher assistant ensure that accommodations are being implemented in the standard curriculum classroom.

In addition to our inclusion model, Fuller Middle School houses 2 special education substantially separate programs:

- This program serves students who have significant intellectual and learning challenges. Some students in the program have significant weaknesses in the areas of social skills activities of daily living. The program focuses on functional life skills and knowledge about community, in order to function as independently as possible. Other students in the program have excellent social skills and benefit from a more traditional academic curriculum, with the academic curriculum provided in a slower rate. This program has the capacity to work with both types of students, as we offer both a functional life skills curriculum and a curriculum, which mirrors the standard curriculum. Students are grouped into multi-grade classes according to ability levels. There is a three-year curriculum sequence. Students receive academic instruction in language arts, reading, math, science, and social studies. Students also take an academic support class for review and reinforcement of academic

content. Students receive all academic instruction from certified special educators. Students take different subjects with different special education teachers, so they have the middle school experience of moving from class to class. Students who are in the functional life skills group participate in a vocational program. Performing various jobs around the building (e.g., delivering newspapers, emptying recycling bins) helps them to develop greater independence and provides opportunity for hands on, practical learning. Students in this program run a café that is open on selected Fridays throughout the school year.

- : The program serves students on the Autism Spectrum who require more social-pragmatic, academic, and behavioral support. The programs provide intensive behavioral training relying upon ABA principles and total communication techniques in order to develop social skills and academic readiness skills. The program blends social/developmental as well as behavioral approaches whenever possible to address the educational challenges faced by this population of students. In addition to the special education teacher and teacher assistant, there is a teacher aide in the classroom.

The program for students with intellectual impairments requires:

- 4 classrooms (12 students maximum in each classroom)
- Multigrade groupings (grades 6-8)
- Functional/life skills component with access to a garden/courtyard and student kitchen area

The program for students with Autism requires:

- 1 classroom (12 students maximum)
- Multigrade groupings (grades 6-8)
- Quiet spaces in order to provide discrete trial teaching methodologies

Bilingual special education services are provided to students at Fuller Middle School who need both special education services and instructional support for English Learners. Students have access to related services such as speech-language services. The bilingual special educator is fluent in Spanish or Portuguese and can provide native language support to students whose first language is Spanish or Portuguese. The bilingual special educator teaches special education classes in core curriculum subjects and provides consultation to other teachers regarding the student's educational needs. Bilingual speech and language therapists are available to provide native language support to students whose first language is Spanish or Portuguese.

<u>Proposed:</u>

In addition to our current needs, the new facility should provide room for an additional Autism classroom based on enrollment at the elementary schools, resulting in 2 classrooms for the Autism program.

Since the proposed plan for the new or renovated Fuller Middle School fully integrates our special education programs within the greater school community, it will be important to provide the necessary office and instructional space within each neighborhood to support these needs. Specialists, including our two Speech and Language Pathologists and Literacy Specialist, will

each require a small classroom equivalent in size to a conference room in order to work with up to 8 students at a time. Each special educator shall require a desk with sufficient storage to secure required documents (including Individualized Educational Programs). These desks should be located in teacher planning rooms (pairs of teacher desks within small offices) so teachers can conduct meetings or make necessary phone calls while ensuring student confidentiality. Inclusion teachers, while primarily serving as co-teachers, will need access to a breakout space large enough to work with a group of up to 12 students at any given time.

Regarding the configuration of the special education classrooms, the spaces should be the same size as the standard classrooms, especially because some of the students may have physical limitations and be in wheelchairs or have other equipment needs. The furniture should be moveable to provide flexible classroom space for both of the substantially separate programs. Additionally, each room should be furnished with a variety of seating, such as sensory cushion seats and standing desks.

Adaptive Physical Education in all Framingham schools occurs in the same space as Physical Education classes. Framingham has one Adaptive PE teacher for the district who provides the adaptive needs in the classroom for the students and works closely with the PE teachers, guiding them on how to adapt their lessons and activities so that all students can access them in some way.

The gymnasium has been sized at 6,500 sf to allow safe run-off areas and space for adaptive PE teachers on the sidelines. The project is targeting the LEED credit for advanced acoustic performance, which will meet sound transmission class (STC) requirements of ANSI S12.60–2010 Part 1.

Framingham currently has a contract with the Learning Center for the Deaf to assist with appropriate equipment, (hearing aids and FM systems) and other acoustical accommodations for the classrooms and schools. It is currently anticipated that assisted listening technology will be hardwired into the sound system of the auditorium, Gymnasium, and Cafeteria, and portable FM systems will be available for classrooms as needed. Additionally, it is anticipated that some sound assist amplification will be provided in each classroom. This approach will be reviewed and confirmed in Design Development.

Since some of the students require lifting for toileting, a bathroom outfitted with a Hoyer lift to assist in the safety of the staff and students would be ideal.

The substantially separate classrooms have multiple grade levels in each group, therefore it is essential that the classrooms be centralized so that they have equitable access to the 6th, 7th and 8th grade teams.

Additional considerations:

- Acoustics will be important for hearing impaired students
- Lighting and reduction of glare from windows will help students with vision impairments
- Any outdoor learning space will need to be handicap accessible
- Classrooms should be flexible (collapsible walls) so they can be reconfigured into smaller learning spaces to meet the instructional needs of the students

Vocational Education programs

Current:

Fuller Middle School staff understand that, although their students are as young as 11 years old, the conversation about college and career begins now. Educators have regular conversations with students about college options, including an annual College Door contest, in which homerooms decorate their doors with a college banners. During the month of October, discussions take place during WIN blocks where students have opportunities to explore colleges and careers, learn about financing for college, and academic goals for college and career readiness. Furthermore, the entrance to every classroom displays a sign with the teacher's name and alma mater and every Friday, staff wear gear from their alma mater. In the spring, 8th grade students visit Framingham State University to tour the school and learn a little about college life. By raising students' awareness of college options, we are opening their eyes to the possibilities and motivating them to achieve academic success.

Proposed:

Fuller Middle School intends to continue its current vocational education programs while expanding opportunities for students to visit colleges, shadow professionals on the job, and establish long-term goals.

As Fuller Middle School expands its STEAM program, this increases the potential for discussions about students' interests and career possibilities. The very nature of inquiry- and project-based learning lends itself to identifying areas of passion for individual students and can provide teachers with the necessary information to open students' eyes to possible vocations.

Transportation Policies

Students in kindergarten through 6th grade who currently live more than two miles from their assigned school will be provided transportation at no charge by the Framingham Public Schools. Students are considered ineligible for bus transportation if they are in kindergarten through 6th grade and live less than 2 miles from their assigned school. Additionally, all students in Grades 7 through 12 are considered ineligible riders. The Framingham Public Schools may offer ineligible students the ability to purchase a seat, if available, on a District bus, for a fee.

Functional and Spatial Relationships and Key Adjacencies

Current:

The current facility's entrance leads into a large hallway, but visitors must turn left and head down a corridor to reach the main office. The main office itself is open and full of positive activity, but it is outdated and lacks natural lighting. Here, one will find the offices of the Principal and Vice Principal, as well as guidance and support staff. There are also two conference rooms. The smaller of these two rooms is connected to the Principal's office.

The library is next to the main office, with easy access for visitors. This is significant since the library is regularly used in the evenings as a community meeting space.

The school's cafeteria and gymnasium are located in remote corners of the building, out of sight of anyone not heading towards these spaces.

For the most part, classrooms are contained in traditional hallway patterns, but it should be noted that Technology Education classes are taught out of a standard classroom.

The MakerSpace is currently housed in the former wood shop classroom. The space contains mostly woodworking equipment (table saws, drill press, planers, etc) and some robotics equipment. While the MakerSpace is available to all teachers, it is primarily used by the Technology Education teacher.

Proposed:

The entrance to Fuller Middle School should be welcoming of students, staff, families and visitors. The principal, vice-principal and secretarial staff should be located in this area. In addition, the main office area should include both large and small conference rooms for meetings, since the conference rooms in the existing building are in constant use.

Each grade level will have its own learning community, designated by a "neighborhood" of the building. Each wing will be composed of classrooms, science classrooms, special education classrooms, ESL classrooms, teacher planning rooms, breakout rooms, and a cohort common. Teachers work in cross-discipline teams and will need to the time and space to collaborate with each other and co-teach lessons in varied learning environments. In addition, each wing will have a "satellite" administrative suite consisting of four offices: two for support staff, one for a department head and one for an instructional coach. This suite will also provide access to a waiting area with storage closet, and a small conference space.

Across the district, we are seeing a significant rise in the social and emotional needs of students. Children require access to support staff with whom they feel comfortable and have developed a relationship. By moving guidance counselors and other support staff into "satellite" administrative suites closer to classrooms, support staff will be more visible to the students,

increasing their familiarity with these adults. By establishing stronger connections and increasing opportunities for staff to get to know students, staff can be proactive in addressing individual needs. This also heightens the level of accountability of students and supports them in building their confidence and self-advocacy skills. Additionally, out-of-class time will be reduced by the closer proximity of the offices, which will ensure instructional time is preserved as much as possible.

Essential to the design of the new Fuller Middle School is flexibility in the use of space. Classrooms with movable walls; breakout spaces and common areas of various sizes; a cafeteria that serves as a learning, demonstration and collaboration center all day long; reliable internet access throughout the building; and creative spaces for hands-on and interactive learning (MakerSpace, FabLab, Arts rooms) are critical components to our STEAM school.

Central to this plan is a community gathering space where works in progress can be displayed, students can present their projects, and groups of students can be seen learning and exploring together. The cafetorium will serve this purpose, ensuring productive use of this large space throughout the day. The Library/Media Center should be adjacent, with a large opening into the cafetorium to expand the learning space for this center. Grade-level neighborhoods should surround this central common area, making it the heart and hub of all teaching and learning.

Security and Visual Access Requirements

Current:

The exterior doors of Fuller Middle School are locked while school is in session. Staff members use an electronic pass to access the building. Visitors must buzz the main office to request entrance to the building. A sign is posted telling visitors to report to the main office, but since there is no sight line from the main office to the entrance, it is difficult to monitor such traffic.

The current facility is equipped with video cameras, security alarms and a two-way communication system so staff are able to contact the main office in an emergency.

Fuller Middle School staff adhere to all safety protocols as required by the city and the district, and follow a strict emergency response plan created specifically for the existing Fuller Middle School.

Proposed:

Safety is of our utmost concern and must be a high priority consideration in the design of a new or renovated Fuller Middle School. By preventing the distractions posed by safety and security issues, students and staff will be able to focus their attention on the real purpose of Fuller Middle School: teaching and learning.

Visibility should be optimized, with as few pockets or hidden corners as possible, in order to properly supervise students and visitors at all times. While it is likely visibility will be enhanced by the use of glass windows instead of walls in some cases, all internal and external windows must be equipped with shades that can be drawn quickly in case of emergency.

The school must remain locked during the school day so an electronic access system for staff is essential, as well as a system for visitors to buzz the main office to request entrance to the building. Visibility from the entrance of the school to the main office is necessary to ensure all visitors check in with school personnel before engaging with the greater school community.

All spaces should be equipped with access to two-way communication with the main office in order to ensure security and timely communications. A state-of-the-art security system, including alarms and a surveillance cameras, should be a part of any design.

Adherence to all city and district accessibility, fire, safety and security regulations must be included in the design, and align with district emergency response plans. The Framingham Public School District will continue to work collaboratively with the Framingham Police and Fire Departments on safety and evacuation procedures to ensure the proper security measures are in place. A new Fuller Middle School emergency response plan will be created to align with the new or renovated facility.

Since Fuller Middle School is a community hub that is regularly used at night for a variety of community meetings and school-wide events, and since the building currently houses our Adult

ESL program, appropriate lighting should surround the exterior of the facility to provide a safe path from the parking lots to the school. In addition, careful consideration should be made regarding traffic patterns, entry and egress systems, and lines of sight. Ideally, the new or renovated Fuller Middle School will provide options to secure designated parts of the building while providing the general public with access to specific areas (cafetorium/commons, gymnasium, etc.) during after school and evening events.

Fuller's Guiding Design Principles and the District Strategic Plan, Revisited

The Educational Program for Fuller Middle School thoughtfully adheres to its Guiding Design Principles in concert with the District's Strategic Plan. The elements of the program that align to each principle and goal are outlined below.

1. Transdisciplinary Instruction

Through project-based, interdisciplinary learning and an active use of the MakerSpace and Fabrication Lab, students and teachers will explore academic content areas through a cross-disciplinary and collaborative model. By engaging students in challenging, real-world problems, students will demonstrate their understanding of concepts through their application of skills on projects.

2. Personalized and Collaborative Learning

Through flexible grouping and the use of breakout spaces and common areas, students will interact with adults and students in a variety of settings. By selecting individual projects that match their interests and needs, students will begin to take charge of their own learning by asking questions and engaging in the engineering design process. Staff will continue to meet regularly with their grade-level teams to review student data and identify appropriate interventions.

3. Whole Child, Whole Community

Fuller Middle School has regular, built-in instructional time to address social-emotional curriculum and school-wide expectations with all students through the What I Need (WIN) block. In the new or renovated building, students will have greater access to support staff since these adults will be housed in auxiliary suites within each grade-level neighborhood. By creating smaller neighborhoods within the school, students and staff will truly get to know each other and develop strong interpersonal relationships. This model also promotes collegiality and a sense of belonging.

4. Visible Learning

The new or renovated Fuller Middle School will embrace collaboration and the growth mindset. Through presentations, demonstrations, display of works-in-progress, academic discourse and student collaboration, students and staff will be surrounded by evidence of learning in action. By providing large windows and access to an outdoor space, learning will extend beyond the walls of the classroom and school.

5. Community and Civic Hub

The new or renovated Fuller Middle School will become the crowning jewel for South Framingham. The community depends on the current facility as a central location for meetings, adult learning, school productions and recreational activities. For this reason, the new facility will be a symbol of the city's commitment to the neighborhood and provide a welcoming hub for civic activity.

6. Adaptability

The new or renovated facility is an investment in both the future of our students as well as the greater Framingham community. This building will need to stand the test of time, which is only possible if the space is adaptable enough to meet the city's future needs. Given the rapid rate at which the world continues to evolve, the new Fuller Middle School design will meet this challenge by providing the flexibility to reallocate space based on instructional needs.

Summary: Fuller's Educational Program and Preferred Design

The new Fuller Middle School must support the Guiding Principles as outlined in this Educational Program in order to fulfill the needs of our students and community. The preferred design thoughtfully and thoroughly meets these principles as outlined below:

1. Transdisciplinary Instruction

Collaboration among content teachers and integration of subjects are supported by the preferred design. The MakerSpace, Fabrication Lab, Cohort Commons, and larger Commons (cafeteria) promote and encourage transdisciplinary learning by their very nature. They are shared spaces that invite inquiry, exploration, research and discovery. Since partitions between classrooms are removable, the merging of classes for shared experiences and project-based learning will be easily facilitated. Furthermore, the integration of the science labs within each neighborhood cohort, rather than being grouped together in a separate wing, ensures the science classes are part of this interdisciplinary model as well. While the staff of Fuller Middle School has worked collaboratively with a consultant in its transition to a STEAM school up to the present time, the Framingham Public Schools has demonstrated its commitment to transdisciplinary learning by adding to its budget for fiscal year 2019 a STEAM coach to support further development and implementation of transdisciplinary units of instruction and other project-based learning opportunities. Through this additional position, staff will be well-trained, experienced and confident in this instructional model prior to the opening of the new building.

2. Personalized and Collaborative Learning

The preferred design not only supports personalized and collaborative learning, it encourages it. The Cohort Commons, larger Commons (cafeteria), removable classroom walls, and breakout spaces invite students and teachers to expand their classroom beyond its four basic walls. By situating the Library Media Center adjacent to the larger Commons, learning spills out into the larger space, thus promoting greater collaboration. By including a Maker Space and Fabrication Lab, the new Fuller Middle School promotes project-based learning. With the support of the new STEAM coach, teachers will offer choice and voice through project-based instruction whenever appropriate. At all times, students will be expected to reflect on their progress and learning by engaging in the engineering design process.

The preferred design also makes it easier for staff to collaborate. Rather than having a desk in their own classroom as their work space, teachers will share an office with another staff member. This promotes conversation, collaboration, and a team mindset. Larger teacher workspaces will be stationed in each cohort, adjacent to the offices of the department heads and support staff, for team meetings and other collaborations. Staff will continue to meet regularly with their grade-level teams to review student data and identify appropriate interventions. All of the practices will promote a shared responsibility for all students, and for all aspects of a child's education.

3. Whole Child, Whole Community

The new Fuller Middle School will make it easier for all staff, but especially support personnel, to develop positive relationships with students. In the preferred design, support personnel have offices directly located within the auxiliary suites of each cohort neighborhood, and not in the main office at the front of the building, thus providing students and staff with greater access to these staff members. Support staff will be closer to the students on their caseload and will be able to engage with students not only when they are receiving services but during those informal moments between classes, at locker time and before homeroom. In this way, support staff will be able to get to know their students better so they can more proactively address concerns.

4. Visible Learning

The preferred design embodies the growth mindset and visible learning. All aspects of the selected model promote opportunities for students to share their learning with others--not just at the final stage of the project, but throughout the learning process. From breakout spaces to Cohort Commons, from removable classroom walls to the use of glass to promote visible learning, students will be able to share what they are doing with their peers as well as teachers. Furthermore, by providing access to outdoor spaces, learning will extend beyond the walls of the classroom and school. In this way, visible learning will also extend to the greater Framingham community.

5. Community and Civic Hub

The preferred design carefully addresses the needs of the community. By including a fully-equipped auditorium and larger gymnasium, the Framingham community will be able to use this facility in the way it needs: for athletic clubs all year long, for community meetings, for concerts and other performances, and for civic engagement.

6. Adaptability

The preferred design addresses the needs of the current educational program without being risky in its layout. By including traditional features including standard classrooms, fully-functioning cafeteria, upgraded technology, and state-of-the-art science laboratories, we have ensured the selected model meets current guidelines while preparing us for the future through its flexible floorplan.

Resources

For more information:

Project-Based Learning

https://www.bie.org/about/what_pbl -- Buck Institute for Education; one-page summary of project-based learning with tabs to additional information

http://www.nea.org/tools/16963.htm -- National Educators Association; Links to Research-Based Resources

https://www.edutopia.org/project-based-learning-experts -- Edutopia: Project-Based Learning: What Experts Say

http://www.ascd.org/publications/educational_leadership/sept10/vol68/num01/Seven_Essentials_for_Project-Based_Learning.aspx -- Educational Leadership (ASCD); Includes an explanation of the essential components of a project-based learning experience

STEAM

https://www.ed.gov/stem -- While focused primarily on STEM education, this site highlights the importance of improving STEM education in our schools

https://www.edutopia.org/blog/pbl-and-steam-natural-fit-andrew-miller -- This article makes the connection between STEAM and Project-Based Learning

https://www.edutopia.org/article/STEAM-resources -- Links to resources that discuss how the arts and humanities are incorporated into STEM programming

21st Century Skills

https://www.brookings.edu/blog/education-plus-development/2017/10/17/how-do-we-teach-21st-century-skills-in-classrooms/ -- Research from the Brookings Institute

https://www.edutopia.org/discussion/15-characteristics-21st-century-teacher -- Emphasizes the shift in instructional strategies to teach 21st Century skills

http://www.nea.org/assets/docs/A-Guide-to-Four-Cs.pdf -- Comprehensive report on 21st Century learning

Framingham Public Schools

Where every child can and will reach high levels of achievement.

Fuller Middle School
Educational Program
June, 2018

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Executive Summary

Fuller Middle School is in its fourth year of STEAM (Science, Technology, Engineering, Arts and Mathematics) design and implementation as part of a district-wide effort to deliver instruction through a project-based, interdisciplinary model that engages students through inquiry and emphasizes 21st Century skills. The Framingham Public Schools envisions the new or renovated Fuller Middle School, together with its educational program, as a model for both the district and the state.

This educational program hinges on six design principles:

- Transdisciplinary Instruction
- Personalized and Collaborative Learning
- Whole Child, Whole Community
- Visible Learning
- Community and Civic Hub
- Adaptability

At the heart of this program is the individual child: by providing opportunities for students to engage in inquiry, collaborate with peers, integrate learning across content areas, utilize technology effectively, and make their thinking and learning visible, students will develop and/or strengthen their growth mindset and feel ready to tackle any future challenge.

An important aspect of STEAM instruction is the ability for students to explore challenges and build physical representations. A Fabrication Laboratory and MakerSpace are fundamental components of the program. Students will use these spaces to engage in the engineering design model, where they develop and test a prototype of their idea and then make modifications as needed until they are ready to present their solution.

Collaboration will be the foundation of all progress as Fuller Middle School continues its transformation to a STEAM model. Teachers will need regular, frequent opportunities to meet with colleagues to develop interdisciplinary lessons, co-plan, review curriculum and analyze data. Students will work collaboratively with peers to perform investigations, research topics, complete projects, and present their work. Thus, ample meeting space and the flexible use of space are key elements of the new or renovated facility.

The Fuller Middle School student population includes 161 English Learners (ELs) and 49 Former English Learners (FELs, one or two years out of the English Language Development program), representing 41% of the total school population. More than 50% of the school's students speak a language other than English at home. The current Fuller Middle School has 9 dedicated classrooms for ELs, and will need at least this many classrooms in the future as the EL population continues to rise.

Fuller Middle School supports students with disabilities through inclusion services as well as two substantially separate programs: Intellectual Impairments and Autism Spectrum Disorders. There are 126 students with active Individualized Education Programs (IEPs), representing 24% of the student population. Of this total, 44 students are provided instruction in the substantially

separate programs. The current Fuller Middle School has 5 dedicated classrooms for the substantially separate programs; however, given the growing Autism program at the elementary level, it is expected that an additional classroom will be necessary in the next couple of years. Inclusion services are provided through standard curriculum classrooms that are assigned a special education co-teacher whose primary role is to deliver the necessary accommodations and instructional support.

To create smaller learning communities within the large Fuller Middle School, the new facility should consist of three neighborhoods (cohorts), one for each grade level. All grade-specific classes (ELA, Math, Social Studies and Science) will be taught within these areas. In addition, each neighborhood shall include designated English as a Second Language and Special Education classrooms to fully integrate all students within the whole school community. To provide easy access to support services and school leaders, small auxiliary administrative suites should be located within each neighborhood. By moving guidance counselors and other support staff into these "satellite" administrative suites, support staff will be closer to students, thus ensuring increased access. This will also allow support staff to better know their students so they can more proactively address concerns.

Welcome to the Framingham Public Schools

The mission of the Framingham Public Schools, a system that understands and values our diversity, is to educate each student to learn and live productively as a critically-thinking, responsible citizen in a multicultural, democratic society by providing academically challenging instructional programs taught by a highly-qualified and diverse staff and supported by comprehensive services in partnership with our entire community.

We envision a school district in which every child is engaged as an active learner in high-quality educational experiences and is supported, at their level, to ensure growth over time. We believe in an educational model that is steeped in meeting the individual needs of every student in our care through the personalization of learning as an ongoing effort to address achievement and opportunity gaps. We believe that with effective effort, time, and practice, all of our students can and will reach high levels of achievement.

Our diversity is our strength. Our city is enriched and strengthened by its diverse cultural heritage, multinational population, and welcoming attitude toward newcomers. Within our classrooms and neighborhoods, and on our stages and athletic fields, we want learning to be relevant and connected to developing our students into value-centered citizens who are able to navigate a complex and inequitable world. We aim to address these inequities--including racism, socio-economic status and language barriers--to create an environment in which every child can and will succeed.

The Framingham Public Schools adapts instruction to meet the learning and developmental needs of all students through appropriately challenging, high quality, standards-based instruction connected to practical applications. We are an inclusive learning community in which students feel safe taking academic risks while mindfully respecting diversity of opinions. We foster supportive and collaborative partnerships between families, the community and the school district so that every child reaches a high level of achievement. The foundation of our work is collaboration, mutual respect, and high expectations, where all educators are reflective of their practice and feel supported as they continually adjust instruction to improve student performance.

The District's Three-Year Strategic Plan focuses on providing all students with high-quality instruction whose foundation is a standards-based curriculum. Goals in the strategic plan include:

Goal 1. Developing a shared understanding of high quality instruction, including content and instructional strategies, by all staff and executed in all classrooms and instructional settings.

Theory of Action: If we develop a common understanding of high quality instruction (HQI) including standards-based content knowledge in ELA and Math, pedagogy and high leverage strategies among all staff, then students will have equitable access to rigorous and engaging standards-based instruction to increase student achievement (
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Creating a system and culture of consistent and accurate assessment, data analysis, reflection and feedback.

Theory of Action: If we create a system and culture of data-based assessment including analysis, reflection and feedback, then educators will be able to effectively target the individual needs of students and purposefully adjust their instructional practices accordingly.

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Promoting academic achievement and social and emotional growth for all students.

Theory of Action: If we promote academic achievement and social and emotional growth for all students, then we are underscoring and making real the central mission of the Framingham Public Schools.

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Delivering targeted supports and interventions based on the analysis of data and identification of student-specific needs.

Theory of Action: If we deliver targeted supports and interventions using a data-driven approach, then students will receive differentiated instruction aligned with individual needs to optimize their success.

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Supporting a culture of rigor and excellence for all students in all settings.

Theory of Action: If there is an emphasis on rigor and excellence in all aspects of our educational system, then we are establishing appropriately challenging expectations for all students. This promotes the growth mindset by communicating our belief that all students can and will reach high levels of achievement.

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Each of these goals has played a pivotal role in the decision-making process for the plan of the new Fuller Middle School. By focusing on standards-based curriculum, student-centered instruction, teacher collaboration, social and emotional well-being, and the growth mindset, we have ensured the educational plan and new facility are aligned with the district's high-impact goals for student achievement.

STEAM Education at Fuller Middle School

The Framingham Public Schools is in its fourth year of implementation of its STEAM (Science, Technology, Engineering, Arts and Mathematics) program. In 2014, the King Elementary School opened its doors as a STEAM school, welcoming four classrooms of kindergarten students. Each year, the school has continued to grow, welcoming a new kindergarten group. The original cohort, currently in 3rd grade, has been immersed in project-based learning, explorations and exhibitions. When the King Elementary School students graduate from elementary school at the end of 5th grade, they will enter Fuller Middle School. In anticipation of this incoming class, Fuller Middle School is preparing itself to provide a comprehensive STEAM education to students.

Fuller Middle School, in its fourth year of STEAM design and implementation, is in the process of transforming its instructional delivery through a STEAM model that engages students through inquiry and emphasizes 21st Century skills. The school leadership is building student and staff capacity as it shifts to a project-based learning environment. Having recently reviewed its progress and recalibrated its work, Fuller Middle School has entered the first year of its new four-year plan, establishing clear and measurable goals to monitor growth of this model.

This innovative educational program, envisioned by the Fuller Middle School community along with school and district leadership, emphasizes project-based, student-centered learning; collaboration (student-student, student-staff, staff-staff); flexible groupings and space configurations; and strategic use of technology. To this end, the new Fuller Middle School building must embrace inventive and creative use of space to achieve these goals.

STEAM at Fuller Middle School is an approach to project-based learning that blurs subject area boundaries, engages students in learning by doing, encourages students to ask and investigate meaningful questions, and places students at the center of their own learning.

STEAM at Fuller Middle School provides a vehicle for fully engaging ALL students, connecting to real-world contexts, and developing a strong culture of accomplishment and accountability.

Fuller Middle School students practice and demonstrate the 21st century skills of critical thinking, communication, collaboration, creativity and citizenship through dynamic student projects, presentations of learning and mindful reflection.

Our Visioning Process

In June 2016, approximately 50 teachers, administrators, parents, school committee members, school building committee members, municipal representatives, and community members came together as an Educational Visioning Team. Together, they collaborated during three days of intense workshops facilitated by Frank Locker to create a prekindergarten through 8th grade educational vision. The following "Places for Learning" have been excerpted from the Executive Summary of the District-Wide PreK-8 Educational Visioning Report prepared by Frank Locker Educational Planning in June 2016.

PLACES FOR LEARNING

Several exemplars were highly favored, selected by three or four of the six Table Teams as most appropriate.

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 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 connections between the rooms and strategic placement of related functions
- Teacher Planning Centers to support teacher collaboration and sense of community

The following Guiding Principles, District Planning Goals and Effective Learning Modalities have been excerpted from Executive Summary of the District-Wide PreK-8 Educational Visioning Report prepared by Frank Locker Educational Planning in June 2016.

GUIDING PRINCIPLES

1. Extend Innovative 21st Century Practices

This future-oriented Educational Vision incorporates a number of innovative 21st century educational practices such as STEM programs already in operation in classrooms in Framingham Public Schools. Extend those practices.

2. Achieve Equity and Equal Opportunities

Achieve equity and equal opportunities for all students, no matter where they reside in town or what their socioeconomic background is 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.

3. Prepare Students for Success

Prepare students for success in the 21st century, an emerging world of global competition, uncertain employment prospects, infinite access to information, and rapid change in technology.

4. Teach 21st Century Skills

Teach 21st century skills at the same time as traditional content.

5. Build Relationships with Students, Families and Communities

Build relationships with students, families, and communities through school structure and programs

6. Foster Independent Lifelong Learning

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 lifelong sense of wonder and purpose. Create independent, lifelong learners.

7. Provide Professional Development

Establish a program of staff Professional Development to support the educational deliveries outlined here.

In October 2017, the Framingham Public Schools Educational Working Group (EWG), a group of approximately 20 Framingham Public Schools administrative leaders, teachers, administrators, students, parents, and community partners, participated in a two-day Educational Visioning Workshop facilitated by New Vista Design and Jonathan Levi Architects. The workshop was a collaborative session aimed at informing the Fuller Middle School design process. Participants were led through a step-by-step visioning process to capture their best thinking about FPS's current and future educational goals and priorities, and connect them to previous visioning work done by the district, as well as to best practices and possibilities in innovative school facility design.

On October 20, 2017, the Framingham Public Schools EWG participated in Educational Visioning Workshop One and explored the following topics:

• Priority Goals for the renovated/new facility
• 21st Century and Future Ready Teaching and Learning Practices that are key to the district's forward thinking educational vision
• Future Ready Learning Goals that distill the group's best thinking with regard to Framingham Public Schools and Fuller Middle School's current and future educational programming and priorities
• Strengths, Challenges, Opportunities, and Goals (SCOG Analysis) associated with Framingham Public Schools and Fuller Middle School's current academic programs as well as the vision for its new facility

On October 26, 2017, the Framingham Public Schools EWG participated in Educational Visioning Workshop Two and explored the following topics:

• Design Patterns that innovative schools throughout the country have put into practice in order to make their forward-thinking learning goals come alive on the level of facility design
• Guiding Principles 1.0 for design of the new facility

Priority Goals

The following list of priority goals for the design of the renovated and/or new Fuller Middle School was recorded during the participant introduction section of the Educational Working Group's (EWG) Workshop One that took place on October 20, 2017. The EWG is a group of approximately 20 participants that includes Framingham Public Schools leadership, as well as Fuller Middle School administrators, teachers, and community partners.

- Understand the long-range vision of district and how it aligns with that of FMS
- Define what the school's vision means at each level - beyond jargon
- Ensure that Fuller Middle School connects to the Elementary and High School
- This is a K-12 initiative
- Create a central hub for the school
- Explore different ways to think about the new school's media center
- A school that integrates media and technology in a comprehensive way
- A school that integrates across disciplines (now we are compartmentalized and siloed)
- A schedule and building that allows for STEAM to happen
- Promote flexibility, connectivity, and sustainability
- Be mindful of and adapt to future change
- Facilitate collaboration within the district and the facility
- Create strong community connections: they are very important, especially for FMS
- A building that is environmentally and aesthetically friendly, appealing, inviting, warm
- Allows creativity to blossom
- Relates well with young learners
- A building that serves as a "second home" for all stakeholders
- A sense of ownership and buy-in from everyone
- Beyond ownership of "your" space, everyone takes ownership of the facility as a whole
- A building and program the honors diversity and equity
- Students
- Staff
- Resources and materials
- Make sure the cafeteria and food service is a priority - second home piece
- Over 50% of students are free and reduced lunch
- This needs to be their second home
- We need spaces that help us work with kids that are lost and traumatized, and that have social emotional and special needs
- Create a school that offers students the possibility of developing a range of skills
- Support alternative ways of motivating and teaching students
- Multiple means of teaching and learning
- Integration of disciplines
- Not just a place that houses students; the building itself becomes a learning tool for students
- Student learning is at the center
- A building that is multicultural in its design and openness
- Families that are not American-cultured can feel connection
- Robust areas for staff collaboration
- Interdisciplinary co-planning
- Promote inter/trans disciplinary teaching and learning
- Inclusive
- From SPED perspective - ensure accessibility for everyone

- A building that supports differentiated instruction
- Beyond academic support - community connections and services
- Social services – counseling
- Building designed as environment friendly and learning instrument
- Outdoor classrooms
- Extended day / adult education / ESL
- Community ED
- Fuller Middle School is central location
- Idea of open space and connection to nature
- Courtyard, open space
- Pond - water sampling
- Outdoor space as part of learning enrichment
- Adaptable to adult education
- Open from 7 - 11
- Board of Health is now in building but we lost the vision center
- A really important element - kids remain in school
- Immunizations
- Have a lot of newcomers - don't know how to access
- Consider the possibility of a childcare center
- Determine what we may want to fund beyond the MSBA template
- See this as a way of reaching our new identity
- We are all a product of the Horace Mann model and it's hard to see beyond it
- Explore what kind of environment we want
- Provide some space in the school that is equipped to engage a global classroom lesson
- Also, something like actually seeing surgery happening real time
- Higher ED is struggling with bricks and mortar – the world that students will occupy is changing so rapidly
- Our current FMS is largely lecture model
- Time for us not to try same, same thing

21st Century Learning Goals

The following set of priority "21st Century Learning Goals 1.0" for Fuller Middle School students was developed by the Educational Working Group (EWG) during Workshop One. Four teams of five participants each reviewed Fuller 5 Cs Learning Goals, as well as assorted other 21st century learning goals created by various school networks around the country, then worked to create their own set of learning goals. Each team presented their learning goals to the larger group. These goals are grouped below by like goals.

Whole Child Learning

- As an Organizing Principle for all Other Learning Goals

Collaboration and Communication

- Effective Communication
- Have a Voice
- To Effect Positive Change
- Emerge from Language Isolation to Collaborative Participation
- Staff and Students
- Understand How, What and Why we Communicate

Social and Civic Competence

- Within Fuller and in the Community
- Civic and Community Engagement
- Local, Community-Based Project Learning
- Community
- Empathy, Ethics and Civic Responsibility

Creativity and Imagination

- Imaginative and Joyous Risk-Taking
- Initiative and Curiosity
- Create Joy and Ownership

Critical Thinking

- Higher Order Thinking
- Permeated with Habits of Mind
- Problem Solving
- Analyze Information
- Executive Function – Ability to Prioritize and Strategize

Love of Learning

- Content is Not as Important as the Ability to Love Learning
- Self-Motivation
- Student Driven and Owned

Multicultural Literacy

Technology Transforming the Basics

Opportunities and Goals 2.0

The following Opportunities and Goals for the design of the renovated and/or new Fuller Middle School were brainstormed by the Educational Working Group (EWG) during Workshop Two.

- Deliver Special Education services in innovative ways that are welcoming and integrative
- Don't define Special Education too much
- Flexible use of space
- Disperse support staff, including specialists, throughout the school facility
- Create smaller learning communities as "sacred spaces"
- Provide centrally located Breakout Spaces
- Create a flexible building with movable walls
- Classrooms not "owned" by teachers
- Professional collaboration spaces for teachers
- Discover what it really means to be a "STEAM" school
- Utilize the STEAM experience of King Elementary School
- Think about how to "even the playing field" for non-King students entering FMS
- Position the Media Lab as the hub of the school
- Build with the larger community in mind
- FMS project as community development project
- Think about how to best facilitate community use as well as create bigger picture connections to the community
- Make decisions holistically about what is included in the design
- Whatever we create here connects to the FPS vision
- Include what we do in the rest of the district as part of the visioning process
- See Farley building as a resource for this project for things that cannot be accommodated at FMS
- Support FMS staff in terms of professional development and training
- Support a mindset shift
- Ongoing support on how to collaborate
- New mindset to share classrooms
- Support Habits of Success, Universal Design for Learning (UdL), and cognitive skill development
- Approaches to personalized learning should be horizontally and vertically aligned

21st Century Design Patterns 1.0

The following set of priority "21st Century Design Patterns" for the design of the new Fuller Middle School was developed by the Educational Working Group (EWG) during Workshop Two. Three teams of five participants each worked to create their own set of priority Design Patterns, after which each team presented to the larger group.

Open and Welcoming Entry
- First Impression Greeting Space

Distributed Dining
- Distributed Gathering Spaces
- Satellite Cafeterias / Café Style
- Cyber Dining

Learning Commons
- With Art, Music and Health, etc.
- Flexible Learning Styles
- Quiet Spaces

Classroom as MakerSpace
- Maker and Collaboration Spaces
- Collaborative Learning Spaces Including MakerSpaces

Display and Exhibition
- Walls Built for Display of Student Work
- Entire School as Display

Outdoor Connectivity
- Outdoor Space Use

Ubiquitous Learning

Professional Teacher Spaces
- Shared with Colleagues
- Teacher Collaboration Space

Breakout Spaces
- Non-Learning Spaces
- Accessible to Classrooms

Distributed Resources
- Distributed Adults

Flexible Furniture
- Variable Seating

Universal Access and Equity

Push-In Special Education

Visible Learning
- Spaces to Show Work in Progress

Paired/Flexible Classrooms

Vertically Integrated

Fuller Middle School's Guiding Design Principles

The following set of "Guiding Design Principles" for design of the renovated and/or new Fuller Middle School was developed by the Educational Working Group (EWG) during the Educational Visioning Workshop Two. Guiding Design Principles offer a framework of educational priorities that prove invaluable in helping stakeholders and design team members to set design goals and focus their work. This first iteration of Guiding Principles may continue to develop as the design process unfolds.

1. Transdisciplinary Instruction

- Project-Based and Real-World Learning
- Mastery-Based and Applied Learning

2. Personalized and Collaborative Learning

- Addresses Varied Learning Styles
- Personalized Learning Plans
- Student Voice and Choice

3. Whole Child, Whole Community

- Educating All Aspects of a Child
- Social Emotional Learning Skills
- Pride Within Cohort and Larger School

4. Visible Learning

- Connectivity
- Indoor/Outdoor Transparency and Connections

5. Community and Civic Hub

- Civic Campus and Community Resource
- Symbolic Hub of South Framingham
- Intergenerational and Community Connections

6. Adaptability

- Planned for Evolution
- Future Ready

While most of the stakeholders around the table for the PreK-8 Educational Visioning workshops were distinct from those at the Fuller Educational Visioning sessions, there are several very clear commonalities among each group's desire for how students will learn in this district. This solidifies our belief that this Educational Program represents the voice of our community and best interests of the students in our care.

Fuller Middle School

Mission Statement

The community of Fuller Middle School is committed to the academic, social, physical, and emotional development of every student. This commitment is supported by a philosophy based on differentiation, participation, high expectations, cooperation and respect for all.

School Overview

Fuller Middle School, established in September 1994, was named in honor of Dr. Solomon Fuller, a psychiatrist, and his wife Meta Fuller, a sculptor. A pioneering African-American family, the Fullers lived on Warren Road, near the current location of the Fuller Middle School, during the early part of the twentieth century. Dr. and Mrs. Fuller were leaders in their professions and in the Framingham community during their lives. They serve as models for the students of the school named in their memory.

Every student at Fuller Middle School is part of an academic team. A team consists of a group of teachers: teachers of academic subjects as well as educators for inclusion instruction and/or English Learner (EL) instruction and support as needed. All ELs receive English as a Second Language (ESL) instruction, regardless of the program model in which they are enrolled. Programs supported at Fuller Middle School include: Sheltered English Immersion (SEI), Transitional Bilingual Education (TBE), and Students with Limited or Interrupted Formal Education (SLIFE). ESL teachers teach foundational and transitional level students across the continuum of WIDA English proficiency levels. TBE teachers teach content-specific subjects to beginner and intermediate ELs. Academic teaming and team-based homerooms allow students to be part of a small, cohesive group of students who share the same classes and teachers. Teachers have collaboration time every day in the six-day rotation in order to plan integrated learning activities, address topics related to improving teaching and learning, discuss student concerns, and meet with parents. The goal of this model is to foster collaboration and shared accountability as we solve learning challenges together.

In addition to attending classes within their team, students also participate in Unified Arts courses – Art, Music, Health, Physical Education, Design and Engineering, World Language (French or Spanish), and Drama.

Demographics

A strength of our school is the rich diversity of our students and families, with the highest population of non-native English speakers among the three middle schools in the district. Fuller Middle School houses a TBE program using Spanish or Portuguese as a mode of instruction for content-area subjects (Math, Science and Native Language) and a SLIFE program. These programs consist of 13 staff, many of whom are native speakers of Spanish and Portuguese.

There are currently 161 English Learners and 49 Former English Learners (FELs, students who are one or two years out of the ELD program) at Fuller Middle School, representing 41% of the total school population. Also of note, more than 50% of the school's students speak a language other than English at home. Fuller Middle School has 9 dedicated classrooms for English language instruction, but this number may increase at any given time depending on the number of additional English Learners who enroll during the academic year.

Fuller Middle School supports students with disabilities through inclusion services as well as two substantially separate programs: Intellectual Impairments and Autism Spectrum Disorders. There are 126 students with Individualized Education Programs (IEPs), representing 24% of the student population. Currently, 44 students are provided instruction in the substantially separate programs. The 4 classrooms for the Intellectual Impairments program and one classroom for the Autism program each require a dedicated space with distinct specifications, as outlined later in this document. Inclusion services are provided in the standard curriculum classroom by assigning a special education co-teacher to the class. Often, the special educator determines it is necessary to work with a small group of students to support their individual needs. This is best accomplished in a separate room, in close proximity to the students' classroom, so students can receive immediate and effective personalized instruction and then rejoin their class as quickly as possible.

School-wide implementation of a positive behavioral interventions and supports (PBIS) system, including Restorative Practice, is unifying our community as we embrace our cultural, social, emotional, and academic diversity both in and out of the classroom.

Our approach is to foster healthy and positive relationships among and between students and adults, combined with comprehensive social and emotional supports and targeted instructional strategies for personalized learning. This work involves professional development, parent outreach and education, increasing student support systems, and regular collaborative use of data to inform instruction across all program areas and staff. Success will be realized when all of Fuller Middle School's students develop confidence and competence, with all students meeting or exceeding expectations.

Grade and School Configuration Policies

Current:

The Framingham Public Schools is a pre-kindergarten through 12th grade district with an enrollment of 9369 students. The District includes 1 preschool, 9 elementary schools, 3 middle schools, and 1 high school with an alternative campus for students identified as benefiting from a modified school day.

Juniper Hill School (Preschool)
- Pre-kindergarten
- 291 students

Brophy Elementary School
- Grades K-5
- 470 students
- Transitional Bilingual Education Program (Spanish)

Barbieri Elementary School
- Grades K-5
- 683 students
- Two-Way Bilingual (Spanish)

Dunning Elementary School
- Grades K-5
- 473 students

Hemenway Elementary School
- Grades K-5
- 570 students

King Elementary School
- Grades K-3
- 279 students
- STEAM School
- Transitional Bilingual Education Program (Portuguese)

McCarthy Elementary School
- Grades K-5
- 563 students

Potter Road Elementary School
- Grades K-5
- 510 students

Stapleton Elementary School
- Grades K-5
- 369 students
- Emotional Disability Program

Woodrow Wilson Elementary School
- Grades K-5
- 574 students
- Transitional Bilingual Education Program (Portuguese)

Cameron Middle School
- Grades 6-8
- 540 students
- Emotional Disability Program

Fuller Middle School
- Grades 6-8
- 516 students
- Transitioning to a STEAM School
- SLIFE Program
- Transitional Bilingual Education Program (Spanish and Portuguese)

Walsh Middle School
- Grades 6-8
- 760 students
- Two-Way Bilingual (Spanish)

Framingham High School
- Grades 9-12
- 2158 students
- Alternative High School Campus: 44 students

Student assignment and grade configurations are based on several complicated factors including feeder systems, school neighborhoods, school choice, school programming (STEAM and Two-Way Bilingual), English Learner status, and special education programs. This has resulted in space and inequity issues that are at the early stages of being addressed by the district.

Proposed:

The District has spent considerable time and resources in reviewing the current and future needs of the Framingham Public Schools. Grade and school configurations are not being revised at this time. However, school programs continue to expand. For example, due to the overwhelming success of our Two-Way Bilingual (Spanish) Program at Barbieri Elementary School, the Framingham Public Schools will be welcoming its first Two-Way Bilingual (Portuguese) kindergarteners in the fall of 2018 at Potter Road Elementary School. With the growing English Learner population and the increased capacity of educators through their Sheltered English Immersion (SEI) training, ELs are more frequently being placed at their neighborhood schools. Lastly, Fuller Middle School is continuing its transition to becoming a STEAM middle school. As the students in King Elementary School's oldest class are already in third grade, they are only 3 years away from entering Fuller Middle School. These students and their families expect and deserve a continuation of the STEAM education they have experienced since kindergarten.

Class Size Policies

Current:

While contractual guidelines ensure class sizes do not exceed 25 students for grades 6 through 8, the diverse range of needs of the students at Fuller Middle School necessitate keeping class sizes as small as possible. Whenever feasible, class sizes are reduced and co-teaching is incorporated to provide instructional supports for all students, particularly our English Learners and students with disabilities. Currently, class sizes for general education and inclusion classes range between 17 and 26 students, with an average of approximately 20 students per class.

Due to student migration that occurs throughout the year, our English as a Second Language (ESL) and Transitional Bilingual Education (TBE) classes tend to be the most impacted by class size concerns as the year progresses. This can lead to splitting classes, creating new classes, and reconfiguring schedules during the year. While school and district administrators cannot predict the number and needs of students at any given grade level in a particular year, the district consistently enrolls English Learners all year long, some of whom have limited or interrupted formal education. Fuller Middle School is prepared to meet these needs through the support of an ESL Department Head, English Language Development (ELD) coach, and Students with Limited or Interrupted Formal Education (SLIFE) teacher. With continuous, year-long student enrollment as a constant factor, the staff at Fuller Middle School work hard to maintain a safe and welcome learning environment at all times. This requires multiple venues for teachers to work with small groups of students, as well as the flexibility to create additional classes as needed.

Proposed:

There are no proposed changes to class sizes.

School Scheduling Method

Current:

Fuller Middle School follows a traditional bell schedule. The school day runs from 8:08 AM to 2:25 PM and consists of 2 45-minute periods, 3 50-minute periods, 1 60-minute period and 30 minutes for lunch. In addition, there is a 25-minute What I Need (WIN) block each day for intervention and extension of learning. Since the school is 1:1 with technology, the day begins with a 5-minute homeroom where students hear morning announcements and pick up their Chromebooks, and ends with a 3-minute homeroom to return their Chromebooks. The periods rotate through a 6-day cycle so that each class meets for the same number of minutes over the course of those 6 days.

The current school bell schedule is detailed below:

Time	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
8:08 - 8:13	Homeroom					
8:15 - 9:05 50	A (8th Specials)	B(7th Specials)	C (6th Specials)	D (8th Specials)	F (7th Specials)	G 6th Specials)
9:07 - 9:57 50	B	C	D	F	G	A
9:59-10:49 50	C	D	F	G	A	B
10:50 - 11:18	WIN - Social Comp					
11:20 - 11:50	Lun E / D / D / F / F / Lun E / G / Lun E / G / Lun E / A / A / B / B / Lun E / C / Lun E / C					
11:50 - 12:20	D / Lun E / Lun E / F / G / Lun E / A / Lun E / Lun E / B / C / Lun E					
12:20 - 12:50	D / Lun E / F / Lun E / Lun E / G / A / Lun E / B / Lun E / Lun E / C					
12:50 -1:35 45	F	G	A	B	C	D
1:37-2:22 45	G	A	B	C	D	F
2:22 - 2:25	Homeroom					

Proposed:

The proposed Fuller Middle School will be able to support two 30-minute lunch servings due to the size of the commons area, which is also being designated as the cafeteria. In order to coordinate two lunch servings for three grade levels, students will be assigned lunch by subject area rather than grade. This means students will attend lunch based on which class period meets during the lunch block. The two lunch servings will occur during the first 30 minutes of the period and the last 30 minutes of the period in order to provide an uninterrupted lesson for all students. This is an improvement over the current lunch program as students who have second lunch under the existing model lose valuable instructional time since they must leave class in the middle of the period and return to finish their lesson after lunch.

While no other proposed changes are being made at this time, a new schedule may need to be developed as the school transitions to a STEAM model. This would be considered if it was determined that the current bell schedule does not provide the necessary structure to guide teaching while also maintaining flexibility to allow students appropriate access to all curricular areas, instruct through an interdisciplinary approach, and promote staff collaboration. The school schedule should provide teaching staff with the flexibility to combine classes or create extended blocks of instruction as a means of delivering interdisciplinary lessons or providing longer periods for projects.

Teaching Methodology and Structure

Current:

The Fuller Middle School faculty and staff are committed to preparing students for success beyond middle and high school, so that all students are equipped to take on the ever-changing landscape of future college and career options. Teachers follow district-approved curriculum that is aligned with state frameworks. Through data-driven decision making based on student conduct, formative assessments, attendance rates, teacher feedback and student growth rates, the staff determine the appropriate interventions for each student.

The current model at Fuller Middle School is a team model within grade levels. Each grade level consists of two general education/inclusion teams (Grade 6--Lime and Opal; Grade 7--Platinum and Tangerine; Grade 8--Blue and Green). In addition, Fuller Middle School has the Crimson Team (substantially separate) and the Gold Team (Bilingual). For the most part, each staff member is assigned within only one team, which allows educators to truly know their students. The staff for each team meet three times per six-day cycle to discuss student data including academic performance, social and emotional concerns, conduct, attendance and any other issues that may impede student learning. In addition to these grade-level team meetings, each teacher participates in departmental meetings twice per six-day cycle to review curriculum, monitor vertical alignment, develop goals, plan lessons and discuss instructional strategies.

All staff are assigned to 4 classes and a What I Need (WIN) group. On 4 days of the six-day cycle, teachers work with small groups of students during the WIN block to provide interventions and extensions, and to conference with students. On the other 2 days of the six-day cycle, teachers provide social/emotional curriculum during this block. This WIN time is critical to meeting the specific, targeted needs of individual students and to reinforce school-wide behavior expectations.

In addition to their academic courses, students rotate through a series of specials subjects intended to provide a broad enrichment and addition to the core academics. In 6th grade, students can elect to take band or string orchestra; all other students take one trimester each of chorus, drama and music. Students in grades 7 and 8 choose either band, string orchestra, drama or chorus, which meets once per cycle for the year. In addition to a performing art, students rotate through fine art, health, and technology education for approximately 6 weeks each, and physical education for two sessions of six weeks.

The Framingham Public Schools meet students' curricular needs through a comprehensive, standards-based program. At this time, some curriculum units are taught concurrently within different content areas to provide a richer and more integrated learning experience. An example of this more interdisciplinary approach is the Holocaust Unit in which students read literature, conduct research, and study the history of the Holocaust in both their English Language Arts and Social Studies classes.

English Language Arts

The ELA curriculum is fully aligned with the Massachusetts Curriculum frameworks and provides students with opportunities to develop their reading and writing skills while simultaneously helping students grow as critical thinkers. The district has provided professional development to the staff on the gradual release of responsibility, including providing training for administrators on the "look fors" so they can provide continual feedback and support to educators in their implementation of this instructional practice. The curriculum for each grade level includes the following thematic units of instruction:

Grade 6:
Folktales around the World, The Craft and Composition of Argument/Persuasion, Survival: Decisions and Consequences (unit on theme, characterization, setting, conflict, point of view as studied through various fictional and nonfictional texts), Civil Rights, and Poetry

Grade 7:
Greek Mythology, Perseverance, Poetry, Civil Rights and The Art of Argument

Grade 8:
Short Stories, Civil Rights, Poetry, Shakespeare's Midsummer Night's Dream and Hope Endures (Holocaust)

Mathematics

The district's middle school Mathematics curriculum aligns with the Massachusetts Curriculum Frameworks and provides an opportunity for students to follow an accelerated pathway which allows them to enter high school ready to study Geometry. All students complete the traditional 6th grade mathematics course to provide students with time to develop more mature thinking and reasoning skills. At the end of 6th grade, students' MCAS scores, formative assessment data, school achievement and teacher recommendations are reviewed to determine if the traditional path or accelerated path is indicated. In the accelerated program, students complete the 7th grade, 8th grade and Algebra 1 standards over the course of their two remaining years in middle school. The mathematics teachers emphasize the Standards of Mathematical Practice as overarching goals in their lessons, and have recently implemented skills-based performance tasks that assess these practice standards.

Science

The district's Science curriculum is currently in transition as we adopt the 2016 Massachusetts Science and Technology/Engineering Curriculum Frameworks. This is the last of our transition years, with full integration of the standards (Earth, Space, Life and Physical Sciences) in all grades. The focus of professional development has been on the Science and Engineering Practice Standards, both in terms of what the skills associated with these standards look like in the Science classroom and how to embed these skills into daily lessons.

Social Studies

The district's Social Studies curriculum is aligned with the Massachusetts Curriculum Frameworks, while emphasizing important themes including freedom, respect for human dignity, the impact of geography on civilization, and the rise and fall of civilizations. In 6th grade, students learn about the foundations of geography, economics and world religions. Students then explore each continent through a geographic, cultural and civic lens. In 7th

grade, students study the evolution of humankind through an exploration of ancient civilizations including Mesopotamia, Greece, Rome, Egypt and others. Students will also study the fall of Rome, the encounters between Christianity and Islam, and medieval Europe. In 8th grade, students are formally introduced to United States History and Government. Areas of focus include the American Revolution and its causes, the formation of the United States government, westward expansion, the Civil War and its causes, Reconstruction, Immigration and Civil Liberties, World War I, the Great Depression and the causes World War II. Teachers receive professional development on such topics as civil discourse, identity, and rights and liberties to promote civic engagement in the classroom.

Proposed:

As the current model has proven itself to be effective, Fuller Middle School intends to continue with this structure in the new facility. Aside from the substantially separate and transitional bilingual teams, each grade-level team will consist of an ELA teacher, a Mathematics teacher, a Science teacher, a Social Studies teacher, a Special Education teacher and an English as a Second Language teacher. The World Language teachers will continue to work in a cross-teaming model.

To improve upon this model, the proposed facility should create grade-level neighborhoods (cohorts) to create smaller communities within the larger Fuller Middle School. This design will be essential to ensuring students and staff feel a sense of belonging and connectedness, while also providing the necessary supervision of all students within the cohort.

Team meetings will still focus on individual student interventions, but will also provide opportunities for co-planning within and across disciplines. Teachers will work collaboratively to design projects with an interdisciplinary approach as often as possible. To this end, the proposed Fuller Middle School will have an auxiliary suite of offices within each cohort which contains a small group seminar space. These spaces provide a quiet place for team meetings, department planning sessions, professional development, itinerant use and staff work area.

Whenever practical, teachers will regroup students using the classroom breakout spaces to accommodate individual needs, teach mini-lessons, work on projects, and conference with student collaboration teams. By providing movable classroom walls to create larger learning environments, teachers can join classes for a truly interdisciplinary lesson. This helps to nurture the understanding that all teachers are responsible for

a child's success, not just within their own particular class, but across the entire spectrum of that child's education.

The Classroom Breakout Spaces are intended to be used for instructional purposes, both by students collaborating on projects and by co-teachers working with a subset of a class. The breakout spaces give teachers and students the flexibility necessary for inquiry- and project-based learning opportunities, while also providing staff with a quiet place to differentiate instruction for our English learners, students with disabilities and other students in need of intervention. This practice of splitting a co-taught class to differentiate based on student need is well established at Fuller Middle School, so it is expected that these breakout spaces will be used regularly throughout the day. The Small Group Seminar Spaces, on the other hand, are meant to provide staff with a dedicated space for research, collaboration, professional development and team meetings. These seminar spaces will be furnished with computers, curricular materials and a variety of resources, making them the hub for interdisciplinary co-planning and collaboration.

The proposed Fuller Middle School will continue to follow the district curriculum as currently written. As more units and projects are developed over time, students will be provided additional opportunities to learn through interdisciplinary lessons that are aligned with real-world situations. As Fuller Middle School continues its transition to a STEAM school, it promises to present more project-based learning opportunities tailored to student interests as a means of providing engaging, relevant and contemporary challenges. By providing options (choice and voice) to students, instruction becomes personalized and differentiated to match the interests, backgrounds and readiness levels of students. This will ensure optimal learning occurs through flexible groupings that allow educators to individualize instruction to meet the unique needs of students. Furthermore, it will support Fuller's inclusive model that focuses on each child's intellectual, social and emotional needs. The proposed Fuller Middle School, therefore, includes smaller classroom breakout spaces to allow groups of students to collaborate or conference, while also providing the cohort commons for larger groups to come together for co-teaching, interdisciplinary lessons, presentations, investigations, visits with scientists and other experts from the field, cross-team collaborations and other tasks. Along the same lines, the proposed facility should include outdoor learning spaces so students can explore their environment and make appropriate connections to their learning. Each cohort is to be provided with convenient access to an outdoor learning area to study living systems, environmental science, botany and other subjects related to elements of the environment, as well as to provide teachers the opportunity to teach traditional subjects outside. Depending on the weather, these spaces may also be used for activities which affect air quality, such as painting.

Project-based tasks, which require the flexible large- and small-group learning spaces described above, are critical to student achievement at Fuller Middle School. Since more than 50% of the students speak a language other than English in their home, and since 24% of students have an Individualized Educational Program (IEP), project-based tasks provide an entry point to learning regardless of a students' background and level of readiness. Furthermore, these tasks provide real-world, hands-on experiences for students and give meaning to the content students are learning. These tasks will integrate curriculum from multiple content areas and require students to investigate topics, develop their own hypotheses, conduct research and present solutions or resolutions. Such projects will require higher-level thinking and reasoning skills, particularly the ability to analyze, critique, synthesize, and design in a variety of

modalities. Students will develop their skills in articulation, debate, written and oral argument, presentation, building physical representation, and public speaking. They will also become better listeners and collaborators as they learn to appreciate the talents and ideas their peers bring to the group. Above all, students will learn the value of asking questions, the first step in paving the way for one's own learning. Through inquiry, students will understand not only what they are learning, but they are learning it. This, in turn, helps students gauge their own progress and assess their own skills. These are the skills we want all students to acquire so they will be successful beyond high school.

Visible learning is essential to promoting the growth mindset, therefore students and teachers will emphasize process as well as product with all tasks. Thus, student thinking will be seen and heard in every way possible. Students' works-in-progress will be on display, classroom workspace (tables and desks) will encourage student dialogue and collaboration, and breakout and common areas will provide opportunities to see and hear students interacting with each other as they engage in meaningful tasks. Additionally, building some level of transparency, to and from classroom and lab spaces and into shared learning commons, will be important.

The school district recognizes that teachers will need support in building their own confidence as they shift their instructional practice to match this model. The district is committed to providing educators with the professional development and ongoing support to develop these skills and build their own capacity. This will include training in project-based and personalized learning, effective Professional Learning Communities (PLCs), data-based decision making, and the growth mindset.

Teacher Planning and Room Assignment Policies

Current:

Teachers at Fuller Middle School are assigned teaching schedules, duties and planning periods in accordance with the Framingham Teachers' Association contract. All teachers have one planning period per day. Teachers are provided with their own individual classrooms, including ESL teachers and special educators. Classrooms are arranged by cross-discipline grade level teams. Teachers regularly meet for team and department meetings in classrooms as there does not exist adequate planning and work space for the staff. For the purpose of these collaboration meetings, teachers' schedules provide for common planning time.

Proposed:

At the foundation of interdisciplinary instruction and project-based learning is an understanding of the importance of providing teachers with sufficient time and the appropriate resources for collaborating. A large, dedicated space for materials, computers, printers, and conference tables is essential to this design. Breakout spaces, small offices and individual teacher desks are also necessary to provide quieter space for independent work or co-planning. Smaller conference spaces should be located within each cohort neighborhood to provide opportunities for teachers to meet regularly for team meetings and co-planning. By integrating these conference spaces into the cohort neighborhoods, the rooms become easily accessible to staff which increases the likelihood they will be used by teachers during their regular planning time.

Classrooms should be well-lit, using natural light whenever possible, and provide adequate space to reconfigure tables and chairs to fit the needs of any lesson (cooperative tasks, investigations, labs, assessment, learning centers, etc). To increase the flexibility of the space, classrooms should have the added feature of combining to create one larger room through the existence of a removable wall to provide for larger interactions between multiple groups. Furniture should be adaptable and flexible as well, allowing students to work independently or collaboratively, depending on the task.

While the traditional model assigns a separate classroom to each teacher, the district recognizes this does not always represent the best utilization of space. Furthermore, such a practice encourages teachers to remain at their desks in their classrooms during planning periods rather than seek out opportunities to work with colleagues. For this reason, the Fuller Middle School design does not provide for a separate classroom for each teacher. Rather, classrooms will be shared when necessary to more efficiently use space, increase collaboration, and promote peer observations. Thus, it is critical that the new facility provide teachers with a quiet place to work by arranging teacher desks within small teacher planning rooms (shared between two staff members), while also including the larger teacher workspaces to foster collaboration.

Due to the large number of English learners (41% of students) and students with disabilities (24% of students), Fuller Middle School will continue to use a co-teaching model whenever possible to most effectively meet the needs of students while providing the least restrictive and most inclusive environment possible for all students. To this end, the co-teachers often design

lessons that allow them to conference with smaller groups of students or teach separate lessons to different groups based on student readiness. To maximize the use of space and reduce the number of classrooms in the proposed Fuller Middle School, our facility design should contain classroom breakout spaces large enough for an inclusion or ESL co-teacher to work with approximately half of a co-taught class (12 students) while the rest of the students remain in the classroom with the general education teacher. By creating these small-group instruction spaces that can also be used for team meetings and co-planning sessions, we have eliminated the need for additional classrooms and simultaneously increased opportunities for teacher and/or student collaboration.

Each grade level will have its own designated area ("cohort neighborhood") in the new Fuller Middle School. All grade-specific classes (ELA, Math, Social Studies and Science) will be taught within these areas. In addition, each cohort neighborhood shall include designated ESL and Special Education classrooms to fully integrate all students within the whole school community. Thus, in each grade-level cohort, 2 Science classrooms will be designated for the general education Science classes. In addition, each cohort will be assigned 1 Science classroom for either the EL or Substantially Separate program. While the proposed model does not meet the minimum usage requirement of 85%, we believe these rooms are necessary in order to deliver our educational program. Science lessons involve hands-on experiments that must be set up in advance of the class period. These labs must remain intact for the duration of the day since all classes that rotate through the room will need the same set-up. Based on enrollment, Fuller Middle School will need 8 general education Science sections for each grade level. Having only one Science classroom would not suffice.. Thus, two general education Science classrooms will be necessary for each grade. Since our Transitional Bilingual Education (TBE) Science classes will need additional resources including translated materials, labels, and posters, and since the TBE classes may follow a modified scope and sequence depending on the educational background and needs of the students in this program, a separate Science classroom is necessary to provide the appropriate supports, resources and lab set-ups for the students. Thus, a TBE (Portuguese) Science classroom and a TBE (Spanish) Science classroom are essential to our educational program. Finally, for reasons similar to the TBE Science needs, our Substantially Separate program follows a modified curriculum and therefore needs its own Science classroom. If the TBE and Substantially Separate Science classes were to be moved into the general education Science classrooms during the unused periods, it would be necessary for teachers to break down and set up the labs throughout the day in order to create a safe and secure learning environment for all students.

Regarding the English Learner Classrooms, the TBE classrooms are language-specific (Spanish and Portuguese). The resources, including textbooks, reference materials, posters, and word walls are completely different and require separate spaces depending on the language. Thus, separate classrooms for the TBE-Spanish and TBE-Portuguese programs are necessary. Additionally, the district believes in providing an equitable educational experience for all students, regardless of program. This includes, for example, providing a designated Math classroom that looks and feels the same for our TBE students as for a general education student. The reference materials, manipulatives, posters, and student work on display should all be related to Mathematics. This same rationale applies to Social Studies and Language Arts. The district is able to provide this model in the current Fuller Middle School and believes it is important to continue providing the same experience in the new Fuller Middle School.

To provide greater access to support services and school leaders, it is essential that small auxiliary administrative suites be located within each grade-level cohort neighborhood. These auxiliary suites will house two student support personnel, a department head and an instructional coach, thus providing students with immediate access to the necessary social and emotional supports while simultaneously increasing teacher access to instructional resources. Each auxiliary suite shall also contain a small group seminar space for professional development, department planning sessions and grade-level team meetings. This design also helps the school move away from the more traditional model of the instructional hub separated from the administrative offices located at the front of the school. Since the district emphasizes that students' academic growth and social-emotional well-being are the responsibility of all adults, it is crucial to create these pockets of support and instructional leadership throughout the building, closer to the students.

An essential component of the Fuller Middle School program must be state-of-the-art science laboratories that provide the space to conduct experiments in a safe and fully-equipped environment. This includes lab benches, equipment and the appropriate technology to allow for science exploration of the life, space, earth and physical sciences.

As a STEAM school, Fuller Middle School needs designated space for students to develop their technological skills, design and build models, and generally explore, invent and create. To this end, Fuller Middle School requires three unique spaces: a classroom with computers equipped with the latest software for engineering, programming, video production and graphic design; a fabrication laboratory (FabLab) with 3-D printers and computers; and a large open classroom outfitted with large tables, tools, equipment and various supplies for a designated MakerSpace to provide hands-on project experience. These "creative" spaces must be large enough to provide students with the ability to safely move about the room as they design and build their projects, whether individually or in teams. While the Technology Education teacher will teach classes out of the computer classroom, she will utilize the FabLab and MakerSpace as part of her instruction whenever feasible. Furthermore, upon completion of the new facility, Fuller Middle School will need a STEAM instructional coach whose primary responsibilities will be to teach digital technology lessons to students as they work on projects in the FabLab and MakerSpace, and to work with teachers to design interdisciplinary projects aligned with the Fuller STEAM vision.

It should be noted that every teaching space, classroom breakout space and cohort common will be designed to accommodate hands-on project experiences. The cohort commons will be equipped with computers, whiteboards, and large work surfaces to support technical collaboration as well as hands-on project work. This provides flexibility so that, regardless of whether a Vocational Technology classroom is already in use, students can still immerse themselves in hands-on tasks. The 2,000 square foot MakerSpace is intended to accommodate large, specialized, noisy and/or potentially hazardous equipment that is not appropriate for the classroom. The MakerSpace will be provided with both woodworking and metalworking equipment, a vacuum exhaust system, and overhead electric power drops for flexibility. It will be located with a large exterior door easily accessible to the deliveries area for receipt of oversized materials. To complement the MakerSpace, the Fabrication Lab will be for digital fabrication, utilization of computers, 3-D printing, and other equipment use such as laser cutting to fabricate from digital files. Since the digital fabrication lab requires less space than a traditional wood shop, the Fabrication Lab is 1,200 square feet rather than 2,000 square feet.

It is complemented by the Tech Classroom, where many of the digital files for fabrication will be created by students.

The arts are an integral part of the Fuller Middle School STEAM program. Thus, adequate space, storage and resources are essential in the consideration of both configuration and location of the arts rooms. The arts classrooms should be centralized within the building, ideally near the large commons/cafetorium, so the arts are recognized for its contributions to the STEAM program. By strategically placing these classrooms around the common/cafetorium, this larger open space becomes an extension of the classroom which allows students to easily showcase their work and perform for large audiences throughout the day.

Outlined below is a room utilization chart to further illustrate many of our needs:

Classroom	Use	New or Existing Program
General Classroom 1	4 Grade 6 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 2	4 Grade 6 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 3	4 Grade 7 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 4	4 Grade 7 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 5	4 Grade 8 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 6	4 Grade 8 ELA Classes, WIN Block, 2 World Language Classes	Existing
General Classroom 7	4 Grade 6 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 8	4 Grade 6 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 9	4 Grade 7 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 10	4 Grade 7 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 11	4 Grade 8 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 12	4 Grade 8 Math Classes, WIN Block, 1 Guided Academics Class	Existing
General Classroom 13	4 Grade 6 Social Studies Classes, WIN Block, SLIFE Portuguese Literacy	Existing
General Classroom 14	4 Grade 6 Social Studies Classes, WIN Block	Existing
General Classroom 15	4 Grade 7 Social Studies Classes, WIN Block, Grade 7 Spanish Language Arts, Grade 8 Spanish Language Arts	Existing
General Classroom 16	4 Grade 7 Social Studies Classes, WIN Block, Grade 8 Portuguese Language Arts	Existing
General Classroom 17	4 Grade 8 Social Studies Classes, WIN Block, Grade 8 ESL 1 Social Studies	Existing

General Classroom 18	4 Grade 8 Social Studies Classes, WIN Block	Existing
General Classroom 19	Health Classroom, WIN Block	Existing
General Classroom 20	Drama Classroom, WIN Block	Existing
General Classroom 21	3 World Language Classes, WIN Block	Existing
EL Classroom 1	1 Spanish Language Arts Class, 5 ESL Classes, WIN Block	Existing
EL Classroom 2	2 Portuguese Language Arts Classes, 4 ESL Social Studies Classes, WIN Block	Existing
EL Classroom 3	1 Portuguese Language Arts Classes, 5 ESL Social Studies Classes, WIN Block	Existing
EL Classroom 4	1 SLIFE Class, 3 ESL Classes, 1 ESL Social Studies Class, WIN Block	Existing
EL Classroom 5	1 SLIFE Class, 3 Spanish Math Classes, WIN Block	Existing
EL Classroom 6	4 Portuguese Math Classes, WIN Block	Existing
SPED Classroom 1	4 Sub Separate ELA Classes, WIN Block	Existing
SPED Classroom 2	4 Sub Separate Math Classes, WIN Block	Existing
SPED Classroom 3	4 Sub Separate Social Studies Classes, WIN Block	Existing
SPED Classroom 4	Autism Classroom, WIN Block	Existing
SPED Classroom 5	Autism Classroom, WIN Block	New, Anticipated Need
SPED Classroom 6	Life Skills/Vocational Substantially Separate Classroom for Students with Intellectual Impairments	Existing
Science Classroom 1	4 Grade 6 Science Classes, 2 Grade 7 Science Classes, WIN Block	Existing
Science Classroom 2	4 Grade 6 Science Classes, 2 Grade 7 Science Classes, WIN Block	Existing
Science Classroom 3	2 Grade 7 Science Classes, 4 Grade 8 Science Classes, WIN Block	Existing
Science Classroom 4	2 Grade 7 Science Classes, 4 Grade 8 Science Classes, WIN Block	Existing
Science Classroom 5	3 Substantially Separate Science Classes, 3 TBE Spanish Science Classes, WIN Block	Existing
Science Classroom 6	1 Substantially Separate Science Class, 1 SLIFE Science Class, 4 TBE Portuguese	Existing

	Science Classes, WIN Block	
Technology Shop	MakerSpace for instructional use as needed for projects* and to support the Technology Education curriculum, scheduled for district review in 2018-2019. *Note: The district has hired a STEAM coach for the 2018-2019 academic year. This individual would be able to support the academic programming of this space.	Existing
Fabrication Laboratory	4 Technology Education Classes, WIN Block; Instructional space for 3-D model design and printing as needed	New/Replaces existing Technology Education Classroom
Art Classroom	4 Art Classes, WIN Block	Existing
Band Classroom	4 Band Classes, WIN Block, 1 Strings Instrumental Class	Existing
Chorus Classroom	4 Chorus Classes, WIN Block	Existing

Below is a sample schedule to indicate room usage for the EL Classrooms. It should be noted that all of these classrooms will also be assigned a What I Need (WIN) class during the intervention block (not listed here).

	EL Room 1	**EL Room 2**	**EL Room 3**	**EL Room 4**	**EL Room 5**	**EL Room 6**	**Moved to Gen. Classrooms (see Utilization Chart above)**		
A	ESL 4 (7-8)	Port LA (7)	ESL 2 (8)	ESL 1 (8)	Span Math (6)	Port Math (6)	~~Span LA (7)~~		
B	Span LA (6)	Port LA (6) 2001	PLA (6)						
C	ESL 1 (6)	ESL 3 Soc St (8)	ESL 2 (6)	ESL 1 (6)	Span Math (8)	Port Math (8)			
D	ESL 3 (7-8)	ESL 2 Soc St. (6-7)	ESL 1 Soc St (6-7)	ESL 1 Soc St (6-7)					
F	ESL 3 (6)	ESL 3 Soc St (7)	ESL 2 (7)	ESL 1 (7)	SLIFE Numeracy (Multi)	Port Math (6)	~~Span LA (8)~~	~~Port LA (8)~~	
G	ESL 4 (6-7)	ESL 3 Soc St (6)	ESL 2 Soc St (8)	SLIFE Spanish Literacy	Span Math (7)	Port Math (7)		~~SLIFE Portuguese Literacy~~	~~ESL 1 Soc St (8)~~

Below is a sample schedule to indicate room usage for the Science Classrooms. It should be noted that all of these classrooms will also be assigned a What I Need (WIN) class during the intervention block (not listed here). We carefully considered the recommendation to furnish Maker Space features into the science classrooms. However, given the anticipated 100% utilization of the science classrooms under our revised program, this would prohibit the use of that equipment by any of the other teachers. Therefore, we instead chose to consolidate the Technology Classroom into the Fabrication Lab to increase efficiencies.

	Science Room 1	**Science Room 2**	**Science Room 3**	**Science Room 4**	**Science Room 5**	**Science Room 6**
A	Gr. 6 Science	Gr. 6 Science	Gr. 7 Science	Gr. 7 Science	Sub Separate Science	Gr. 6 Port Science
B	Gr. 6 Science	Gr. 6 Science	Gr. 8 Science	Gr. 8 Science	Gr. 8 Spanish Science	Gr. 8 Port Science
C	Gr. 7 Science	Gr. 7 Science	Gr. 8 Science	Gr. 8 Science	Gr. 7 Spanish Science	Gr. 7 Port Science
D	Gr. 6 Science	Gr. 6 Science	Gr. 7 Science	Gr. 7 Science	Sub Separate Science	SLIFE Science (multi)
F	Gr. 6 Science	Gr. 6 Science	Gr. 8 Science	Gr. 8 Science	Gr. 6 Spanish Science	Sub Separate Science
G	Gr. 7 Science	Gr. 7 Science	Gr. 8 Science	Gr. 8 Science	Sub Separate Science	Gr. 6 Port Science

Lunch Programs

Current:

The Fuller Middle School lunch program provides 3 lunch servings per day to up to 210 students at a time. In addition, Fuller Middle School provides breakfast to students each morning before school.

Proposed:

The proposed Fuller Middle School must continue to provide breakfast and lunch service each school day. The proposed facility will be able to support two 30-minute lunch servings per day (315 students each) due to the size of the central commons area, which is also being designated as the cafeteria. In order to coordinate two lunch servings for three grade levels, students will be assigned lunch by subject rather than grade. This means students will attend lunch based on which class period meets during the lunch block. The two lunch servings will occur during the first 30 minutes of the period and the last 30 minutes of the period in order to provide an uninterrupted lesson for all students. This is an improvement over the current lunch program as students who have second lunch under the existing model lose valuable instructional time since they must leave class in the middle of the period and return to finish their lesson after lunch.

The new or renovated Fuller Middle School should have a full kitchen as well as several serving stations to provide a variety of meal options for students.

The cafeteria should provide plenty of natural light as well as access to an outdoor space. Since the cafeteria will be used throughout the day as a common area, the space should easily transform from dining hall to meeting space. It should have breakout areas for groups to collaborate, plenty of tables, charging stations for devices and full internet capabilities.

Finally, the cafeteria should be designed with noise-reducing features due to its large size and anticipated use.

Technology Instruction Policies and Program Requirements

Current:

The mission of the Middle School Technology Education Program for the Framingham Public Schools is to provide opportunities for interdisciplinary learning experiences where students can apply and reinforce math, science, computer literacy, and other specialized skills through the use of technology-based applications. In grades six through eight, students pursue engineering questions and technological solutions that emphasize research and problem solving. Students develop skills in Engineering Design by learning to conceptualize a problem, design, construct, and test prototypes, making modifications as necessary. Through these engineering challenges, students are given the unique opportunity to collaboratively apply numerous academic concepts through practical hands-on applications.

Fuller Middle School is 1:1 with its technology. Students start and end their day in homeroom where they pick up and drop off their assigned Chromebooks. The school's infrastructure is sound, with students and staff having internet access throughout the building.

Fuller Middle School's library is regularly used as the location for larger group meetings, workshops and presentations. It is also frequently used for community meetings in the evening. When these events take place during the school day, the library is closed, reducing students' access to its resources. While the library has some computer stations, it primarily serves as a traditional library. The school's librarian has made programmatic improvements to increase the library's inventory, circulation and traffic, but he is limited by these current constraints.

The Technology Education classroom is significantly lacking in the proper tools for learning in the 21st Century. The teacher does not use the current set of computers because they are slow, inefficient and lack the proper software. While the Technology Education teacher does have a 3-D printer, the Technology Education teacher does not utilize this regularly due to her lack of other adequate equipment.

The classrooms at Fuller Middle School are not equipped with Smartboards or other technology. At best, teachers use portable projectors and document cameras to teach their lessons.

Proposed:

The Framingham Public Schools is in the process of revising its Technology Education curriculum so it aligns with the 2016 Massachusetts Science and Technology Education Frameworks. As part of a STEAM program, Technology Education at Fuller Middle School will incorporate project-based learning through science, technology, engineering, arts and mathematics. The goal of Technology Education is to spread technological literacy by providing a variety of hands-on activities using current technology. Technology Education emphasizes

both design and problem-solving skills while raising students' awareness of career options in the technical fields.

In order to prepare students for the technological "unknowns" of our future society, we must equip our students not only with technical skills but with the ability to adapt in this rapidly-changing world. Fuller Middle School's educational program continues to expand students' opportunities to utilize technology, and its educators recognize that placing a device in students' hands is not enough to reach our goals. By increasing instruction around digital literacy, computer programming, technology education and communication technology, students will become more comfortable exploring new technological advances.

Since Fuller Middle School is transitioning to a STEAM model, all spaces must be equipped with internet so students can access their learning in any corner of the building. Daily, students are encouraged to be resourceful in their problem solving and technology plays a key role in this process. At the center of project-based learning in a STEAM setting is the engineering design model where students must identify and research a problem, brainstorm possible solutions, select a solution and develop a prototype, test the solution and make improvements, and ultimately communicate findings. This requires not only a technological infrastructure and a MakerSpace for students to build their models, but also an outlet for disseminating and presenting results to a larger audience. The commons/cafetorium should be equipped with high-quality sound and lighting equipment to provide such a venue. Additionally, while the square footage for the MakerSpace and Fabrication Lab areas falls below the MSBA guidelines, this reduced figure only meets the District's needs provided the cohort commons are included in the program. The cohort commons are intended to accommodate both Media Center and Vocations and Technology functions. Per the education plan, the cohort commons will have computer stations and large work surfaces to support both "hands-on" projects and technology collaboration. In an effort to coordinate with MSBA guidelines, the PDP space summary included a reduction in the Media Center category of 2,103 nsf along with this 2,250 nsf reduction in Vocations and Technology, for a total of 4,353 nsf below MSBA guidelines. In the attached revised space summary, the district proposes that the size of the 3 cohort commons be reduced from 1,500 sf to 1,450 sf for an aggregate 4,350 nsf, just below the aggregate MSBA guidelines.

While the entire school should be considered a "media center," Fuller Middle School must still dedicate a space for a true library to nurture a love of reading, provide a variety of digital resources, and facilitate both online and traditional research. This Library/Media Center should divide its space between shelves of books, computer stations and tables. Ideally, this Library/Media Center will be adjacent to a larger common area to expand the space available for groups to work collaboratively. Please reference the district's response to the Vocations and Technology comment in the paragraph above. The cohort commons has been moved to the Media Center Category and reduced to 1,450 nsf to comply with aggregate MSBA guidelines for Media Center and Vocations and Technology.

To support 21st Century instruction, classrooms should be equipped with state-of-the-art technology for presenting information. Interactive boards or LCD screens that provide connectivity to a computer or laptop are essential to allow teachers to present the latest digital images, videos or graphical displays to their students. All science laboratories should also be

equipped with wireless internet so students can record data, create accurate graphs, view videos, share information and conduct research in real time.

As described above, the FabLab and Technology Education classrooms require a classroom set of computers with the latest software for engineering, programming, video production and graphic design.

Art, Music and Theater Programs

Current:

The Framingham Public Schools is proud of its Fine and Performing Arts program, including its award winning Band and Drama programs. Fuller Middle School is no exception. Students of all ages are exposed to visual arts, music, and theater in a rich, inclusive, and culturally proficient program at all grade levels. A primary goal of the district's middle school Fine and Performing Arts program is to spark a passion for the arts in all of our students so they pursue not only the academic offerings but also the extracurricular programs at Framingham High School, where our students perform competitively each year and often earn national recognition.

The Arts teachers are incredibly special to our instructional program since they each impact child in the school. By serving as the sole providers of their particular content area within the school, they are tasked with instilling an enthusiasm and appreciation for the arts to over 500 students. This requires a well-furnished, inviting and spacious teaching environment.

Art:
In the Fine Art classes, all learning is project-based and student-centered. Students build their technical and observational skills, deepen their understanding of artistic styles, and learn that every person is an artist. They increase their confidence through creativity, curiosity and self-reflection. Throughout the program, students develop a deeper understanding of the Elements of Art and the Principles of Design. Students are not graded on artistic ability, but rather on effort and craftsmanship. Students create projects to demonstrate their understanding of foreground/background, silhouettes, perspective, printmaking, and mandalas. Students work both individually and collaboratively as they develop skill and confidence.

Music/Chorus/Band:
In Music, Chorus and Band classes, students learn about music theory and history while developing their skills as a musician and a performer. Above all else, students learn about themselves and their individual responsibility as a member of a team. Students are taught a range of musical concepts including rhythm, tonality, expression, composition, musical form, improvisation, and music's impact on culture around the world.

Theater:
The Drama curriculum increases language development, analytical skills, social skills, collaboration and team building fluency, articulation, self-confidence and problem solving. Students develop their voice and ways of expressing their voice to achieve a goal. Working cooperatively, students recognize their contributions to a greater community both within their classroom and globally. The primary objective of the middle school Drama program is to teach students basic techniques through guided, creative, play so they can begin to feel more confident using their voice to express ideas on stage and with practical applications in life as

they move on to high school. Students are introduced to a wide variety of concepts including stage basics, theater etiquette, the evolution of storytelling, non-verbal communication, choral poetry, focus and concentration, improvisation and perspective.

The Arts classrooms are not integrated with the rest of the school. They are virtually hidden and segregated from the rest of the instruction that takes place in the school. The rooms lack the appropriate resources to teach the curriculum beyond the basics. For example, the Fine Arts classroom lacks a kiln, even though another middle school has one.

The current Fuller Middle School has a dedicated auditorium that is used regularly for school plays and concerts, school-wide assemblies, and community forums and events. While the auditorium is out-of-date, it is a space that has come to be depended upon by both the school itself and the greater Framingham community.

Proposed:

Fuller Middle School is ready to embrace its identity as a true STEAM school by incorporating the arts into its project-based, student-centered learning. Whether through the study of instrument design, building of sets, the mathematics behind music, or the impact of sound waves on music, the arts will be a focal point of the Fuller Middle School instructional program. We wholeheartedly believe adequate space should be included in the design of the new facility to achieve this goal to its fullest potential. In any building design, it will be imperative that students are provided multiple venues to display and exhibit their art and academic work.

Fuller Middle School will serve its students best with the following spaces, which should be centrally located near the commons/cafetorium for maximum visibility:

- One large Art classroom with large workspaces, plenty of storage, and a kiln to align with another middle school
- One Band classroom with an additional small practice room for individual or small-group rehearsal
- One Chorus classroom with an additional small practice room for individual or small-group rehearsal
- One Theater classroom for Drama instruction and after-school play rehearsals.

In considering the inclusion of a dedicated auditorium in the new facility, we are reviewing options that will allow us to continue to provide the same opportunities and access so the school and district can support the performing arts programs at Fuller Middle School as well as the needs of the greater community.

Health and Physical Education Programs

Current:

The Framingham Public Schools recognizes the importance of providing a high-quality and comprehensive Health and Physical Education curriculum to all students. The district's Physical Education program is carefully crafted to be an enjoyable, productive, and beneficial experience for students of all skill levels. Teachers establish an environment that is safe, welcoming, and energetic so students are able to practice important life skills including teamwork, cooperation, problem solving, and process orientation. The goal is to help all students identify activities they enjoy so they will lead a healthy and active lifestyle. The Health curriculum promotes wellness, positive attitudes, communication skills, healthy behaviors, and decision-making skills. Building off the curriculum from earlier grades, students learn how good health can impact all areas of growth, development and lifestyle. Our middle school program meets or exceeds all National Health Education Standards including the Massachusetts Curriculum Frameworks, with the goal of empowering students to be critical thinkers when it comes to decisions regarding their personal behavior.

Fuller Middle School provides outdoor recreational space in the area surrounding the building. This includes a large football/soccer field, a small lacrosse field and an adult-sized softball field. These fields are used for instructional purposes during Physical Education classes as well as recreational areas during school recess. The fields are used by the Framingham community for athletic practices and sporting events throughout the warmer seasons.

Proposed:

There are no proposed changes to the Health and Physical Education program at Fuller Middle School.

The Health and Physical Education program at Fuller Middle School requires:

- a spacious and welcoming Health classroom where students can move around, engage in dialogue with one another, explore topics and interact with physical models;
- a full-sized gymnasium with adequate storage so students can regularly engage in cooperative, physical activities
- Two separate locker rooms (Boys/Girls), each with enough space to secure the belongings of approximately 40 students at any given time
- a gender-neutral changing room accessible to anyone, with a shower and space to secure the belongings of approximately 5 individuals at any given time
- Two small offices located outside the gymnasium for the Physical Education teachers where they can plan lessons, store additional equipment and meet with students

Since the athletic fields and green space are used not only by the students during the school day, but also by the Framingham community as a recreational outlet, it is vital to the school and

district that the outdoor facilities are not compromised by a new school facility. Therefore, the educational program supports the preservation of all athletic fields and green space whenever possible. For any field or green space that is impacted by the construction of the new Fuller Middle School, the educational program supports the relocation of such space to another area of the school property upon completion of the project.

Special Education Programs

Current:

Framingham Public Schools provides a broad array of services for children and youth identified with disabilities from the ages of three through twenty-two. State and federal special education laws and regulations, namely The Individuals with Disabilities Education Act (IDEA), govern the referral, evaluation and placement procedures. Framingham Public Schools is committed to the goal of providing an appropriate education for students with needs in the least restrictive environment.

- Resource Room/In-Class Support
- Partial Inclusion Opportunities
- Occupational Therapy
- Speech and Language Therapy
- Physical Therapy
- Adaptive Physical Education
- BCBA/ABA Services
- Teacher of the Visually Impaired
- Orientation and Mobility

The inclusion classroom consists of a certified special educator who rotates through the student's schedule in order to ensure that the student on an Individualized Educational Program (IEP) understands the curriculum and is meeting his/her responsibilities. Individual and small group assistance is provided within the standard curriculum classroom. In addition, the student has a daily support class with their special educator on their team. The special educator provides consultation to standard curriculum teachers regarding student's learning style and educational needs. The special educator and teacher assistant ensure that accommodations are being implemented in the standard curriculum classroom.

In addition to our inclusion model, Fuller Middle School houses 2 special education substantially separate programs:

- This program serves students who have significant intellectual and learning challenges. Some students in the program have significant weaknesses in the areas of social skills activities of daily living. The program focuses on functional life skills and knowledge about community, in order to function as independently as possible. Other students in the program have excellent social skills and benefit from a more traditional academic curriculum, with the academic curriculum provided in a slower rate. This program has the capacity to work with both types of students, as we offer both a functional life skills curriculum and a curriculum, which mirrors the standard curriculum. Students are grouped into multi-grade classes according to ability levels. There is a three-year curriculum sequence. Students receive academic instruction in language arts, reading, math, science, and social studies. Students also take an academic support class for review and reinforcement of academic

content. Students receive all academic instruction from certified special educators. Students take different subjects with different special education teachers, so they have the middle school experience of moving from class to class. Students who are in the functional life skills group participate in a vocational program. Performing various jobs around the building (e.g., delivering newspapers, emptying recycling bins) helps them to develop greater independence and provides opportunity for hands on, practical learning. Students in this program run a café that is open on selected Fridays throughout the school year.

- : The program serves students on the Autism Spectrum who require more social-pragmatic, academic, and behavioral support. The programs provide intensive behavioral training relying upon ABA principles and total communication techniques in order to develop social skills and academic readiness skills. The program blends social/developmental as well as behavioral approaches whenever possible to address the educational challenges faced by this population of students. In addition to the special education teacher and teacher assistant, there is a teacher aide in the classroom.

The program for students with intellectual impairments requires:

- 4 classrooms (12 students maximum in each classroom)
- Multigrade groupings (grades 6-8)
- Functional/life skills component with access to a garden/courtyard and student kitchen area

The program for students with Autism requires:

- 1 classroom (12 students maximum)
- Multigrade groupings (grades 6-8)
- Quiet spaces in order to provide discrete trial teaching methodologies

Bilingual special education services are provided to students at Fuller Middle School who need both special education services and instructional support for English Learners. Students have access to related services such as speech-language services. The bilingual special educator is fluent in Spanish or Portuguese and can provide native language support to students whose first language is Spanish or Portuguese. The bilingual special educator teaches special education classes in core curriculum subjects and provides consultation to other teachers regarding the student's educational needs. Bilingual speech and language therapists are available to provide native language support to students whose first language is Spanish or Portuguese.

<u>Proposed:</u>

In addition to our current needs, the new facility should provide room for an additional Autism classroom based on enrollment at the elementary schools, resulting in 2 classrooms for the Autism program.

Since the proposed plan for the new or renovated Fuller Middle School fully integrates our special education programs within the greater school community, it will be important to provide the necessary office and instructional space within each neighborhood to support these needs. Specialists, including our two Speech and Language Pathologists and Literacy Specialist, will

each require a small classroom equivalent in size to a conference room in order to work with up to 8 students at a time. Each special educator shall require a desk with sufficient storage to secure required documents (including Individualized Educational Programs). These desks should be located in teacher planning rooms (pairs of teacher desks within small offices) so teachers can conduct meetings or make necessary phone calls while ensuring student confidentiality. Inclusion teachers, while primarily serving as co-teachers, will need access to a breakout space large enough to work with a group of up to 12 students at any given time.

Regarding the configuration of the special education classrooms, the spaces should be the same size as the standard classrooms, especially because some of the students may have physical limitations and be in wheelchairs or have other equipment needs. The furniture should be moveable to provide flexible classroom space for both of the substantially separate programs. Additionally, each room should be furnished with a variety of seating, such as sensory cushion seats and standing desks.

Adaptive Physical Education in all Framingham schools occurs in the same space as Physical Education classes. Framingham has one Adaptive PE teacher for the district who provides the adaptive needs in the classroom for the students and works closely with the PE teachers, guiding them on how to adapt their lessons and activities so that all students can access them in some way.

The gymnasium has been sized at 6,500 sf to allow safe run-off areas and space for adaptive PE teachers on the sidelines. The project is targeting the LEED credit for advanced acoustic performance, which will meet sound transmission class (STC) requirements of ANSI S12.60–2010 Part 1.

Framingham currently has a contract with the Learning Center for the Deaf to assist with appropriate equipment, (hearing aids and FM systems) and other acoustical accommodations for the classrooms and schools. It is currently anticipated that assisted listening technology will be hardwired into the sound system of the auditorium, Gymnasium, and Cafeteria, and portable FM systems will be available for classrooms as needed. Additionally, it is anticipated that some sound assist amplification will be provided in each classroom. This approach will be reviewed and confirmed in Design Development.

Since some of the students require lifting for toileting, a bathroom outfitted with a Hoyer lift to assist in the safety of the staff and students would be ideal.

The substantially separate classrooms have multiple grade levels in each group, therefore it is essential that the classrooms be centralized so that they have equitable access to the 6th, 7th and 8th grade teams.

Additional considerations:

- Acoustics will be important for hearing impaired students
- Lighting and reduction of glare from windows will help students with vision impairments
- Any outdoor learning space will need to be handicap accessible
- Classrooms should be flexible (collapsible walls) so they can be reconfigured into smaller learning spaces to meet the instructional needs of the students

Vocational Education programs

Current:

Fuller Middle School staff understand that, although their students are as young as 11 years old, the conversation about college and career begins now. Educators have regular conversations with students about college options, including an annual College Door contest, in which homerooms decorate their doors with a college banners. During the month of October, discussions take place during WIN blocks where students have opportunities to explore colleges and careers, learn about financing for college, and academic goals for college and career readiness. Furthermore, the entrance to every classroom displays a sign with the teacher's name and alma mater and every Friday, staff wear gear from their alma mater. In the spring, 8th grade students visit Framingham State University to tour the school and learn a little about college life. By raising students' awareness of college options, we are opening their eyes to the possibilities and motivating them to achieve academic success.

Proposed:

Fuller Middle School intends to continue its current vocational education programs while expanding opportunities for students to visit colleges, shadow professionals on the job, and establish long-term goals.

As Fuller Middle School expands its STEAM program, this increases the potential for discussions about students' interests and career possibilities. The very nature of inquiry- and project-based learning lends itself to identifying areas of passion for individual students and can provide teachers with the necessary information to open students' eyes to possible vocations.

Transportation Policies

Students in kindergarten through 6th grade who currently live more than two miles from their assigned school will be provided transportation at no charge by the Framingham Public Schools. Students are considered ineligible for bus transportation if they are in kindergarten through 6th grade and live less than 2 miles from their assigned school. Additionally, all students in Grades 7 through 12 are considered ineligible riders. The Framingham Public Schools may offer ineligible students the ability to purchase a seat, if available, on a District bus, for a fee.

Functional and Spatial Relationships and Key Adjacencies

Current:

The current facility's entrance leads into a large hallway, but visitors must turn left and head down a corridor to reach the main office. The main office itself is open and full of positive activity, but it is outdated and lacks natural lighting. Here, one will find the offices of the Principal and Vice Principal, as well as guidance and support staff. There are also two conference rooms. The smaller of these two rooms is connected to the Principal's office.

The library is next to the main office, with easy access for visitors. This is significant since the library is regularly used in the evenings as a community meeting space.

The school's cafeteria and gymnasium are located in remote corners of the building, out of sight of anyone not heading towards these spaces.

For the most part, classrooms are contained in traditional hallway patterns, but it should be noted that Technology Education classes are taught out of a standard classroom.

The MakerSpace is currently housed in the former wood shop classroom. The space contains mostly woodworking equipment (table saws, drill press, planers, etc) and some robotics equipment. While the MakerSpace is available to all teachers, it is primarily used by the Technology Education teacher.

Proposed:

The entrance to Fuller Middle School should be welcoming of students, staff, families and visitors. The principal, vice-principal and secretarial staff should be located in this area. In addition, the main office area should include both large and small conference rooms for meetings, since the conference rooms in the existing building are in constant use.

Each grade level will have its own learning community, designated by a "neighborhood" of the building. Each wing will be composed of classrooms, science classrooms, special education classrooms, ESL classrooms, teacher planning rooms, breakout rooms, and a cohort common. Teachers work in cross-discipline teams and will need to the time and space to collaborate with each other and co-teach lessons in varied learning environments. In addition, each wing will have a "satellite" administrative suite consisting of four offices: two for support staff, one for a department head and one for an instructional coach. This suite will also provide access to a waiting area with storage closet, and a small conference space.

Across the district, we are seeing a significant rise in the social and emotional needs of students. Children require access to support staff with whom they feel comfortable and have developed a relationship. By moving guidance counselors and other support staff into "satellite" administrative suites closer to classrooms, support staff will be more visible to the students,

increasing their familiarity with these adults. By establishing stronger connections and increasing opportunities for staff to get to know students, staff can be proactive in addressing individual needs. This also heightens the level of accountability of students and supports them in building their confidence and self-advocacy skills. Additionally, out-of-class time will be reduced by the closer proximity of the offices, which will ensure instructional time is preserved as much as possible.

Essential to the design of the new Fuller Middle School is flexibility in the use of space. Classrooms with movable walls; breakout spaces and common areas of various sizes; a cafeteria that serves as a learning, demonstration and collaboration center all day long; reliable internet access throughout the building; and creative spaces for hands-on and interactive learning (MakerSpace, FabLab, Arts rooms) are critical components to our STEAM school.

Central to this plan is a community gathering space where works in progress can be displayed, students can present their projects, and groups of students can be seen learning and exploring together. The cafetorium will serve this purpose, ensuring productive use of this large space throughout the day. The Library/Media Center should be adjacent, with a large opening into the cafetorium to expand the learning space for this center. Grade-level neighborhoods should surround this central common area, making it the heart and hub of all teaching and learning.

Security and Visual Access Requirements

Current:

The exterior doors of Fuller Middle School are locked while school is in session. Staff members use an electronic pass to access the building. Visitors must buzz the main office to request entrance to the building. A sign is posted telling visitors to report to the main office, but since there is no sight line from the main office to the entrance, it is difficult to monitor such traffic.

The current facility is equipped with video cameras, security alarms and a two-way communication system so staff are able to contact the main office in an emergency.

Fuller Middle School staff adhere to all safety protocols as required by the city and the district, and follow a strict emergency response plan created specifically for the existing Fuller Middle School.

Proposed:

Safety is of our utmost concern and must be a high priority consideration in the design of a new or renovated Fuller Middle School. By preventing the distractions posed by safety and security issues, students and staff will be able to focus their attention on the real purpose of Fuller Middle School: teaching and learning.

Visibility should be optimized, with as few pockets or hidden corners as possible, in order to properly supervise students and visitors at all times. While it is likely visibility will be enhanced by the use of glass windows instead of walls in some cases, all internal and external windows must be equipped with shades that can be drawn quickly in case of emergency.

The school must remain locked during the school day so an electronic access system for staff is essential, as well as a system for visitors to buzz the main office to request entrance to the building. Visibility from the entrance of the school to the main office is necessary to ensure all visitors check in with school personnel before engaging with the greater school community.

All spaces should be equipped with access to two-way communication with the main office in order to ensure security and timely communications. A state-of-the-art security system, including alarms and a surveillance cameras, should be a part of any design.

Adherence to all city and district accessibility, fire, safety and security regulations must be included in the design, and align with district emergency response plans. The Framingham Public School District will continue to work collaboratively with the Framingham Police and Fire Departments on safety and evacuation procedures to ensure the proper security measures are in place. A new Fuller Middle School emergency response plan will be created to align with the new or renovated facility.

Since Fuller Middle School is a community hub that is regularly used at night for a variety of community meetings and school-wide events, and since the building currently houses our Adult

ESL program, appropriate lighting should surround the exterior of the facility to provide a safe path from the parking lots to the school. In addition, careful consideration should be made regarding traffic patterns, entry and egress systems, and lines of sight. Ideally, the new or renovated Fuller Middle School will provide options to secure designated parts of the building while providing the general public with access to specific areas (cafetorium/commons, gymnasium, etc.) during after school and evening events.

Fuller's Guiding Design Principles and the District Strategic Plan, Revisited

The Educational Program for Fuller Middle School thoughtfully adheres to its Guiding Design Principles in concert with the District's Strategic Plan. The elements of the program that align to each principle and goal are outlined below.

1. Transdisciplinary Instruction

Through project-based, interdisciplinary learning and an active use of the MakerSpace and Fabrication Lab, students and teachers will explore academic content areas through a cross-disciplinary and collaborative model. By engaging students in challenging, real-world problems, students will demonstrate their understanding of concepts through their application of skills on projects.

2. Personalized and Collaborative Learning

Through flexible grouping and the use of breakout spaces and common areas, students will interact with adults and students in a variety of settings. By selecting individual projects that match their interests and needs, students will begin to take charge of their own learning by asking questions and engaging in the engineering design process. Staff will continue to meet regularly with their grade-level teams to review student data and identify appropriate interventions.

3. Whole Child, Whole Community

Fuller Middle School has regular, built-in instructional time to address social-emotional curriculum and school-wide expectations with all students through the What I Need (WIN) block. In the new or renovated building, students will have greater access to support staff since these adults will be housed in auxiliary suites within each grade-level neighborhood. By creating smaller neighborhoods within the school, students and staff will truly get to know each other and develop strong interpersonal relationships. This model also promotes collegiality and a sense of belonging.

4. Visible Learning

The new or renovated Fuller Middle School will embrace collaboration and the growth mindset. Through presentations, demonstrations, display of works-in-progress, academic discourse and student collaboration, students and staff will be surrounded by evidence of learning in action. By providing large windows and access to an outdoor space, learning will extend beyond the walls of the classroom and school.

5. Community and Civic Hub

The new or renovated Fuller Middle School will become the crowning jewel for South Framingham. The community depends on the current facility as a central location for meetings, adult learning, school productions and recreational activities. For this reason, the new facility will be a symbol of the city's commitment to the neighborhood and provide a welcoming hub for civic activity.

6. Adaptability

The new or renovated facility is an investment in both the future of our students as well as the greater Framingham community. This building will need to stand the test of time, which is only possible if the space is adaptable enough to meet the city's future needs. Given the rapid rate at which the world continues to evolve, the new Fuller Middle School design will meet this challenge by providing the flexibility to reallocate space based on instructional needs.

Summary: Fuller's Educational Program and Preferred Design

The new Fuller Middle School must support the Guiding Principles as outlined in this Educational Program in order to fulfill the needs of our students and community. The preferred design thoughtfully and thoroughly meets these principles as outlined below:

1. Transdisciplinary Instruction

Collaboration among content teachers and integration of subjects are supported by the preferred design. The MakerSpace, Fabrication Lab, Cohort Commons, and larger Commons (cafeteria) promote and encourage transdisciplinary learning by their very nature. They are shared spaces that invite inquiry, exploration, research and discovery. Since partitions between classrooms are removable, the merging of classes for shared experiences and project-based learning will be easily facilitated. Furthermore, the integration of the science labs within each neighborhood cohort, rather than being grouped together in a separate wing, ensures the science classes are part of this interdisciplinary model as well. While the staff of Fuller Middle School has worked collaboratively with a consultant in its transition to a STEAM school up to the present time, the Framingham Public Schools has demonstrated its commitment to transdisciplinary learning by adding to its budget for fiscal year 2019 a STEAM coach to support further development and implementation of transdisciplinary units of instruction and other project-based learning opportunities. Through this additional position, staff will be well-trained, experienced and confident in this instructional model prior to the opening of the new building.

2. Personalized and Collaborative Learning

The preferred design not only supports personalized and collaborative learning, it encourages it. The Cohort Commons, larger Commons (cafeteria), removable classroom walls, and breakout spaces invite students and teachers to expand their classroom beyond its four basic walls. By situating the Library Media Center adjacent to the larger Commons, learning spills out into the larger space, thus promoting greater collaboration. By including a Maker Space and Fabrication Lab, the new Fuller Middle School promotes project-based learning. With the support of the new STEAM coach, teachers will offer choice and voice through project-based instruction whenever appropriate. At all times, students will be expected to reflect on their progress and learning by engaging in the engineering design process.

The preferred design also makes it easier for staff to collaborate. Rather than having a desk in their own classroom as their work space, teachers will share an office with another staff member. This promotes conversation, collaboration, and a team mindset. Larger teacher workspaces will be stationed in each cohort, adjacent to the offices of the department heads and support staff, for team meetings and other collaborations. Staff will continue to meet regularly with their grade-level teams to review student data and identify appropriate interventions. All of the practices will promote a shared responsibility for all students, and for all aspects of a child's education.

3. Whole Child, Whole Community

The new Fuller Middle School will make it easier for all staff, but especially support personnel, to develop positive relationships with students. In the preferred design, support personnel have offices directly located within the auxiliary suites of each cohort neighborhood, and not in the main office at the front of the building, thus providing students and staff with greater access to these staff members. Support staff will be closer to the students on their caseload and will be able to engage with students not only when they are receiving services but during those informal moments between classes, at locker time and before homeroom. In this way, support staff will be able to get to know their students better so they can more proactively address concerns.

4. Visible Learning

The preferred design embodies the growth mindset and visible learning. All aspects of the selected model promote opportunities for students to share their learning with others--not just at the final stage of the project, but throughout the learning process. From breakout spaces to Cohort Commons, from removable classroom walls to the use of glass to promote visible learning, students will be able to share what they are doing with their peers as well as teachers. Furthermore, by providing access to outdoor spaces, learning will extend beyond the walls of the classroom and school. In this way, visible learning will also extend to the greater Framingham community.

5. Community and Civic Hub

The preferred design carefully addresses the needs of the community. By including a fully-equipped auditorium and larger gymnasium, the Framingham community will be able to use this facility in the way it needs: for athletic clubs all year long, for community meetings, for concerts and other performances, and for civic engagement.

6. Adaptability

The preferred design addresses the needs of the current educational program without being risky in its layout. By including traditional features including standard classrooms, fully-functioning cafeteria, upgraded technology, and state-of-the-art science laboratories, we have ensured the selected model meets current guidelines while preparing us for the future through its flexible floorplan.

Resources

For more information:

Project-Based Learning

https://www.bie.org/about/what_pbl -- Buck Institute for Education; one-page summary of project-based learning with tabs to additional information

http://www.nea.org/tools/16963.htm -- National Educators Association; Links to Research-Based Resources

https://www.edutopia.org/project-based-learning-experts -- Edutopia: Project-Based Learning: What Experts Say

http://www.ascd.org/publications/educational_leadership/sept10/vol68/num01/Seven_Essentials_for_Project-Based_Learning.aspx -- Educational Leadership (ASCD); Includes an explanation of the essential components of a project-based learning experience

STEAM

https://www.ed.gov/stem -- While focused primarily on STEM education, this site highlights the importance of improving STEM education in our schools

https://www.edutopia.org/blog/pbl-and-steam-natural-fit-andrew-miller -- This article makes the connection between STEAM and Project-Based Learning

https://www.edutopia.org/article/STEAM-resources -- Links to resources that discuss how the arts and humanities are incorporated into STEM programming

21st Century Skills

https://www.brookings.edu/blog/education-plus-development/2017/10/17/how-do-we-teach-21st-century-skills-in-classrooms/ -- Research from the Brookings Institute

https://www.edutopia.org/discussion/15-characteristics-21st-century-teacher -- Emphasizes the shift in instructional strategies to teach 21st Century skills

http://www.nea.org/assets/docs/A-Guide-to-Four-Cs.pdf -- Comprehensive report on 21st Century learning

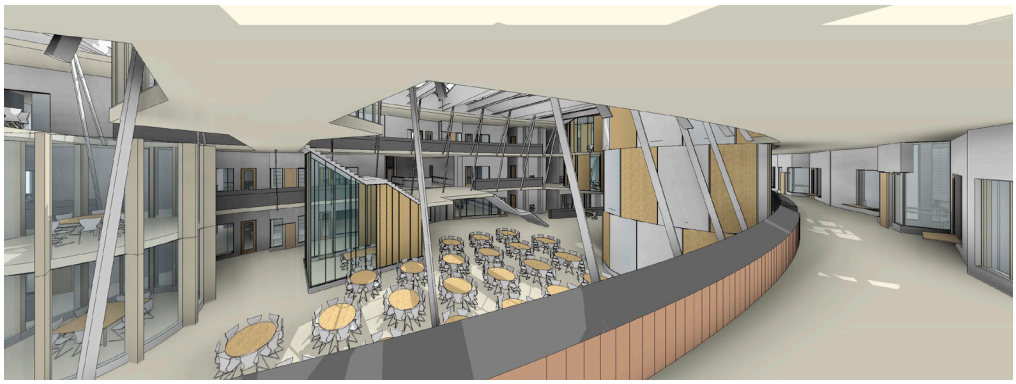
2. Final Design Program

2.1 Architectural Characteristics

The layout of the new Fuller Middle School follows from the building block of the paired classrooms. Each pair of classrooms is composed of two 28-foot-wide by 32-foot-deep structural modules. The larger sized science classrooms are achieved by extruding the depth of the classroom bay. The corridor balconies in front of the classrooms vary in width in order to allow for students to gather before and after class at the classroom doors, and to provide improved visibility to and from the glass enclosed teacher preparation offices.

Typical Science Classroom with expanded depth of classroom bay..

Typical Classroom bay with shared Teacher Planning Room - view from corridor side



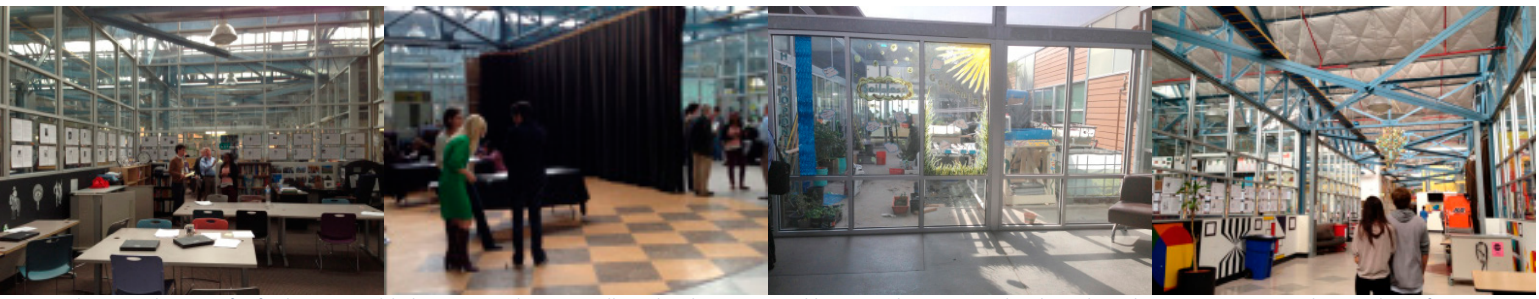
View of Classroom corridor with gathering areas at classroom entries and views to Learning Common, Breakout areas and other floors.

View of corridor balconies with structural tension straps, communicating stairs, and Breakout areas

Two curved classroom wings surround the central multi height Learning Commons space. The bars face each other in order to facilitate connections between teachers and students and to consolidate the classrooms into clusters representing the cohorts. The plans provide for 3 cohorts – one at each floor level, with grade 8 starting on the ground-floor and working upwards to grade 6 at the third level.

Each level's corridor balconies terminate in a shared cohort commons collaboration space which overlooks the main learning commons-making visible the excitement of ongoing works-in-progress and student collaboration. Satellite administration and glass-enclosed science classrooms are co-located with these cohort balconies

The learning community is also enhanced by the visible presence of teacher preparation spaces and breakout spaces. This type of transparency and interconnectedness has its precedent in the widely acknowledged success of other STEM facilities such as those in Scituate, in San Diego at the High Tech High campuses and in the architect's own design for the Dearborn school in Boston (for which the Fuller's school principal, Dr. Jose Duarte also served during design).



Architectural means for facilitating visible learning at the new Fuller school was inspired by precedent STEM schools such as those in San Diego (above). These feature large amounts of glass, multi-functional open space and extensive public display and exhibit areas for student work and ongoing projects.

The main central administration area and welcome center are located directly adjacent to the main entry on the second floor in a separate wing. The building service elements such as its kitchen, and central custodial areas are located below, in the basement of the administrative area. Service access to these areas is tucked in area ways out of sight of the entrance.

The smaller shared spaces such as music, art, fabrication, (both digital and conventional), media center, and physical education radiate around the large common spaces at level 1 to create the multi-functional flexible 'learning commons'. This configuration will facilitate a wide variety of educationally directed combinations of collaborative use between and among these shared spaces.
The structure of the building will be of conventional steel with composite decks exposed to allow for increased ceiling heights for daylighting. At the learning commons, the corridor balconies are

Level 1 - central Learning Commons surrounded by academic spaces.

Main central administration area and welcome center are set forward in a separate single story above grade pavilion.

suspended by tension straps from the roof girders in order to allow for maximal flexibility at the ground-floor level.

For the exterior, carrying forward the criteria of blending successfully into the surrounding neighborhood, the architectural team has explored the use of a combination of brick masonry and and artificial wood trim such as Trespa

.

Fenestration patterns are derived from the team's previous experience with daylighting to almost fully offset the cost of artificial light during the school day.

The several exterior elevations will be differentiated by sun shading devices, which are specialized for the two correctly angled solar orientations, North and South. Material alternatives for the construction of the sun shading elements will be studied during design development, according to a value-based analysis. It is the intention of the team to justify the initial cost of the sun shading and daylighting elevational features through energy saving over the life span of the building.

Rear 3-D view. Exterior brick masonry, Trespa trim, and fenestration patterns.

2.2 Space Summary

Please see the attached space analyses:

- Space Summary (signed, (2) copies) and narrative
- space measurement analysis

The Designer verifies these analyses are accurate.

Proposed Space Summary - Middle Schools

Date: 9/12/2018 Schematic Design Submittal

FULLER Middle School 630 Students Grades 6-8	Existing Conditions			PROPOSED									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
				Existing to Remain/Renovated			New			Total						
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**31,685**			**0**			**36,000**			**36,000**			**29,580**	
(List classrooms of different sizes separately)																
Classroom - General	775	20	15,500				900	21	18,900	900	21	18,900	950	22	20,900	850 SF min - 950 SF max
ELL Classrooms	675	9	6,075				900	6	5,400	900	6	5,400				
Teacher Planning	0	0	0				90	15	1,350	90	15	1,350				Shared between classrooms
Classroom Breakout	0	0	0				290	7	2,030	290	7	2,030				Shared between classrooms. Includes SPED use
Small Group Seminar (20-30 seats) / Resource	0	0	0				400	1	400	400	1	400	500	2	1,000	Professional Development/ Itinerant / Workspace. Some uses served in Admin "Teachers Work Rooms"
Science Classroom / Lab	915	10	9,150				1,195	6	7,170	1,195	6	7,170	1,200	6	7,200	
Prep Room	240	4	960				80	6	480	80	6	480	80	6	480	
Science Teacher Planning	0	0	0				90	3	270	90	3	270				Shared between classrooms
SPECIAL EDUCATION			**10,875**			**0**			**9,150**			**9,150**			**7,550**	
(List classrooms of different sizes separately)																
Self-Contained SPED	930	5	4,650				900	6	5,400	900	6	5,400	950	5	4,750	assumed 8% of pop. in self-contained SPED
SPED Teacher Planning	0	0	0				90	3	270	90	3	270				Dedicated to SPED classrooms
SPED Classroom Breakout	620	7	4,340				300	2	600	300	2	600				Shared between classrooms. SPED use also in Gen Classroom Breakout
Self-Contained SPED Toilet	0	0	0				95	3	285	95	3	285	60	5	300	For medically fragile students
Resource Room	935	1	935				520	3	1,560	520	3	1,560	500	3	1,500	Should be divisible
Small Group Room / Reading	0	0	0				345	3	1,035	345	3	1,035	500	2	1,000	Allows division into 2 smaller spaces
SPED Office w/Storage	190	5	950				0	0	0	0	0	0				
ART & MUSIC			**5,620**			**0**			**3,675**			**3,675**			**3,250**	
Art Classroom	600	2	1,200				1,185	1	1,185	1,185	1	1,185	1,200	1	1,200	assumed use - 50% population 2 times / week
Art Workroom w/ Storage & kiln	0	0	0				150	1	150	150	1	150	150	1	150	
Band / Chorus - 100 seats	2,120	2	4,240				970	2	1,940	970	2	1,940	1,500	1	1,500	To accommodate 60 to 70 students, Includes Teacher Planning space
Music Practice / Ensemble	60	3	180				200	2	400	200	2	400	200	2	400	
VOCATIONS & TECHNOLOGY			**3,350**			**0**			**3,170**			**3,170**			**6,400**	Distributed V&T in Cohort Commons
Tech Clrm. - (E.G. Drafting, Business)	1,660	1	1,660				950	0	0	950	0	0	1,200	2	2,400	Functions to be served in Fab Lab
Tech Shop - (E.G. Consumer, Wood)	1,690	1	1,690				1,980	1	1,980	1,980	1	1,980	2,000	2	4,000	Assumed use - 25% Population - 5 times/week
Fab Lab	0	0	0				1,190	1	1,190	1,190	1	1,190				Includes closed off area for 3D printers
HEALTH & PHYSICAL EDUCATION			**24,265**			**0**			**9,985**			**9,985**			**8,400**	
Gymnasium	9,680	1	9,680				8,300	1	8,300	8,300	1	8,300	6,000	1	6,000	Gym enlarged to fit 2 MS BB Courts
Gym Storeroom	260	2	520				300	1	300	300	1	300	150	1	150	
Health Instructor's Office w/ Shower & Toilet	685	3	2,055				150	2	300	150	2	300	250	1	250	PE instructor - no shower or toilet
Locker Rooms - Boys / Girls w/ Toilets	3,500	2	7,000				500	2	1,000	500	2	1,000	1,000	2	2,000	3 Shower, 1 toilet, 25 lockers
Unisex Toilet / Shower	140	1	140				85	1	85	85	1	85				Include 4 lockers
Fitness Center	4,870	1	4,870													
MEDIA CENTER			**3,720**			**0**			**6,280**			**6,280**			**4,003**	
Media Center / Reading Room	3,720	1	3,720				1,990	1	1,990	1,990	1	1,990	4,003	1	4,003	
Cohort Commons	0	0	0				1,430	3	4,290	1,430	3	4,290				Distributed Media Center and Vocations and Technology functions
DINING & FOOD SERVICE			**13,740**			**0**			**8,960**			**8,960**			**8,922**	
Cafetorium / Dining	8,570	1	8,570				4,725	1	4,725	4,725	1	4,725	4,725	1	4,725	2 seatings - 15SF per seat
Stage	0	0	0				1,590	1	1,590	1,590	1	1,590	1,600	1	1,600	
Chair / Table / Equipment Storage	440	1	440				430	1	430	430	1	430	410	1	410	
Kitchen	3,485	1	3,485				1,915	1	1,915	1,915	1	1,915	1,930	1	1,930	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	1,245	1	1,245				300	1	300	300	1	300	258	1	258	Allows teacher collaboration
MEDICAL			**1,560**			**0**			**610**			**610**			**610**	
Medical Suite Toilet	50	3	150				60	1	60	60	1	60	60	1	60	
Nurses' Office / Waiting Room	930	1	930				250	1	250	250	1	250	250	1	250	
Examination Room / Resting	160	3	480				100	3	300	100	3	300	100	3	300	
ADMINISTRATION & GUIDANCE			**4,600**			**0**			**5,250**			**5,250**			**3,430**	
General Office / Waiting Room / Toilet	1,540	1	1,540				425	1	425	425	1	425	415	1	415	
Teachers' Mail and Time Room	100	1	100				95	1	95	95	1	95	100	1	100	
Duplicating Room	130	1	130				200	1	200	200	1	200	200	1	200	
Records Room	90	1	90				200	1	200	200	1	200	200	1	200	
Principal's Office w/ Conference Area	560	1	560				375	1	375	375	1	375	375	1	375	
Principal's Secretary / Waiting	80	1	80				125	1	125	125	1	125	125	1	125	
Assistant Principal's Office - AP1	110	1	110				150	1	150	150	1	150	150	1	150	
Assistant Principal's Office - AP2	0	0	0				150	0	0	150	0	0	150	1	150	
Supervisory / Spare Office	170	1	170				150	1	150	150	1	150	150	1	150	
Conference Room	310	1	310				350	1	350	350	1	350	350	1	350	
Small Conference Room	0	0	0				210	1	210	210	1	210				For parent meetings
Guidance Office (Student Support)	170	8	1,360				150	6	900	150	6	900	150	4	600	Distributed 2 per cohort
Guidance Waiting Room W/ Sto Closet	0	0	0				75	3	225	75	3	225	100	1	100	Distributed 1 per cohort
Guidance Storeroom	60	1	60				15	3	45	15	3	45	50	1	50	Distributed 1 per cohort
Teachers' Work Room			0				300	3	900	300	3	900	465	1	465	Distributed 1 per cohort. Serves uses of removed Small Seminar Rooms

Version
10.30.2017

Proposed Space Summary - Middle Schools

Date: 9/12/2018 Schematic Design Submittal

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				Existing to Remain/Renovated			New			Total						
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
Dept Head / Coach offices	90	1	90				150	6	900	150	6	900				Distributed 2 per cohort
CUSTODIAL & MAINTENANCE			**3,515**			**0**			**2,140**			**2,140**			**2,105**	
Custodian's Office	100	1	100				165	1	165	165	1	165	150	1	150	
Custodian's Workshop	250	1	250				250	1	250	250	1	250	250	1	250	
Custodian's Storage	105	9	945				130	3	390	130	3	390	375	1	375	
Recycling Room / Trash	0	0	0				400	1	400	400	1	400	400	1	400	
Receiving and General Supply	220	1	220				310	1	310	310	1	310	310	1	310	
Storeroom	1,240	1	1,240				145	3	435	145	3	435	420	1	420	
Network / Telecom Room	380	2	760				190	1	190	190	1	190	200	1	200	Includes head end and IDF rooms
OTHER			**27,670**			**0**			**6,700**			**6,700**			**0**	
Other *(specify)*																
Adult ESL Offices	2,370	1	2,370				0	0	0	0	0	0				
City Offices, (PIC, Bldg& Grounds, BOH)	17,300	1	17,300													
Auditorium	5,400	1	5,400				4,200	1	4,200	4,200	1	4,200				420 seat auditorium
Stage	1,900	1	1,900				1,600	1	1,600	1,600	1	1,600				
Auditorium Storage	160	1	160				400	1	400	400	1	400				
Dressing Rooms	270	2	540				250	2	500	250	2	500				
Total Building Net Floor Area (NFA)			**130,600**			**0**			**91,920**			**91,920**			**74,250**	
Proposed Student Capacity / Enrollment															**630**	
NON-PROGRAMMED SPACES					% of GFA	**0**		% of GFA	**44,870**		% of GFA	**44,870**				
Other Occupied Rooms (list separately)					#DIV/0!			0%			0%					Non-Programmed space areas are
					#DIV/0!			0%			0%					required to be included in the
					#DIV/0!			0%			0%					following submittals:
					#DIV/0!			0%			0%					Schematic Design Submittal
Unoccupied MEP/FP Spaces					#DIV/0!			1%	1,685		0%					Design Development Submittal
Unoccupied Closets, Supply Rooms & Storage Rooms					#DIV/0!			0%	235		0%	235				60% Construction Documents
Toilet Rooms					#DIV/0!			3%	3,560		3%	3,560				90% Construction Documents
Circulation (corridors, stairs, ramps & elevators)					#DIV/0!			25%	34,175		25%	34,175				Final Construction Documents
Remaining[3]					#DIV/0!	**0**		4%	**5,215**		5%	**6,900**				
Total Building Gross Floor Area (GFA)[2]			195,900			**0**			**136,790**			**136,790**			**107,280**	
Grossing factor (GFA/NFA)			**1.50**			**#DIV/0!**			**1.49**			**1.49**			**1.44**	

[1] **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.

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

[3] **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: Jonathan Levi Architects

Name of Principal Architect: Jonathan Levi

Signature of Principal Architect:

Date: 9/6/18

Proposed Space Summary - Middle Schools

Date: 9/12/2018 Schematic Design Submittal

FULLER Middle School 630 Students Grades 6-8	Existing Conditions			PROPOSED									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
				Existing to Remain/Renovated			New			Total						
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CORE ACADEMIC SPACES			**31,685**			**0**			**36,000**			**36,000**			**29,580**	
(List classrooms of different sizes separately)																
Classroom - General	775	20	15,500				900	21	18,900	900	21	18,900	950	22	20,900	850 SF min - 950 SF max
ELL Classrooms	675	9	6,075				900	6	5,400	900	6	5,400				
Teacher Planning	0	0	0				90	15	1,350	90	15	1,350				Shared between classrooms
Classroom Breakout	0	0	0				290	7	2,030	290	7	2,030				Shared between classrooms. Includes SPED use
Small Group Seminar (20-30 seats) / Resource	0	0	0				400	1	400	400	1	400	500	2	1,000	Professional Development/ Itinerant / Workspace. Some uses served in Admin "Teachers Work Rooms"
Science Classroom / Lab	915	10	9,150				1,195	6	7,170	1,195	6	7,170	1,200	6	7,200	
Prep Room	240	4	960				80	6	480	80	6	480	80	6	480	
Science Teacher Planning	0	0	0				90	3	270	90	3	270				Shared between classrooms
SPECIAL EDUCATION			**10,875**			**0**			**9,150**			**9,150**			**7,550**	
(List classrooms of different sizes separately)																
Self-Contained SPED	930	5	4,650				900	6	5,400	900	6	5,400	950	5	4,750	assumed 8% of pop. in self-contained SPED
SPED Teacher Planning	0	0	0				90	3	270	90	3	270				Dedicated to SPED classrooms
SPED Classroom Breakout	620	7	4,340				300	2	600	300	2	600				Shared between classrooms. SPED use also in Gen Classroom Breakout
Self-Contained SPED Toilet	0	0	0				95	3	285	95	3	285	60	5	300	For medically fragile students
Resource Room	935	1	935				520	3	1,560	520	3	1,560	500	3	1,500	Should be divisible
Small Group Room / Reading	0	0	0				345	3	1,035	345	3	1,035	500	2	1,000	Allows division into 2 smaller spaces
SPED Office w/Storage	190	5	950				0	0	0	0	0	0				
ART & MUSIC			**5,620**			**0**			**3,675**			**3,675**			**3,250**	
Art Classroom	600	2	1,200				1,185	1	1,185	1,185	1	1,185	1,200	1	1,200	assumed use - 50% population 2 times / week
Art Workroom w/ Storage & kiln	0	0	0				150	1	150	150	1	150	150	1	150	
Band / Chorus - 100 seats	2,120	2	4,240				970	2	1,940	970	2	1,940	1,500	1	1,500	To accommodate 60 to 70 students, Includes Teacher Planning space
Music Practice / Ensemble	60	3	180				200	2	400	200	2	400	200	2	400	
VOCATIONS & TECHNOLOGY			**3,350**			**0**			**3,170**			**3,170**			**6,400**	Distributed V&T in Cohort Commons
Tech Clrm. - (E.G. Drafting, Business)	1,660	1	1,660				950	0	0	950	0	0	1,200	2	2,400	Functions to be served in Fab Lab
Tech Shop - (E.G. Consumer, Wood)	1,690	1	1,690				1,980	1	1,980	1,980	1	1,980	2,000	2	4,000	Assumed use - 25% Population - 5 times/week
Fab Lab	0	0	0				1,190	1	1,190	1,190	1	1,190				Includes closed off area for 3D printers
HEALTH & PHYSICAL EDUCATION			**24,265**			**0**			**9,985**			**9,985**			**8,400**	
Gymnasium	9,680	1	9,680				8,300	1	8,300	8,300	1	8,300	6,000	1	6,000	Gym enlarged to fit 2 MS BB Courts
Gym Storeroom	260	2	520				300	1	300	300	1	300	150	1	150	
Health Instructor's Office w/ Shower & Toilet	685	3	2,055				150	2	300	150	2	300	250	1	250	PE instructor - no shower or toilet
Locker Rooms - Boys / Girls w/ Toilets	3,500	2	7,000				500	2	1,000	500	2	1,000	1,000	2	2,000	3 Shower, 1 toilet, 25 lockers
Unisex Toilet / Shower	140	1	140				85	1	85	85	1	85				Include 4 lockers
Fitness Center	4,870	1	4,870													
MEDIA CENTER			**3,720**			**0**			**6,280**			**6,280**			**4,003**	
Media Center / Reading Room	3,720	1	3,720				1,990	1	1,990	1,990	1	1,990	4,003	1	4,003	
Cohort Commons	0	0	0				1,430	3	4,290	1,430	3	4,290				Distributed Media Center and Vocations and Technology functions
DINING & FOOD SERVICE			**13,740**			**0**			**8,960**			**8,960**			**8,922**	
Cafetorium / Dining	8,570	1	8,570				4,725	1	4,725	4,725	1	4,725	4,725	1	4,725	2 seatings - 15SF per seat
Stage	0	0	0				1,590	1	1,590	1,590	1	1,590	1,600	1	1,600	
Chair / Table / Equipment Storage	440	1	440				430	1	430	430	1	430	410	1	410	
Kitchen	3,485	1	3,485				1,915	1	1,915	1,915	1	1,915	1,930	1	1,930	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	1,245	1	1,245				300	1	300	300	1	300	258	1	258	Allows teacher collaboration
MEDICAL			**1,560**			**0**			**610**			**610**			**610**	
Medical Suite Toilet	50	3	150				60	1	60	60	1	60	60	1	60	
Nurses' Office / Waiting Room	930	1	930				250	1	250	250	1	250	250	1	250	
Examination Room / Resting	160	3	480				100	3	300	100	3	300	100	3	300	
ADMINISTRATION & GUIDANCE			**4,600**			**0**			**5,250**			**5,250**			**3,430**	
General Office / Waiting Room / Toilet	1,540	1	1,540				425	1	425	425	1	425	415	1	415	
Teachers' Mail and Time Room	100	1	100				95	1	95	95	1	95	100	1	100	
Duplicating Room	130	1	130				200	1	200	200	1	200	200	1	200	
Records Room	90	1	90				200	1	200	200	1	200	200	1	200	
Principal's Office w/ Conference Area	560	1	560				375	1	375	375	1	375	375	1	375	
Principal's Secretary / Waiting	80	1	80				125	1	125	125	1	125	125	1	125	
Assistant Principal's Office - AP1	110	1	110				150	1	150	150	1	150	150	1	150	
Assistant Principal's Office - AP2	0	0	0				150	0	0	150	0	0	150	1	150	
Supervisory / Spare Office	170	1	170				150	1	150	150	1	150	150	1	150	
Conference Room	310	1	310				350	1	350	350	1	350	350	1	350	
Small Conference Room	0	0	0				210	1	210	210	1	210				For parent meetings
Guidance Office (Student Support)	170	8	1,360				150	6	900	150	6	900	150	4	600	Distributed 2 per cohort
Guidance Waiting Room W/ Sto Closet	0	0	0				75	3	225	75	3	225	100	1	100	Distributed 1 per cohort
Guidance Storeroom	60	1	60				15	3	45	15	3	45	50	1	50	Distributed 1 per cohort
Teachers' Work Room			0				300	3	900	300	3	900	465	1	465	Distributed 1 per cohort. Serves uses of removed Small Seminar Rooms

Version
10.30.2017

Middle School Space Summary

Proposed Space Summary - Middle Schools

Date: 9/12/2018 Schematic Design Submittal

FULLER Middle School 630 Students Grades 6-8	Existing Conditions			PROPOSED									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
				Existing to Remain/Renovated			New			Total						
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
Dept Head / Coach offices	90	1	90				150	6	900	150	6	900				Distributed 2 per cohort
CUSTODIAL & MAINTENANCE			**3,515**			**0**			**2,140**			**2,140**			**2,105**	
Custodian's Office	100	1	100				165	1	165	165	1	165	150	1	150	
Custodian's Workshop	250	1	250				250	1	250	250	1	250	250	1	250	
Custodian's Storage	105	9	945				130	3	390	130	3	390	375	1	375	
Recycling Room / Trash	0	0	0				400	1	400	400	1	400	400	1	400	
Receiving and General Supply	220	1	220				310	1	310	310	1	310	310	1	310	
Storeroom	1,240	1	1,240				145	3	435	145	3	435	420	1	420	
Network / Telecom Room	380	2	760				190	1	190	190	1	190	200	1	200	Includes head end and IDF rooms
OTHER			**27,670**			**0**			**6,700**			**6,700**			**0**	
Other *(specify)*																
Adult ESL Offices	2,370	1	2,370				0	0	0	0	0	0				
City Offices, (PIC, Bldg& Grounds, BOH)	17,300	1	17,300													
Auditorium	5,400	1	5,400				4,200	1	4,200	4,200	1	4,200				420 seat auditorium
Stage	1,900	1	1,900				1,600	1	1,600	1,600	1	1,600				
Auditorium Storage	160	1	160				400	1	400	400	1	400				
Dressing Rooms	270	2	540				250	2	500	250	2	500				
Total Building Net Floor Area (NFA)			**130,600**			**0**			**91,920**			**91,920**			**74,250**	
Proposed Student Capacity / Enrollment															**630**	
NON-PROGRAMMED SPACES					% of GFA	**0**		% of GFA	**44,870**		% of GFA	**44,870**				
Other Occupied Rooms (list separately)					#DIV/0!			0%			0%					Non-Programmed space areas are
					#DIV/0!			0%			0%					required to be included in the
					#DIV/0!			0%			0%					following submittals:
					#DIV/0!			0%			0%					Schematic Design Submittal
Unoccupied MEP/FP Spaces					#DIV/0!			1%	1,685		0%					Design Development Submittal
Unoccupied Closets, Supply Rooms & Storage Rooms					#DIV/0!			0%	235		0%	235				60% Construction Documents
Toilet Rooms					#DIV/0!			3%	3,560		3%	3,560				90% Construction Documents
Circulation (corridors, stairs, ramps & elevators)					#DIV/0!			25%	34,175		25%	34,175				Final Construction Documents
Remaining[3]					#DIV/0!	**0**		4%	**5,215**		5%	**6,900**				
Total Building Gross Floor Area (GFA)[2]			195,900			**0**			**136,790**			**136,790**			**107,280**	
Grossing factor (GFA/NFA)			**1.50**			**#DIV/0!**			**1.49**			**1.49**			**1.44**	

[1] **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.

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

[3] **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: Jonathan Levi Architects

Name of Principal Architect: Jonathan Levi

Signature of Principal Architect:

Date: 9/6/18

The overall Fuller Middle School parti proposed in the PSR preferred design alternative has been carried forward in Schematic Design, with the pedagogical objectives described in the Education Plan unchanged. There have been a number of refinements which are outlined below, mostly from minor adjustments resulting from building design efforts. Any changes over 5% of nsf floor area have been highlighted in orange in the attached Proposed Space Summary. Overall, the total educational NSF has been reduced 2,583 sf from 94,493 nsf to 91,910 nsf. The building is efficiently designed, with a grossing factor of 1.49. The overall gsf has been reduced by 4,950 sf from 141,740 gas to 136,790 gsf.

Core Academic Spaces
Total NSF has gone up from the PSR by 290 sf, due to the addition of one 90 sf teacher planning space to accommodate teachers who are not assigned to specific classrooms, and an increase in the Science classrooms from 1,150 nsf to 1,195 nsf (closer to MSBA standard) due to building design efforts. The number of classrooms has remained unchanged.

Special Education
Total NSF has gone up from the PSR by 330 sf primarily due to minor adjustments resulting from building design efforts. The most significant change is that the Small Group / Reading rooms have increased from 250 nsf to 345 nsf in order to allow those spaces to be divisible with a movable partition into 2 functional smaller rooms to increase flexibility and privacy as needed.

Art and Music
Total NSF has gone up from the PSR by 25 sf due to minor adjustments resulting from building design efforts.

Vocations and Technology
Total NSF has gone down from the PSR by 30 sf due to minor adjustments resulting from building design efforts.

Health and Physical Education
Total NSF is unchanged from the PSR.

Media Center
Total NSF has gone up from the PSR by 30 sf due to minor adjustments resulting from building design efforts.

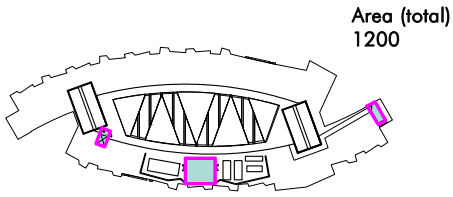
Dining and Food Service
Total NSF has gone up from the PSR by 37 sf due to minor adjustments resulting from building design efforts.

Medical
NSF is unchanged from the PSR

Administration and Guidance
Total NSF has gone up from the PSR by 10 sf due to minor adjustments resulting from building design efforts. The area assigned to the guidance storeroom has been divided into 3 to allow storage to be associated with the guidance areas on each floor.

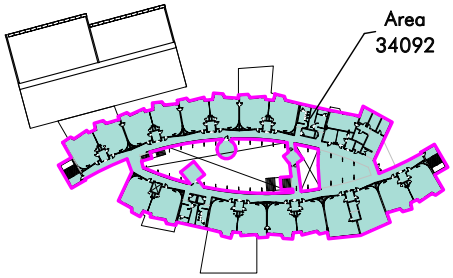
Custodial and Maintenance
Total NSF has gone up from the PSR by 25 sf due to minor adjustments resulting from building design efforts.

Other
Overall NSF has gone down by 3,300 nsf due to a decision by the district to reduce the seating capacity of the auditorium from 750 seats to 420 seats.



4 FLOOR 04

1" = 200'-0"



3 FLOOR 03

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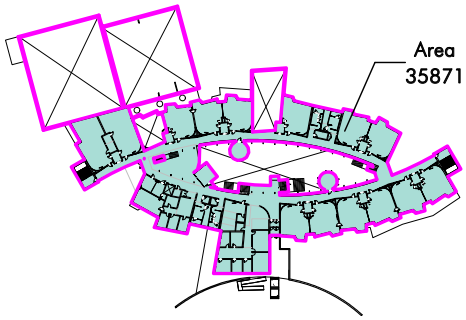

2 FLOOR 02

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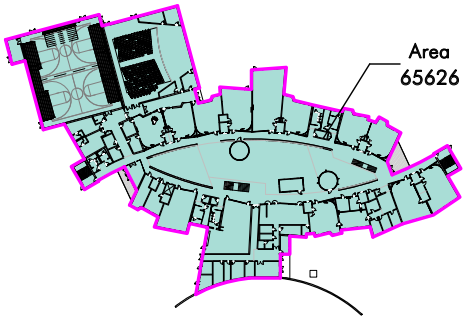


1 FLOOR 01

1" = 200'-0"

Fuller - GSF	
Level	Area

FLOOR 01	65,626 SF
FLOOR 02	35,871 SF
FLOOR 03	34,092 SF
FLOOR 04	1,200 SF
	136,790 SF

2.3 Proposed Project and the District Educational Progarm

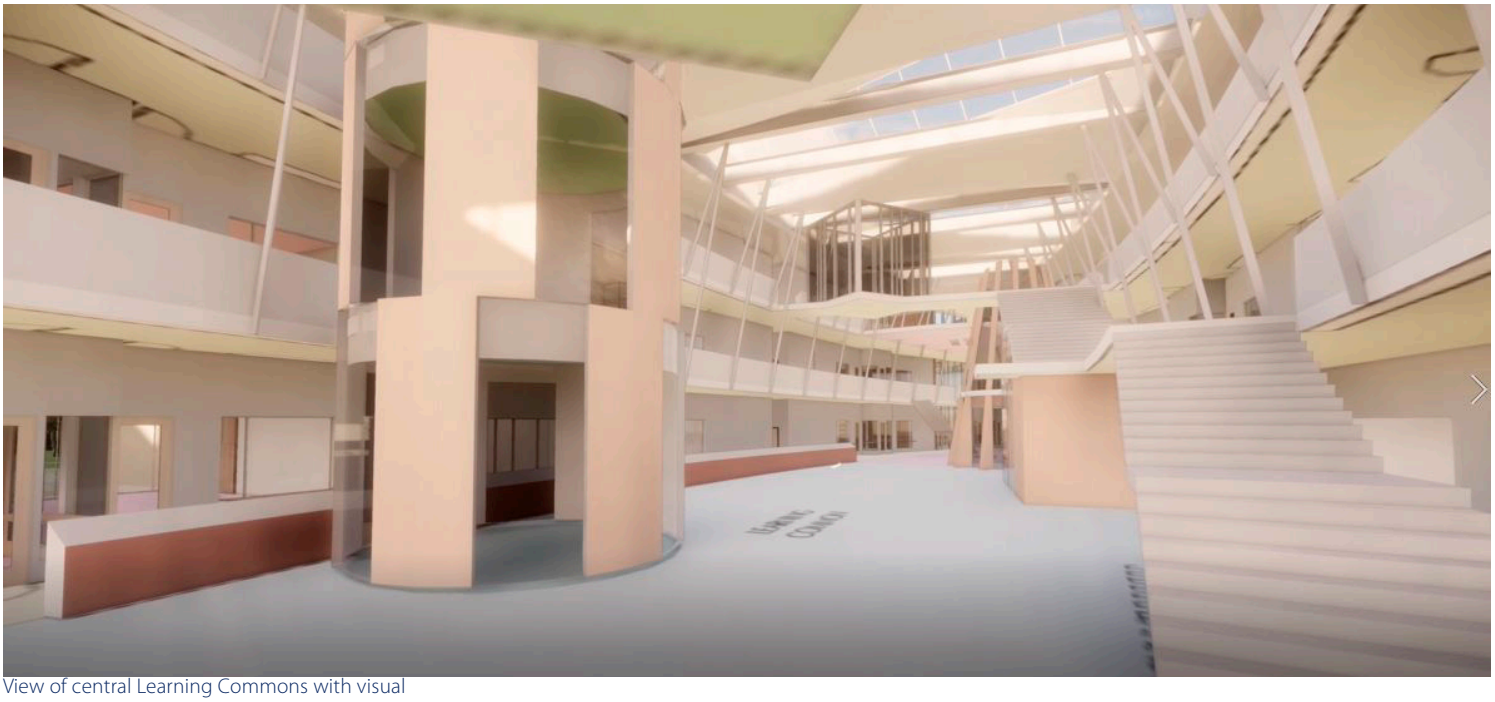
The design of the new Fuller Middle School is based on the approved space summary and educational program from the Preferred Schematic Report. Qualities and objectives of the curriculum that played a primary role in determining the configuration of the new building include:

- Small-scale learning communities
- Collaborative learning
- Collaborative teaching
- Visible learning
- Flexible learning
- Community engagement
- Civic place making
- Community accessible performing arts and athletic facilities

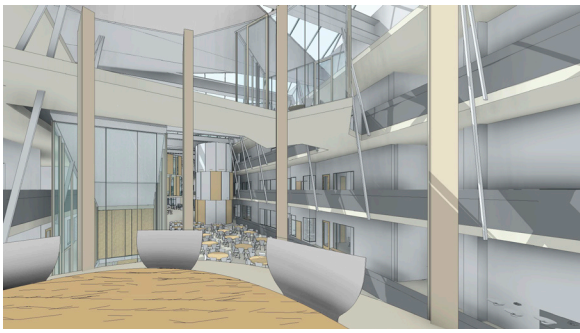
View of typical Cohort Common.

Small-Scale Learning Communities

The building will be arranged into three small-scale learning communities or cohorts. These are arrayed with connecting stairs, clustered around collaboration balconies on alternating ends of the building. The communities are shaped by not only by the array of classrooms on each level, which are specific to their cohort, but also by the formation of a center called the cohort commons for each area. Each cohort commons consists of an expanded balcony with connecting open stair between adjacent levels. Each cohort commons is meant as a place of arrival, a place of flexible learning, of group collaboration and as a place for students to create the social bonds that eventually lead to exchange of ideas and creation. It is hoped that through the creation of strong cohort identity, all the students within their groups will be known to one another and will be known individually to the associated staff.



View of central Learning Commons with visual connections between Cohort Commons, Breakout areas, balconies and , connecting stairs



Breakout space with views to Learning Commons and classroom balconies.

Collaborative Learning

Collaborative learning will be fostered on a number of different levels by the configuration of the new building. First and foremost is the arrangement of the classrooms. The classrooms are sized to allow multiple centers of learning to operate simultaneously within the confines of the room. This is facilitated by the large classroom size of 900 sf. The size will allow adequate separation for the simultaneous groupings of students working within the room.

Secondary to the classrooms, a series of breakout spaces are provided immediately adjacent to the classroom entrance doors, pushed out into the space of the learning commons. These allow for small-scale student groupings around work or socialization and to allow for mentoring of small groups of students by the faculty. The breakout rooms are largely transparent and are positioned to allow supervision from the adjacent classrooms and their attendant teacher preparation offices.

Collaboration will also occur among the students in the learning commons and cohort commons spaces. At the first floor level, the cafeteria and the open learning commons is meant as a continuous place of learning, project activity and socialization to be adapted by the students and the faculty as the needs of the curriculum evolve. These collaborative activities can take the form of anything from group work around conference tables, small group work around monitors or laptops, physical projects from the nearby fabrication lab, media centers or art space, or actual large scale productions. The fabrication lab and maker space are additionally provided with direct access to a service accessible "maker courtyard".

Makerspace with "exterior maker courtyard"

Fab Lab with exterior "maker courtyard"

Collaborative Teaching

Building on the preferred schematic proposal, the team focused on the relationship between teachers and how team teaching could be enhanced. Each pair of classrooms can be opened up to combine the 2 rooms. When open, the two classrooms constitute a larger learning group as a basis for selecting collaborative partners in creating a greater range of project-based activities. At the same time, the pairing of classrooms allows for intimate collaboration, inspiration and mutual observation by pairs of teachers. Collaboration is further supported by the shared teacher preparation offices, which are embedded between paired classrooms while at the same time looking outward into the public space of the school. Teachers may also gather in a variety of

Typical Classroom bay with operable partition and shared Teacher Planning Office.

Visible Learning view from Learning Common to Breakout areas, classroom corridors, balconies and connecting stairs.

group sizes to collaborate in the various cohort commons, and in the dedicated central conference room.

Visible Learning

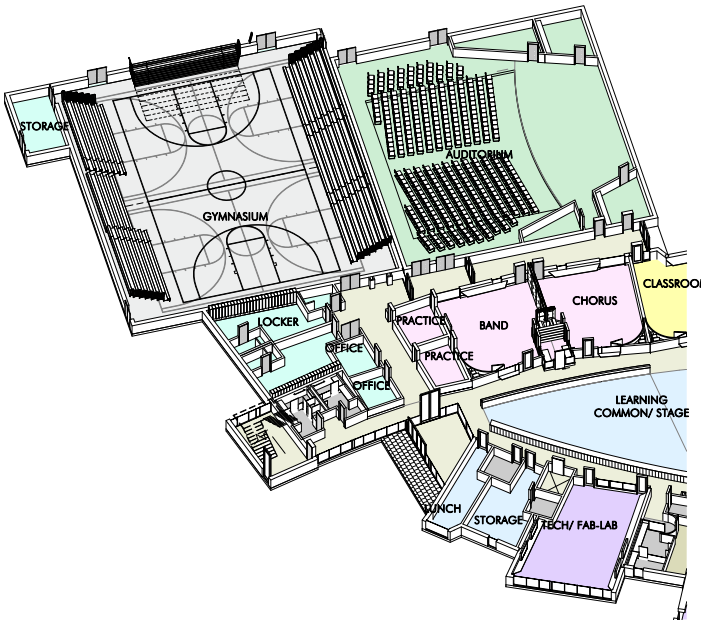
A core principle of 21st century education concerns the ability of students to influence and inspire one another as much as they are influenced and inspired by their teachers and mentors. To this end, the new school is arranged, unlike a conventional school with its cloistered corridors, as a largely transparent and multi-directionally interconnected interior. This occurs both in the horizontal dimension and in the vertical dimension. In the horizontal dimension, occupants are able to look across the central learning commons space to see the activities that are going on throughout the floor. This is also true of the glazed teacher preparation areas, where mentoring and specialized student work is on display.

In the vertical dimension, the balconies and open stairs allow for students and teachers to be aware of activities and work product on display from one floor to another. The art, fab lab, maker space and performing arts classrooms are meant as demonstration platforms; the exploration and discovery that occurs within them is shared publicly due to their prominence in the learning commons area. As a corollary to visible activity, the school will also feature many locations for visible work product, including public exhibit space, display walls, galleries and the wide-open project floor areas of the learning commons and cohort commons. Outdoor display space for on-going projects is provided in outdoor classrooms which are directly accessible from the learning commons at both East and West ends.

Flexible Learning

Insofar as 21st century education relies on the spontaneous initiative of the students, spaces throughout the school are conceived as highly adaptable and highly configurable according to the needs of the curriculum and the students' initiatives. This includes the combinable

classrooms described above. It also relates to the commons area themselves whether on the whole school level or on the cohort level. These spaces are intended to be built without fixed furnishings so that there can be variable interpretations of use by the school community - from individual study to group learning activities, whether in class size events or dispersed among many small pairings of students. Given that pedagogy is constantly evolving and will move in directions that we cannot know today, the intent of the building over the long term is also to be adaptable. Responding to this need, the building is planned modularly using a standard spacing of walls which can accommodate a variety of changes over the decades to come.



Gymnasium/ Auditorium and performance areas with access to Learning Commons.

Community Engagement

The Framingham School District and the current school administration together with the visioning session participants have anticipated a high degree of interaction between the school and the outside community. This will allow the theme of real-world application to permeate throughout the school environment. The building supports an open and outward engagement with the community through its first floor learning commons, which can be separated from the remainder of the building with separate entrance access and which provides a core functional program suite for community use, including the arts, media lab, technology, music, arts, athletics, theater, fabrication lab and maker space.

Community engagement at the school may take the form of access to these resources, or it may take the form of mentoring within the school by outside sources, such as higher education partners.

2.4 Instructional Technology

Current:

The mission of the Middle School Technology Education Program for the Framingham Public Schools is to provide opportunities for interdisciplinary learning experiences where students can apply and reinforce math, science, computer literacy, and other specialized skills through the use of technology-based applications. In grades six through eight, students pursue engineering questions and technological solutions that emphasize research and problem solving. Students develop skills in Engineering Design by learning to conceptualize a problem, design, construct, and test prototypes, making modifications as necessary. Through these engineering challenges, students are given the unique opportunity to collaboratively apply numerous academic concepts through practical hands-on applications.

Fuller Middle School is 1:1 with its technology. Students start and end their day in homeroom where they pick up and drop off their assigned Chromebooks. The school's infrastructure is sound, with students and staff having internet access throughout the building.

Fuller Middle School's library is regularly used as the location for larger group meetings, workshops and presentations. It is also frequently used for community meetings in the evening. When these events take place during the school day, the library is closed, reducing students' access to its resources. While the library has some computer stations, it primarily serves as a traditional library. The school's librarian has made programmatic improvements to increase the library's inventory, circulation and traffic, but he is limited by these current constraints.

The Technology Education classroom is significantly lacking in the proper tools for learning in the 21st Century. The teacher does not use the current set of computers because they are slow, inefficient and lack the proper software. While the Technology Education teacher does have a 3-D printer, the Technology Education teacher does not utilize this regularly due to her lack of other adequate equipment.

The classrooms at Fuller Middle School are not equipped with Smartboards or other technology. At best, teachers use portable projectors and document cameras to teach their lessons.

Proposed:

The Framingham Public Schools is in the process of revising its Technology Education curriculum so it aligns with the 2016 Massachusetts Science and Technology Education Frameworks. As part of a STEAM program, Technology Education at Fuller Middle School will incorporate project-based learning through science, technology, engineering, arts and mathematics. The goal of Technology Education is to spread technological literacy by providing a variety of hands-on activities using current technology. Technology Education emphasizes both design and problem-solving skills while raising students' awareness

of career options in the technical fields.

In order to prepare students for the technological "unknowns" of our future society, we must equip our students not only with technical skills but with the ability to adapt in this rapidly-changing world. Fuller Middle School's educational program continues to expand students' opportunities to utilize technology, and its educators recognize that placing a device in students' hands is not enough to reach our goals. By increasing instruction around digital literacy, computer programming, technology education and communication technology, students will become more comfortable exploring new technological advances.

Since Fuller Middle School is transitioning to a STEAM model, all spaces must be equipped with internet so students can access their learning in any corner of the building. Daily, students are encouraged to be resourceful in their problem solving and technology plays a key role in this process. At the center of project-based learning in a STEAM setting is the engineering design model where students must identify and research a problem, brainstorm possible solutions, select a solution and develop a prototype, test the solution and make improvements, and ultimately communicate findings. This requires not only a technological infrastructure and a MakerSpace for students to build their models, but also an outlet for disseminating and presenting results to a larger audience. The commons/cafetorium should be equipped with high-quality sound and lighting equipment to provide such a venue. Additionally, while the square footage for the MakerSpace and Fabrication Lab areas falls below the MSBA guidelines, this reduced figure only meets the District's needs provided the cohort commons are included in the program. The cohort commons are intended to accommodate both Media Center and Vocations and Technology functions. Per the education plan, the cohort commons will have computer stations and large work surfaces to support both "hands-on" projects and technology collaboration. In an effort to coordinate with MSBA guidelines, the PDP space summary included a reduction in the Media Center category of 2,103 nsf along with this 2,250 nsf reduction in Vocations and Technology, for a total of 4,353 nsf below MSBA guidelines. In the attached revised space summary, the district proposes that the size of the 3 cohort commons be reduced from 1,500 sf to 1,450 sf for an aggregate 4,350 nsf, just below the aggregate MSBA guidelines.

While the entire school should be considered a "media center," Fuller Middle School must still dedicate a space for a true library to nurture a love of reading, provide a variety of digital resources, and facilitate both online and traditional research. This Library/Media Center should divide its space between shelves of books, computer stations and tables. Ideally, this Library/Media Center will be adjacent to a larger common area to expand the space available for groups to work collaboratively. Please reference the district's response to the Vocations and Technology comment in the paragraph above. The Cohort Commons has been moved to the Media Center Category and reduced to 1,450 nsf to

comply with aggregate MSBA guidelines for Media Center and Vocations and Technology.

To support 21st Century instruction, classrooms should be equipped with state-of-the-art technology for presenting information. Interactive boards or LCD screens that provide connectivity to a computer or laptop are essential to allow teachers to present the latest digital images, videos or graphical displays to their students. All science laboratories should also be equipped with wireless internet so students can record data, create accurate graphs, view videos, share information and conduct research in real time.

As described above, the FabLab and Technology Education classrooms require a classroom set of computers with the latest software for engineering, programming, video production and graphic design. While the Technology Education teacher will teach classes out of the computer classroom, she will utilize the FabLab and MakerSpace as part of her instruction whenever feasible. Furthermore, upon completion of the new facility, Fuller Middle School will need a STEAM instructional coach whose primary responsibilities will be to teach digital technology lessons to students as they work on projects in the FabLab and MakerSpace, and to work with teachers to design interdisciplinary projects aligned with the Fuller STEAM vision.

2.5 Functional Relationships

Functional relationships for the new Fuller Middle School are best described in the program "bubble" diagram accompanying the preferred schematic submission. The highlights of which are as follows:

•Typical open balcony cohort commons form the lynchpin of each classroom wing cluster by connecting floors with open stairs and forming an active 'pass through' location which invites students and teachers to interact.

•Central learning cafeteria/learning commons placed at the heart of school life invites day-long activity and participation. The space can be partially or fully cordoned off depending on community use mode. The cafeteria/learning commons is overlooked by balconies from each of the upper floors of the school and is continuous with the outdoor classroom spaces at each of its ends.

•Main administration is centrally located at the middle of the second floor of the building, co-located with the entrance.

•Prominently located teacher workspace and professional development areas are part of the main administration suite.

•Guidance areas are distributed throughout the satellite administration areas within the cohorts.

LEGEND

- 1_CORE ACADEMIC SPACES
- 2_SPECIAL EDUCATION
- 3_ART & MUSIC
- 4_VOCATIONS & TECHNOLOGY
- 5_HEALTH & PHYSICAL ED.
- 6_MEDIA CENTER
- 7_DINING & FOOD SERVICE
- 8_MEDICAL
- 9_ADMIN. & GUIDANCE
- 10_CUSTODIAL & MAINTENANCE
- 11_OTHER

Third Floor Plan

Second Floor Plan

First Floor Plan

•Maker space is situated prominently off the learning commons at the ground-floor level with its own service access and functionally adjacent to the main custodial areas of the school. It is also conjoined with the stem fabrication laboratory next door.

•STEM fabrication laboratory, is situated prominently together with the maker space off the cafeteria/learning commons

•The double height Media center is front and center in the learning commons and is also directly opposite and visible from the main entrance with two story high interior glazing in order to encourage student engagement and interactivity.

•Art classrooms are placed prominently on the ground floor looking into the main cafeteria/learning commons

•Music and chorus classrooms together with drama form a suite at the northwest corner of the cafeteria/learning commons and are placed in convenient proximity to the auditorium's back of house.

•Auditorium is located with community access entry and lobby shared with the gymnasium.

•Gymnasium has direct access to the West play fields. The gymnasium is sized to accommodate current Fuller program needs.

•Service and storage along with shared facilities maintenance quarters are located, together with loading dock storage amenities in proximity to the nearby district central maintenance facility. The loading area is convenient to the Kitchen.

•Science classrooms are located prominently at each level in concert with the cohort collaboration and satellite administration areas.

•Classroom cluster pairs are grouped around glass-enclosed teacher preparation offices.

•Special Education spaces are dispersed throughout the school.

•Satellite storage areas associated with each toilet room suite are distributed evenly throughout the building.

•Student bathrooms are efficiently located for easy access both from the classroom wings and from the cafeteria/learning commons. Separate bathrooms are provided for the community access performing arts in athletic areas.

2.6 Security and Visual Access

General Description:

Approach to main entry with visibility from main administration area (left).

Exterior view of front entry with further administration area visibility (left)

The floor plan of the new school has been organized to allow for a prudent balance between the need for school security and the need for a warm and welcoming environment for the grades 6 through 8 population. The transparency and interconnectedness, which are desirable features of the educational program, also make for a favorable scheme for internal school security. The open floor plans provide a high degree of visual access from one portion of the school to another. This has been enhanced through the fine adjustment of classroom corridors to allow sightlines to connect the far corners of the school, including all 3 floors. All the classroom corridors include passive supervision from both teacher planning spaces and cohort commons.

Regarding security for the school from the visitors' perspective, the middle school central administration has been located adjacent to the main entrance of the school at the second floor level. Broad expanses of glass will allow observation of approaching visitors from the main school reception desk to the entrance approach and to the vestibule. The main entrance approach is configured with an outer covered area and an inner vestibule. The progress of an intruder can therefore be impeded at either line of doors. It is intended that the vestibule will be attended by administrative personnel facing into the vestibule from the central administration area. The administration area is safeguarded behind a glass wall partition with a locking door.

Upon arriving, visitors will follow the following procedure:

1. Visitors will ring the bell located at the exterior door:
2. Through the voice intercom system, visitors will be asked to identify themselves and if they have an appointment in the building.
3. Once this information is received and verified for accuracy, visitors will be let into the vestibule.
4. Visitors will need to present driver's license which must be queried through the school's background check system.
5. After passing clearance, visitors will be issued a visitor badge.
6. Visitors who do not gain clearance, may be asked to leave the building immediately.
7. Anyone given a visitor badge cannot be left unattended in the building and will have staff accompany them to the designated location.
8. No visitor can ever be left unattended.

In the instance of an intruder who has successfully passed through the outer security measures of the school an intruder alarm system can be triggered. Additionally, all classrooms will be provided with roll down shades at windows facing the corridor, so that an intruder could not look directly into classrooms.

It should be noted that the intruder alarm strategy will not interfere with life safety issues during a fire alarm.

In order to allow for community access, the school is also compartmentalized for usage modes in addition to that uses during school hours. Access will be allowed through the west entrance vestibule to allow the community to utilize the auditorium and athletic facilities, the ground floor locker rooms. This vestibule will be outfitted with security cameras and electronic door locking hardware, which may be accessed and operated remotely by building security. Sliding metal fabric partitions will prevent access to the main school space.

City Representatives Consulted:

The design team has met with representatives of the Framingham Police Department and Framingham Fire department on 2/6/18, 4/5/18, and 7/30/18 to consult on the planning process for both site and building design issues. Their input has been and will continue to be included in the project. Included in these meetings were discussions of:

- Main entrance design,
- Classroom hardware (thumb turn lock function from interior, key lock function from exterior
- Classroom Visibility – manual shades at interior and exterior windows
- Alternative entry locations, knox boxes
- Emergency vehicle access around entire building
- CCTV camera surveillance
- Site Phasing Plans
- Construction Traffic

2.7 Site Development

Because the new Fuller School will be built on an area currently used for parking by the Fuller, Farley, and McCarthy schools, a detailed phasing plan was developed to address the temporary loss of both parking spaces and drop-off queueing during construction. These phasing plans are shown in the illustrations below.

Parking

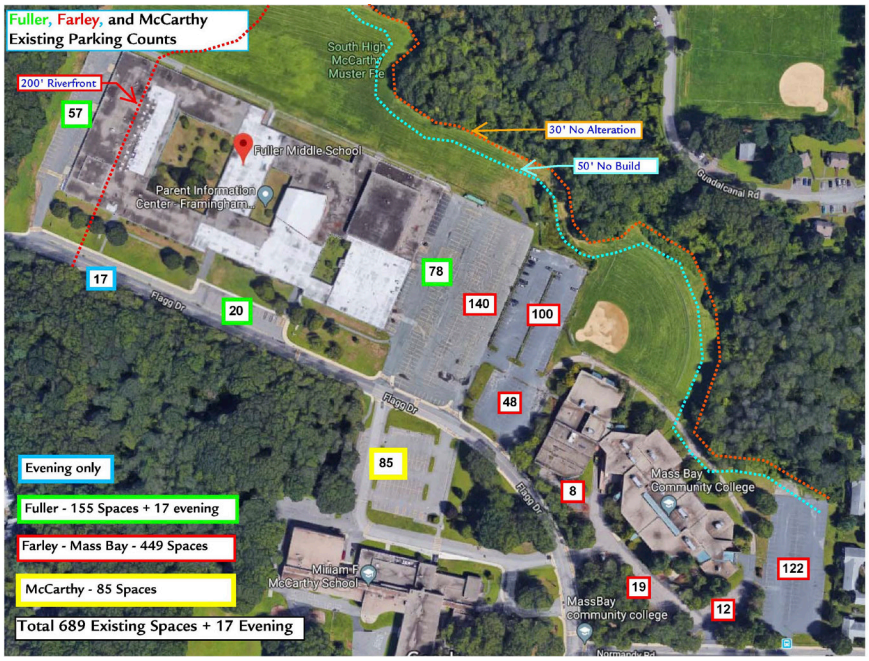
Day and evening parking requirements were recommended by the district as follows:

	Day	Night
Adult ESL	5	425
Fuller	100	-
Farley	150	150
McCarthy	85	-
PIC	15	-
Building and Grounds	20	5
Early Childhood	3	-
Truant	1	1
Board of Health	20	15
Subtotal	***399***	***596***

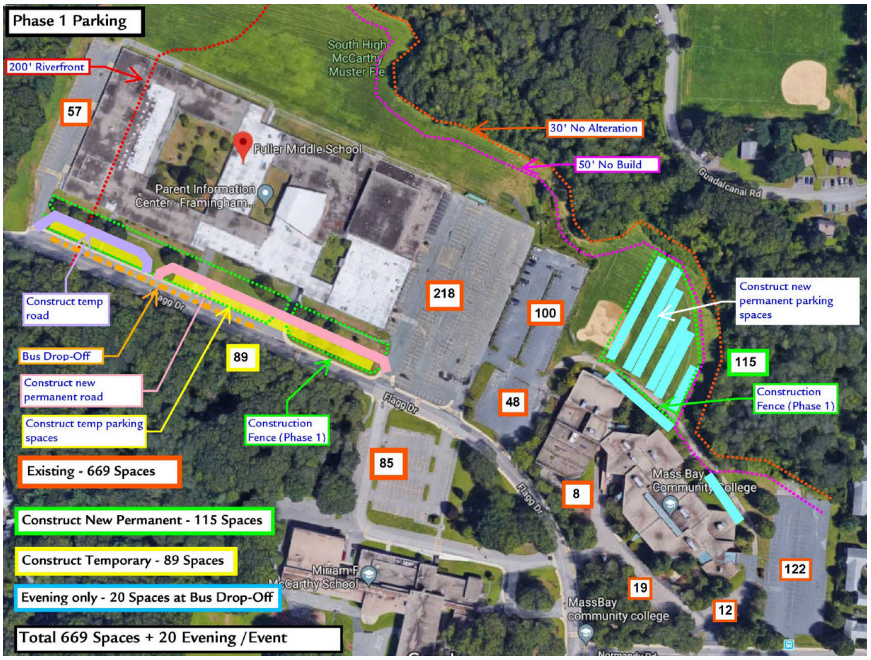
Contractor	100	-
Adult ESL off site parking	-	-100
Total	***499***	***496***

This calculation concludes that approximately 500 parking spaces will be required during construction when 100 Adult ESL spaces will be located off-site, and after construction 500 daytime spaces and 100 evening spaces are needed.

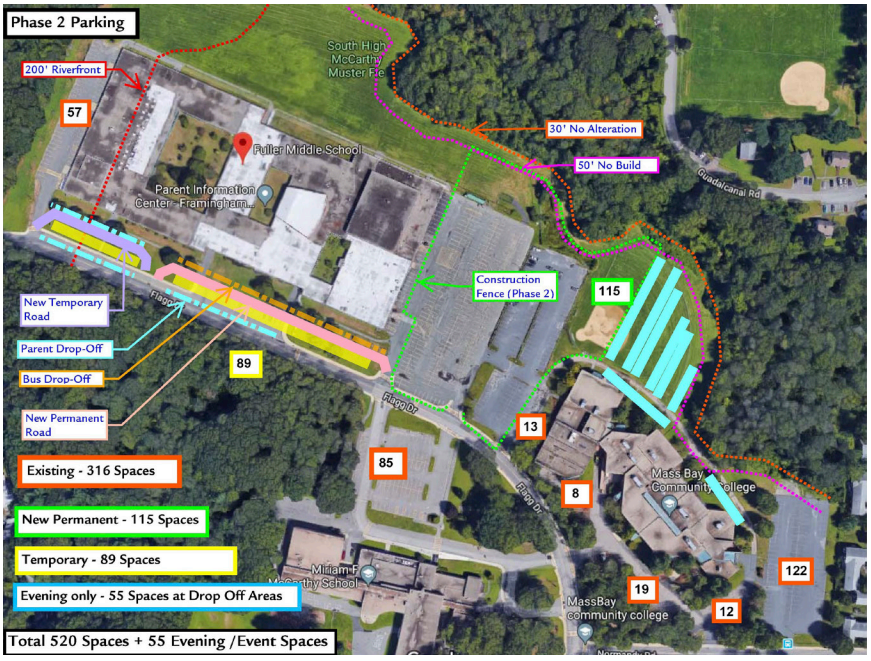
Phase 1 will build both temporary and permanent parking before the main construction project begins, so the proper number of spaces will be available when the existing lot is fenced off to build the new building in Phase 2. Phase 3 will allow the appropriate number of spaces to be available after the new building is finished, and while the existing school is demolished.



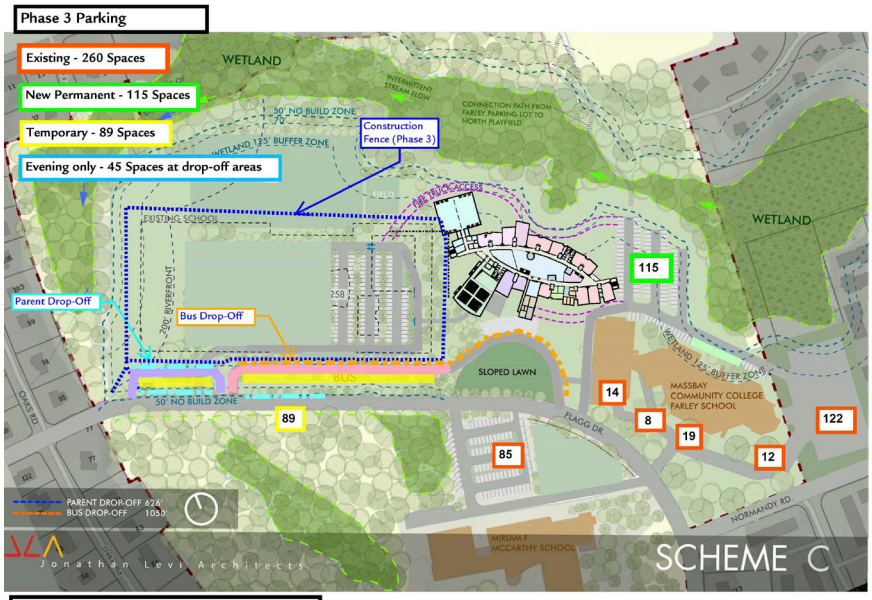
Parking - Existing



Parking - Phase 1

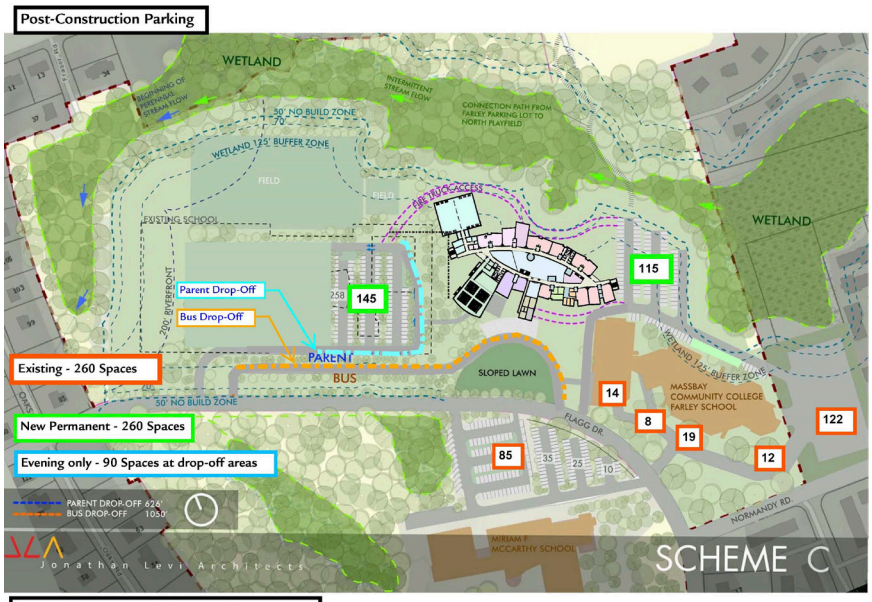


Parking - Phase 2



Parking - Phase 3

Total 464 Spaces + 90 Evening /Event Spaces

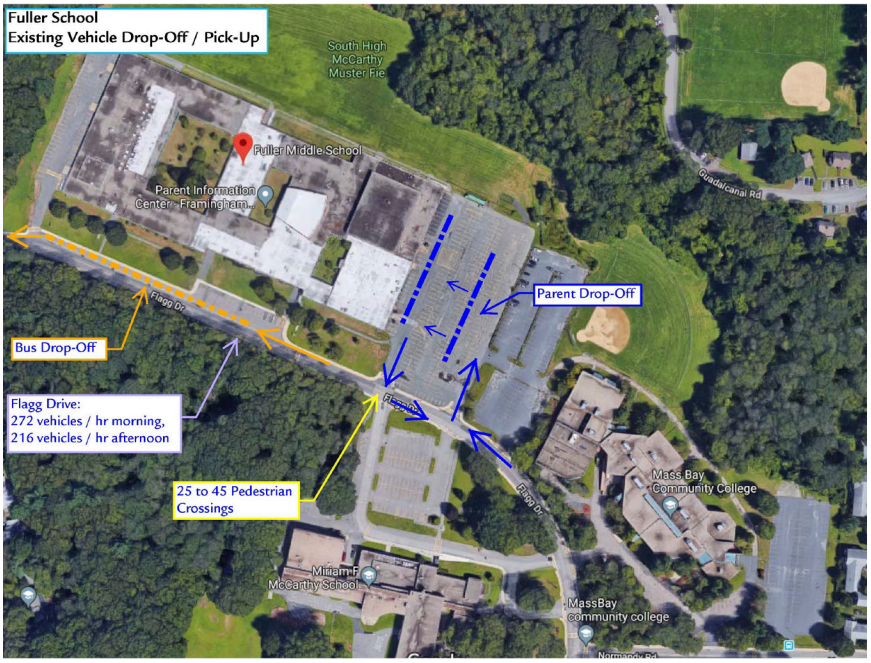


Parking -Post - Construction

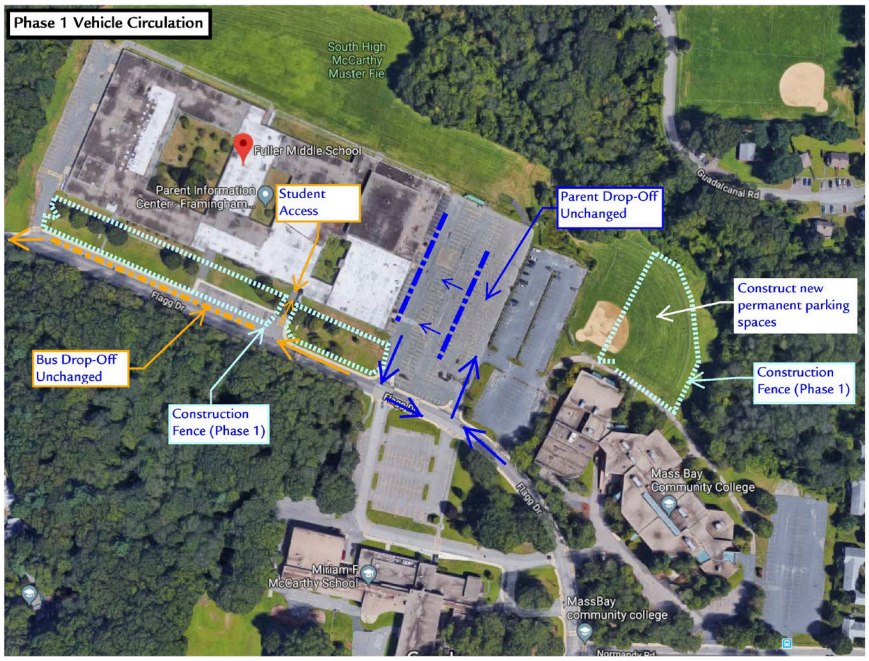
Total 520 Spaces + 90 Evening /Event Spaces

Drop-off and Pick-Up

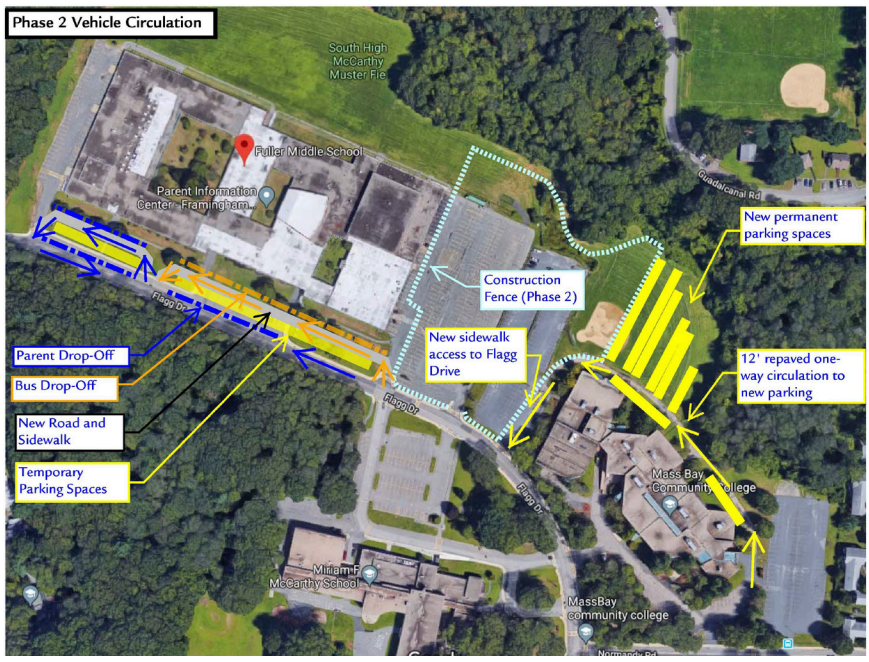
Just as parking will need to be accommodated during construction, so too will student drop-off and pick-up. Phase 1 will build both temporary and permanent roadway before the main construction project begins, so the proper space for parent vehicles and buses will be available when the existing lot is fenced off to build the new building in Phase 2. The new access will be built between the existing bus drop-off and the school, so that there will be minimal disruption to existing service. Bus and parent vehicle access is being designed in all cases to help resolve the existing conflict with the McCarthy school, in which both schools' access and egress are directly across Flagg Drive from each other.



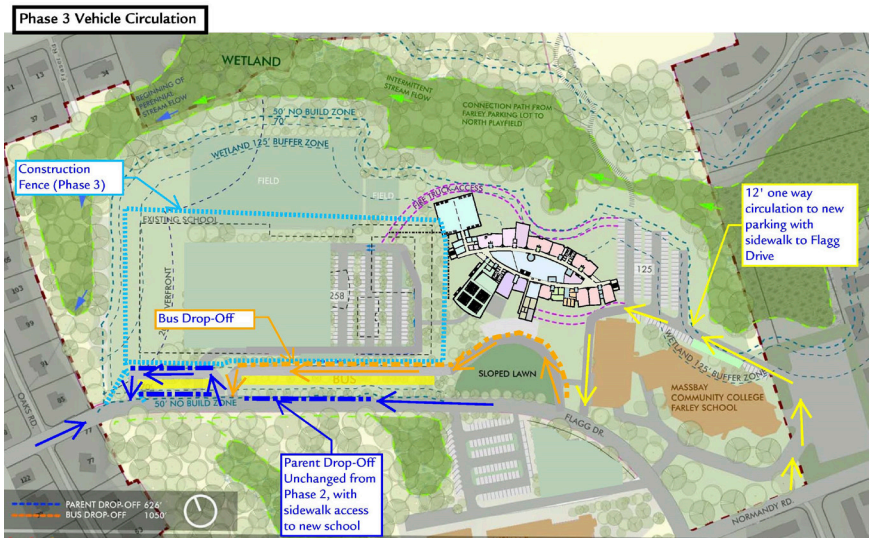
Traffic Diagram - Existing



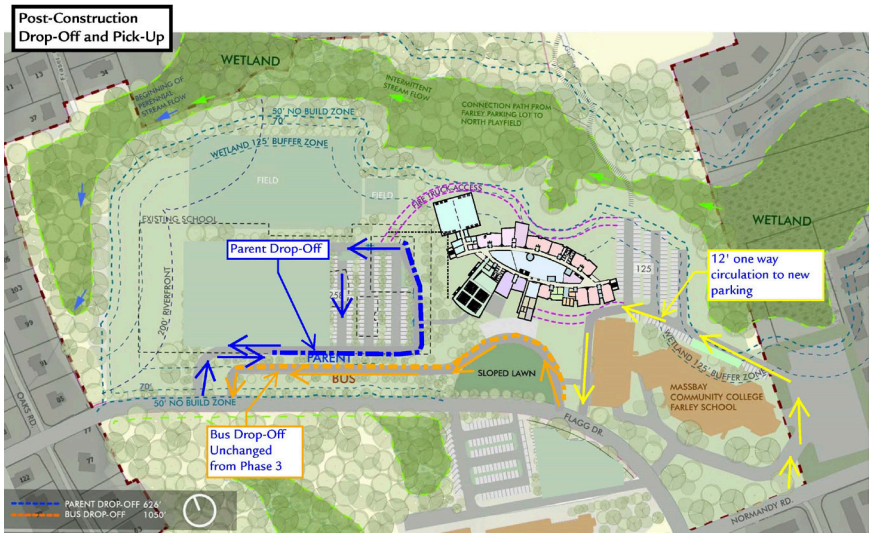
Traffic Diagram - Phase 1



Traffic Diagram - Phase 2



Traffic Diagram - Phase 3



Traffic Diagram -Post - Construction

Fuller School entry with sloped lawn

2.8 Aesthetic Features

A student or visitor arriving at the site of the new Fuller Middle School will experience a designed campus of district schools including the Farley school to the East and the McCarthy elementary school to the south. The new three-story Fuller building will be set back on a broad sloped green space which will connect the three surrounding schools- facilitating the exchange of teachers and students between buildings and serving as a new Civic Center for South Framingham The lawn will be a gathering space for students both before and after school hours. With its focal point bandshell/bus shelter/gateway it will also serve for community gatherings such as outdoor music and dramatic performances.

The building itself will have a convex segmented façade punctuated by a series of projected classroom bay elements which will add a sense of variation and individuality to the repetition of the classrooms. The largest of these represent the full projection of the glass-enclosed science classrooms which are a signature element of the school. On the north elevation, also convexly curved, the main feature will be the projected two-story volume of the media center and the semi-detached gymnasium/performing arts structure. The overall building mass is further articulated by indentations between pairs of classrooms in order to break down the scale and to allow corner windows to enlarge the perceived space in the classroom.

Students and visitors will enter the building adjacent to the forward positioned central administration pavilion. Passing through the hardened security vestibule they will emerge adjacent to the administration welcome center on an observational balcony with stair connections both upwards and downwards to the classroom levels of the building.

At this location there will be 360° views to all points of the school's academic functions including the three cohort collaboration balconies, all of the classrooms and the glass-enclosed teacher preparation areas. A particular focus will be on the two-story glass wall of the media center directly opposite the administration welcome center.

This central space will be naturally illuminated by a series of crisscrossing skylights at the ceiling level of the atrium and by full height glass walls at each end with connecting views to the landscape. In addition to the main monumental stairs, cohort stairs connect between the balconies and their clustered classrooms.

The variously shaped classroom breakout spaces are placed within the multi-height learning commons -in one case a cylinder, in another case a cube and another a pyramid - evoking references to the primary solids which are part of the student's education in STEM subjects such as mathematics. The breakout spaces are accessed directly off of the classroom balconies and in one case by a connecting bridge.

Considerable attention has been given to the visual and functional environment of the classrooms themselves. Most notably, the normally dormant corner opposite classroom entrance door is treated with a continuously curved 'panorama' teaching surface which allows for uninterrupted educational displays and media presentations. A folding partition will allow for partial enclosure of the space for focuses student

Central Learning Commons 360deg. views to academic areas, Breakout areas, and illuminated by skylights.

Panorama teaching wall.

group work within the classroom. In its open position the partition screens the corridor glazing and provides an additional display surface to the public area of the building for showing off the product of the classroom's explorations.

MEMORANDUM

TO:	Mr. Philip Gray Jonathan Levi Architects 266 Beacon Street Boston, MA 02116	**FROM:**	F. Giles Ham, P.E. *and* Jennifer Conners Vanasse & Associates, Inc. 35 New England Business Center Drive Suite 140 Andover, MA 01810 (978) 474-8800
DATE:	August 28, 2018	**RE:**	7704
SUBJECT:	Fuller Middle School Feasibility Study Framingham, Massachusetts		

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has prepared an evaluation of the Fuller Middle School Expansion and associated access modifications off Flagg Drive in Framingham, Massachusetts. This study includes observations of existing traffic, pick-up and drop-off circulation, busing, pedestrians, vehicle queuing, level-of-service operations and safety deficiencies in the vicinity of the school, estimates traffic associated with the expansion and modifications, and makes recommendations to enhance safety conditions and future traffic operations in the vicinity of the school. The school currently accommodates approximately 530 students and 100 faculty/staff and in the future will accommodate up to 630 students and 120 faculty/staff.

The study area for this report includes portions of Flagg Drive, including the following locations:

- Warren Road at Oaks Road
- Oaks Road at Flagg Drive
- Flagg Drive at Fuller School Drive A
- Flagg Drive at Visitor Parking Lot
- Flagg Drive at Fuller School Drive B and McCarthy School Parking Lot
- Flagg Drive at Fuller School Drive C and McCarthy School Parking Lot
- Flagg Drive at Fuller School Drive D
- Flagg Drive at McCarthy School North Drive and MassBay Community College
- Flagg Drive at McCarthy School South Drive
- Flagg Drive at Normandy Road
- Flagg Drive at Warren Road

Figure 1 graphically depicts the site location map and Figure 2 graphically depicts the study area intersections.

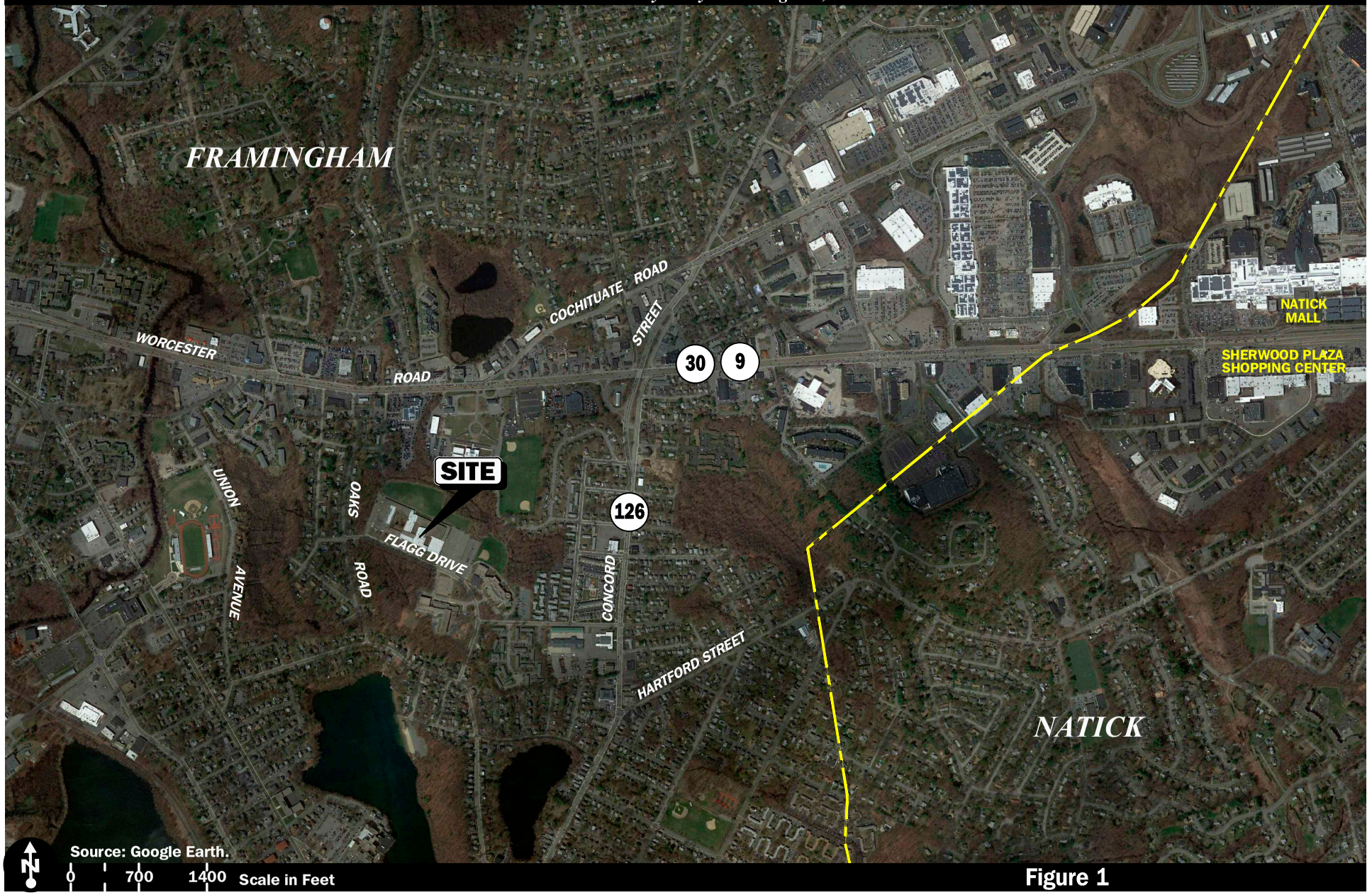


Figure 1

Site Location Map

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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Fuller Middle School Feasibility Study - Framingham, Massachusetts

Figure 2

Study Area Intersections

Vanasse & Associates, Inc.
Transportation Engineers & Planners

STUDY METHODOLOGY

This study was generally performed in accordance with industry and state guidelines for the preparation of traffic studies and was conducted in distinct stages. The first stage involved an assessment of existing traffic conditions in the study area and included an inventory of roadway geometrics, observations of traffic flow, and collection of peak-period traffic counts during hours of school arrivals and departures. The next stage included traffic projected from the expanded school and an evaluation of traffic operations. In the final stage of the study, measures were evaluated to provide safe conditions for students, staff, and visitors of the school.

EXISTING CONDITIONS

A comprehensive field inventory of existing traffic conditions on the study area roadways was conducted in October of 2017. The field investigation consisted of an inventory of existing roadway geometrics, traffic volumes, and operating characteristics, as well as posted speed limits and land use information within the study area. The study area for the project was selected to contain the major roadways providing access to the project site includes portions of Flagg Drive. Specifically, traffic counts were conducted at the following intersections located along these roadways which are accommodate the majority of school-related traffic.

- Warren Road at Oaks Road
- Oaks Road at Flagg Drive
- Flagg Drive at Fuller School Drive A
- Flagg Drive at Visitor Parking Lot
- Flagg Drive at Fuller School Drive B and McCarthy School Parking Lot
- Flagg Drive at Fuller School Drive C and McCarthy School Parking Lot
- Flagg Drive at Fuller School Drive D
- Flagg Drive at McCarthy School North Drive and MassBay Community College
- Flagg Drive at McCarthy School South Drive
- Flagg Drive at Normandy Road
- Flagg Drive at Warren Road

Geometry

The existing lane usage and travel lane widths for the study area are depicted in Figure 3. As shown, the school access and egress is provided via Flagg Drive and this roadway accommodates a single lane in each direction.

EXISTING TRAFFIC CONDITIONS

In order to establish existing traffic-volume demands and flow patterns within the study area, manual turning movement counts (TMCs) and vehicle classification counts were completed in October of 2017 during the weekday morning (7:00 to 9:00 AM) and weekday afternoon (1:30 to 3:30 PM) time periods at each of the study area intersections. These time periods correspond to the peak hours of school arrivals and departures. A summary of the peak hour traffic volumes surrounding the Middle School are depicted in Figures 4 and 5, and presented in Table 1. In general, the morning peak hour occurs between 7:30 and 8:30 AM and the afternoon peak hour occurs between 2:00 and 3:00 PM.

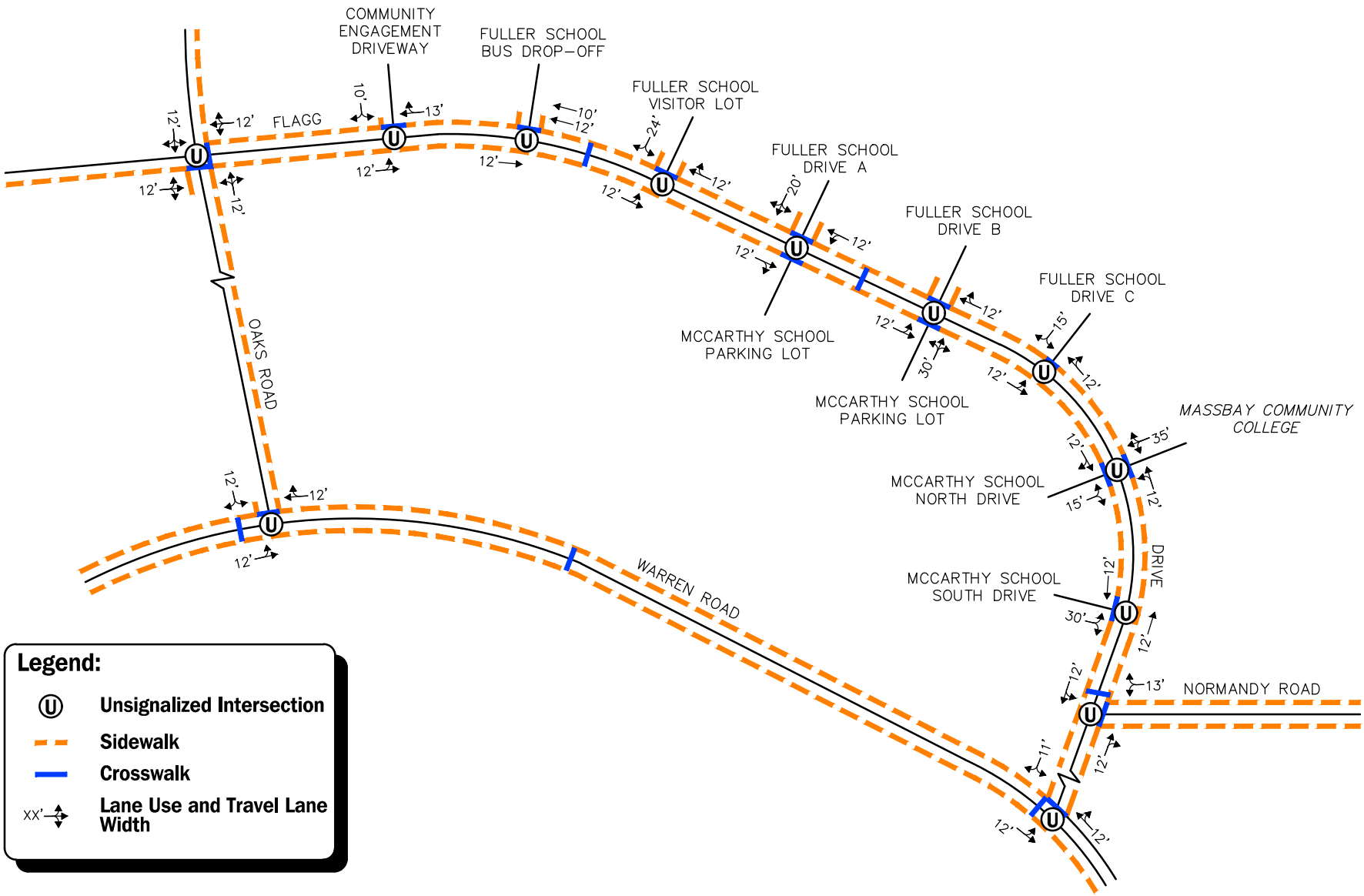

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Figure 3

Existing Lane Use and Travel Lane Width

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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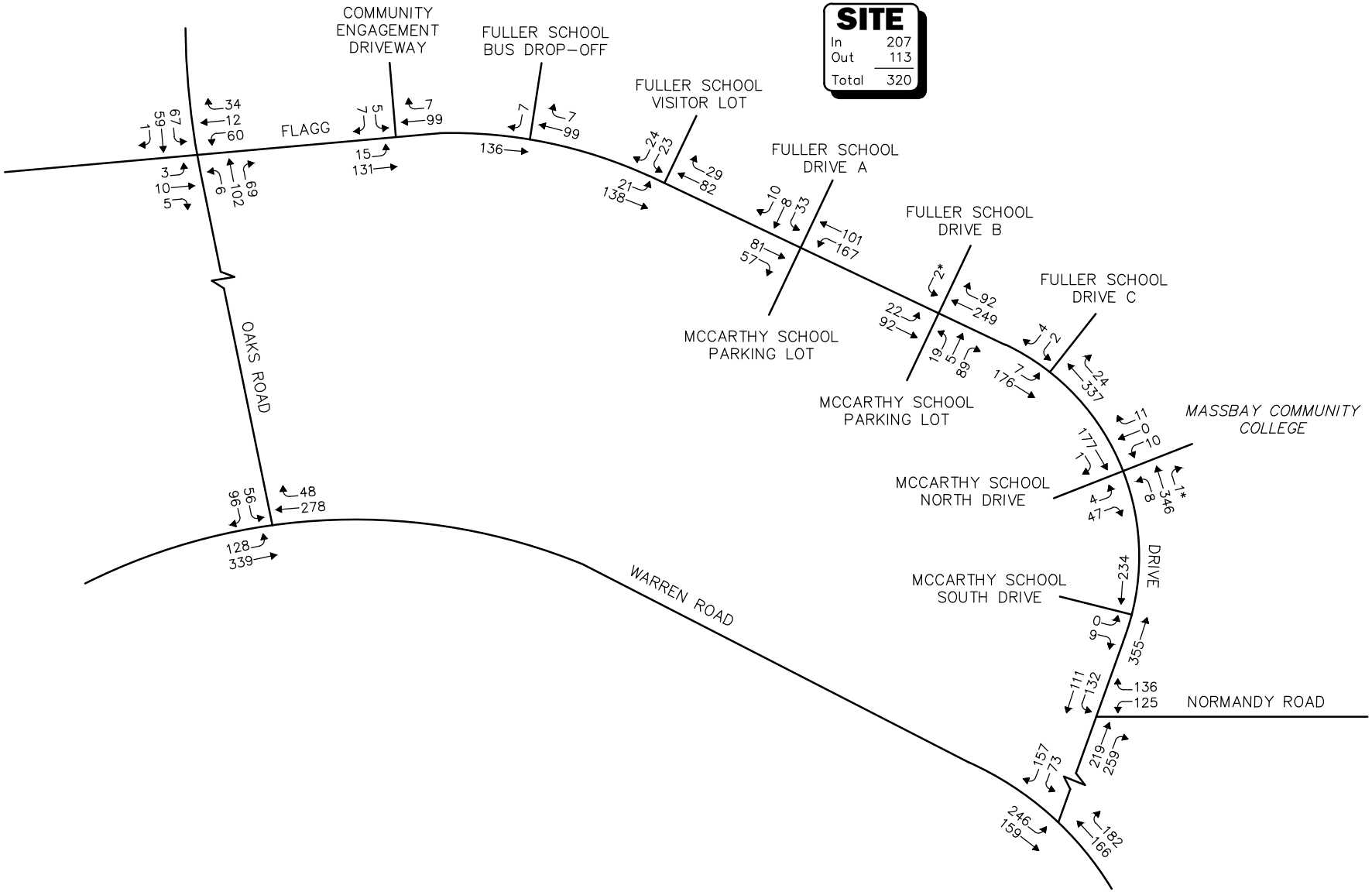

* Illegal Movement

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Figure 4

2017 Existing
Weekday Morning
Peak Hour Traffic Volumes

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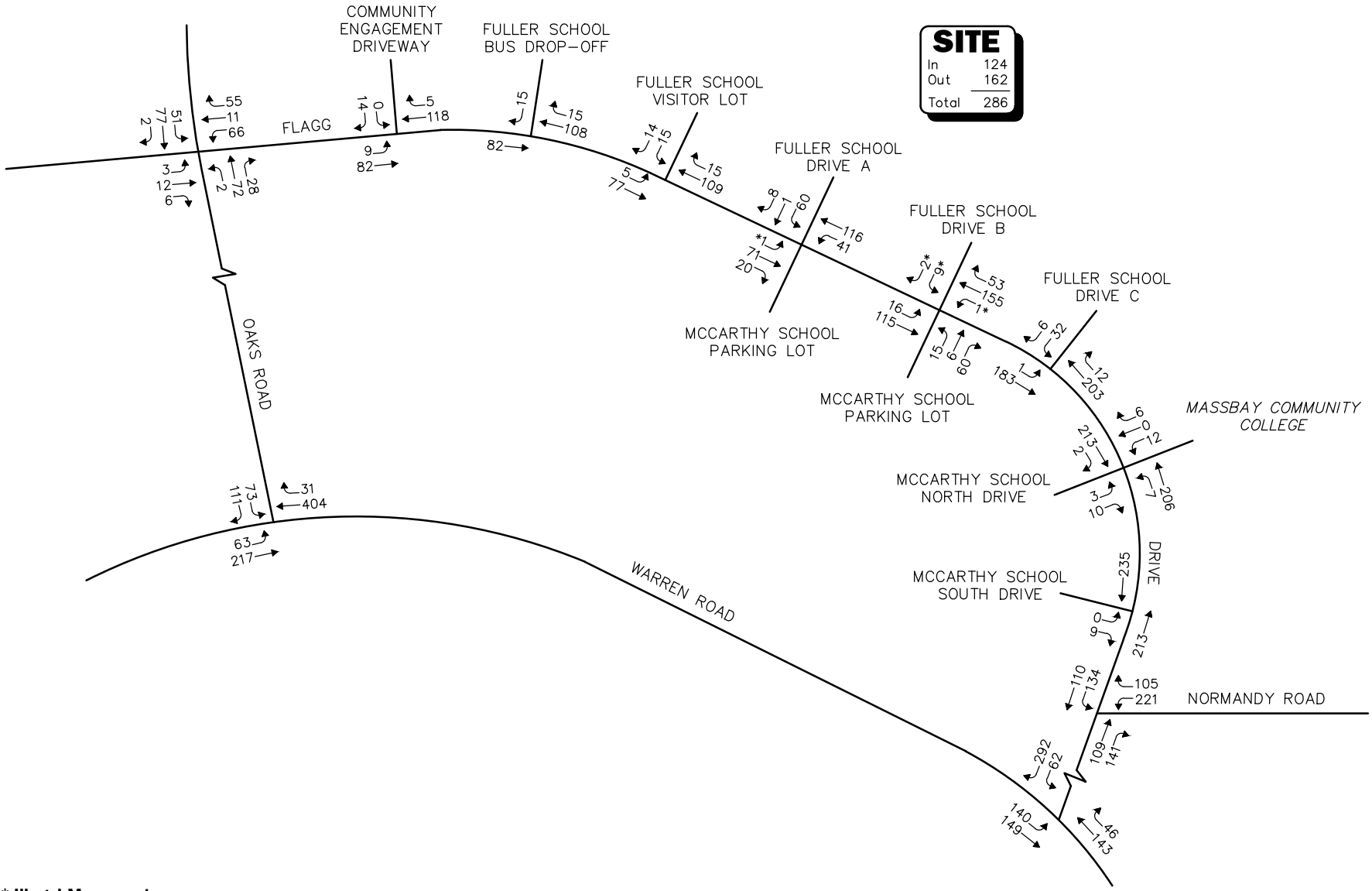

* Illegal Movement

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Figure 5

2017 Existing
Weekday Afternoon
Peak Hour Traffic Volumes

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Table 1
2017 EXISTING TRAFFIC VOLUMES

Location	Daily[a]	VPH[b]	K Factor[c]	Directional Distribution[d]
Flagg Drive, at the Fuller Middle School				
Weekday Morning	2,200	272	12.3	59% EB
Weekday Evening	2,200	216	9.8	57% WB

[a]Average traffic in vehicles per day.
[b]Vehicles per hour, based on TMCs conducted November 2017.
[c]Percent of daily traffic occurring during the peak hour.
[d]Percent traveling in peak direction.
NB = northbound; SB = southbound.

Flagg Drive in the vicinity of the Fuller Middle School was found to accommodate approximately 2,200 vehicles on an average weekday (two-way, 24-hour volume), with approximately 272 vehicles per hour (vph) during the weekday morning peak hour and approximately 216 vph during the weekday evening peak hour. Table 2 summarizes the vehicle trips entering and exiting the Fuller Middle School during the weekday morning and weekday evening peak hours.

Table 2
FULLER MIDDLE SCHOOL
EXISTING TRAFFIC VOLUMES

Time Period	Existing Volumes[a]
Weekday Morning Peak Hour	
Entering	207
Exiting	113
Total	320
Weekday Evening Peak Hour	
Entering	124
Exiting	162
Total	286

As can be seen in Table 2, Fuller Middle School experiences 320 vehicles trips (207 entering and 113 exiting) during the weekday morning peak hour, and 286 vehicle trips (124 entering and 162 exiting) during the weekday evening peak hour.

The Fuller Middle School drop-off time is at 7:55 AM, with 17 school buses. The Fuller Middle School pick-up time is at 2:25 PM, with 15 school buses. Bus and van drop-off and pick-up occurs in an exclusive bus lane parallel to Flagg Drive, directly outside the Fuller Middle School. The buses are separated from Flagg Drive traffic by pavement striping. A maximum queue of 12 vehicles for pick-ups was observed during the afternoon in the school parking lot.

The McCarthy School is also located on the south side of Flagg Drive, just east of the Fuller Middle School. The McCarthy School drop-off time is at 8:00 AM, with 12 school buses. The McCarthy School pick-up time is at 2:15 PM, with 11 school buses.

PEDESTRIAN FACILITIES

A comprehensive field inventory of pedestrian facilities within the study area was undertaken in October 2017. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study intersections. In general, sidewalks are provided along both side of Flagg Drive, the east side of Oaks Road and both sides of Warren Road. Crosswalks are provided at all study area intersections. Figures 6 and 7 graphically depicts the pedestrian volumes at the crosswalks during the weekday morning and weekday evening peak hours.

SPOT SPEED MEASUREMENTS

Vehicle travel speed measurements were performed on Flagg Drive in the vicinity of the Fuller Middle School in conjunction with the ATR counts. Table 3 summarizes the vehicle travel speed measurements.

Table 3
VEHICLE TRAVEL SPEED MEASUREMENTS

	Flagg Drive	
	Eastbound	Westbound
Mean Travel Speed (mph)	29	27
85th Percentile Speed (mph)	35	33
Posted Speed Limit (mph)	20	20

mph = miles per hour.

As can be seen in Table 3, the mean (average) vehicle travel speed along Flagg Drive in the vicinity of the Fuller Middle School was found to be approximately 29 mph in the eastbound direction and 27 mph in the westbound direction. The measured 85th percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be approximately 35 mph in the eastbound and 33 mph in the westbound direction. The 85th percentile speed is used as the basis of engineering design and in the evaluation of sight distances, and is often used in establishing posted speed limits.

MOTOR VEHICLE CRASH SUMMARY

Motor vehicle crash information for the study area intersections was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent five-year period available (2010 through 2014) in order to examine motor vehicle crash trends occurring within the study area. MassDOT's average motor vehicle crash rate for unsignalized intersections in District 3 is 0.66. The data is summarized by intersection, type, severity, and day of occurrence, and presented in Table 4.

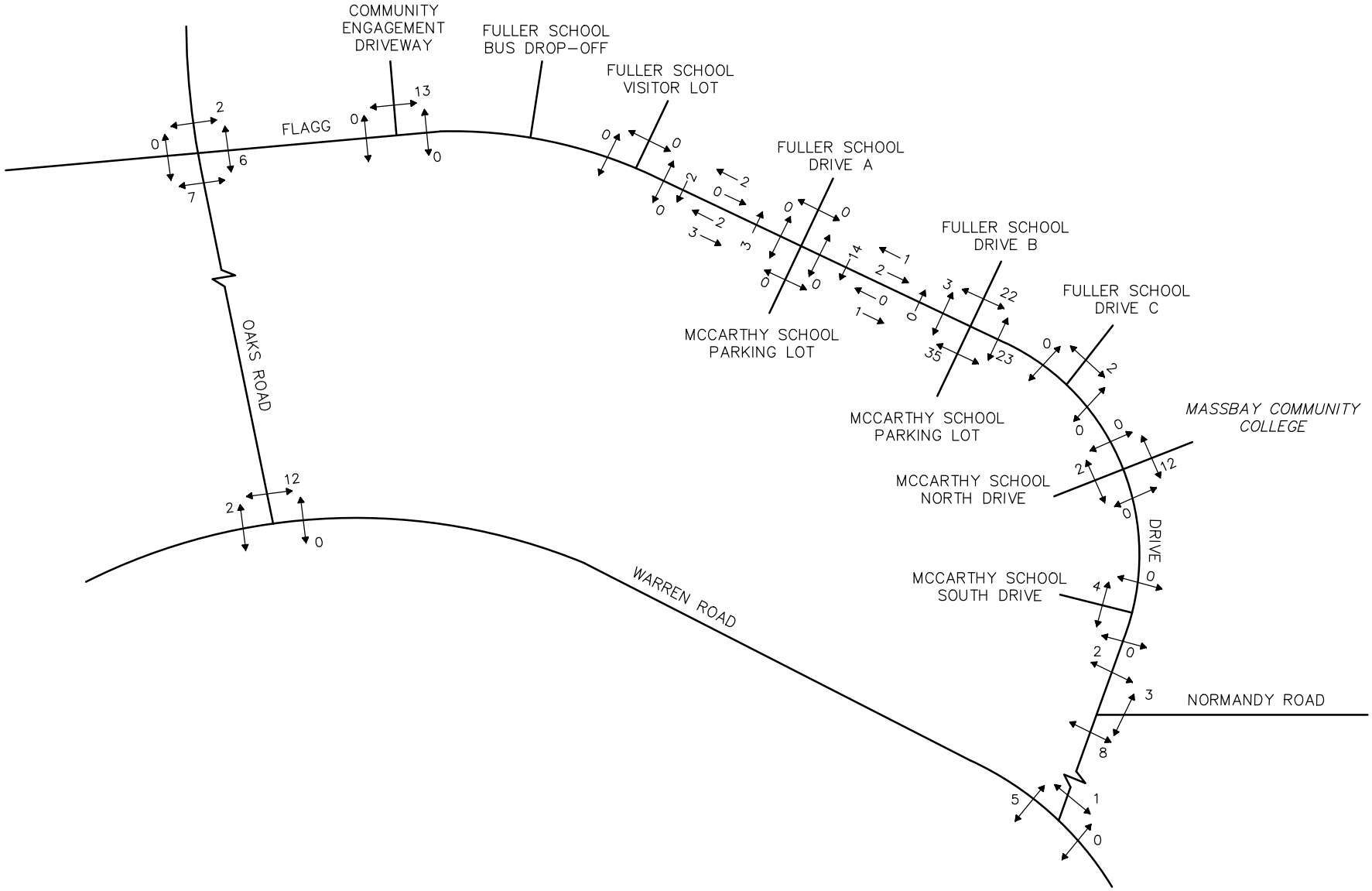

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Figure 6

2017 Existing
Weekday Morning
Pedestrian Crosswalk Counts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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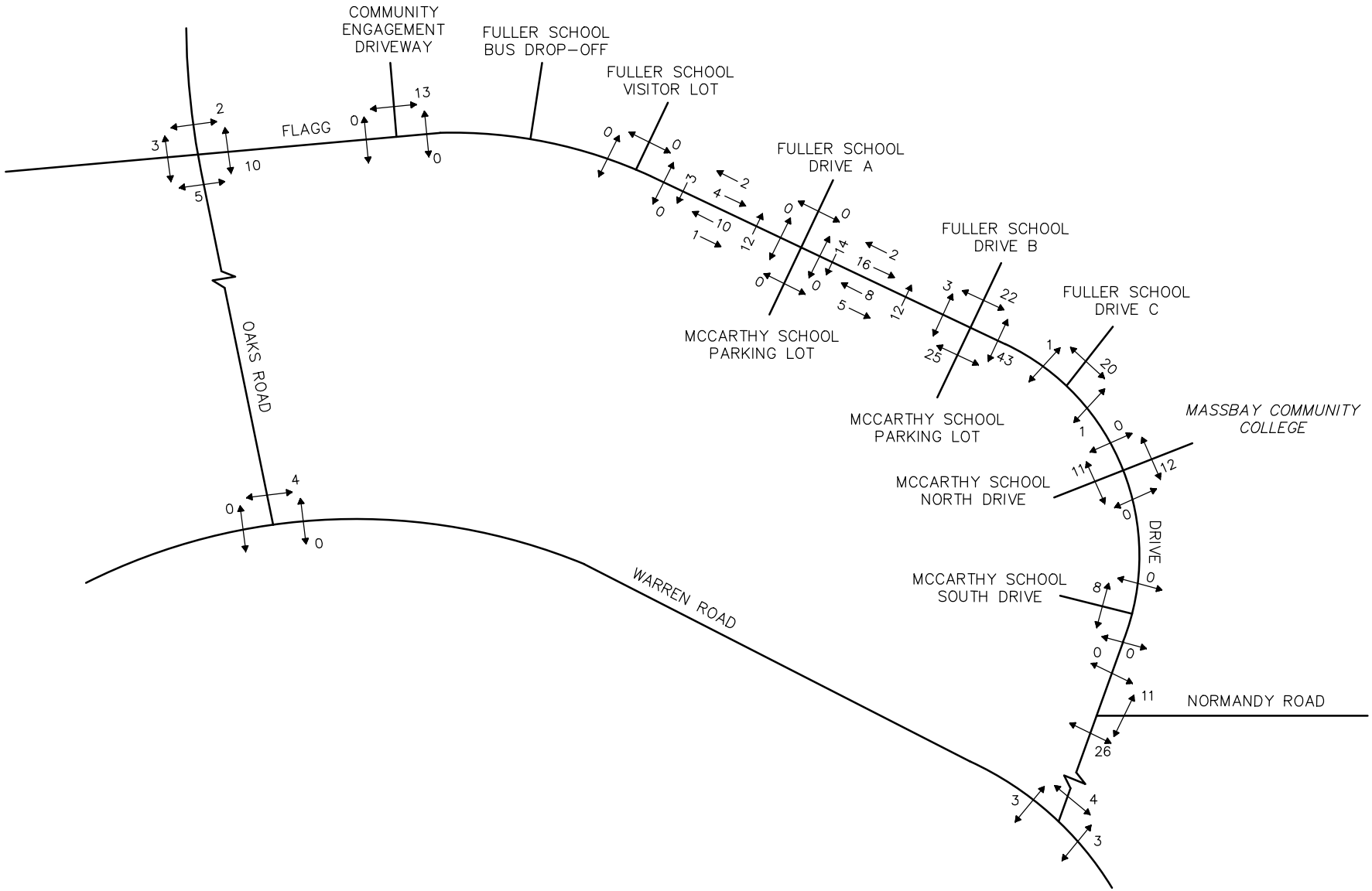


Not To Scale

Figure 7

2017 Existing
Weekday Afternoon
Pedestrian Crosswalk Counts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

As can be seen in Table 4, the location that experienced the greatest number of motor vehicle collisions over the last five years of available data was the intersection of Flagg Drive at MassBay Community College and McCarthy School. Over the five-year review period a total of 6 motor vehicle collisions were reported at this location, the majority of which involved single-vehicle collisions. The majority of collisions at this location resulted in property damage only, with no reported fatalities over the five-year review period.

All study area intersections exhibit crash rates that fall below the MassDOT average crash rate for this District.

Table 4
MOTOR VEHICLE CRASH DATA SUMMARY[a]

	Warren Road at Oaks Road	Normandy Road at Flagg Drive	Flagg Drive at MassBay Community College & McCarthy School	Oaks Road at Flagg Drive
Year:				
2010	0	1	1	0
2011	0	0	0	0
2012	1	2	1	1
2013	1	0	1	0
2014	0	0	3	0
Total	2	3	6	1
Average	0.4	0.60	1.20	0.20
Rate[b]	0.11	0.18	0.64	0.13
Significant?[c]	No	No	No	No
Type:				
Angle	0	1	1	1
Rear-End	1	1	2	0
Head-On	0	0	0	0
Sideswipe	0	1	0	0
Fixed Object	0	0	3	0
Pedestrian	0	0	0	0
Unknown/Other	1	0	0	0
Total	2	3	6	1
Road Surface Conditions:	1	2	5	0
Clear	1	0	1	1
Cloudy/Rain	0	1	0	0
Snow/Ice	0	0	0	0
Fog	0	0	0	0
Unknown/Other	2	3	6	1
Total				
Severity:				
Property Damage Only	2	3	4	1
Personal Injury	0	0	2	0
Fatality	0	0	0	0
Total	0	3	6	1

[a]Source: MassDOT Safety Management/Traffic Operations Unit records, 2010 through 2014.

FUTURE CONDITIONS

Proposed Site Plan

Jonathan Levi Architects, in coordination with VAI, has developed a new school site plan which follows sound engineering practices and provides better on-site circulation, drop-off areas, bus areas, and pedestrian flow. Included in the site plan are the following changes:

- Separate off-street bus drop-off and pick-up area
- Parent drop-off/pick-up area with over 700 feet for queuing
- Relocated driveways separated from the McCarthy School driveway for improved safety
- Two distinct parking areas with sufficient parking of the school.
- Updated student walkways throughout the new layout

Overall, the plan provides improved operations and safety for the students and staff.

Future Traffic Generation

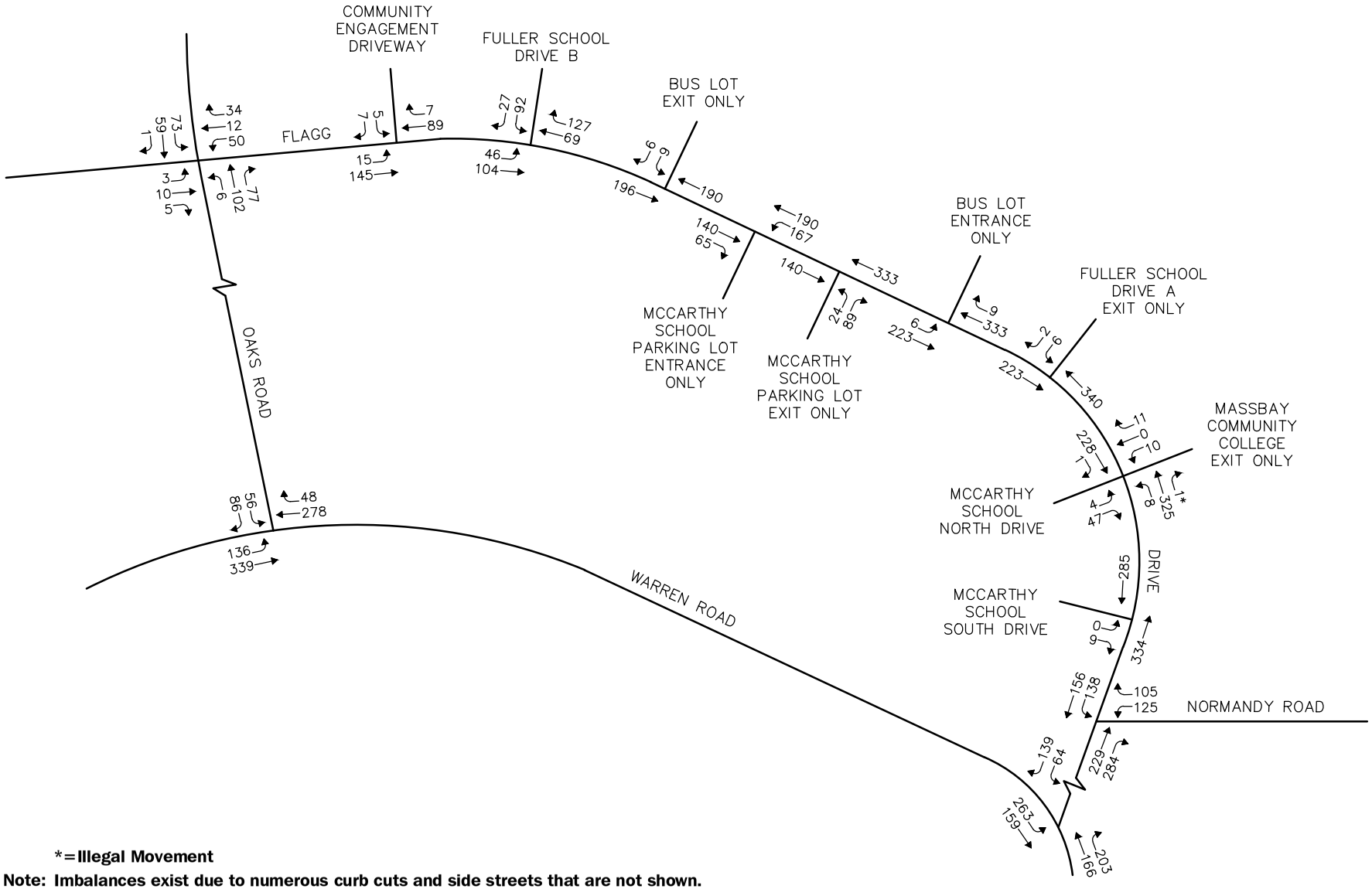
The proposed school is expected to increase enrollment from 530 students to 630 students in the future. This is an approximated 19 percent increase. The existing school and projected school traffic is presented in Table 5.

Table 5
FULLER MIDDLE SCHOOL
EXISTING TRAFFIC VOLUMES

Time Period	Existing	Projected	Increase
Weekday Morning Peak Hour			
Entering	207	246	39
Exiting	113	134	21
Total	320	380	60
Weekday Evening Peak Hour			
Entering	124	144	23
Exiting	162	193	31
Total	286	340	54

As can be seen in Table 5, Fuller Middle School expansion is estimated to generate 60 additional vehicle trips (39 entering and 21 exiting) during the weekday morning peak hour, and 54 additional vehicle trips (23 entering and 31 exiting) during the weekday evening peak hour.

Traffic volume networks for the new school layout and additional traffic volumes area presented in Figures 8 and 9.



*=Illegal Movement

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Figure 8

Build - New School
Weekday Morning
Peak Hour Traffic Volumes

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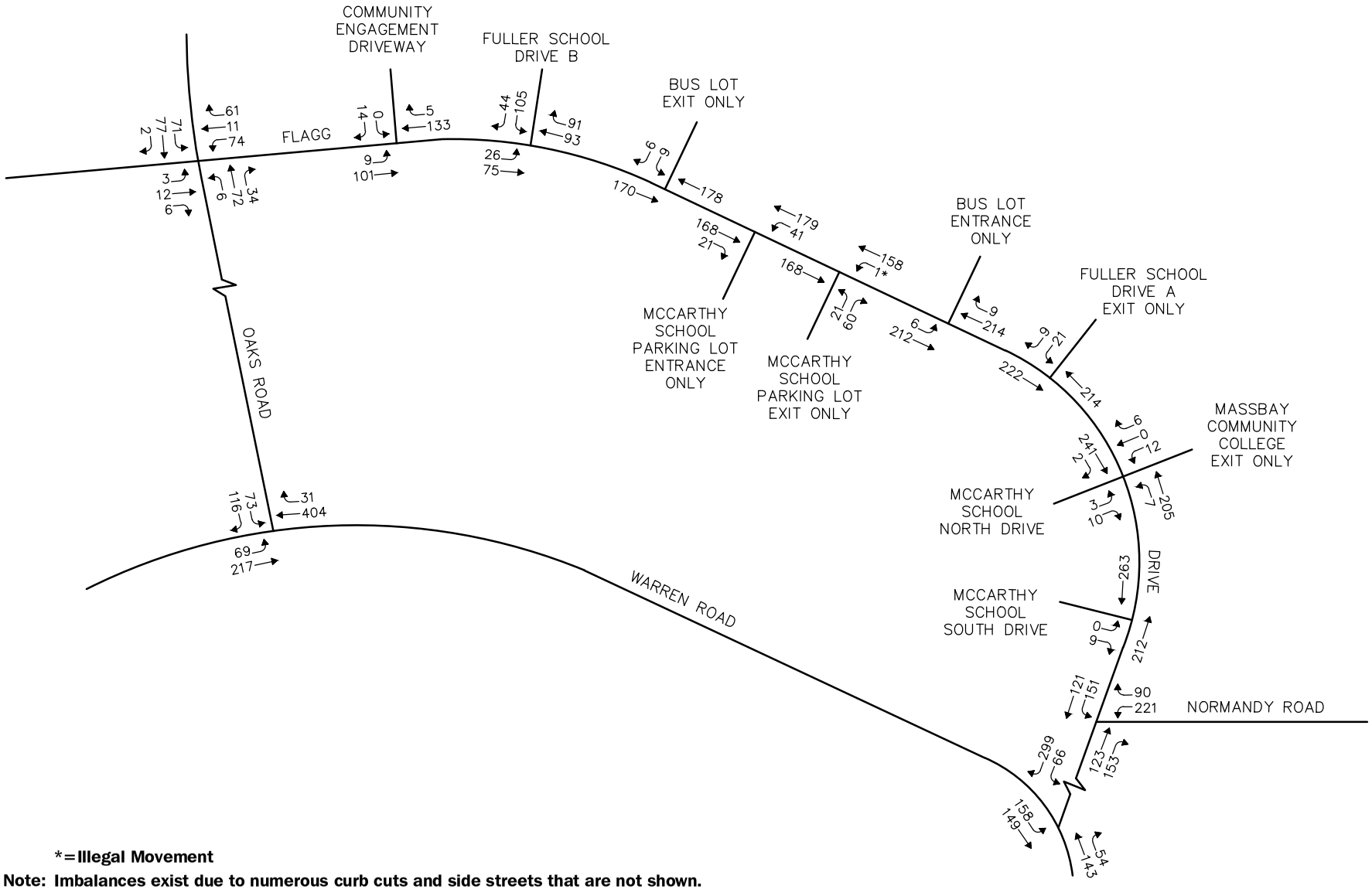

*=Illegal Movement

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Figure 9

Vanasse & Associates, Inc.
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Build - New School
Weekday Evening
Peak Hour Traffic Volumes

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TRAFFIC OPERATIONS

Measuring existing and future traffic volumes quantifies traffic flow within the study area. To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under Existing traffic-volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study.

Methodology

Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.[1] The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best operating conditions and LOS F representing congested or constrained operating conditions.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

Unsignalized Intersections

The six levels of service for unsignalized intersections may be described as follows:

- *LOS A* represents a condition with little or no control delay to minor street traffic.
- *LOS B* represents a condition with short control delays to minor street traffic.
- *LOS C* represents a condition with average control delays to minor street traffic.
- *LOS D* represents a condition with long control delays to minor street traffic.
- *LOS E* represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
- *LOS F* represents a condition where minor street demand volume exceeds capacity of an approach lane, with extreme control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the 2010 *Highway Capacity Manual.*[2] Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as

[1]The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual;* Transportation Research Board; Washington, DC; 2010.

[2]*Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010.

traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *2010 Highway Capacity Manual*. Table 6 summarizes the relationship between level of service and average control delay for two way stop controlled and all-way stop controlled intersections.

Table 6
LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[a]

Level-Of-Service by Volume-to-Capacity Ratio		Average Control Delay
v/c ≤ 1.0	v/c > 1.0	(Seconds Per Vehicle)
A	F	≤10.0
B	F	10.1 to 15.0
C	F	15.1 to 25.0
D	F	25.1 to 35.0
E	F	35.1 to 50.0
F	F	>50.0

[a]Source: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010; page 19-2.

ANALYSIS RESULTS

Level-of-service analyses were conducted for 2017 Existing conditions and new school Build conditions for the study area intersections. The results of the intersection capacity analysis within the study area are described below, with a tabular summary provided in Tables 7 and 8.

Unsignalized Intersection Analysis Results

Warren Road at Oaks Road

Under Existing conditions, the critical movements at this intersection (turns from Oaks Road) operate at LOS D during the weekday morning peak hour and at LOS C during the weekday afternoon peak hour. No changes are expected as a result of the new school.

Oaks Road at Flagg Drive

Under Existing and new school Build conditions, the all movements at this intersection operate at LOS A during both the weekday morning and weekday afternoon peak hours.

Flagg Drive at Community Engagement Drive

Under Existing and new school Build conditions, the critical movements at this intersection operates at LOS B during the weekday morning peak hour and at LOS A during the weekday afternoon peak hour.

Flagg Drive at Visitor Parking Lot

Under Existing conditions, the critical movements at this intersection (turns from Visitor Parking Lot) operate at LOS B during both the weekday morning and weekday afternoon peak hours. This drive is eliminated in the future.

Flagg Drive at Fuller School Drive A and McCarthy School Parking Lot

Under Existing conditions, the critical movements at this intersection (turns from Fuller Drive) operate at LOS C during the weekday morning peak hour and at LOS B during the weekday afternoon peak hour. In the future, this will no longer be a four-way intersection.

Flagg Drive at Fuller School Drive C

Under Existing conditions, the critical movements at this intersection (turns from Fuller Drive) operate at LOS B during the weekday morning peak hour and LOS C during the weekday afternoon peak hour.

Flagg Drive at McCarthy School North Drive and MassBay Community College

Under Existing conditions, the critical movements at this intersection (turns from McCarthy School) operate at LOS C during the weekday morning peak hour and at LOS B during the weekday afternoon peak hour. Under Existing conditions, the critical movements at this intersection (turns from MassBay Community College) operate at LOS C during both the weekday morning and weekday afternoon peak hours. Under future conditions, this intersection operates at LOS B.

Flagg Drive at McCarthy School South Drive

Under Existing conditions, the critical movements at this intersection (turns from McCarthy School) operate at LOS B during both the weekday morning and weekday afternoon peak hours.

Flagg Drive at Normandy Road

Under Existing conditions, the critical movements at this intersection (turns from Normandy Road) operate at LOS F during both the weekday morning and weekday afternoon peak hours. This new school will have a minimal impact at this location.

Flagg Drive at Warren Road

Under Existing conditions and Future conditions, the critical movements at this intersection (turns from Flagg Drive) operate at LOS F during the weekday morning peak hour and at LOS C during the weekday afternoon peak hour.

Flagg Drive at New School driveway (Drive A, Drive B, and Bus Exit)

These driveways, under Future conditions, will operate at LOS C or better during the morning and afternoon periods.

Overall, traffic conditions operate well based upon industry standards. Minimal levels of congestion and delay were observed at the peak school drop-off and pick-up times. Similar operations can be expected in the future.

Table 7
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY
EXISTING CONDITION

	Baseline			
Unsignalized Intersection Movements	Demand[a]	Delay[b]	LOS[c]	Queue[d]
Warren Road at Oaks Road				
Weekday Morning :				
Oaks Road SB LT/RT	152	30.4	D	4
Weekday Afternoon:				
Oaks Road SB LT/RT	184	20.3	C	3
Oaks Road at Flagg Drive				
Weekday Morning :				
Flagg Drive EB	18	8.2	A	0
Flagg Drive WB	106	9.8	A	0
Oaks Road NB	177	9.4	A	0
Oaks Road SB	127	9.1	A	0
Weekday Afternoon:				
Flagg Drive EB	21	7.8	A	0
Flagg Drive WB	132	9.4	A	0
Oaks Road NB	102	8.3	A	0
Oaks Road SB	130	8.7	A	0
Flagg Drive at Community Engagement Drive				
Weekday Morning :				
Fuller Drive SB LT/RT	12	10.2	B	0
Weekday Afternoon:				
Fuller Drive SB LT/RT	14	9.0	A	0
Flagg Drive at Visitor Parking Lot				
Weekday Morning :				
Visitor Parking Lot SB LT/RT	47	11.2	B	0
Weekday Afternoon:				
Visitor Parking Lot SB LT/RT	29	10.1	B	0
Flagg Drive at Fuller School Drive A and McCarthy School Parking Lot				
Weekday Morning :				
Fuller Drive SB LT/TH	41	24.5	C	2
Fuller Drive SB RT	10	9.1	A	0
Weekday Afternoon:				
Fuller Drive SB LT/TH	61	12.7	B	1
Fuller Drive SB RT	8	9.1	A	0
Flagg Drive at Fuller School Drive B and McCarthy School Parking Lot				
Weekday Morning :				
McCarthy Parking Lot NB LT/TH	24	13.9	B	0
McCarthy Parking Lot NB RT	89	9.9	A	1
Weekday Afternoon:				
McCarthy Parking Lot NB LT/TH	21	12.0	B	0
McCarthy Parking Lot NB RT	60	9.7	A	0
Flagg Drive at Fuller School Drive C				
Weekday Morning :				
Fuller Drive SB LT/RT	6	12.5	B	0
Weekday Afternoon:				
Fuller Drive SB LT/RT	38	15.2	C	1

See Notes at End of Table.

Table 7 (Continued)
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY
EXISTING CONDITION

	Baseline			
Unsignalized Intersection Movements	Demand[a]	Delay[b]	LOS[c]	Queue[d]
Flagg Drive at McCarthy School North Drive and MassBay Community College				
Weekday Morning :				
McCarthy School EB LT/RT	51	20.2	C	0
MassBay Community College WB LT	10	23.3	C	0
MassBay Community College WB RT	11	12.0	B	0
Weekday Afternoon:				
McCarthy School EB LT/RT	13	14.5	B	0
MassBay Community College WB LT	12	15.0	C	0
MassBay Community College WB RT	6	9.7	A	0
Flagg Drive at McCarthy School South Drive				
Weekday Morning :				
McCarthy Parking Lot EB LT/RT	9	10.7	B	0
Weekday Afternoon:				
McCarthy Parking Lot EB LT/RT	9	10.4	B	0
Flagg Drive at Normandy Road				
Weekday Morning :				
Normandy Road WB LT/RT	261	>50.0	F	12
Weekday Afternoon:				
Normandy Road WB LT/RT	326	>50.0	F	15
Flagg Drive at Warren Road				
Weekday Morning :				
Flagg Drive SB LT/RT	230	>50.0	F	8
Weekday Afternoon:				
Flagg Drive SB LT/RT	354	16.6	C	4

[a]Demand in vehicles per hour
[b]Delay in seconds per vehicle
[c]Level of service
[d]Queue Length in Vehicles
NB = northbound; WB = westbound; LT = left-turning movements; RT = right-turning movements

Table 8
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY
BUILD CONDITION

	Build			
Unsignalized Intersection Movements	Demand[a]	Delay[b]	LOS[c]	Queue[d]
Warren Road at Oaks Road				
Weekday Morning :				
Oaks Road SB LT/RT	145	31.5	D	3.9
Weekday Afternoon:				
Oaks Road SB LT/RT	189	20.9	C	2.7
Oaks Road at Flagg Drive				
Weekday Morning :				
Flagg Drive EB	18	8.2	A	0.1
Flagg Drive WB	96	9.6	A	0.9
Oaks Road NB	185	9.4	A	1.4
Oaks Road SB	133	9.1	A	0.8
Weekday Afternoon:				
Flagg Drive EB	21	8.0	A	0.1
Flagg Drive WB	146	9.8	A	1.0
Oaks Road NB	112	8.5	A	0.6
Oaks Road SB	150	9.1	A	0.8
Flagg Drive at Community Engagement Drive				
Weekday Morning :				
Fuller Drive SB LT/RT	12	10.1	B	0.1
Weekday Afternoon:				
Fuller Drive SB LT/RT	14	9.1	A	0.1
Flagg Drive at Drive B				
Weekday Morning :				
Fuller Drive SB LT/RT	119	13.6	B	0.8
Weekday Afternoon:				
Fuller Drive SB LT/RT	149	12.4	B	1.2
Flagg Drive at Bus lot Exit Only				
Weekday Morning :				
Visitor Parking Lot SB LT/RT	15	11.7	B	0.1
Weekday Afternoon:				
Visitor Parking Lot SB LT/RT	15	10.3	B	0.1
Flagg Drive at Fuller School Drive B and McCarthy School Parking Lot (Exit Only)				
Weekday Morning :				
McCarthy Parking Lot NB LT/TH/RT	113	10.4	B	1
Weekday Afternoon:				
McCarthy Parking Lot NB LT/TH/RT	81	10.2	B	0.5
Flagg Drive at Bus Lot Entrance Only				
Weekday Morning :				
Flagg Drive EB LT/TH	229	0.3	A	0.3
Weekday Afternoon:				
Flagg Drive EB LT/TH	218	0.3	B	0.3
Flagg Drive at Fuller School Drive A				
Weekday Morning :				
Fuller Drive SB LT/RT	8	14.0	B	0.1
Weekday Afternoon:				
Fuller Drive SB LT/RT	30	15.1	C	0.4

See notes at end of Table.

Table 8 (Continued)
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY
BUILD CONDITION

	Build			
Unsignalized Intersection Movements	Demand[a]	Delay[b]	LOS[c]	Queue[d]
Flagg Drive at McCarthy School North Drive and MassBay Community College				
Weekday Morning :				
McCarthy School EB LT/RT	54	22.1	C	0.1
MassBay Community College WB LT	10	28.2	D	0.4
MassBay Community College WB RT	11	11.7	B	0.1
Weekday Afternoon:				
McCarthy School EB LT/RT	13	11.8	B	0.1
MassBay Community College WB LT	12	15.9	C	0.1
MassBay Community College WB RT	6	9.7	A	0
Flagg Drive at McCarthy School South Drive				
Weekday Morning :				
McCarthy Parking Lot EB LT/RT	9	11.3	B	0.2
Weekday Afternoon:				
McCarthy Parking Lot EB LT/RT	9	10.7	B	0.2
Flagg Drive at Normandy Road				
Weekday Morning :				
Normandy Road WB LT/RT	230	>50.0	F	13
Weekday Afternoon:				
Normandy Road WB LT/RT	311	>50.0	F	18.5
Flagg Drive at Warren Road				
Weekday Morning :				
Flagg Drive SB LT/RT	203	>50.0	F	6.8
Weekday Afternoon:				
Flagg Drive SB LT/RT	365	18.3	C	4.1

[a]Demand in vehicles per hour
[b]Delay in seconds per vehicle
[c]Level of service
[d]Queue Length in Vehicles
NB = northbound; WB = westbound; LT = left-turning movements; RT = right-turning movements

RECOMMENDATIONS

A number of existing conditions that do not meet industry practices were noted and should be incorporated in future plans. The measures will enhance safety conditions in the area.

Based upon our evaluation, the following is recommended:

- The 4-way STOP intersection of Flagg Drive at Oaks Street should have "All-Stop" signs installed beneath the STOP-signs.
- All school driveways should be placed under STOP-control.
- Advanced-warning signs, School Zone signs, Pedestrian signs, pavement markings and traffic control devices (i.e., flashing school speed limit signs) should be provided along Flagg Drive.
- Appropriate Do Not Enter signage should be installed on one-way drives.
- All signs and other pavement markings to be installed within the Project site shall conform to the

applicable standards of the current Manual on Uniform Traffic Devices (MUTCD).[3]

- Signs and landscaping adjacent to the school driveway intersections should be designed and maintained so as not to restrict lines of sight.
- Restriping of crosswalks on Flagg Drive should be provided for safe crossings.
- A raised intersection should be installed on the section of roadway in front of the school.
- A speed hump should be installed along Flagg Drive north of the school.

Figure 10 depicts the preliminary school signage plan which incorporates the appropriate School Zone signage, STOP-sign, and necessary advance warning sign for safe operations.

CONSTRUCTION MANAGEMENT

A detailed Construction Management Plan will need to be developed once a contractor has been selected. VAI, in coordination with Jonathan Levi Architects, has reviewed construction routes for truck traffic. Based upon our review, the preferred entering route is via Normandy Road from Route 126. Exiting truck traffic traveling north on Route 126 should utilize the signalized intersection of Dennison Avenue at Route 126 and travel via Flagg Drive to Warren Road to Dennison Avenue. Route 126 southerly truck traffic can utilize Normandy Road. The Construction Management Plan, in addition to preferred truck routing, will include contact information, construction schedule, hours of construction, fencing areas, and stages of construction, and employee parking in addition to other construction issues.

SUMMARY

In summary, VAI has conducted a detailed transportation study of the proposed new Fuller Middle School. While the new school will add traffic to the area, safe conditions will continue to exist for the students, staff, and visitors to the school. The new school design incorporates improved drop-off areas, a separate bus area, new walkways, and safety measures in the area of the school. Recommendations have been made to enhance safety conditions and ensure safe operations at the new school.

[3]Ibid 4

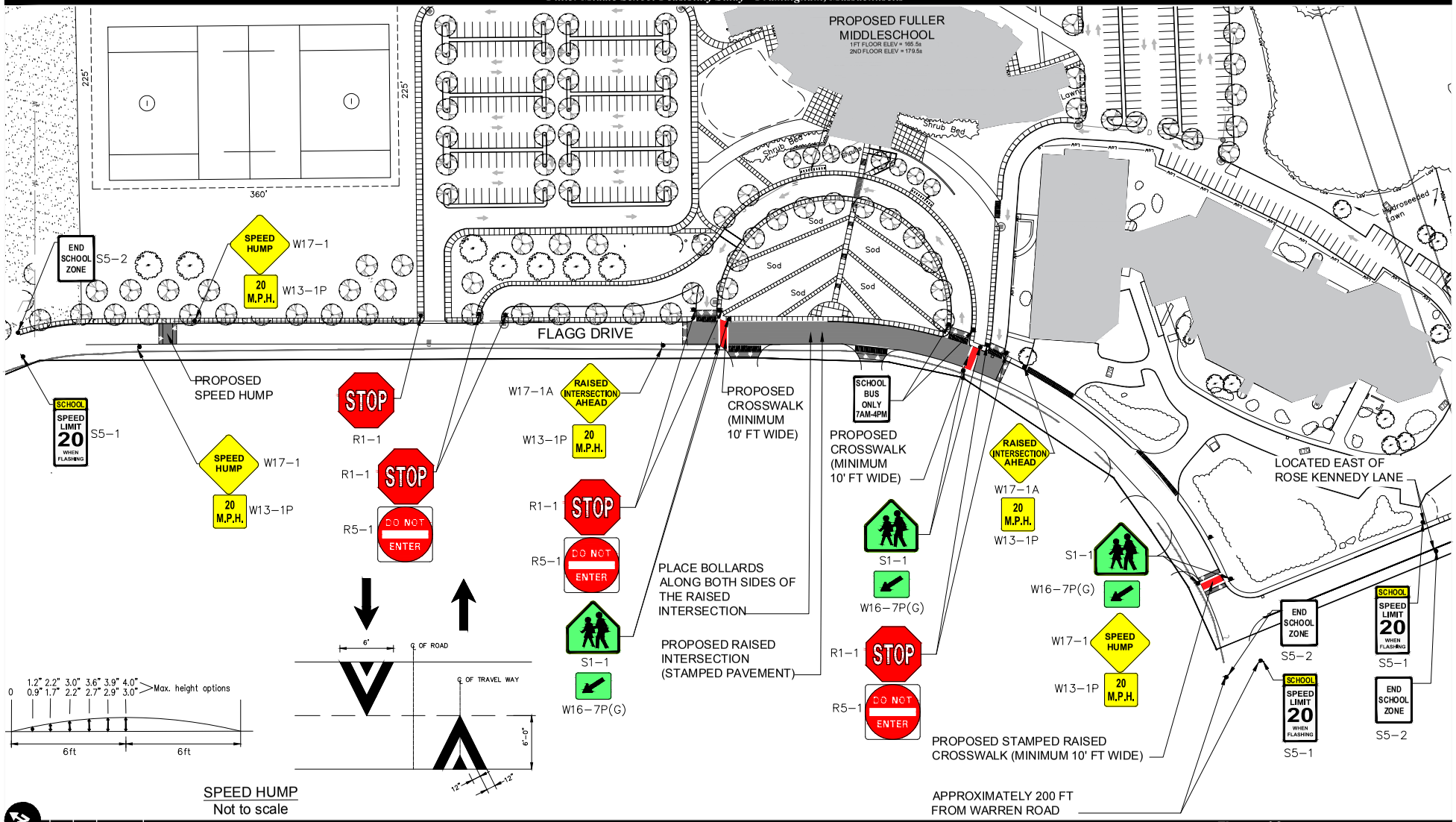

Figure 10

Proposed School Signage Plan

Vanasse & Associates, Inc.
Transportation Engineers & Planners

4. Environmental and Existing Building Assessment

Existing Conditions Summary

Fuller Middle School at 31 Flagg Drive is located in South Framingham. The single-story building contains approximately 196,000 square feet and is situated on over 42 acres of combined property along with the Farley Middle School, currently occupied by the Massachusetts Bay Community College. Also shared with the college are the football/soccer fields as well as the baseball field and the adjoining parking area. There is no playground on site. The Fuller School has roughly 150 parking stalls available for all of its occupants. It is located across Flagg Drive from the McCarthy Elementary School.

The school was constructed as Framingham High School in 1958 (later, Framingham South High School). It is a cast-in-place concrete building with structural steel frame founded on concrete piles and spread footings with a brick masonry and glass exterior facade. Since 1991, Fuller has served as a middle school with approximately 500 students, occupying 160,000 SF. The building also houses, in the remaining 36,000 SF, the Framingham Public School District's ("District") Building & Grounds Department, Framingham Public Access Cable TV, an English Language Learners adult education program, and school transportation offices. The Fuller School site is situated on a suburban site with underground utility lines along Flagg Drive for water, natural gas, sewer, and electrical service.

The design team embarked upon an investigative study of the existing Fuller School building during the months of October and November 2017. The study included visual analysis, destructive testing, existing document research and interviews with staff having knowledge of the various projects completed throughout the history of the building. Previous investigative reports were provided to the design team, including an extensive 2013 Pre-Feasibility Study by BH+A for further evaluation and inclusion in the current analysis. Please see the full BH+A report in Appendix 8.4.0.

The building was constructed on structural piles and caissons with a crawl space and a dirt floor beneath most of the structure. This causes a musty odor at times within the building. Air quality testing was performed in 2007 when mold spore count, carbon dioxide, oxygen and carbon monoxide measured levels were reported to be within allowable limits. The structural concrete floor is suspended and is showing signs of wear. The roof was replaced in 1995 and has a 20-year life expectancy. The roof has shown wear and requires seasonal leak repairs. The building was originally equipped with many skylights that were removed during roof replacement resulting in limited natural light throughout the main corridors.

The aspects of the existing Fuller School that have been analyzed and evaluated as part of this report include historic significance, traffic, building code compliance, Architectural Access Board compliance, structural, hazardous materials, soils and geotechnical, mechanical,

electrical, plumbing, and fire protection. A site survey was performed with wetlands delineation flagging. The study of existing conditions was completed to a level that will allow the design team to have a clear understanding of the potential cost impacts involved with the preliminary alternatives for the Fuller School.

It may be concluded that the existing building, while well maintained, has reached the end of its useful life. It has structural deterioration in a large portion of its 1st floor framed structural concrete slab and approximately 1/3 of its gypsum concrete roof structure is degraded on account of roof leaks over the past 50+ years. To address the physical needs of Fuller Middle School a major renovation would be required to repair structural deficiencies, replace mechanical, electrical and plumbing systems, install fire protection and upgraded fire alarm systems, improve the thermal performance of the exterior envelope of the building, repair water infiltration deficiencies and update the layout of the interior of the building to meet current educational space standards.

5. Geotech - GeoEnvironmental Analysis

5.1 GeoTechnical Report-

Please see Division 31 of the Project Manual for the Foundation Engineering Report.

5.2 GeoEnvironmental Report

Following is the GeoEnvironmental Report.

McPHAIL ASSOCIATES, LLC

2269 Massachusetts Avenue
Cambridge, MA 02140
www.mcphailgeo.com
(617) 868-1420

PRELIMINARY ENVIRONMENTAL DATA REPORT

FULLER MIDDLE SCHOOL

FRAMINGHAM, MASSACHUSETTS

JUNE 13, 2018

Prepared For:

JONATHON LEVI ARCHITECTS
266 BEACON STREET
BOSTON, MA 02116

PROJECT NO. 6473.9.01

June 13, 2018

Jonathon Levi Architects
266 Beacon Street
Boston, MA 02116

Attention: Mr. Philip Gray

Reference: Fuller Middle School; Framingham, Massachusetts
Preliminary Environmental Data Report

Ladies and Gentlemen:

We are pleased to present this Preliminary Environmental Data Report associated with the proposed redevelopment of the Fuller Middle School (FMS) located in Framingham, Massachusetts. Refer to the Project Location Plan (**Figure 1**) for the general site locus.

Purpose and Scope

The purpose of this letter report by McPhail Associates, LLC (McPhail) is to present the results of the preliminary environmental testing of the soil at the subject site as identified above.

These services were performed and this report was prepared in accordance with our proposal dated April 12, 2018, and the subsequent authorization of Jonathon Levi Architects (JLA). These services are subject to the limitations in **Appendix A**.

Our scope of services was performed concurrently with our geotechnical engineering investigation and consisted of the following tasks: (i) screen soil samples for total volatile organic compounds (TVOC) using a photoionization detector (PID); (ii) submit soil samples for chemical analyses: three (3) fill samples obtained from the borings were submitted for analysis for the presence of semi-volatile organic compounds (SVOCs) and total RCRA-8 metals, one (1) fill sample was submitted for analysis for the presence of volatile organic compounds (VOCs) and extractable petroleum hydrocarbons (EPH); and (iii) evaluate the results of the testing in comparison with Massachusetts Contingency Plan (MCP) standards for regulatory reporting, and provide a letter containing recommendations.

Existing Conditions and Proposed Construction

The subject site fronts onto Flagg Drive to the south and is bounded by the Mass Bay Community College to the east, residential properties to the west and a wooded area to the north. Currently, the existing one-story brick Fuller Middle school building occupies the central portion of the site, which was built in the late 1950's. The site is occupied by a paved surface parking lot, as well as grassed and landscape areas. Existing ground surface across the site varies from about Elevation +160.5 to Elevation +166.

Based on the information provided to us, the proposed development includes a 2 to 3-story structure and associated site work. It is understood that the proposed construction is

anticipated to be located within the southern portion of parcel. Except for the area of the proposed auditorium, it is understood that the proposed building will not contain any below grade space. Based on the information provided to us, the proposed building will generally be located within an existing bituminous concrete parking area or the existing field grassed areas.

Elevations cited herein are in feet and are referenced to the North American Vertical Datum of 1988 (NAVD88).

Subsurface Exploration Program

A subsurface exploration program consisting of ten (10) borings was conducted at the site on February 21, 22 and April 19, 2018 for geotechnical purposes. In accordance with our proposed scope of additional geoenvironmental engineering services, a total of three (3) of the ten (10) borings were performed for environmental testing and are discussed further below.

The borings were performed utilizing NW casing. Standard 2-inch O.D. split-spoon samples and standard penetration tests (SPT) were obtained continuously or at 5-foot intervals of depth, in accordance with the standard procedures described in ASTM D1586.

The borings were performed within the existing parking lot to the south and southeast of the existing building and within the existing walkway north of the existing school building. Borings were terminated at depths ranging from 26 to 31 feet below existing ground surface. The locations of the borings are indicated on the enclosed Subsurface Exploration Plan, **Figure 2**.

The borings were observed by representatives of McPhail who performed field layout, prepared field logs, obtained and visually classified soil samples, performed headspace screening of soil samples, and determined the depths of the explorations based upon actual subsurface conditions encountered. Boring logs prepared by McPhail are contained in **Appendix B**.

Subsurface Conditions

A detailed description of the subsurface conditions encountered within the three (3) geoenvironmental borings are documented on the boring logs contained in **Appendix B**. The "Preliminary Foundation Engineering Report" prepared by McPhail Associates, LLC dated June 4, 2018 further details these explorations and the other explorations completed in 2018, however the following is a description of the generalized subsurface conditions encountered across the site from ground surface downward.

Fill material of about 2.2- to 6.5-foot in thickness was encountered in the borings at ground surface or below the surface treatments, which consisted of a 3-inch thickness of asphalt or a 6-inch thickness of topsoil. Underlying the fill deposit at five boring locations, an

alluvial/organic silt deposit, ranged from about 2 to 5.5 feet in thickness. Below the fill and/or alluvial/organic silt deposits, a natural lacustrine deposit was encountered at a depth of 8 feet below ground surface. A natural glacial outwash deposit was encountered at depths ranging from 4 to 9 feet below ground surface.

At the time of the 2018 borings, groundwater levels where measured within the completed boreholes performed within the project site were reported to vary from about 3 to approximately 6 feet below the existing ground surface corresponding to about Elevation +160.9 to Elevation +158.6. It is anticipated that future groundwater levels across the site may vary from those reported herein due to factors such as normal seasonal changes, periods of heavy precipitation, and alterations of existing drainage patterns or may become perched on the relatively impervious organic deposit.

MCP Reporting Provisions

The Massachusetts Contingency Plan, 310 CMR 40.0000 (MCP) established "...requirements and procedures for notifying the Department of releases and threats of release of oil and/or hazardous material." The MCP defined categories for soil and groundwater at sites under investigation. The MCP also established Reportable Concentrations for oil and hazardous materials in soil and groundwater for the defined categories. The soils at the site under investigation are classified as RCS-1 since the site is located within 500 feet of a school.

Soil Screening Results

Soil samples obtained from the borings were screened for the presence of Total Volatile Organic Compounds (TVOCs). The TVOCs screening results are summarized in **Table 1**. The headspace screening was performed in general accordance with DEP's "Jar Headspace Analytical Screening Procedure," Attachment II to the Interim Remediation Waste Management Policy for Petroleum Contaminated Soils, #WSC-94-400. The screening was performed with a MiniRAE 3000 Photoionization Detector calibrated to laboratory grade 100 parts per million (ppm) isobutylene.

A total of 25 discrete soil samples obtained from the subsurface geoenvironmental exploration program were screened. TVOC levels were detected at or below 0.2 parts per million (ppm) in each of the samples screened. In the absence of visual or olfactory indications of the presence of oil and/or hazardous material (OHM), TVOC results below 10 ppm are generally not considered likely to indicate the presence of a release of OHM.

Soil Chemical Test Results

The soil chemical analysis results are included in **Appendix C** and are summarized in **Table 2**. The results of jar headspace screening, visual and olfactory evidence of contamination, together with our environmental concerns documented above, were used to support the selection of soil samples that were submitted to the laboratory for chemical testing.

Based on our visual observations and TVOC screening results, three (3) composite soil samples of the fill deposit obtained from borings B-101, B-102 and B-105 ranging from depths of 0 to 6 feet below ground surface were submitted for laboratory testing for the presence of SVOCs, total RCRA 8 metals, and EPH. The discrete sample with the highest headspace result was submitted for VOC analysis.

None of the compounds analyzed for were detected at concentrations in excess of the applicable RCS-1 reportable concentrations as defined in the MCP. The majority of which were generally consistent with DEP background levels for natural soils.

Summary of MCP Notification Requirements

As detailed above, results of the analysis of soil samples collected from the subject site did not identify the presence of a release condition, pursuant to the provisions of the MCP.

Summary and Conclusions

McPhail completed a subsurface exploration including advancement of soil borings, visual and olfactory observations of soil samples obtained from the borings and headspace screening of the soil samples for the presence of TVOC, and chemical analysis of soil.

In summary, based on the result of analysis of soil samples collected at the subject site, we found no evidence to suggest the presence of a release condition.

We trust this sufficient for your present requirements. If you have any questions concerning the enclosed, please do not hesitate to call us.

Very truly yours,

McPHAIL ASSOCIATES, LLC

Kathryn E. Hanrahan

Joseph G. Lombardo, L.S.P.

N:\Working Documents\Reports\6473 - GEOENV DATA REPORT 061318.docx
KEH/jgl

FIGURE 1

McPHAIL ASSOCIATES, LLC
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Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)
www.mcphailgeo.com

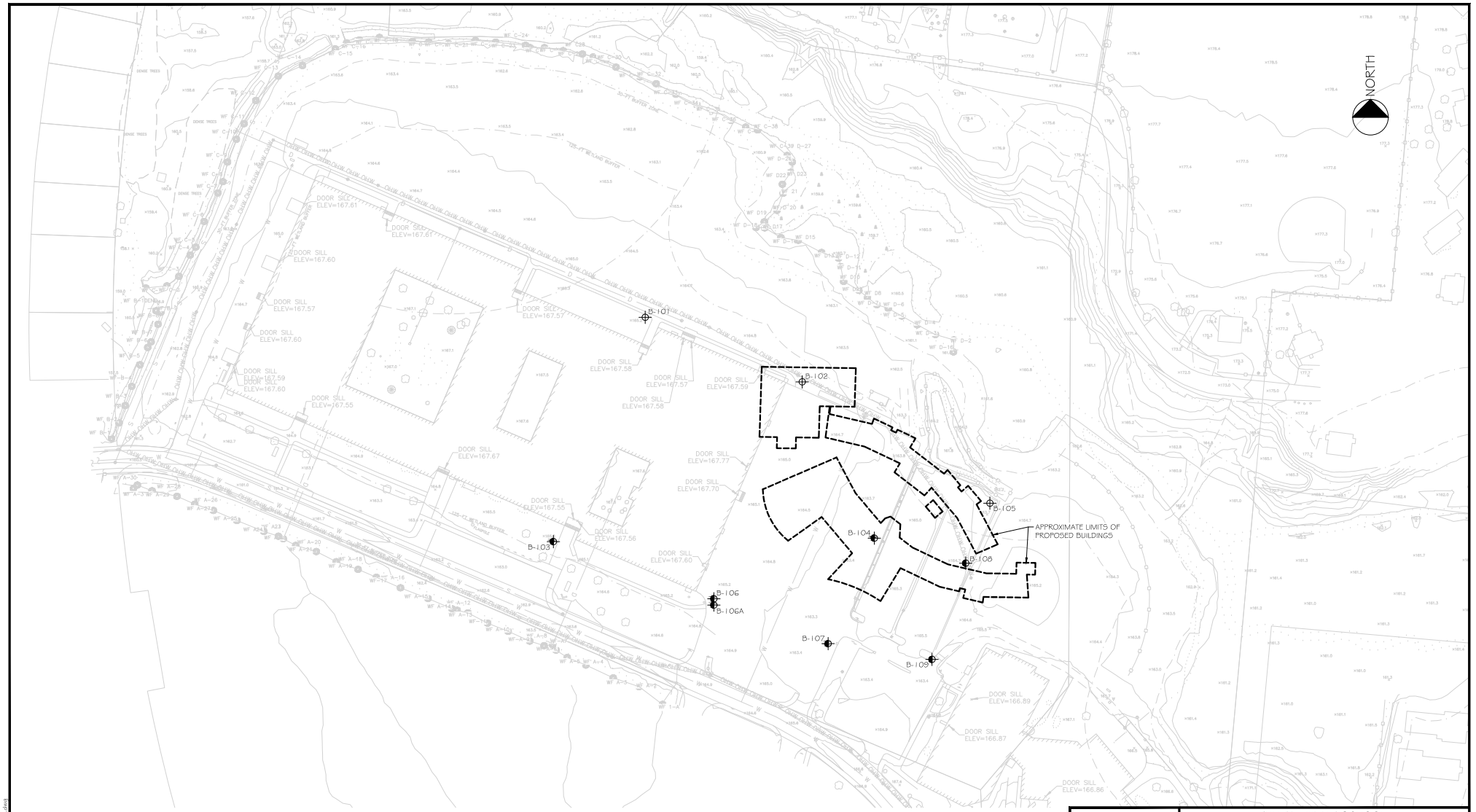
N

SCALE 1:25,000

PROJECT LOCATION PLAN

FULLER MIDDLE SCHOOL

FRAMINGHAM MASSACHUSETTS



LEGEND

— APPROXIMATE LOCATION OF BORING PERFORMED BY NORTHERN DRILL SERVICES, INC. ON APRIL 19, 2018 FOR McPHAIL ASSOCIATES, LLC

— APPROXIMATE LOCATION OF BORING PERFORMED BY NORTHERN DRILL SERVICES, INC. ON FEBRUARY 21 & 22, 2018 FOR McPHAIL ASSOCIATES, LLC

REFERENCE: THIS PLAN WAS PREPARED FROM A 40-SCALE DRAWING ENTITLED "EXISTING CONDITIONS PLAN" DATED NOVEMBER 20, 2017 PROVIDED BY JONATHAN LEVI ARCHITECTS

GRAPHIC SCALE
60 0 60 120 240

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FULLER MIDDLE SCHOOL

FRAMINGHAM MASSACHUSETTS

SUBSURFACE EXPLORATION PLAN

FOR

JONATHAN LEVI ARCHITECTS

BY

McPHAIL ASSOCIATES, LLC

Date: JUNE 2018	Dwn: M.B.S.	Chkd: P.B.K.	Scale: 1" = 60'
Project No: 6473			FIGURE 2

FILE NAME: N:\Acad\2018\6473-F02rev2.dwg

TABLE 1
Fuller Middle School
Project No: 6473
Headspace Readings in Sample Jars

EXPLORATION NO.	SAMPLE NO.	SAMPLE DEPTH	SAMPLE TYPE	PID READING (ppm)	VISUAL/OLFACTORY PETROLEUM EVIDENCE
BACKGROUND				0.0	
B-101	S-1	0-2'	Fill	0.0	None
	S-2	2-4'	Fill	0.0	None
	S-3	4-5'	Fill	0.0	None
	S-3A	5-6'	Alluvial Deposit	0.1	None
	S-4	9-11'	Glacial Outwash	0.0	None
	S-5	14-16'	Glacial Outwash	0.0	None
	S-6	19-21'	Glacial Outwash	0.0	None
	S-7	24-26'	Glacial Outwash	0.0	None
B-102	S-1	0-2'	Fill	0.1	None
	S-2	2-4'	Fill	0.1	None
	S-3	4-6'	Fill	0.0	None
	S-4	6-8'	Alluvial Deposit	0.0	None
	S-5	8-10'	Lacustrine	0.0	None
	S-6	14-16'	Lacustrine	0.1	None
	S-7	19-21'	Lacustrine	0.0	None
	S-8	24-26'	Lacustrine	0.0	
B-105	S-1	0-2'	Fill	0.1	None
	S-2	2-4'	Fill	0.2	None
	S-3	4-6'	Glacial Outwash	0.1	None
	S-4	6-8'	Glacial Outwash	0.1	None
	S-5	8-10'	Glacial Outwash	0.1	None
	S-6	14-16'	Glacial Outwash	0.1	None
	S-7	19-21'	Glacial Outwash	0.0	None
	S-8	24-26'	Lacustrine	0.0	None
	S-9	29-31'	Lacustrine	0.0	None

Equipment: MiniRae3000 Detector with 10.6 eV Probe
PPM-Parts Per Million

TABLE 2
Fuller Middle School
Project No: 6473
Soil Laboratory Analytical Results

LOCATION	RCS-1	B-105 (COMP)	B-105, S-2	B-101 (COMP)	B-102 (COMP)
SAMPLING DATE		4/24/2018	4/24/2018	4/24/2018	4/24/2018
LAB SAMPLE ID		L1814382-01	L1814382-02	L1814382-03	L1814382-04
SAMPLE TYPE		Fill	Fill	Fill	Fill
SAMPLE DEPTH (ft.)		0-4	2-4	0-5	0-6
General Chemistry					
Solids, Total		84.1	85.6	85.3	86.8
MCP Total Metals (mg/kg)					
Arsenic, Total	20	2.87	-	6.11	5.06
Barium, Total	1000	31	-	25	27.5
Cadmium, Total	70	0.453	-	ND(0.459)	ND(0.449)
Chromium, Total	100	14.7	-	10.1	11.1
Lead, Total	200	10.7	-	3.91	3.94
Mercury, Total	20	ND(0.075)	-	ND(0.075)	ND(0.074)
Selenium, Total	400	ND(2.24)	-	ND(2.29)	ND(2.24)
Silver, Total	100	ND(0.448)	-	ND(0.459)	ND(0.449)
Extractable Petroleum Hydrocarbons (mg/kg)					
C19-C36 Aliphatics	3000	-	36.2	-	-
C11-C22 Aromatics		-	56.8	-	-
C11-C22 Aromatics, Adjusted	1000	-	56.8	-	-
MCP PAHs (mg/kg)					
Fluoranthene	1000	0.16	-	ND(0.11)	ND(0.11)
Benzo(a)anthracene	7	0.12	-	ND(0.11)	ND(0.11)
Benzo(b)fluoranthene	7	0.15	-	ND(0.11)	ND(0.11)
Chrysene	70	0.14	-	ND(0.11)	ND(0.11)
Pyrene	1000	0.21	-	ND(0.11)	ND(0.11)
SUM		0.78	-	-	-
MCP Volatile Organics by 8260/5035 (mg/kg)					
SUM		-	-	-	

* Comparison is not performed on parameters with non-numeric criteria.

RCS-1-14: MCP 2014 RCS-1 Reportable Concentrations Criteria effective April 25, 2014.

APPENDIX A:

LIMITATIONS

LIMITATIONS

The purpose of this report was to perform environmental testing of soil from borings completed at the subject site located on the campus of the Fuller Middle School in Framingham, Massachusetts pursuant to the Massachusetts General Laws Chapter 21E and the Massachusetts Contingency Plan 310 CMR 40.0000. No attempt was made to check on the compliance of present or past owners of the site with federal, state or local laws and regulations except as otherwise documented herein.

The above observations were made under the conditions stated in this report. The conclusions presented above were based on these observations. If variations in the nature and extent of subsurface conditions between the widely spaced subsurface explorations become evident in the future, it will be necessary to re-evaluate the conclusions presented herein after performing on-site observations and noting the characteristics of any variations.

The conclusions submitted in this report are based in part upon chemical test data obtained from analysis of soil samples and are contingent upon their validity. These data have been reviewed, and interpretations have been made in the text. It should also be noted that fluctuations in the types and levels of contaminants and variations in their flow paths may occur due to changes in seasonal water table, past practices used in disposal and other factors.

Chemical analyses have been performed for specific constituents during the course of this site assessment, as described in the text. However, it should be noted that additional chemical constituents not searched for during the current study may be present in soil and/or groundwater at the site.

This study and report have been prepared on behalf of and for the exclusive use of the Jonathon Levi Architects. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party nor used in whole or in part by any other party without prior written consent of McPhail Associates, LLC.

APPENDIX B:

BORING LOGS PREPARED BY MCPHAIL

Project:	Fuller Middle School	**Job #:**	6473
Location:	31 Flagg Drive	**Date Started:**	4-19-18
City/State:	Framingham, MA	**Date Finished:**	4-19-18

Boring No.

B-101

Contractor: Northern Drill Service, Inc.
Driller/Helper: Z. Nada/J. Stevens
Logged By/Reviewed By: C. Connors
Surface Elevation (ft): 165.1

Casing Type/Depth (ft): 4"
Casing Hammer (lbs)/Drop (in): 140lb/30"
Sampler Size/Type: 24" Split Spoon
Sampler Hammer (lbs)/Drop (in): 140lb/30"

Groundwater Observations

Date	Depth	Elev.	Notes

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample TVOC (ppm)	N-Value / RQD	No.	Pen. /Rec. (in)	Depth (ft)	Blows/6" / Min/ft	Sample Description and Boring Notes
			0.5 / 164.6	TOPSOIL							
1	164				0.0	9	S1	24/14	0.0-2.0	2 4 5 6	Loose, light borwn to brown, SILTY SAND, some gravel. (Fill)
2	163										
3	162			FILL	0.0	2	S2	24/16	2.0-4.0	2 1 1 1	Very loose, brown to yellow/brown, SILTY SAND, trace gravel. (Fill)
4	161				0.0	4	S3	12/6	4.0-5.0	2 2	Very loose to loose, yellow/brown, SAND, some silt, trace gravel. (Fill)
			5.0 / 160.1								
5	160				0.1	4	S3A	12/6	5.0-6.0	2 6	Very loose to loose, dark brown, fine to medium grain, SAND, trace to some organic silt and peat fibers. (Alluvial Organic Silt Deposit)
6	159										
7	158			ALLUVIAL ORGANIC SILT DEPOSIT							
8	157										
			9.0 / 156.1								
9	156				0.0	8	S4	24/8	9.0-11.0	3 4 4 5	Loose, light brown to gray, medium to coarse grain, SAND, trace silt and gravel. (Glacial Outwash)
10	155										
11	154										
12	153										
13	152										
14	151				0.0	6	S5	24/6	14.0-16.0	2 3 3 4	Loose, light brown to brown, medium to coarse grain, SAND, trace silt and gravel. (Glacial Outwash)
15	150										
16	149			GLACIAL OUTWASH							
17	148										
18	147										
19	146					20	S6	24/4	19.0-21.0	9 11 9 7	Compact, light brown to gray, SANDY GRAVEL, trace silt. (Glacial Outwash)
20	145										
21	144										
22	143										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
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CAMBRIDGE, MA 02140
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FAX: 617-868-1423

Project:	Fuller Middle School	**Job #:**	6473
Location:	31 Flagg Drive	**Date Started:**	4-19-18
City/State:	Framingham, MA	**Date Finished:**	4-19-18

Boring No.

B-101

Contractor: Northern Drill Service, Inc.
Driller/Helper: Z. Nada/J. Stevens
Logged By/Reviewed By: C. Connors
Surface Elevation (ft): 165.1

Casing Type/Depth (ft): 4"
Casing Hammer (lbs)/Drop (in): 140lb/30"
Sampler Size/Type: 24" Split Spoon
Sampler Hammer (lbs)/Drop (in): 140lb/30"

Groundwater Observations

Date	Depth	Elev.	Notes

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample TVOC (ppm)	Sample N-Value / RQD	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows/6" / Min/ft	Sample Description and Boring Notes
24	141										
25	140			GLACIAL OUTWASH		28	S7	24/8	24.0-26.0	14 16 12 9	Compact, gray, well graded mixture of SILT, SAND and GRAVEL, trace clay. (Glacial Outwash)
26	139		26.0 / 139.1	Bottom of borehole 26 feet below ground surface.							
27	138										
28	137										
29	136										
30	135										
31	134										
32	133										
33	132										
34	131										
35	130										
36	129										
37	128										
38	127										
39	126										
40	125										
41	124										
42	123										
43	122										
44	121										
45	120										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

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2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Fuller Middle School	**Job #:**	6473
Location:	31 Flagg Drive	**Date Started:**	4-19-18
City/State:	Framingham, MA	**Date Finished:**	4-19-18

Boring No.

B-102

Contractor: Northern Drill Service, Inc.
Driller/Helper: Z. Nada/J. Stevens
Logged By/Reviewed By: C. Connors
Surface Elevation (ft): 164.9

Casing Type/Depth (ft): 4"
Casing Hammer (lbs)/Drop (in): 140lb/30"
Sampler Size/Type: 24" Split Spoon
Sampler Hammer (lbs)/Drop (in): 140lb/30"

Groundwater Observations

Date	Depth	Elev.	Notes

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample TVOC (ppm)	N-Value / RQD	No.	Pen. /Rec. (in)	Depth (ft)	Blows/6" / Min/ft	Sample Description and Boring Notes
			0.5 / 164.4	TOPSOIL							
1	164				0.1	13	S1	24/20	0.0-2.0	2 6 7 10	Compact, brown to yellow/brown, SILTY SAND, trace gravel. (Fill)
2	163										
3	162			FILL	0.1	15	S2	24/18	2.0-4.0	8 8 7 5	Compact, yellow/brown to orange/brown, SILTY SAND, trace gravel. (Fill)
4	161										
5	160				0.0	5	S3	24/16	4.0-6.0	2 2 3 4	Compact, yellow/brown to orange/brown, SILTY SAND, trace gravel. (Fill)
6	159		6.0 / 158.9								
7	158			ALLUVIAL ORGANIC SILT DEPOSIT		5	S4	24/16	6.0-8.0	4 2 3 4	Loose, dark gray to gray, medium to coarse grain, SAND, trace to some organic silt. (Alluvial Organic Silt Deposit)
8	157		8.0 / 156.9								
9	156			LACUSTRINE	0.0	17	S5	24/12	8.0-10.0	4 9 8 8	Compact, light gray to gray, medium to coarse grain, SILTY SAND. (Lacustrine)
10	155										
11	154										
12	153										
13	152										
14	151				0.1	13	S6	24/14	14.0-16.0	6 8 5 9	Compact, light brown, fine grain, SILTY SAND, trace clay and gravel. (Lacustrine)
15	150										
16	149										
17	148										
18	147										
19	146										
20	145				0.0	13	S7	24/18	19.0-21.0	5 7 6 10	Compact, light brown, fine grain, SILTY SAND, trace clay and gravel. (Lacustrine)
21	144										
22	143										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Fuller Middle School	**Job #:**	6473
Location:	31 Flagg Drive	**Date Started:**	4-19-18
City/State:	Framingham, MA	**Date Finished:**	4-19-18

Boring No.

B-102

Contractor: Northern Drill Service, Inc.
Driller/Helper: Z. Nada/J. Stevens
Logged By/Reviewed By: C. Connors
Surface Elevation (ft): 164.9

Casing Type/Depth (ft): 4"
Casing Hammer (lbs)/Drop (in): 140lb/30"
Sampler Size/Type: 24" Split Spoon
Sampler Hammer (lbs)/Drop (in): 140lb/30"

Groundwater Observations

Date	Depth	Elev.	Notes

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample TVOC (ppm)	Sample N-Value / RQD	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows/6" / Min/ft	Sample Description and Boring Notes
24	141										
25	140			LACUSTRINE	0.0	28	S8	24/10	24.0-26.0	8 8 20 13	Compact, light brown, fine grain, SILTY SAND, trace gravel. (Lacustrine)
26	139		26.0 / 138.9	Bottom of borehole 26 feet below ground surface.							
27	138										
28	137										
29	136										
30	135										
31	134										
32	133										
33	132										
34	131										
35	130										
36	129										
37	128										
38	127										
39	126										
40	125										
41	124										
42	123										
43	122										
44	121										
45	120										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Fuller Middle School	**Job #:**	6473
Location:	31 Flagg Drive	**Date Started:**	4-19-18
City/State:	Framingham, MA	**Date Finished:**	4-19-18

Boring No.

B-105

Contractor: Northern Drill Service, Inc.
Driller/Helper: Z. Nada/J. Stevens
Logged By/Reviewed By: C. Connors
Surface Elevation (ft): 163.4

Casing Type/Depth (ft): 4"
Casing Hammer (lbs)/Drop (in): 140lb/30"
Sampler Size/Type: 24" Split Spoon
Sampler Hammer (lbs)/Drop (in): 140lb/30"

Groundwater Observations

Date	Depth	Elev.	Notes

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample TVOC (ppm)	Sample N-Value / RQD	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows/6" / Min/ft	Sample Description and Boring Notes
0	163		0.5 / 162.9	ASPHALT							
1	162			FILL	0.1	8	S1	18/6	0.5-2.0	3 4 4	Loose, dark gray to dark brown, well graded mixture of SILT, SAND and GRAVEL, w/ asphalt. (Fill)
2	161				0.2	8	S2	24/12	2.0-4.0	3 6 2 9	Loose, dark gray, SAND and GRAVEL, tarce silt. (Fill)
3	160		4.0 / 159.4								
4	159			GLACIAL OUTWASH	0.1	13	S3	24/12	4.0-6.0	4 6 7 6	Compact, gray to brown, coarse grain, SAND, trace silt and gravel. (Glacial Outwash)
5	158										
6	157				0.1	8	S4	24/16	6.0-8.0	6 4 4 7	Loose, gray, coarse grain, SAND, trace silt and gravel. (Glacial Outwash)
7	156										
8	155				0.1	8	S5	24/6	8.0-10.0	3 4 4 5	Loose, light brown to orange/brown, cparse grain, SAND, trace silt and gravel. (Glacial Outwash)
9	154										
10	153										
11	152										
12	151										
13	150										
14	149				0.1	5	S6	24/3	14.0-16.0	2 2 3 6	Loose, light brown to orange/brown, coarse grain, SAND, trace silt and gravel. (Glacial Outwash)
15	148										
16	147										
17	146										
18	145										
19	144				0.0	11	S7	24/10	19.0-21.0	3 4 7 10	Compact, light brown, coarse grain, GRAVELY SAND, trace silt. (Glacial Outwash)
20	143										
21	142										
22	141										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project: Fuller Middle School
Location: 31 Flagg Drive
City/State: Framingham, MA

Job #: 6473
Date Started: 4-19-18
Date Finished: 4-19-18

Boring No.
B-105

Contractor: Northern Drill Service, Inc.
Driller/Helper: Z. Nada/J. Stevens
Logged By/Reviewed By: C. Connors
Surface Elevation (ft): 163.4

Casing Type/Depth (ft): 4"
Casing Hammer (lbs)/Drop (in): 140lb/30"
Sampler Size/Type: 24" Split Spoon
Sampler Hammer (lbs)/Drop (in): 140lb/30"

Groundwater Observations

Date	Depth	Elev.	Notes

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample TVOC (ppm)	Sample N-Value / RQD	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows/6" / Min/ft	Sample Description and Boring Notes
	140										
24	139				0.0	8	S8	24/6	24.0-26.0	8 4 4 5	Loose, light brown, fine to medium grain, SILTY SAND. (Glacial Outwash)
25	138										
26	137										
27	136			GLACIAL OUTWASH							
28	135										
29	134										
30	133					10	S9	24/6	29.0-31.0	7 6 4 8	Loose to compact, brown to dark brown, coarse grain, SAND and GRAVEL, trace silt. (Glacial Outwash)
31	132		31.0 / 132.4	Bottom of borehole 31 feet below ground surface.							
32	131										
33	130										
34	129										
35	128										
36	127										
37	126										
38	125										
39	124										
40	123										
41	122										
42	121										
43	120										
44	119										
45	118										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

APPENDIX C:

SOIL LABORATORY ANALYTICAL DATA

ANALYTICAL REPORT

Lab Number:	L1814382
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FULLER MIDDLE SCHOOL
Project Number:	6473
Report Date:	05/03/18

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1814382-01	B-105 (COMP)	FILL	FRAMINGHAM, MA	04/24/18 13:00	04/24/18
L1814382-02	B-105, S-2	FILL	FRAMINGHAM, MA	04/24/18 13:00	04/24/18
L1814382-03	B-101 (COMP)	FILL	FRAMINGHAM, MA	04/24/18 13:00	04/24/18
L1814382-04	B-102 (COMP)	FILL	FRAMINGHAM, MA	04/24/18 13:00	04/24/18

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382

Project Number: 6473 **Report Date:** 05/03/18

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382
Project Number: 6473 **Report Date:** 05/03/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382
Project Number: 6473 **Report Date:** 05/03/18

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

L1814382-01 through -04: The collection time was obtained from the container labels.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

Volatile Organics

In reference to question H:

The initial calibration, associated with L1814382-02, did not meet the method required minimum response factor on the lowest calibration standard for 2-butanone (0.0764), 4-methyl-2-pentanone (0.0839) and 1,4-dioxane (0.0012), as well as the average response factor for 2-butanone and 1,4-dioxane.

The continuing calibration standard, associated with L1814382-02, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

Semivolatile Organics

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Total Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 05/03/18

ORGANICS

VOLATILES

Project Name: FULLER MIDDLE SCHOOL
Lab Number: L1814382
Project Number: 6473
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-02
Client ID: B-105, S-2
Sample Location: FRAMINGHAM, MA
Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 2-4
Matrix: Fill
Analytical Method: 97,8260C
Analytical Date: 04/27/18 16:28
Analyst: MV
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	19	--	1
1,1-Dichloroethane	ND		ug/kg	2.9	--	1
Chloroform	ND		ug/kg	2.9	--	1
Carbon tetrachloride	ND		ug/kg	1.9	--	1
1,2-Dichloropropane	ND		ug/kg	6.8	--	1
Dibromochloromethane	ND		ug/kg	1.9	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.9	--	1
Tetrachloroethene	ND		ug/kg	1.9	--	1
Chlorobenzene	ND		ug/kg	1.9	--	1
Trichlorofluoromethane	ND		ug/kg	7.8	--	1
1,2-Dichloroethane	ND		ug/kg	1.9	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.9	--	1
Bromodichloromethane	ND		ug/kg	1.9	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.9	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.9	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.9	--	1
1,1-Dichloropropene	ND		ug/kg	7.8	--	1
Bromoform	ND		ug/kg	7.8	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.9	--	1
Benzene	ND		ug/kg	1.9	--	1
Toluene	ND		ug/kg	2.9	--	1
Ethylbenzene	ND		ug/kg	1.9	--	1
Chloromethane	ND		ug/kg	7.8	--	1
Bromomethane	ND		ug/kg	3.9	--	1
Vinyl chloride	ND		ug/kg	3.9	--	1
Chloroethane	ND		ug/kg	3.9	--	1
1,1-Dichloroethene	ND		ug/kg	1.9	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.9	--	1

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382

Project Number: 6473 **Report Date:** 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-02 Date Collected: 04/24/18 13:00

Client ID: B-105, S-2 Date Received: 04/24/18

Sample Location: FRAMINGHAM, MA Field Prep: Not Specified

Sample Depth: 2-4

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Trichloroethene	ND		ug/kg	1.9	--	1
1,2-Dichlorobenzene	ND		ug/kg	7.8	--	1
1,3-Dichlorobenzene	ND		ug/kg	7.8	--	1
1,4-Dichlorobenzene	ND		ug/kg	7.8	--	1
Methyl tert butyl ether	ND		ug/kg	3.9	--	1
p/m-Xylene	ND		ug/kg	3.9	--	1
o-Xylene	ND		ug/kg	3.9	--	1
Xylenes, Total	ND		ug/kg	3.9	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.9	--	1
Dibromomethane	ND		ug/kg	7.8	--	1
1,2,3-Trichloropropane	ND		ug/kg	7.8	--	1
Styrene	ND		ug/kg	3.9	--	1
Dichlorodifluoromethane	ND		ug/kg	19	--	1
Acetone	ND		ug/kg	70	--	1
Carbon disulfide	ND		ug/kg	7.8	--	1
Methyl ethyl ketone	ND		ug/kg	19	--	1
Methyl isobutyl ketone	ND		ug/kg	19	--	1
2-Hexanone	ND		ug/kg	19	--	1
Bromochloromethane	ND		ug/kg	7.8	--	1
Tetrahydrofuran	ND		ug/kg	7.8	--	1
2,2-Dichloropropane	ND		ug/kg	9.7	--	1
1,2-Dibromoethane	ND		ug/kg	7.8	--	1
1,3-Dichloropropane	ND		ug/kg	7.8	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.9	--	1
Bromobenzene	ND		ug/kg	9.7	--	1
n-Butylbenzene	ND		ug/kg	1.9	--	1
sec-Butylbenzene	ND		ug/kg	1.9	--	1
tert-Butylbenzene	ND		ug/kg	7.8	--	1
o-Chlorotoluene	ND		ug/kg	7.8	--	1
p-Chlorotoluene	ND		ug/kg	7.8	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	7.8	--	1
Hexachlorobutadiene	ND		ug/kg	7.8	--	1
Isopropylbenzene	ND		ug/kg	1.9	--	1
p-Isopropyltoluene	ND		ug/kg	1.9	--	1
Naphthalene	ND		ug/kg	7.8	--	1
n-Propylbenzene	ND		ug/kg	1.9	--	1

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382

Project Number: 6473 **Report Date:** 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-02 Date Collected: 04/24/18 13:00

Client ID: B-105, S-2 Date Received: 04/24/18

Sample Location: FRAMINGHAM, MA Field Prep: Not Specified

Sample Depth: 2-4

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	7.8	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	7.8	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	7.8	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	7.8	--	1
Diethyl ether	ND		ug/kg	9.7	--	1
Diisopropyl Ether	ND		ug/kg	7.8	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	7.8	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	7.8	--	1
1,4-Dioxane	ND		ug/kg	78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	83		70-130
Dibromofluoromethane	91		70-130

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382

Project Number: 6473 **Report Date:** 05/03/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/27/18 10:50
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02 Batch: WG1110711-5					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382

Project Number: 6473 **Report Date:** 05/03/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/27/18 10:50
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02 Batch: WG1110711-5					
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--
2-Chloroethylvinyl ether	ND		ug/kg	20	--
Halothane	ND		ug/kg	40	--
Ethyl Acetate	ND		ug/kg	20	--
Freon-113	ND		ug/kg	20	--
Vinyl acetate	ND		ug/kg	10	--

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473
Lab Number: L1814382
Report Date: 05/03/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/27/18 10:50
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02 Batch: WG1110711-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	86		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	90		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473
Lab Number: L1814382
Report Date: 05/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02 Batch: WG1110711-3 WG1110711-4								
Methylene chloride	86		86		70-130	0		20
1,1-Dichloroethane	88		88		70-130	0		20
Chloroform	92		88		70-130	4		20
Carbon tetrachloride	91		89		70-130	2		20
1,2-Dichloropropane	90		90		70-130	0		20
Dibromochloromethane	92		96		70-130	4		20
1,1,2-Trichloroethane	101		101		70-130	0		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	92		90		70-130	2		20
Trichlorofluoromethane	86		92		70-130	7		20
1,2-Dichloroethane	86		87		70-130	1		20
1,1,1-Trichloroethane	91		91		70-130	0		20
Bromodichloromethane	90		90		70-130	0		20
trans-1,3-Dichloropropene	95		95		70-130	0		20
cis-1,3-Dichloropropene	89		88		70-130	1		20
1,1-Dichloropropene	91		92		70-130	1		20
Bromoform	89		91		70-130	2		20
1,1,2,2-Tetrachloroethane	85		92		70-130	8		20
Benzene	89		88		70-130	1		20
Toluene	95		94		70-130	1		20
Ethylbenzene	89		87		70-130	2		20
Chloromethane	90		92		70-130	2		20
Bromomethane	90		92		70-130	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02 Batch: WG1110711-3 WG1110711-4								
Vinyl chloride	91		91		70-130	0		20
Chloroethane	96		95		70-130	1		20
1,1-Dichloroethene	95		95		70-130	0		20
trans-1,2-Dichloroethene	93		91		70-130	2		20
Trichloroethene	93		92		70-130	1		20
1,2-Dichlorobenzene	92		92		70-130	0		20
1,3-Dichlorobenzene	92		91		70-130	1		20
1,4-Dichlorobenzene	90		90		70-130	0		20
Methyl tert butyl ether	99		99		70-130	0		20
p/m-Xylene	87		92		70-130	6		20
o-Xylene	95		96		70-130	1		20
cis-1,2-Dichloroethene	94		96		70-130	2		20
Dibromomethane	93		91		70-130	2		20
1,4-Dichlorobutane	93		97		70-130	4		20
1,2,3-Trichloropropane	84		90		70-130	7		20
Styrene	88		96		70-130	9		20
Dichlorodifluoromethane	118		120		70-130	2		20
Acetone	**64**	Q	**58**	Q	70-130	10		20
Carbon disulfide	83		82		70-130	1		20
Methyl ethyl ketone	85		80		70-130	6		20
Methyl isobutyl ketone	93		90		70-130	3		20
2-Hexanone	81		75		70-130	8		20
Ethyl methacrylate	97		98		70-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473
Lab Number: L1814382
Report Date: 05/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02 Batch: WG1110711-3 WG1110711-4								
Acrylonitrile	96		95		70-130	1		20
Bromochloromethane	96		96		70-130	0		20
Tetrahydrofuran	93		93		70-130	0		20
2,2-Dichloropropane	90		90		70-130	0		20
1,2-Dibromoethane	89		84		70-130	6		20
1,3-Dichloropropane	84		86		70-130	2		20
1,1,1,2-Tetrachloroethane	97		95		70-130	2		20
Bromobenzene	93		93		70-130	0		20
n-Butylbenzene	88		89		70-130	1		20
sec-Butylbenzene	89		91		70-130	2		20
tert-Butylbenzene	90		92		70-130	2		20
o-Chlorotoluene	84		88		70-130	5		20
p-Chlorotoluene	85		89		70-130	5		20
1,2-Dibromo-3-chloropropane	84		85		70-130	1		20
Hexachlorobutadiene	86		86		70-130	0		20
Isopropylbenzene	87		93		70-130	7		20
p-Isopropyltoluene	92		93		70-130	1		20
Naphthalene	95		95		70-130	0		20
n-Propylbenzene	85		90		70-130	6		20
1,2,3-Trichlorobenzene	94		92		70-130	2		20
1,2,4-Trichlorobenzene	93		93		70-130	0		20
1,3,5-Trimethylbenzene	88		91		70-130	3		20
1,2,4-Trimethylbenzene	90		92		70-130	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02 Batch: WG1110711-3 WG1110711-4								
trans-1,4-Dichloro-2-butene	86		89		70-130	3		20
Diethyl ether	103		101		70-130	2		20
Diisopropyl Ether	83		84		70-130	1		20
Ethyl-Tert-Butyl-Ether	88		88		70-130	0		20
Tertiary-Amyl Methyl Ether	89		89		70-130	0		20
1,4-Dioxane	111		109		70-130	2		20
2-Chloroethylvinyl ether	93		89		70-130	4		20
Halothane	96		95		70-130	1		20
Ethyl Acetate	84		85		70-130	1		20
Freon-113	93		93		70-130	0		20
Vinyl acetate	90		91		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		91		70-130
Toluene-d8	101		103		70-130
4-Bromofluorobenzene	89		96		70-130
Dibromofluoromethane	94		95		70-130

SEMIVOLATILES

Project Name: FULLER MIDDLE SCHOOL
Lab Number: L1814382
Project Number: 6473
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-01
Client ID: B-105 (COMP)
Sample Location: FRAMINGHAM, MA

Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 0-4
Matrix: Fill
Analytical Method: 97,8270D
Analytical Date: 04/26/18 06:49
Analyst: SZ
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 04/25/18 08:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	160		ug/kg	120	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	120		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	150		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	140		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	210		ug/kg	120	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	92		30-130
2-Fluorobiphenyl	84		30-130
4-Terphenyl-d14	64		30-130

Project Name: FULLER MIDDLE SCHOOL
Lab Number: L1814382
Project Number: 6473
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-03
Client ID: B-101 (COMP)
Sample Location: FRAMINGHAM, MA

Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 0-5
Matrix: Fill
Analytical Method: 97,8270D
Analytical Date: 04/26/18 05:03
Analyst: SZ
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 04/25/18 08:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	71		30-130
4-Terphenyl-d14	55		30-130

Project Name: FULLER MIDDLE SCHOOL
Lab Number: L1814382
Project Number: 6473
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-04
Client ID: B-102 (COMP)
Sample Location: FRAMINGHAM, MA

Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 0-6
Matrix: Fill
Analytical Method: 97,8270D
Analytical Date: 04/26/18 05:27
Analyst: SZ
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 04/25/18 08:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		30-130
2-Fluorobiphenyl	73		30-130
4-Terphenyl-d14	53		30-130

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473
Lab Number: L1814382
Report Date: 05/03/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 04/25/18 18:37
Analyst: PS

Extraction Method: EPA 3546
Extraction Date: 04/25/18 08:32

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03-04 Batch: WG1109584-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	100	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	100	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	100	--
Benzo(k)fluoranthene	ND		ug/kg	100	--
Chrysene	ND		ug/kg	100	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	100	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	100	--
Dibenzo(a,h)anthracene	ND		ug/kg	100	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	100	--
2-Methylnaphthalene	ND		ug/kg	200	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		30-130
2-Fluorobiphenyl	93		30-130
4-Terphenyl-d14	97		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03-04 Batch: WG1109584-2 WG1109584-3								
Acenaphthene	82		82		40-140	0		30
Fluoranthene	86		88		40-140	2		30
Naphthalene	82		83		40-140	1		30
Benzo(a)anthracene	86		86		40-140	0		30
Benzo(a)pyrene	89		89		40-140	0		30
Benzo(b)fluoranthene	80		83		40-140	4		30
Benzo(k)fluoranthene	94		97		40-140	3		30
Chrysene	81		84		40-140	4		30
Acenaphthylene	81		88		40-140	8		30
Anthracene	88		87		40-140	1		30
Benzo(ghi)perylene	84		84		40-140	0		30
Fluorene	84		87		40-140	4		30
Phenanthrene	83		82		40-140	1		30
Dibenzo(a,h)anthracene	86		88		40-140	2		30
Indeno(1,2,3-cd)pyrene	90		88		40-140	2		30
Pyrene	84		83		40-140	1		30
2-Methylnaphthalene	83		84		40-140	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03-04 Batch: WG1109584-2 WG1109584-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	90		88		30-130
2-Fluorobiphenyl	80		90		30-130
4-Terphenyl-d14	87		88		30-130

PETROLEUM HYDROCARBONS

Project Name: FULLER MIDDLE SCHOOL
Lab Number: L1814382
Project Number: 6473
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID:	L1814382-02	Date Collected:	04/24/18 13:00
Client ID:	B-105, S-2	Date Received:	04/24/18
Sample Location:	FRAMINGHAM, MA	Field Prep:	Not Specified
Sample Depth:	2-4		
Matrix:	Fill	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	05/02/18 14:51
Analytical Date:	05/03/18 09:58	Cleanup Method1:	EPH-04-1
Analyst:	MEO	Cleanup Date1:	05/02/18
Percent Solids:	86%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.77	--	1
C19-C36 Aliphatics	36.2		mg/kg	7.77	--	1
C11-C22 Aromatics	56.8		mg/kg	7.77	--	1
C11-C22 Aromatics, Adjusted	56.8		mg/kg	7.77	--	1
Naphthalene	ND		mg/kg	0.388	--	1
2-Methylnaphthalene	ND		mg/kg	0.388	--	1
Acenaphthylene	ND		mg/kg	0.388	--	1
Acenaphthene	ND		mg/kg	0.388	--	1
Fluorene	ND		mg/kg	0.388	--	1
Phenanthrene	ND		mg/kg	0.388	--	1
Anthracene	ND		mg/kg	0.388	--	1
Fluoranthene	ND		mg/kg	0.388	--	1
Pyrene	ND		mg/kg	0.388	--	1
Benzo(a)anthracene	ND		mg/kg	0.388	--	1
Chrysene	ND		mg/kg	0.388	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.388	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.388	--	1
Benzo(a)pyrene	ND		mg/kg	0.388	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.388	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.388	--	1
Benzo(ghi)perylene	ND		mg/kg	0.388	--	1

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382

Project Number: 6473 **Report Date:** 05/03/18

SAMPLE RESULTS

Lab ID:	L1814382-02	Date Collected:	04/24/18 13:00
Client ID:	B-105, S-2	Date Received:	04/24/18
Sample Location:	FRAMINGHAM, MA	Field Prep:	Not Specified
Sample Depth:	2-4		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Extractable Petroleum Hydrocarbons - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	70		40-140
o-Terphenyl	88		40-140
2-Fluorobiphenyl	90		40-140
2-Bromonaphthalene	91		40-140

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473
Lab Number: L1814382
Report Date: 05/03/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 98,EPH-04-1.1
Analytical Date: 05/03/18 11:34
Analyst: MEO

Extraction Method: EPA 3546
Extraction Date: 05/02/18 14:51
Cleanup Method: EPH-04-1
Cleanup Date: 05/02/18

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 02 Batch: WG1111898-1					
C9-C18 Aliphatics	ND		mg/kg	6.48	--
C19-C36 Aliphatics	ND		mg/kg	6.48	--
C11-C22 Aromatics	ND		mg/kg	6.48	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.48	--
Naphthalene	ND		mg/kg	0.324	--
2-Methylnaphthalene	ND		mg/kg	0.324	--
Acenaphthylene	ND		mg/kg	0.324	--
Acenaphthene	ND		mg/kg	0.324	--
Fluorene	ND		mg/kg	0.324	--
Phenanthrene	ND		mg/kg	0.324	--
Anthracene	ND		mg/kg	0.324	--
Fluoranthene	ND		mg/kg	0.324	--
Pyrene	ND		mg/kg	0.324	--
Benzo(a)anthracene	ND		mg/kg	0.324	--
Chrysene	ND		mg/kg	0.324	--
Benzo(b)fluoranthene	ND		mg/kg	0.324	--
Benzo(k)fluoranthene	ND		mg/kg	0.324	--
Benzo(a)pyrene	ND		mg/kg	0.324	--
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.324	--
Dibenzo(a,h)anthracene	ND		mg/kg	0.324	--
Benzo(ghi)perylene	ND		mg/kg	0.324	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	77		40-140
o-Terphenyl	85		40-140
2-Fluorobiphenyl	89		40-140
2-Bromonaphthalene	90		40-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: FULLER MIDDLE SCHOOL

Project Number: 6473

Lab Number: L1814382

Report Date: 05/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02 Batch: WG1111898-2 WG1111898-3								
C9-C18 Aliphatics	71		76		40-140	7		25
C19-C36 Aliphatics	84		91		40-140	8		25
C11-C22 Aromatics	70		88		40-140	23		25
Naphthalene	56		73		40-140	**26**	Q	25
2-Methylnaphthalene	57		74		40-140	**26**	Q	25
Acenaphthylene	60		79		40-140	**27**	Q	25
Acenaphthene	62		81		40-140	**27**	Q	25
Fluorene	64		83		40-140	**26**	Q	25
Phenanthrene	67		85		40-140	24		25
Anthracene	67		84		40-140	23		25
Fluoranthene	70		90		40-140	25		25
Pyrene	72		92		40-140	24		25
Benzo(a)anthracene	70		90		40-140	25		25
Chrysene	74		95		40-140	25		25
Benzo(b)fluoranthene	72		92		40-140	24		25
Benzo(k)fluoranthene	72		90		40-140	22		25
Benzo(a)pyrene	68		86		40-140	23		25
Indeno(1,2,3-cd)Pyrene	69		87		40-140	23		25
Dibenzo(a,h)anthracene	75		95		40-140	24		25
Benzo(ghi)perylene	67		85		40-140	24		25
Nonane (C9)	57		61		30-140	7		25
Decane (C10)	64		69		40-140	8		25
Dodecane (C12)	68		73		40-140	7		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02 Batch: WG1111898-2 WG1111898-3								
Tetradecane (C14)	70		78		40-140	11		25
Hexadecane (C16)	75		81		40-140	8		25
Octadecane (C18)	79		85		40-140	7		25
Nonadecane (C19)	80		86		40-140	7		25
Eicosane (C20)	81		87		40-140	7		25
Docosane (C22)	82		88		40-140	7		25
Tetracosane (C24)	82		89		40-140	8		25
Hexacosane (C26)	82		89		40-140	8		25
Octacosane (C28)	82		90		40-140	9		25
Triacontane (C30)	82		89		40-140	8		25
Hexatriacontane (C36)	80		88		40-140	10		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	75		80		40-140
o-Terphenyl	68		86		40-140
2-Fluorobiphenyl	66		87		40-140
2-Bromonaphthalene	67		88		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

METALS

Project Name: FULLER MIDDLE SCHOOL
Lab Number: L1814382
Project Number: 6473
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-01
Client ID: B-105 (COMP)
Sample Location: FRAMINGHAM, MA
Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 0-4
Matrix: Fill
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	2.87		mg/kg	0.448	--	1	04/25/18 21:21	04/26/18 15:29	EPA 3050B	97,6010C	AB
Barium, Total	31.0		mg/kg	0.448	--	1	04/25/18 21:21	04/26/18 15:29	EPA 3050B	97,6010C	AB
Cadmium, Total	0.453		mg/kg	0.448	--	1	04/25/18 21:21	04/26/18 15:29	EPA 3050B	97,6010C	AB
Chromium, Total	14.7		mg/kg	0.448	--	1	04/25/18 21:21	04/26/18 15:29	EPA 3050B	97,6010C	AB
Lead, Total	10.7		mg/kg	2.24	--	1	04/25/18 21:21	04/26/18 15:29	EPA 3050B	97,6010C	AB
Mercury, Total	ND		mg/kg	0.075	--	1	04/26/18 07:30	04/26/18 14:25	EPA 7471B	97,7471B	MG
Selenium, Total	ND		mg/kg	2.24	--	1	04/25/18 21:21	04/26/18 15:29	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.448	--	1	04/25/18 21:21	04/26/18 15:29	EPA 3050B	97,6010C	AB

Project Name: FULLER MIDDLE SCHOOL
Lab Number: L1814382
Project Number: 6473
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-03
Client ID: B-101 (COMP)
Sample Location: FRAMINGHAM, MA
Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 0-5
Matrix: Fill
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	6.11		mg/kg	0.459	--	1	04/25/18 21:21	04/26/18 15:34	EPA 3050B	97,6010C	AB
Barium, Total	25.0		mg/kg	0.459	--	1	04/25/18 21:21	04/26/18 15:34	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.459	--	1	04/25/18 21:21	04/26/18 15:34	EPA 3050B	97,6010C	AB
Chromium, Total	10.1		mg/kg	0.459	--	1	04/25/18 21:21	04/26/18 15:34	EPA 3050B	97,6010C	AB
Lead, Total	3.91		mg/kg	2.29	--	1	04/25/18 21:21	04/26/18 15:34	EPA 3050B	97,6010C	AB
Mercury, Total	ND		mg/kg	0.075	--	1	04/26/18 07:30	04/26/18 14:30	EPA 7471B	97,7471B	MG
Selenium, Total	ND		mg/kg	2.29	--	1	04/25/18 21:21	04/26/18 15:34	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.459	--	1	04/25/18 21:21	04/26/18 15:34	EPA 3050B	97,6010C	AB

Project Name: FULLER MIDDLE SCHOOL
Lab Number: L1814382
Project Number: 6473
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-04
Client ID: B-102 (COMP)
Sample Location: FRAMINGHAM, MA
Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 0-6
Matrix: Fill
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	5.06		mg/kg	0.449	--	1	04/25/18 21:21	04/26/18 15:39	EPA 3050B	97,6010C	AB
Barium, Total	27.5		mg/kg	0.449	--	1	04/25/18 21:21	04/26/18 15:39	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.449	--	1	04/25/18 21:21	04/26/18 15:39	EPA 3050B	97,6010C	AB
Chromium, Total	11.1		mg/kg	0.449	--	1	04/25/18 21:21	04/26/18 15:39	EPA 3050B	97,6010C	AB
Lead, Total	3.94		mg/kg	2.24	--	1	04/25/18 21:21	04/26/18 15:39	EPA 3050B	97,6010C	AB
Mercury, Total	ND		mg/kg	0.074	--	1	04/26/18 07:30	04/26/18 14:32	EPA 7471B	97,7471B	MG
Selenium, Total	ND		mg/kg	2.24	--	1	04/25/18 21:21	04/26/18 15:39	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.449	--	1	04/25/18 21:21	04/26/18 15:39	EPA 3050B	97,6010C	AB

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382

Project Number: 6473 **Report Date:** 05/03/18

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01,03-04 Batch: WG1109797-1										
Arsenic, Total	ND		mg/kg	0.400	--	1	04/25/18 21:21	04/26/18 12:42	97,6010C	PE
Barium, Total	ND		mg/kg	0.400	--	1	04/25/18 21:21	04/26/18 12:42	97,6010C	PE
Cadmium, Total	ND		mg/kg	0.400	--	1	04/25/18 21:21	04/26/18 12:42	97,6010C	PE
Chromium, Total	ND		mg/kg	0.400	--	1	04/25/18 21:21	04/26/18 12:42	97,6010C	PE
Lead, Total	ND		mg/kg	2.00	--	1	04/25/18 21:21	04/26/18 12:42	97,6010C	PE
Selenium, Total	ND		mg/kg	2.00	--	1	04/25/18 21:21	04/26/18 12:42	97,6010C	PE
Silver, Total	ND		mg/kg	0.400	--	1	04/25/18 21:21	04/26/18 12:42	97,6010C	PE

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01,03-04 Batch: WG1109930-1										
Mercury, Total	ND		mg/kg	0.083	--	1	04/26/18 07:30	04/26/18 13:41	97,7471B	MG

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis

Batch Quality Control

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01,03-04 Batch: WG1109797-2 WG1109797-3 SRM Lot Number: D098-540								
Arsenic, Total	111		113		83-117	2		30
Barium, Total	103		101		82-118	2		30
Cadmium, Total	102		102		82-117	0		30
Chromium, Total	107		105		83-119	2		30
Lead, Total	101		104		82-117	3		30
Selenium, Total	108		110		78-121	2		30
Silver, Total	112		112		80-120	0		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01,03-04 Batch: WG1109930-2 WG1109930-3 SRM Lot Number: D098-540								
Mercury, Total	102		91		50-149	11		30

INORGANICS
&
MISCELLANEOUS

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-01
Client ID: B-105 (COMP)
Sample Location: FRAMINGHAM, MA

Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 0-4
Matrix: Fill

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.1		%	0.100	NA	1	-	04/26/18 09:48	121,2540G	RI

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-02
Client ID: B-105, S-2
Sample Location: FRAMINGHAM, MA

Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 2-4
Matrix: Fill

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.6		%	0.100	NA	1	-	04/25/18 12:23	121,2540G	RI

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-03
Client ID: B-101 (COMP)
Sample Location: FRAMINGHAM, MA

Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 0-5
Matrix: Fill

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.3		%	0.100	NA	1	-	04/26/18 09:48	121,2540G	RI

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

SAMPLE RESULTS

Lab ID: L1814382-04
Client ID: B-102 (COMP)
Sample Location: FRAMINGHAM, MA

Date Collected: 04/24/18 13:00
Date Received: 04/24/18
Field Prep: Not Specified

Sample Depth: 0-6
Matrix: Fill

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.8		%	0.100	NA	1	-	04/26/18 09:48	121,2540G	RI

Project Name: FULLER MIDDLE SCHOOL
Project Number: 6473

Lab Number: L1814382
Report Date: 05/03/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1814382-01A	Glass 60ml unpreserved split	A	NA		2.4	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1814382-01B	Glass 500ml/16oz unpreserved	A	NA		2.4	Y	Absent		TS(7),MCP-PAH-10(14)
L1814382-02A	Vial MeOH preserved	A	NA		2.4	Y	Absent		MCP-8260HLW-10(14)
L1814382-02B	Vial water preserved	A	NA		2.4	Y	Absent	25-APR-18 01:30	MCP-8260HLW-10(14)
L1814382-02C	Vial water preserved	A	NA		2.4	Y	Absent	25-APR-18 01:30	MCP-8260HLW-10(14)
L1814382-02D	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		TS(7),EPH-DELUX-10(14)
L1814382-03A	Glass 60ml unpreserved split	A	NA		2.4	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1814382-03B	Glass 500ml/16oz unpreserved	A	NA		2.4	Y	Absent		TS(7),MCP-PAH-10(14)
L1814382-04A	Glass 60ml unpreserved split	A	NA		2.4	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1814382-04B	Glass 500ml/16oz unpreserved	A	NA		2.4	Y	Absent		TS(7),MCP-PAH-10(14)

*Values in parentheses indicate holding time in days

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382

Project Number: 6473 **Report Date:** 05/03/18

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	FULLER MIDDLE SCHOOL	**Lab Number:**	L1814382
Project Number:	6473	**Report Date:**	05/03/18

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: FULLER MIDDLE SCHOOL **Lab Number:** L1814382
Project Number: 6473 **Report Date:** 05/03/18

REFERENCES

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE ____ OF ____

ALPHA ANALYTICAL

8 Walkup Drive, Westboro, MA 01581, Tel. 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel. 508-822-9300

Date Rec'd in Lab: 04/24/18

ALPHA Job #: L1814382

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Email: @McPhailgeo.com

Project Information

Project Name: FULLER MIDDLE SCHOOL
Project Location: FRAMINGHAM, MA
Project #: 6473
Project Manager: FATIMA BABIC-KONJIC
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH *(only confirmed if pre-approved!)*
Date Due:

Report Information - Data Deliverables

☒ ADEx ☐ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☒ Other State /Fed Program MCP Criteria RCS-1

Additional Project Information:
☒ Run TCLP (if triggered)

Sample "Sample ID" Nomenclature: B-100, S-1

ALPHA Lab ID (Lab Use Only)	Sample ID	Sample Depth	Sample Material	Collection Date	Collection Time	Sampler Initials	Soil Assessment Package IV (less VOC)	VOC: ☒ 8260	Total Solids	SVOC: ☒ PAH	EPH: ☒ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	TOTAL METALS: ☒ RCRA8 ☐ PP13 ☐ MCP 14	DISSOLVED METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	METALS: Total Sb,Be,Ni,Tl,V,Zn	☐ PCBs ☐ Pesticides	RGP Section A Inorganics	SAMPLE INFO *Filtration* ☐ Field ☐ Lab to do *Preservation* ☐ Lab to do	Sample Comments	TOTAL # BOTTLES
14382-01	B-105 (COMP)	0-4'	F	4/24/18		CC				X			X							1
02	B-105 S2	2'-4'	F	4/24/18		CC		X			X									4
03	B-101 (COMP)	0-5'	F	4/24/18		CC				X			X							1
04	B-102 (COMP)	0-6	F	4/24/18		CC				X			X							1

Container Type
A=Amber glass
B=Bacteria cup
C=Cube
D=BOD bottle
E=Encore
G=Glass
O=Other
P=Plastic
V=Vial

Preservative
A=None
B=HCl
C=HNO_3
D=H_2SO_4
E=NaOH
F=MeOH
G=$NaHSO_4$
H=$Na_2S_2O_3$
I=Ascorbix Acid
J=NH_4Cl
K=Zn Acetate
O=Other

Sample Material
F=Fill S=Sand
O=Organics C=Clay
N=Natural T=Till
GM=Glaciomarine
GW=Groundwater

RGP Section A Inorganics :
Ammonia, Chloride, TRC, TSS, CrVI, CrIII, Total Cyanide, Total RGP Metals

	Container Type																			
	Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
EKC	4/24 1:00	McPhail Associates secure sample storage for laboratory pick-up	
McPhail Associates secure sample storage for laboratory pick-up			4/24/18 1600
	4/24/18 1800		4-24-18 1800

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

DOC ID: 25188 Rev 0 (11/28/2017)

Method Blank Summary
Form 4
VOLATILES

Client	: McPhail Associates	**Lab Number**	: L1814382
Project Name	: FULLER MIDDLE SCHOOL	**Project Number**	: 6473
Lab Sample ID	: WG1110711-5	**Lab File ID**	: V00180427B04
Instrument ID	: VOA100		
Matrix	: SOIL	**Analysis Date**	: 04/27/18 10:50

Client Sample No.	Lab Sample ID	Analysis Date
WG1110711-3LCS	WG1110711-3	04/27/18 09:32
WG1110711-4LCSD	WG1110711-4	04/27/18 09:58
B-105, S-2	L1814382-02	04/27/18 16:28

Continuing Calibration
Form 7

Client	: McPhail Associates	**Lab Number**	: L1814382		
Project Name	: FULLER MIDDLE SCHOOL	**Project Number**	: 6473		
Instrument ID	: VOA100	**Calibration Date**	: 04/27/18 09:32		
Lab File ID	: V00180427B01	**Init. Calib. Date(s)**	: 03/14/18	03/15/18	
Sample No	: WG1110711-2	**Init. Calib. Times**	: 22:04	01:32	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	125	0
Dichlorodifluoromethane	0.177	0.209	-	-18.1	20	142	0
Chloromethane	0.353	0.317	-	10.2	20	118	0
Vinyl chloride	0.286	0.259	-	9.4	20	114	0
Bromomethane	20	17.961	-	10.2	20	150	0
Chloroethane	0.161	0.154	-	4.3	20	117	0
Trichlorofluoromethane	0.279	0.241	-	13.6	20	104	0
Ethyl ether	0.109	0.113	-	-3.7	20	129	0
1,1-Dichloroethene	0.185	0.175	-	5.4	20	116	0
Carbon disulfide	0.689	0.574	-	16.7	20	104	0
Freon-113	0.191	0.177	-	7.3	20	108	0
Methylene chloride	0.252	0.218	-	13.5	20	113	0
Acetone	20	12.905	-	35.5*	20	94	0
trans-1,2-Dichloroethene	0.222	0.206	-	7.2	20	115	0
Methyl acetate	0.17	0.129	-	24.1*	20	98	0
Methyl tert-butyl ether	0.523	0.517	-	1.1	20	123	0
tert-Butyl alcohol	0.021	0.019	-	9.5	20	115	0
Diisopropyl ether	1.107	0.923	-	16.6	20	101	0
1,1-Dichloroethane	0.508	0.446	-	12.2	20	107	0
Halothane	0.154	0.147	-	4.5	20	113	0
Acrylonitrile	0.066	0.063	-	4.5	20	129	-.01
Ethyl tert-butyl ether	0.818	0.716	-	12.5	20	106	0
Vinyl acetate	0.622	0.563	-	9.5	20	116	0
cis-1,2-Dichloroethene	0.234	0.221	-	5.6	20	113	-.01
2,2-Dichloropropane	0.348	0.315	-	9.5	20	109	0
Bromochloromethane	0.097	0.093	-	4.1	20	113	-.01
Cyclohexane	0.497	0.435	-	12.5	20	100	0
Chloroform	0.423	0.388	-	8.3	20	115	0
Ethyl acetate	0.245	0.207	-	15.5	20	109	0
Carbon tetrachloride	0.282	0.258	-	8.5	20	108	0
Tetrahydrofuran	0.069	0.064	-	7.2	20	117	0
Dibromofluoromethane	0.242	0.228	-	5.8	20	117	0
1,1,1-Trichloroethane	0.337	0.306	-	9.2	20	109	-.01
2-Butanone	0.097	0.083	-	14.4	20	116	0
1,1-Dichloropropene	0.309	0.282	-	8.7	20	108	0
Benzene	0.941	0.836	-	11.2	20	111	0
tert-Amyl methyl ether	0.595	0.531	-	10.8	20	109	-.01
1,2-Dichloroethane-d4	0.284	0.255	-	10.2	20	113	0
1,2-Dichloroethane	0.329	0.285	-	13.4	20	107	0
Methyl cyclohexane	0.389	0.349	-	10.3	20	104	-.01
Trichloroethene	0.225	0.209	-	7.1	20	112	0
Dibromomethane	0.124	0.114	-	8.1	20	113	-.01
1,2-Dichloropropane	0.274	0.245	-	10.6	20	108	-.01
2-Chloroethyl vinyl ether	0.118	0.11	-	6.8	20	122	0
Bromodichloromethane	0.302	0.272	-	9.9	20	110	0

* Value outside of QC limits.

Continuing Calibration
Form 7

Client	: McPhail Associates	**Lab Number**	: L1814382		
Project Name	: FULLER MIDDLE SCHOOL	**Project Number**	: 6473		
Instrument ID	: VOA100	**Calibration Date**	: 04/27/18 09:32		
Lab File ID	: V00180427B01	**Init. Calib. Date(s)**	: 03/14/18	03/15/18	
Sample No	: WG1110711-2	**Init. Calib. Times**	: 22:04	01:32	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,4-Dioxane	0.00156	0.00174	-	-11.5	20	143	0
cis-1,3-Dichloropropene	0.375	0.333	-	11.2	20	111	0
Chlorobenzene-d5	1	1	-	0	20	119	-.01
Toluene-d8	1.484	1.5	-	-1.1	20	120	-.01
Toluene	0.843	0.799	-	5.2	20	112	0
4-Methyl-2-pentanone	0.114	0.106	-	7	20	117	0
Tetrachloroethene	0.272	0.274	-	-0.7	20	110	0
trans-1,3-Dichloropropene	0.466	0.441	-	5.4	20	112	0
Ethyl methacrylate	20	19.469	-	2.7	20	127	0
1,1,2-Trichloroethane	0.214	0.217	-	-1.4	20	115	-.01
Chlorodibromomethane	0.281	0.26	-	7.5	20	109	0
1,3-Dichloropropane	0.454	0.38	-	16.3	20	95	-.01
1,2-Dibromoethane	20	17.751	-	11.2	20	107	-.01
2-Hexanone	0.233	0.189	-	18.9	20	113	-.01
Chlorobenzene	0.88	0.806	-	8.4	20	108	0
Ethylbenzene	1.594	1.425	-	10.6	20	104	0
1,1,1,2-Tetrachloroethane	0.283	0.273	-	3.5	20	109	0
p/m Xylene	0.58	0.504	-	13.1	20	101	0
o Xylene	0.556	0.529	-	4.9	20	108	-.01
Styrene	0.909	0.798	-	12.2	20	102	-.01
1,4-Dichlorobenzene-d4	1	1	-	0	20	126	0
Bromoform	0.32	0.284	-	11.3	20	112	0
Isopropylbenzene	3.132	2.712	-	13.4	20	103	-.01
4-Bromofluorobenzene	1.132	1.007	-	11	20	113	0
Bromobenzene	0.651	0.606	-	6.9	20	114	0
n-Propylbenzene	4.048	3.423	-	15.4	20	103	-.01
1,4-Dichlorobutane	1.194	1.108	-	7.2	20	113	0
1,1,2,2-Tetrachloroethane	0.705	0.601	-	14.8	20	105	0
4-Ethyltoluene	3.362	2.86	-	14.9	20	102	0
2-Chlorotoluene	2.486	2.086	-	16.1	20	107	0
1,3,5-Trimethylbenzene	2.689	2.362	-	12.2	20	107	0
1,2,3-Trichloropropane	0.569	0.476	-	16.3	20	105	0
trans-1,4-Dichloro-2-buten	0.242	0.207	-	14.5	20	113	-.01
4-Chlorotoluene	2.421	2.057	-	15	20	103	0
tert-Butylbenzene	2.123	1.92	-	9.6	20	108	0
1,2,4-Trimethylbenzene	2.64	2.375	-	10	20	107	0
sec-Butylbenzene	3.432	3.054	-	11	20	105	0
p-Isopropyltoluene	2.719	2.495	-	8.2	20	106	0
1,3-Dichlorobenzene	1.326	1.223	-	7.8	20	111	0
1,4-Dichlorobenzene	1.38	1.237	-	10.4	20	112	0
p-Diethylbenzene	1.728	1.553	-	10.1	20	106	0
n-Butylbenzene	2.92	2.568	-	12.1	20	103	0
1,2-Dichlorobenzene	1.207	1.106	-	8.4	20	111	0
1,2,4,5-Tetramethylbenzene	2.636	2.324	-	11.8	20	105	0
1,2-Dibromo-3-chloropropan	0.08	0.068	-	15	20	116	-.01

* Value outside of QC limits.

Continuing Calibration
Form 7

Client	: McPhail Associates	**Lab Number**	: L1814382		
Project Name	: FULLER MIDDLE SCHOOL	**Project Number**	: 6473		
Instrument ID	: VOA100	**Calibration Date**	: 04/27/18 09:32		
Lab File ID	: V00180427B01	**Init. Calib. Date(s)**	: 03/14/18	03/15/18	
Sample No	: WG1110711-2	**Init. Calib. Times**	: 22:04	01:32	
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3,5-Trichlorobenzene	0.936	0.823	-	12.1	20	105	0
Hexachlorobutadiene	0.37	0.317	-	14.3	20	102	0
1,2,4-Trichlorobenzene	0.738	0.688	-	6.8	20	110	0
Naphthalene	1.693	1.601	-	5.4	20	116	0
1,2,3-Trichlorobenzene	0.668	0.626	-	6.3	20	111	0

* Value outside of QC limits.

6. Code Analysis

Please see the following report for:

- Code Analysis
- Accessibility - ADA/MAAB Compliance

Fire Protection and Life Safety Code Compliance Strategy

FRAMINGHAM FULLER MIDDLE SCHOOL
FRAMINGHAM, MA

Prepared For:

Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

Prepared By:

HOWE ENGINEERS
101 Longwater Circle, Suite 203
Norwell, MA 02061
Phone: 781.878.3500
Fax: 781.878.3551

SUBMITTED: SEPTEMBER 7, 2018

Table of Contents

DOCUMENT HISTORY

50% Schematic Design Fire Protection and Life Safety Code Compliance Strategy ..... August 8, 2018
100% Schematic Design Fire Protection and Life Safety Code Compliance Strategy ..... September 7, 2018

This document "Concept Design Fire Protection and Life Safety Code Compliance Strategy" is intended for use by the design team and code officials for understanding the building design concept for the proposed Framingham Fuller Middle School located in Framingham, MA. This document contains the code basis for the building design, functionality of the egress system, fire protection recommendations, the smoke control system design concept, and a comprehensive code outline.

This document is a preliminary draft based on the schematic building plans sent from Jonathan Levi Architects on September 5, 2018. This document is a work in progress, will be updated as the design progresses and discussions/agreements with the Authorities Having Jurisdiction occur.

PURPOSE

The purpose of this report is to document and provide the code compliance strategy, including the framework for the fire protection and life safety concept, for the Framingham Fuller Middle School in Framingham, MA. This document will also identify design concepts that are not clearly addressed by the applicable building codes, which will require approval and or interpretation by the authorities having jurisdiction (AHJ).

APPLICABLE CODES AND REQUIREMENTS

The following codes are presently adopted in the State of Massachusetts:

- **Building** — Massachusetts State Building Code (MSBC), 9th Edition, which adopts and amends the 2015 International Building Code and the 2015 International Existing Building Code (IEBC).
- **Accessibility** — Massachusetts Architectural Access Board (MAAB), 521-CMR.
  2010 ADA Standards for Accessible Design
- **Electrical** — Massachusetts Electrical Code, 527 CMR, 12.00. The Massachusetts Electrical Code is an amended version of the 2017 National Electrical Code (NFPA 70).
- **Elevators** — Massachusetts Elevator Regulations, 524-CMR.
- **Energy** — 2015 Edition of the International Energy Conservation Code (IECC) as amended by the State of Massachusetts; Massachusetts Stretch Code
- **Fire Prevention** — 527 CMR Massachusetts Fire Prevention Code, which adopts and amends the 2015 edition of NFPA 1.
- **Mechanical** — International Mechanical Code, 2015 edition, as adopted and amended by the MSBC (Chapter 28).
- **Plumbing** — Massachusetts Fuel Gas and Plumbing Codes (248 CMR).
- **Other** — National Fire Protection Association (NFPA) Standards, as referenced by the MSBC and the MFPR.

PROJECT DESCRIPTION

Howe Engineers has prepared this document for the Framingham Fuller Middle School located in Framingham, MA. The proposed building will be a newly constructed, three (3) story building with a footprint area of approximately 64,780 square feet. The building contains primarily Group E Educational spaces for middle school students (6th to 8th grade), with accessory office and lounge spaces. There is a gymnasium and auditorium on the north side of the building that will be considered Group A-3 assembly spaces as public events will likely be held in these spaces.

This narrative addresses the requirements contained in the 9th edition of 780 CMR, The Massachusetts State Building Code (MSBC), which is an amended version of the 2015 International Building Code (IBC).

GENERAL OPERATING ASSUMPTIONS

The following general operating assumptions serve as the basis for the Life Safety and Fire Protection design and should be incorporated into the new facilities operations plan. It is the responsibility of the Owner/Operator to ensure that these assumptions are enforced:

- The materials used shall meet the interior finish requirements of the International Building, and NFPA 1.
- Hazardous materials and explosives are not permitted within the Building unless protected in accordance with the International Building and Fire Codes and approved by the Authority Having Jurisdiction.

NEW CONSTRUCTION- CODE COMPLIANCE APPROACH

OCCUPANCY CLASSIFICATION

The proposed Fuller School is classified as Mixed Use, containing Educational, Group E Occupancies, along with Assembly Group A and Business Group B Occupancies. The building serves as an educational building for students from the 6th through 8th grade containing primarily classroom spaces. There is a gymnasium and auditorium on the north side of the building which will likely hold events for the general public. As these spaces will hold events for the public, they must be considered Assembly spaces as they will accommodate occupants other than the students of the Fuller School. The occupancies in the building on the respective levels are as follows:

First Floor (Level of Exit Discharge)	**USE GROUP**
Classrooms / Lab Spaces	E
Gymnasium	A-4
Auditorium / Lounge Space	A-3
Office / Administration	B
Storage	S-1
MEP	S-2
Second Floor	**USE GROUP**
Classrooms	E
Office / Administration	B
Lounge / Breakout Space	A-3
Storage	S-1
MEP	S-2
Third Floor	**USE GROUP**
Classrooms	E
Office / Administration	B
Lounge / Breakout Space	A-3
Storage	S-1
MEP	S-2

OCCUPANCY SEPARATIONS

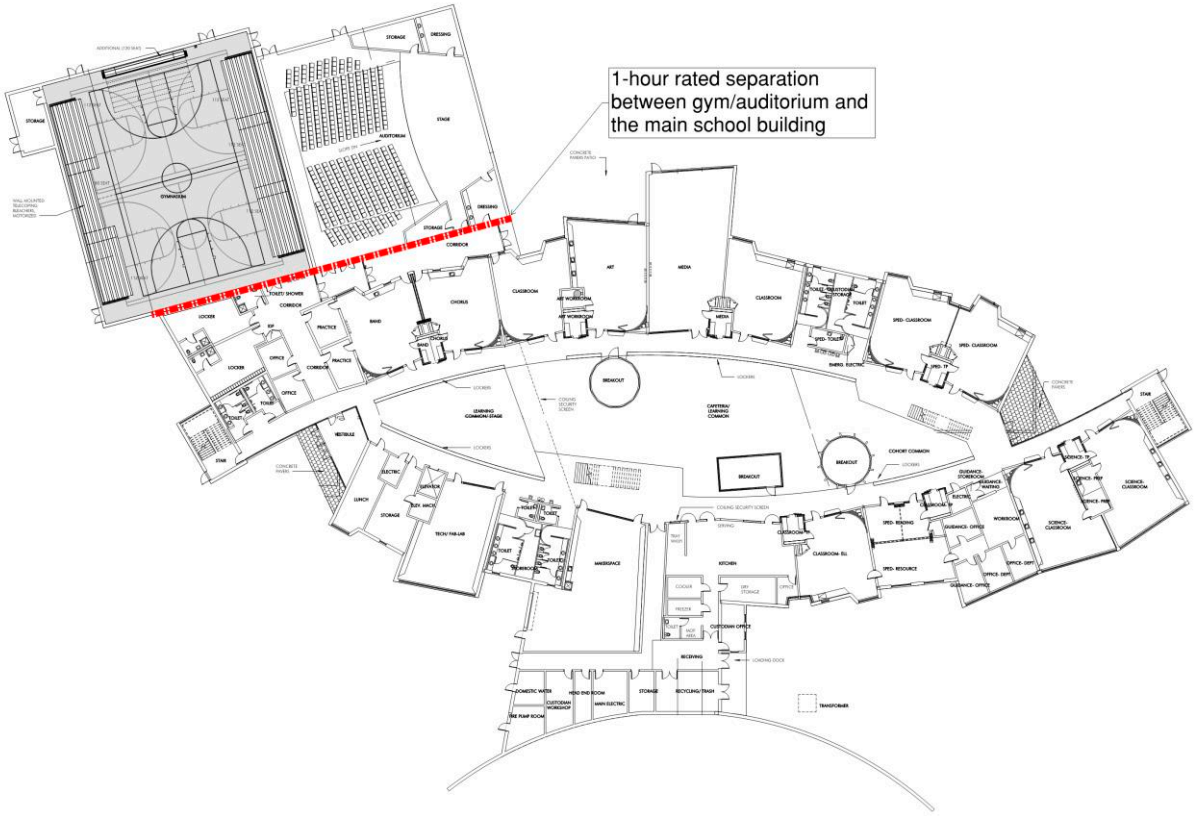
The Building contains a number of different occupancies, not included in the same occupancy group, within the building and is classified as Mixed-Use Occupancy in accordance with MSBC Section 508.1. Therefore, the building is required to comply with the requirements of either Section 508.3 (non-separated uses) or Section 508.4 (separated uses), or combinations of these sections. As the gymnasium and auditorium on the first floor of the building will be used for public events, they must be considered assembly spaces. A separated, mixed-use approach will be taken for the design of the building in which the assembly spaces on the first floor will be separated from the Group E Educational spaces on the floor by 1-hour rated separations. Refer to the Building Construction section below for minimum construction type necessary to allow for the application of the separated mixed-use provisions.

BUILDING CONSTRUCTION

CONSTRUCTION TYPE

The Framingham Fuller School will be newly constructed using a separated mixed-use approach. The building is three (3) stories in height, containing primarily Group E occupancies, with Group A Assembly spaces consisting of the Gymnasium and Auditorium primarily on the first floor. The building will be designed as Type IIA protected, non-combustible construction.

Under Type IIA Construction, Group E occupancies are permitted to be four (4) stories in height and 79,500 square feet per floor. Group A occupancies are permitted to be four (4) stories in height with 46,500 square feet per floor. As the gymnasium and auditorium will be used for public events, they are classified as Group A-3 spaces, while the balance of the school is classified as Group E educational spaces. A 1-hour rated separation will be constructed between the gym/auditorium wing and the balance of the school building to meet the separated mixed-use provisions. This separation is detailed in the image below for clarification.



In order to demonstrate compliance with the allowable building area requirements of MSBC Section 506, the sum of the ratios on each floor must be individually analyzed. This approach involves taking the area of each occupancy, and dividing this area by the allowable area of each occupancy on a floor-by-floor basis (MSBC Section 506.2.4). The following table outlined the sum of the ratios on a per-floor basis for the building.

Occupancy	Actual Area	Allowable Area	Ratio
First Floor			
A-3	15,610	46,500	0.336
E	47,986	79,500	0.604
		Total	**0.939**
Second Floor			
E	34,874	79,500	0.439
		Total	**0.439**
Third Floor			
E	32,524	79,500	0.409
		Total	**0.409**

It should be noted that if the cafeteria space on the first floor is also used for public, assembly events, it will also be classified as a Group A-3 assembly space and will require a separation from the balance of the Educational occupancies in the building**. JLA must confirm the intended function of the cafeteria space and whether or not it will host public assembly events. If the cafeteria is used for hosting public assembly events, a separated mixed-use approach will not be possible based on the openness to other floor levels and the inability to provide a complete separation between occupancies. In this case, a non-separated mixed-use approach would be required, and the building construction type would have to be increased to Type IB construction with Group A-3 being the most restrictive occupancy classification in the building.**

Alternatively, the building could be constructed as a non-separated mixed-use building of Type IB construction. If constructed of Type IB construction, occupancy separations would not be required, but stairways and shafts would be required to be constructed of 2-hour construction to meet the requirements for Type IB construction. **The construction type of the proposed Fuller School requires further discussion with Howe Engineers.**

FIRE RESISTANCE RATING

The fire-resistance rating requirements for Type IIA construction can be found in MSBC Table 601. The fire-resistance ratings for the building structural elements are as follows:

Fire Resistance Ratings of Structural Elements for Type IIA Construction

BUILDING STRUCTURAL ELEMENT	FIRE RESISTANCE RATING – TYPE IIA
Structural Frame	
Including girders, beams and trusses (other than columns):	
Supporting a floor	1-hour
Supporting roof only	1-hour
Columns:	
Supporting a floor	1-hour
Supporting roof only	1-hour
Bearing Walls	
Exterior	1-hour
Interior Walls:	
Supporting more than one floor	1-hour
Supporting only roof	1-hour
Nonbearing Walls and Partitions	
Exterior *(not less than fire separation requirements)*	See Fire Separation
Interior *(not less than fire separation requirements)*	0-hours
Floor Construction	
Including supporting beams and joists	1-hour
Roof Construction	
Including supporting beams and joists:	
Less than 20' in height to lowest member	1-hours
20' or more in height to lowest member	0-hours

EXTERIOR WALLS

The MSBC regulates the fire resistance rating of exterior walls and the extent to which protected and unprotected openings are permitted in the exterior walls of facing buildings based on the fire separation distance to the lot line or to the center of the street (MSBC Table 602 and Table 705.8).

It should be noted that the Farley building is located approximately 40-feet away from the proposed Fuller School. The Farley building is constructed of non-combustible brick exterior walls. As such, the Fuller School is not provided with 100% open frontage on all sides. **The existing Farley Building was confirmed by JLA to be of masonry construction, with no exterior openings on the portions closest to the proposed Fuller School.**

In order to determine the allowable openings and rating of the exterior walls of the Fuller School, an assumed lot line must be developed between the Farley building and the Fuller School. Based on the masonry exterior walls of the Farley Building, it is assumed that the Farley Building is provided with 1-hour rated exterior walls. With no openings in the exterior wall, the Fuller School will be permitted to have unlimited openings and a non-rated exterior wall. Specific detail of the Farley wall construction should be provided for a detailed review to ensure a 1-hour rated exterior wall exists.

Fire Resistance Rating for Exterior Non-Loading-Bearing Walls

Based on Fire Separation Distance (IBC Table 602)

FIRE SEPARATION DISTANCE (Building wall to property line for each side of the building)	FIRE-RESISTANCE RATING (GROUP A, B, E, S-2)
Less than 5 feet	1-hour
Greater than or equal to 5 feet and less than 10 feet	1-hour
Greater than or equal to 10 feet and less than 30 feet	1-hour
Greater than or equal to 30 feet	0-hour

The required fire-resistance rating of exterior walls with a fire separation distance of greater than 10 feet must be rated for exposure to fire from the inside. The required fire-resistance rating of exterior walls with a fire separation distance of less than or equal to 10 feet must be rated for exposure to fire from both sides.

Maximum Area of Exterior Wall Openings

Based on IBC Table 705.8

Fire Separation Distance to Lot Line (feet)	Allowable Area of Opening (Sprinklered)
0 to less than 3	Not Permitted
3 to less than 5	15%
5 to less than 10	25%
10 to less than 15	45%
15 to less than 20	75%
20 to less than 25	No Limit
25 to less than 30	No Limit
30 or greater	No Limit

The Farley building is not provided with openings on the portions of the building that will face the proposed Fuller School. As mentioned above, the allowable openings of the Fuller School will be determined upon confirmation of the assumed lot line between the Fuller School and the Farley Building. The Fuller School will likely be permitted to have unlimited openings based on the 1-hour rated exterior walls and lack of openings in the Farley Building.

Fire Resistant Joint Systems

Joints installed in or between fire-rated walls, floors or floor/ceiling assemblies and roofs or roof/ceiling assemblies must be protected by an approved fire-resistant joint assembly having a rating equal to the rating of the wall, floor, or roof. Joint systems shall be tested in accordance with MSBC Section 715.0.

Listed and approved joint assemblies must be provided for all concealed locations where fire resistance rated assemblies form a joint.

Interior Finishes and Floor Finishes

Interior finishes in the building are required to meet the requirements of MSBC Section 803 for Interior Finish. Refer to the following tables for details. Interior finish applies to wall and ceiling finishes. Interior floor finish applies to floor coverings.

Interior Wall & Ceiling Finish Requirements by Occupancy

Sprinklered Building (Table 803.11)

USE GROUP	VERTICAL EXITS AND PASSAGEWAYS	EXIT ACCESS CORRIDORS	ROOMS AND ENCLOSED SPACES
A-3	A or B	A or B	A, B, or C
B / E	A or B	A, B, or C	A, B, or C
S	A, B, or C	A, B, or C	A, B, or C
Atrium	A or B	A or B	A or B

Interior Floor Finish Requirements by Occupancy

Interior floor finish and floor coverings must comply with IBC Section 804, unless the floor finish or covering material is of traditional type, such as wood, vinyl, linoleum, or terrazzo and resilient floor covering materials not comprised of fibers.

PENETRATIONS OF DUCT AND AIR TRANSFER OPENINGS

MEP Shaft Enclosures

A shaft is required when the duct penetrates two (2) or more floor/ceiling assemblies (MSBC Section 717.6.1). A shaft is not required in occupancies other than Groups I-2 and I-3, for a duct constructed of approved materials in accordance with the International Mechanical Code that penetrates not more than one (1) fire-resistance-rated floor/ceiling assembly (connecting only 2 stories), provided a listed fire damper is installed at the floor line or the duct is protected in accordance with MSBC Section 714.4 (MSBC Section 717.6).

MSBC Section 713.4 provides that shafts connecting less than four (4) stories, a 1-hour fire rated shaft enclosure is required. Shafts connecting four (4) or more stories require a fire-resistance rating of at least two (2) hours. Additionally, shaft enclosures must not have a fire resistance rating that is less than the rating of the floor that they are penetrating, but need not exceed two (2) hours. Openings in a shaft enclosure are required to be limited to those necessary for the purpose of the shaft (MSBC Section 713.8.1). Where shafts do not extend to the top or bottom of a building, adequate protection should be provided (MSBC Section 713.11 and Section 713.12).

Further, as the building is considered Type IIA construction, having fire-resistance rated floor assemblies, duct systems constructed of approved materials are not required to be located within a shaft provided the duct does not penetrate more than two (2) stories and a listed fire damper is installed at the floor line or the duct is protected in accordance with Section 714.4.

Fire Dampers

Fire dampers should have a fire resistance rating in accordance with the table below (MSBC Table 717.3.2.1). The actuation temperature of the actuating device should be approximately 50˚F above the normal temperature within the duct system (MSBC Section 717.3.3.1). If a fusible link is used, it should have a temperature rating not less than 160˚F (MSBC Section 717.3.3.1).

Fire Damper Rating

Type of Penetration	Minimum Fire Damper Rating
Less than 3-hour fire-resistance rated assemblies	1½ hours
3 hour or greater fire-resistance rated assemblies	3 hours

Fire dampers are required at locations where ducts or air transfer openings of an air distribution system penetrate fire resistance rated assemblies including the following:

- Fire barriers (MSBC Section 717.5.2);
- Shaft enclosures (MSBC Section 717.5.3);
- Fire partitions (MSBC Section 717.5.4);
- Horizontal assemblies (MSBC Section 717.6).

Smoke Dampers

Actuation of smoke dampers should be achieved in accordance with the table below (MSBC Section 717.3.3.2).

Smoke Damper Actuation Methods

Damper Location	Activation Method
Within a duct	Activation controlled by a smoke detector within 5-feet of the damper with no air outlets or inlets between the detector and the damper.
Above smoke barrier doors in a smoke barrier	Activation controlled by a spot type detector listed for releasing service should be installed on both sides of the smoke barrier door opening.
In an un-ducted opening in a wall	Activation controlled by a spot type detector listed for releasing service should be installed within 5-feet of the damper.
In a corridor wall	Activation controlled by smoke detector system in the corridor.
All	Where a total-coverage smoke detector system is provided within areas served by HVAC system, dampers are permitted to be controlled by the smoke detection system.

Smoke dampers are required at locations where ducts or air transfer openings of an air distribution system penetrate assemblies; including:

- Shaft enclosures (MSBC Section 717.5.3);
- Smoke barrier walls (MSBC Section 717.5.5);
- Horizontal Exits in fire walls (MSBC Section 717.5.1);
- Corridors (MSBC Section 717.5.4.1);
- Smoke Partitions (MSBC Section 717.5.7).
- Smoke-tight construction (MSBC Section 509.4.2)

The table below reiterates smoke damper (SD) requirements and provides a number of exceptions in accordance with the MSBC.

Combination Smoke/ Fire Dampers

Where penetration of a smoke barrier is required to be provided with a fire damper, a combination fire and smoke damper equipped and arranged to be both smoke and heat responsive should be provided (MSBC 717.5). Combination smoke / fire dampers are required in the following location:

- Shaft penetrations (MSBC 717.5.3).

The table below reiterates combination smoke / fire damper requirements and provides a number of exceptions in accordance with the MSBC.

Through Penetration Protection

Penetrations into or through fire barriers, smoke barrier walls, fire partitions, floor/ceiling assemblies, or the ceiling membrane of a roof/ceiling assembly are required to be protected with an approved penetration or membrane penetration assembly (MSBC 708). See MSBC 708 for exceptions. **Penetrations in the proposed horizontal exit must be provided with through penetration or membrane penetration protection measures.**

Damper Exceptions

The table below been developed by Howe Engineers in identifying where dampers are required and where exceptions exist.

	FD	SD	MSBC	Applicable SD, FD & SD/FD Damper Exceptions
Fire Barriers (including horizontal exits)[1]	Required	Not Required (NR)	717.5.2	Penetrations tested in accordance with ASTM E119 as part of a fire-resistance rated assembly **(FD)**. **[MSBC §717.5.2 Exception 1]**
				Ducts used as part of an approved smoke control system **(FD)**. **[MSBC 717.5.2 Exception 2]**
				Where fire barriers walls have a FRR of less than 1-hour and the following conditions apply: • The Building is protected throughout by automatic sprinklers; • Penetrations are limited to a ducted HVAC system conveying supply, return or exhaust air; • HVAC ducts are minimally 26 gage; • HVAC ducts are continuous from the AHU to the air outlet and inlet terminals **(FD)**. **[MSBC 717.5.2 Exception 3]**
Smoke Barriers[2]	NR	Required	717.5.5	Smoke dampers are not required where openings in ducts are limited to a single smoke compartment and ducts are constructed of steel **(SD)**. **[MSBC 717.5.5 Exception 1]**
Floor / Ceiling Assemblies	Required	NR	717.6.1	A duct is permitted to penetrate two floors or less with a fire damper at each floor provided it meets all the requirements in 717.6.1 Exception **(FD)**. **[MSBC 717.6.1 Exception]**
Shafts	Fire / Smoke Dampers Required		717.5.3	Steel exhaust sub ducts extending at least 22-inches vertically in an exhaust shaft provided there is a continuous upward airflow to the outside **(FD)**. **[MSBC 717.5.3 Exception 1.1]**
				Penetrations tested in accordance with ASTM E119 as part of a fire-resistance rated assembly **(FD)**. **[MSBC717.5.3 Exception 1.2]**
				Ducts used as part of an approved smoke control system **(FD)**. **[MSBC 717.5.3 Exception 1.3]**
				Fire dampers and combination fire/smoke dampers are not required in kitchen and clothes dryer exhaust systems when installed in accordance with the International Mechanical Code **(SD/FD). [MSBC 717.5.3 Exception 5].** A duct that penetrates a fire-resistance rated floor/ceiling assembly that connects not more than 2 stories is permitted without a shaft enclosure, provided that a listed fire damper is installed at the floor line. **[MSBC 717.6.3].**
				Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed with steel exhaust sub ducts, having a minimum wall thickness of 0.187-inch (No. 26 gage), the sub ducts extend at least 22 inches vertically, and an exhaust fan providing continuous airflow to the outside is installed at the top of the shaft terminal. The exhaust fan should be provided with an uninterruptible power system for the first 15 minutes of loss of primary power **(SD)**. **[MSBC 717.5.3 Exception 2 for Group B and R occupancies only]**
Corridors	NR	Required	717.5.4	Ductwork has a minimum wall thickness of 0.019 inches and there are not openings that serve the corridor **(SD). [MSBC 717.5.4.1 Exception 2]**
Fire Partitions	Required	NR	717.5.4	Ductwork does not exceed 100 square inches, constructed of steel a minimum of 0.0217 inch in thickness, does not have openings that communicate with the corridor, installed above the ceiling, shall not terminate at a wall register in the fire resistance rated wall, 12-inch long by 0.060-inch-thick steel sleeve centered in each duct opening and secured by rectangle angles **(SD). [MSBC 717.5.4 Exception 3]**

Protected Vertical Openings

Vertical openings through floors will be protected by fire-rated assemblies in accordance with MSBC Section 707.3. Vertical openings include exit stairs, elevator shafts, and mechanical shafts. Shafts and exit enclosures, other than *exit access stairways* complying with MSBC Section 1019.3 Item 4, will be enclosed with listed and approved shaft enclosure assemblies that provide a 1-hour fire-resistant rated noncombustible shaft assembly per MSBC Section 707.3, as the shafts will connect less than four (4) stories. Enclosed exit stairs within the building will be designed with 1-hour fire-rated separations.

[1] **Fire barriers within the building will include:** Occupancy separations (if provided) and special use room enclosures.
[2] **Smoke barriers within the building will include:** Fire service elevator lobby separations.

The floor openings requiring shaft protection will include, but are not limited to:

- Grease Ducts, Trash chutes and linen chutes
- Elevator Shafts
- Mechanical, electrical and plumbing shafts
- Exit Stairways, other than exit access stairways complying with MSBC Section 1019.3 Item 4.

Duct systems throughout the building that do not connect more than two (2) stories and are not required to be enclosed in shafts and are not required to be provided with smoke dampers, provided the annular space around the shaft is sealed with an approved material (MSBC, Section 714).

ATRIUM DESIGN

The current Fuller School design includes a three (3) story opening in the center of the building, with numerous breakout spaces within the opening. As the opening connects more than two (2) stories, the space is considered an atrium and must be designed in accordance with MSBC Section 404. Atriums are only permitted to be installed in buildings provided with approved automatic sprinkler protection (404.3). Initially, it should be assumed that the building will require approximately 130,000 cfm of exhaust and associated make up air at the First Floor.

Section 404.5 requires a smoke control system to be installed in accordance with MSBC Section 909. The smoke control system can either be designed using natural or mechanical-ventilation but will require and engineering rational analysis to ensure adequate system performance. Equipment for the smoke control system must be provided with standby power.

Section 404.6 requires atrium spaces to be separated from adjacent spaces by a 1-hour fire barrier constructed in accordance with Section 707. A fire barrier is not required to enclose an atrium space when one (1) of the following arrangements are met:

- A glass wall forming a smoke partition is provided and sprinklers are provided along both sides of the separation walls and doors. Sprinklers must be located between 4 and 12-inches away from the glass at intervals along the glass not more than 6-feet. The sprinkler system must be designed to wet all surface of the glass upon activation. The glass wall must be installed in a gasketed frame in such a manner that the framing deflects without breaking the glass before the sprinkler operates. Where glass doors are provided, they must be self or automatic-closing.
- A glass block wall assembly complying with section 2110 having a ¾-hour rating is provided.
- A fire barrier is not required when the design is accounted for in the design of the smoke control system.

Atrium interior finishes must be class B or higher, with no reduction for sprinkler protection (Section 404.8).

It should be noted that unique egress requirements exist for atrium spaces in Section 404.9. Exit access travel distance through the atrium, not at the level of exit discharge, must not exceed 200-feet within the bounds of the atrium. Refer to the means of egress section of this report for further information.

STAGE DESIGN

The current Fuller School design includes a stage in the auditorium space on the First Floor. The requirements for stages are provided in MSBC Section 410. Section 410.3.1 requires stages to be constructed of materials as required for floors of the type of construction in which the stage is located. In buildings of Type IIA construction, a fir-resistance rated floor is not required provided the space below the stage is equipped with an automatic sprinkler system or fire-extinguishing system in accordance with Section 903 or 904 respectively. In all types of construction, the finished floor must be constructed of wood or non-combustible materials. Openings through the stage floor must be equipped with tight-fitting, solid wood trap floors with approved safety locks.

Where the stage height is greater than 50-feet in height, all portions of the stage must be completely separated from the seating area by a proscenium wall with not less than a 2-hour fire-resistance rating extending continuously from the foundation to the roof (Section 410.3.4). Where a proscenium wall is required to have a fire-resistance rating, the stage openings must be provided with a fire curtain complying with NFPA 80, horizontal sliding doors complying with Section 716.5.2 having a fire protection rating of at least 1-hour, or an approved water curtain complying with section 903.3.1.1.

Combustible scenery used in sets must meet the fire propagation performance criteria of Test Method 1 or 2, as appropriate of NFPA 701 in accordance with Section 806 of the International Fire Code.

It should be noted that the current stage design was measured to be approximately 1,500 square feet. Section 410.3.7 requires emergency ventilation for stages larger than 1000 square feet in floor area, or stages with a height greater than 50-feet. Ventilation must comply with Section 410.3.7.1 (roof vents) or 410.3.7.2 (Smoke control). **The height and area of the current stage must be verified by JLA. It should be noted that the area measure of the stage must include all of the wing areas and backstage areas. The design of the stage requires further discussion with Howe Engineers.**

Dressing rooms are required to be separated from the stage with rated construction in accordance with Section 410.5.1. Staged must be separated from dressing rooms, scene docks, workshops, storerooms and compartments appurtenant to the stage by fire barriers or horizontal assemblies. The fire-resistance rating must be 2-hour for stage heights greater than 50-feet, and not less than 1-hour for stage height of 50-feet or less.

Stages must be provided with automatic sprinkler protection in accordance with Section 903.3.1.1. Sprinklers must be installed under the roof and gridiron and under all catwalks and galleries over the storage. Sprinklers must be installed in dressing rooms, performer lounges, and storerooms accessory to the stage (Section 410.7). Section 905.3.4 requires that stages greater than 1,000 square feet in area be provided with a Class III wet standpipe system with 1 ½-inch and 2 ½-inch hose connections on each side of the stage.

MEANS OF EGRESS SYSTEM DESIGN

GENERAL REQUIREMENTS

Occupant Load

The occupant load for each space within the Building is determined using the occupant load factors listed in MSBC Table 1004.1.2, as shown in the table below.

OCCUPANT USE GROUP	OCCUPANT LOAD FACTOR PER PERSON
Classrooms	20 square feet (net) per person or actual occupant load
Lab Classrooms	50 square feet (net) per person
Unconcentrated Assembly Areas (Lounge, Collab, Cafeteria)	15 square feet (net) per person
Office/Business	100 square feet (gross) per person
Locker Rooms	50 square feet (gross) per person
Athletic Facility (Gymnasium)	50 square feet (gross) per person
Stage	15 square feet (net) per person)
Fixed Seating (Auditorium)	Actual Number of Seats
Circulation Space	100 square feet (gross) per person
Kitchen	200 square feet (gross) per person
Storage, Mechanical, Electrical	300 square feet (gross) per person

The following tables outline the calculated occupant load for the proposed plans.

It should be noted that the tables below depict the actual number of occupants planned for each classroom. The classrooms will contain 24 students, one teacher, and an additional teacher aid for a total of 26 occupants per classroom.

Fuller School - Floor 1

Room	Size (sq. ft.)	Loading Factor (sq. ft. per occupant)	Occupancy
Locker Room	1,035	50	21
Office	308	100	4
Practice	410	100	5
Band/Chorus Room	1,904	20	96
Classroom	880	20	44
Art classroom	1,159	50	24
Media	1,911	50	39
Classroom	901	20	46
SPED Classroom	890	20	45
Classroom	890	20	45
Science Classrooms	2,255	20	113
Science Prep	166	100	2
Offices	629	100	7
Workroom	296	15	20
Guidance Waiting	77	100	1
SPED Classrooms	1,768	20	89
Kitchen	868	200	5
Kitchen Storage	569	300	2
Kitchen Office	74	100	1
Tech Makerspace	1,982	50	40
Storage/MEP	1,185	300	4
Custodian Offices	553	100	6
Fab Lab	1,191	50	24
Storage / MEP	563	300	2
Lunch Room	407	15	28
Cafeteria / Learning Common	6,549	15	437
Cohort Common	1,514	15	101
Breakout Spaces	926	15	62
		Total Occupancy	1313

Fuller School - Gymnasium & Auditorium

Room	Size (sq. ft.)	Loading Factor (sq. ft. per occupant)	Occupancy
Gymnasium	5,741	50	115
Gym Bleacher Seats	-	Actual	760
Storage / MEP Space	317	300	2
Auditorium	-	Actual	420
Stage	1,509	15	101
Storage	393	300	2
Dressing	446	50	9
		Total Occupancy	1409

Fuller School - Floor 2

Room	Size (sq. ft.)	Loading Factor (sq. ft. per occupant)	Occupancy
Science Classrooms	2,537	20	127
Science Prep	166	100	2
Classroom Spaces	2,672	20	134
Classroom Spaces	2,688	20	135
Classroom Spaces	5,361	20	269
Offices	1,387	100	14
Admin - General	174	100	2
Copy	193	300	1
Records	199	300	1
Conference Rooms S & L	577	15	39
Workspace	401	15	27
Department Offices	644	100	7
Workroom	271	15	19
Guidance Waiting	124	100	2
Electrical	63	300	1
SPED Resource Rooms	916	20	46
Cohort Common	1,298	15	87
Breakout Spaces	923	15	62
		Total Occupancy	975

Fuller School - Floor 3

Room	Size (sq. ft.)	Loading Factor (sq. ft. per occupant)	Occupancy
Classroom Spaces	7,141	20	358
SPED Resource Rooms	904	20	46
Guidance Offices	628	100	7
Workroom	293	15	20
Electrical	63	300	1
Classroom Spaces	1,787	20	90
Science Classrooms	2,236	20	112
Science Prep	166	100	2
Classroom Spaces	5,352	20	268
Cohort Common	1,392	15	93
Breakout Spaces	797	15	54
		Total Occupancy	1051

Number of Exit Access Doorways

Section 1006.2.1.1 requires that three (3) or more exits be provided when a space has a calculated occupant load of 501 to 1,000 and four (4) exits are required when the occupant load is greater than 1,000 occupants. Section 1006.2.1 requires two exits for all areas exceeding the occupant load in table 1006.2.1. For an A-3/E occupancy, two exits are required if the occupant load exceeds 49 occupants or where the common path of travel exceeds 75 feet. In Group B occupancy areas, two exits are required if the occupant load exceeds 49 occupants or where the common path of travel exceeds 100 feet. Further, in Group S-1/S-2 occupancy areas, two exits are required if the occupant load exceeds 29 occupants or where the common path of travel exceeds 100 feet.

It should be noted that the first-floor occupant load also exceeds 1,000, thus requiring four means of egress. The auditorium and gymnasium space are provided with their own dedicated egress doors leading directly to the exterior. The occupant load of the main school area is provided with four means of egress by means of doors to the exterior, and two (2) interior atrium stairways. It should be noted that the tech maker space, fab lab, art room, and media room on the first floor are all provided with a single 36-inch door that leads directly to the exterior of the building. Occupants in these rooms are expected to egress directly to the exterior of the building and do not need to enter the main building in order to egress. As such, the remainder of the first floor only requires three (3) means of egress, served by the two primary egress stairs, and the open stair within the atrium bounds.

It should be noted that the means of egress for unique spaces such as boiler rooms, furnace rooms, and refrigeration machinery rooms is governed by Section 1006.2.2. Boiler rooms, incinerator rooms, and furnace rooms require two (2) means of egress where the area of the space is over 500 square feet and any fuel-fired equipment exceeds 400,000 BTU input capacity (Section 1006.2.2.1). Where two means of egress are required, one (1) is permitted to be a fixed ladder or an alternating tread device. The exits must be remotely located at a distance equal to one-half the length of the maximum overall diagonal dimension of the room. Refrigeration machinery rooms larger than 1,000 square feet must have at least two (2) exits (Section 1006.2.2.2). All portions of the machinery rooms must be within 150-feet of an exit or exit access doorway. Doors must swing in the direction of egress travel regardless of the occupant load served.

The current egress strategy involves occupants on the first-floor egressing upwards one story to exit through the main entry doors on Floor 2. MSBC Section 1006.3 permits the path of egress travel to pass through one (1) adjacent story to reach an exit. Occupants from Floor 1 would only pass through one adjacent story to reach the main entrance to the building, thus the approach complies with Section 1006.3.

Arrangement of Means of Egress (MSBC Section 1007.1.1)

Where two (2) exits, or exit access doors are required from a space, they must be placed not less than one-third the overall diagonal distance of the space, measured in a straight line between the exit doors or exit access doors.

Where there are three (3) or more exits, or exit access doors, at least two (2) of the exits or exit access doors are required to meet the remoteness as defined above. The additional exits shall be located as remotely as possible.

The current arrangement of means of egress meets these criteria. The primary egress stairs are on opposite sides of the building, satisfying the one-third remoteness criteria.

Exit Capacities

The exits within the building will be designed using the exit capacity factors listed in MSBC Sections 1005.3.1 and 1005.3.2. The exit capacity for stairs is calculated at 0.2 inches per occupant, while all other means of egress are calculated at 0.15 inches per occupant as the building will be fully sprinklered and provided with emergency voice/communication capabilities (Section 1005.3). The minimum required clear width shall not be less than those outlined within other sections of this report, which have been excerpted in the table below for reference.

LOCATION	EXIT CAPACITY NON-SPRINKLERED	MINIMUM REQUIRED CLEAR WIDTH
Stairways	0.20 inches per person	44 inches (MSBC Section 1011.2)
Doors	0.15 inches per person	32 inches (MSBC Section 1010.1.1)

The following tables outline the calculated exit capacity on each floor within the building.

Egress Capacity Calculations for Floor 1

Area	Exit Description	Clear Width of Limiting Component (in)	Capacity Factor (in / occ.)	Limiting Component Exit Capacity (people)
Exits Serving Floor 1	Gym Doors (1)	64	0.15	426
	Gym Doors (2)	68	0.15	453
	Gym Doors (3)	68	0.15	453
	Gym Doors (4)	64	0.15	426
	Auditorium Doors (1)	64	0.15	426
	Auditorium Doors (2)	64	0.15	426
	South Auditorium Corridor Doors	68	0.15	453
	East Doors	81	0.15	540
	East Stair Door to Exterior	34	0.15	226
	Southwest Doors	68	0.15	453
	West Vestibule Doors	70	0.15	466
	West Stair Doors	34	0.15	226
	Atrium Open Stair	96	0.2	480
			Total	5,454 > 2,722

Egress Capacity Calculations for Floor 2

Area	Exit Description		Clear Width of Limiting Component (in)	Capacity Factor (in / occ.)	Limiting Component Exit Capacity (people)
Exits Serving Floor 2	South Entry Doors		107	0.15	713
	West Stair	Door	34	0.15	226
		Stair	72	0.2	360
	East Stair	Door	34	0.15	226
		Stair	72	0.2	360
				Total	1,165 > 975

Egress Capacity Calculations for Floor 3

Area	Exit Description		Clear Width of Limiting Component (in)	Capacity Factor (in / occ.)	Limiting Component Exit Capacity (people)
Exits Serving Floor 3	Atrium Open Stair		156	0.2	780
	West Stair	Door	34	0.15	226
		Stair	72	0.2	360
	East Stair	Door	34	0.15	226
		Stair	72	0.2	360
				Total	1,232 > 1,051

As seen in the tables above, the means of egress capacity exceeds the occupant load on all floors. The use of the unenclosed egress stairs as a means of egress requires further discussion with Howe Engineers.

Exit Access Travel Distance (MSBC Section 1017)

The Travel distance for each of the occupancies will be in accordance with the requirements contained in MSBC Section 1017.2 and Table 1017.2. Refer to the Table below:

OCCUPANCY	MAXIMUM ALLOWABLE TRAVEL DISTANCE (Sprinklered)
Group A, E, S-1	250 feet
Group B	300 feet
Group S-2	400 feet
Atrium	200 feet within atrium

Exit access travel distance must be measured from the most remote point within a story along the natural and unobstructed path of horizontal and vertical egress travel to the entrance of an *exit* (MSBC Section 1017.3). Where an exit access stairway or ramp is used as part of the means of egress system, the travel distance along the exit access stairway or ramp must be included in the exit access travel distance measurement (MSBC Section 1017.3.1). The measurement along exit access stairways and ramps must comply with the following:

- Stairways: measurements must be made on a plane parallel and tangent to the stair tread and nosings in the center of the stair and landings.
- Ramps: measurement along ramps must be made on the walking surface in the center of the ramp and landing.

Note that an "exit" is defined by MSBC Section 202 as that portion of a means of egress system between the exit access and the exit discharge or public way. Exit components include exterior exit doors at the level of exit discharge, *interior exit stairways* and *ramps*, *exit passageways*, *exterior exit stairways* and *ramps* and *horizontal exits*.

As addressed in the atrium design section of this report, the travel distance within the atrium is governed by Section 404.9. Where the path of egress travel is not on a level of exit discharge (i.e. Floor 3), the portion of the total permitted exit access travel distance that occurs within the atrium must not exceed 200-feet (Section 400.9.3).

Egress through Intervening Spaces (MSBC Section 1016.2)

Exit access from a room or space should not pass through an adjacent room or space, except where the room or area is accessory to the area being served. Exit access is not permitted to pass through kitchens, storerooms, restrooms, closets or other similar spaces. In addition, the exit access is not permitted to pass through rooms subject to locking.

Common Path of Travel Limits (MSBC Table 1006.2.1)

Maximum common path of egress travel distance is limited based on individual occupancies as outlined below.

- Business and Storage Occupancies 100 feet
- Assembly / Educational occupancies 75 feet

Common path of travel is less than 75-feet in the Fuller School and thus is compliant.

Dead End Corridor Limits (MSBC Section 1020.4)

Per MSBC Section 1020.4, where more than one exit or exit access doorway is required, the exit access must be arranged such that there is no dead ends more than:

- Assembly Occupancies 20 feet
- Business Occupancies 50 feet
- Storage Occupancies 50 feet
- Educational Occupancies 50 feet

Note that a dead-end corridor is not limited where the length is less than 2.5 times the minimum width of the dead end. **Dead ends in the building do not exceed 20-feet.**

Exit Access Corridors (MSBC Section 1020)

Corridors used for the exit access portion of the means of egress will be constructed in accordance with the MSBC Section 1020. The exit access corridors will provide sufficient clear width to accommodate the number of occupants exiting through the corridor, but will never be less than 44 inches unless serving an occupant load of less than 50 people, in which case they can be 36 inches.

Per MSBC Table 1020.1, as the building will be fully sprinklered, rated corridors are not required.

It should also be noted that corridors in Group E occupancies with greater than 100 occupants are required to be 72-inches in width (Section 1020.2).

Exit Stair Discharge

The MSBC requires 50-percent of the enclosed interior exit stairways discharge to the exterior of the building. The remainder of the enclosed interior exit stairways are permitted to discharge to interior lobbies and vestibules (MSBC Section 1028.1). **The primary egress stairs on the east and west sides of the building both discharge directly to the exterior on the first floor and thus are compliant.**

Doors (MSBC Section 1010)

Doors throughout the building must comply with MSBC Section 1010.1.

1. Dimensional Requirements (MSBC 1010.1.1)
   - Minimum clear width: 32 inches
   - Maximum size of a door leaf: 48 inches
   - Minimum Clear Height: 6 feet – 8 inches
2. Doors shall be side-hinged swinging in all spaces except within storage areas.
3. Doors serving a space with 50 people or more are required to swing in the direction of egress travel towards the exit.
4. While opening, doors are not permitted to project more than 50 percent of the required clear width in an exit stair or exit access stairway at any moment during the swing when opening. In addition, doors, when fully open, are not permitted to project more than 7 inches into the required exit clear width

Exit signage (MSBC Section 1013)

1. Exit signs must be provided in each room or space that requires more than one (1) exit or exit access.
2. Exit signs must be placed such that no point within an exit access corridor is more than 100 feet or the listed viewing distance of the sign, whichever is less, from the nearest visible sign.
3. Main exterior exit doors or gates which obviously and clearly are identifiable as exits are not required to be provided with an exit sign where approved by the building official.
4. Every exit sign and directional exit sign must have plainly legible letters not less than 6 inches high with the principal strokes of the letters not less than ¾ inch wide. The word “EXIT” must be in high contrast with the background and shall be clearly discernible when the exit sign illumination means is or is not energized. When an arrow is provided as part of the exit sign, the construction shall be such that the arrow direction cannot be readily changed.

5. Exit signs and exit directional signs can be externally or internally illuminated. The level of illumination at the sign's surface must be no less than 5-foot candles.
6. Exit signs shall be illuminated at all times and connected to an emergency power source having a duration of not less than 90 minutes. Emergency power shall conform to the National Electrical Code (NFPA 70).
7. Exit signs must be provided within 18-inches of the floor in electric rooms if the electric room has over 1,200 amperes and is more than 6-feet wide. In addition, panic hardware should be provided from these spaces.
8. **The International Symbol of Accessibility must be included on exit signs at exits to grade.**
9. Directional signage indicating the location of other means of egress and in which are accessible means of egress must be provided at the following locations:
    a. At exits serving a required accessible space, but not providing an approved accessible means of egress.
    b. At Elevator Landings
    c. Within areas of refuge

Means of Egress Lighting (MSBC Section 1008)

Work areas will meet the following criteria as MSBC Section 1008 requires the following for means of egress lighting:

- The means of egress, including the exit discharge, must be illuminated at all times the building space served by the means of egress is occupied, except aisle access ways in Group A occupancies.
- The means of egress illumination level must not be less than 1 foot-candle (11 lux) at the walking surface.
- The power supply for means of egress illumination must normally be provided by the premises' electrical supply. In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:
    - Aisles and unenclosed egress stairways in rooms and spaces that require two or more means of egress.
    - Corridors, exit enclosures and exit passageways in buildings required to have two or more exits.
    - Exterior egress components at other than their levels of exit discharge until exit discharge is accomplished for buildings required to have two or more exits.
        - All components to the access to public way must be illuminated
    - Interior exit discharge elements, as permitted in Section 1027.1 of the MSBC, in buildings required to have two or more exits.
    - Exterior landings as required by Section 1008.1.6 for exit discharge doorways in buildings required to have two or more exits.
- The emergency power system must provide power for a duration of not less than 90 minutes and must consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system must be in accordance with Chapter 27 of the MSBC.

- Emergency lighting facilities must be arranged to provide initial illumination that is at least an average of 1 foot-candle (11 lux) and a minimum at any point of 0.1 foot-candle (1 lux) measured along the path of egress at floor level. Illumination levels are permitted to decline to 0.6 foot-candle (6 lux) average and a minimum at any point of 0.06 foot-candle (0.6 lux) at the end of the emergency lighting time duration. A maximum-to-minimum illumination uniformity ratio of 40 to 1 must not be exceeded.

FIRE PROTECTION SYSTEMS

SUMMARY OF FIRE PROTECTION FEATURES

The following Fire Protection and Life Safety Features are being provided in the building:

1. The building will be constructed of a Type IIA protected non-combustible construction.
2. The building will be fully sprinklered and provided with standpipes as outlined in this section.
3. A manual fire alarm system will be provided in the building and will meet current NFPA 72 spacing requirements
4. Emergency voice/alarm communication systems will be installed in accordance with Section 907.2.3
5. Emergency Power and Standby Power for all life safety systems
   a. At least one elevator will be available to operate on Standby power
   b. Egress Signage and Lighting will be provided with Emergency Power.
   c. The atrium smoke control system will be provided with Standby Power.
6. Portable fire extinguishers are being provided in supervised locations in accordance with NFPA 10.

AUTOMATIC SPRINKLER PROTECTION

The Fuller School will be provided with an automatic sprinkler system as required for Group E occupancies with fire areas larger than 12,000 square feet and as required by the M. G. L. 148 26 G. The atrium and stage are also required to be provided with sprinkler protection. The design densities of the sprinkler system will be determined by the engineer of record.

STANDPIPES

Standpipes are required throughout the building when the highest floor is greater than 30 feet above the lowest level of fire department access (MSBC Section 905). **Based on the building elevation drawings provided by JLA, the building height from the lowest level of fire department vehicle access to the highest occupieable floor is 28-feet. It should be confirmed by JLA that the lowest level of fire department access is the first floor and that the landscape around the building is not sloped to provide fire department access at a lower point. It should be noted that Class I standpipes are permitted in buildings provided with automatic sprinkler protection in lieu of a Class III standpipe.**

It should also be noted that the stage will require a Class III wet standpipe system with a 1 ½-inch hose connection installed in accordance with NFPA 13 or NFPA 14 on each side of the stage (Section 905.3.4). This requirement is

only applicable is the stage is greater than 1,000 square feet in area. **The area of the stage must be confirmed by JLA.**

FIRE ALARM

Section 907.2.3 requires a manual fire alarm system for group E occupancies having an occupant load that exceeds 50. The manual fire alarm system must initiate emergency voice/alarm communication features in the building. Where smoke detectors or automatic sprinkler systems are installed, the systems must be connected to the building fire alarm system. **It should be noted that manual fire alarm boxed are not required in Group E occupancies where the building is fully sprinklered, the emergency voice/alarm communication system will activate upon sprinkler waterflow, and where manual activation is provided from normally occupied spaces.**

Manual Fire Alarm Pull Stations

Manual fire alarm devices will be located no more than five (5) feet from the entrance to each exit. Additional manual fire alarm boxes will be located so that travel distance to the nearest box is no more than 200 feet. A Manual pull station will also be provided in a constantly attended locations to provide the capability to manually activate the fire alarm system in an emergency situation.

SMOKE CONTROL

As indicated in the atrium design section of this report, the atrium will require a smoke control system designed in accordance with MSBC Section 909. The system may be designed as either a natural or mechanical ventilation system, and an engineering rational analysis should be provided to document the intended design of the system function. A smoke control panel must be provided in accordance with MSBC Section 909.16. As indicated throughout this report, the smoke control system must be provided with standby power.

EMERGENCY POWER

The following systems shall be provided with emergency power:

1. Emergency lighting along the means of egress in the building and along the exit discharge at a minimum level of 1-foot candle. Emergency lighting shall be provided in those rooms when the area is occupied. Subject to the approval of the Authorities Having Jurisdiction.
    a. Complete Emergency Lighting shall be provided to the exit discharge of the building exits as determined by the Authorities Having Jurisdiction.
2. Fire Alarm System and all associated equipment including but not limited to the following:
    a. Fire alarm control panels (including all fire alarm control equipment throughout the facility).
    b. Fire alarm controls.
    c. Fire alarm power supply booster panels.
    d. Digital fire alarm communicators and interface equipment.
    e. Dedicated telephone line from the Fire Alarm Control Panel dialer.
    f. Manual pull stations

3. Exit and Directional Exit Signs.
4. Elevators (transferable)
5. Power Operated Locks (if provided)
    a. Manual override controls for any electric locking or hardware in the entire building.

It should be noted that the atrium smoke control system will be required to be provided with standby power.

ELEVATOR PROVISIONS

An elevator is proposed in the southwest portion of the building which will serve the first through the third floor and will provide roof access.

Phase I and Phase II recall equipment prescribed by the ASME 17.1 elevator code will be provided for the elevators. Accessible elevators shall be located with the required travel distance as per the Accessibility Standards.

Two-way communication devices must be provided at elevator lobby areas above and below grade.

PORTABLE FIRE EXTINGUISHERS

The Massachusetts State Fire Code (MSFC) adopts and amends the 2015 edition of NFPA 1, which requires fire extinguishers in Groups A, B, and E occupancies. As such, fire extinguishers must be provided throughout all enclosed areas of the building. Portable fire extinguishers will be provided in locations where required by NFPA 10. Basic requirements are as follows.

In accordance with MSBC Section 906.1, extinguishers will be required in the following locations:

- Not more than 75 feet of travel distance to a fire extinguisher. Fire Extinguishers need not be located in each room if the travel distance can be achieved and the extinguisher has the correct hazard classification for each hazard within the 75-foot travel distance.
- Portable Class BC in elevator machine rooms and kitchens (kitchens may require class K depending on contents and use)
- Shall not exceed 40 lbs. capacity

Actual Mounting Locations (2013 Edition NFPA 10)

- Bottom of extinguisher at least 4" above the floor
- Top of extinguisher not more than 5 ft. above the floor
- 1-6.6 Fire extinguishers shall not be obstructed or obscured from view
- 1-6.5 Cabinets shall not be locked (However, if extinguishers are in locations subject to malicious use, the cabinets can be locked, but there must be a means to open them in an emergency. Example: breaking the glass)

- 1-6.3 Fire extinguishers shall be conspicuously located where they will be readily accessible and immediately available in the event of a fire. Preferably they shall be located along normal paths of travel, including exits from areas.
- 1-6.11 Operating instruction shall be located on the front of the extinguisher and be clearly visible (manufacturer requirement)
- 1-6.12 Fire extinguishers mounted in cabinets or wall recesses shall be placed so that the fire extinguisher operating instructions face outward.
- The location of such fire extinguishers shall be marked conspicuously (see 1-6.6)

FIRE DEPARTMENT ACCESS

Per 527 CMR Section 18.2.3.2, a fire department access road must be maintained / provided in a manner that allows for at least one (1) exterior door to be within 50 feet of the access road that can be opened from the outside. In addition:

- All points of the building must be within 150 feet of the fire department access road which is increased to 250 feet when the building is protected throughout by an automatic sprinkler system.
- The fire department access road must have an unobstructed width of not less than 20 feet, and an unobstructed vertical clearance of 13 feet 6 inches.
- A minimum 25-foot turning radius must be provided / maintained.
- The access road must be designed and maintained to support the imposed loads of fire department apparatus and must be provided with an all-weather driving surface.
- Turning radius must be approved by the AHJ, with a minimum turning radius of 25 feet.
- Where necessary, dead ends are permitted provided they do not exceed 150 feet in cumulative length.
- The access road plan must include an analysis and evaluation of fire apparatus maneuvers throughout the access roads created by sweep path analysis and turn simulation software.

EMERGENCY RESPONDER RADIO COVERAGE

Per the MSBC Section 916.1, all buildings must have approved radio coverage for emergency responders within the building based upon the existing coverage levels of the public safety communication systems of the jurisdiction at the exterior of the building. This section does not require improvement of the existing public safety communication systems. The emergency responder radio coverage must be in accordance with Section 510 of the International Fire Code.

The building is considered to have acceptable emergency responder radio coverage when signal strength measurements in 95 percent of all areas on each floor of the building have a minimum signal strength of -95 dBm must be receivable within the building and a minimum signal strength of -100 dBm must be received by the agency's radio system when transmitted from within the building. **A bi-directional antenna may br required for the project. A radio coverage test should be performed to verify the necessity for additional radio coverage.**

ACCESSIBILITY

As new construction, the new School will be designed to be fully accessible and comply with MAAB as well as the 2010 Americans with Disabilities Act.

GENERAL REQUIREMENTS

The Fuller School must be designed to meet MAAB as well as the 2010 Americans with Disabilities Act. Both ADAAG and MAAB require that all entrances are accessible, changing rooms and showers are accessible, and that all bathrooms be designed to be accessible. Finally, it should be noted that MAAB requires all exterior pathways to be fully accessible and that if parking is provided that a certain percentage be accessible.

The following accessible features should be provided in the building.

- All bathrooms and locker rooms should be accessible. Locker rooms should include the following features:
    - 36-inch wide accessible routes around all lockers. (including between benches and lockers)
    - 5% but not less than one accessible locker
    - At least one accessible shower stall
    - Accessible toilet and plumbing fixtures
- The elevator will be fully accessible
- All entrances must be accessible
- All exterior walkways must be accessible
- Classrooms must be accessible including all laboratory/ science classrooms. 5% but not less than one (1) of each type of equipment/ learning station should be accessible

Public and Common Use Spaces

The public and common use spaces are those spaces inside or outside the buildings that are used by residents and/or visitors. This includes the parking and assembly spaces on the ground floor. These spaces must be accessible per the requirements of 521 CMR and the 2010 ADAAG. These spaces should be on an accessible route at least 36- inches wide which connects accessible parking, accessible entrances, and public and common use spaces. Wherever possible, the accessible route should be the shortest possible route (521 CMR 10.2). All doorways and openings located in common use and public use spaces and along accessible routes should comply with 521 CMR Sections 26.2 through 26.11 and ADAAG Section 404.

Accessible Means of Egress

All spaces or elements that are required to be accessible must be provided with at least one accessible means of egress. In spaces required to be provided with multiple means of egress, each space must be served by at least two accessible means of egress. Exit access stairways are permitted to be considered part of the accessible means of egress when they are provided with a clear width of at least 48 inches between the handrails and two-way communication is provided at the elevator landings in accordance with 780 CMR Section 1009.3. The building is fully sprinklered and areas of refuge are not required to be provided at the exit access stairways. Two-way communication is required to be provided at the elevator landings, so that the exit access stairways in the school can be considered as part of the accessible means of egress.

Parking

Parking will be provided in accordance with the following MAAB table based on the number of spaces provided for the residential occupants and the potential assembly occupants. **One in eight accessible spaces, but not less than one, must be van accessible.**

23.2.1	Total Parking in Lot	Required Minimum Number of Accessible Spaces
	15-25	1
	26-50	2
	51-75	3
	76- 100	4
	101-150	5
	151-200	6
	201-300	7
	301-400	8
	401-500	9
	501-1,000	2% of total
	1,001 and over	20 plus 1 for each 100 over 1000

Accessible Seating Requirements

In places of assembly with fixed seating, the minimum number of accessible spaces provided must be in accordance with the table below:

Total Seating	Wheelchair Spaces
4 to 25	1
26 to 50	2
51 to 300	4
301 to 500	6
over 500	6, one additional space for each total seating capacity increase of 100.

When more than 150 seats are provided, the wheelchair seating locations must be provided in more than one (1) location and must be dispersed through the seating area. Accessible seating must be integral with the rest of the seating. I.e. should to shoulder. Bleachers should be ordered with cutouts where accessible seating will be provided. In addition to wheelchair seating locations, 1% of all fixed seats must be a companion seat consisting of an aisle seat with no armrests on the aisle side.

Accessible seating positions are permitted to be clustered for bleachers, balconies and other areas having sight lights with a slope greater than 5%. Equivalent accessible viewing positions may be located on levels having accessible egress.

Ticket box offices and concession stands must be located on an accessible route, and a portion of the counter must be a maximum of 36 inches high for a length of at least 36 inches. A counter or auxiliary counter can be used to achieve this requirement.

PLUMBING FIXTURES

The Massachusetts Plumbing Code requires specific plumbing fixtures for various spaces in the building. The number of plumbing fixtures shall be determined based on the following factors, as excerpted from the Massachusetts State Plumbing Code, Section 10.10 Table 1.

The following table outlines the plumbing fixture requirements for new construction. The factors that dictate the fixture counts for the building depend on the intended and future function of the Fuller School. It should be noted that separate toilet facilities are required for staff and students.

Occupancy	Water closets			Lavatories		Drinking Fountains	Other Fixtures
	Male	Female	Urinals	Male	Female		
Education (Secondary)	1 per 90	1 per 30	1 per 90	1 per 90	1 per 90	1 per 75	1 service sink per floor
Education (Staff)	1 per 25	1 per 20	33% substitution	1 per 40	1 per 40	-	1 service sink per floor
Auditorium	1 per 600 seats	1 per 200 seats	1 per 200 seats	-	-	-	-

The following tables outline the required plumbing fixtures for the Fuller School based on the use of a programmatic occupant load. A program occupant load captures the intended use of spaces, as opposed to the calculated occupant load which tends to be more conservative in nature. **The use of a program occupant load requires discussion and approval from the plumbing official**.

Gender neutral toilets have been discussed for the building. The following provisions are applicable for the installation of gender neutral toilets in the Fuller School:

1. Gender neutral facilities are permitted for employees
2. Gender neutral toilets can only be counted one time towards plumbing fixture counts. Thus, they may be counted as either Male or Female.
3. When two (2) or more toilet facilities are required, Gender Neutral Toilets may replace these fixtures but only in pairs (E.g. one replaces a Male and the other replace a female fixture).
4. Once the minimum number of fixtures is provided Gender Neutral Toilets can be singularly provided.

It should also be noted that 248 CMR Section 10.10(18)(h).6 requires all secondary schools that conduct physical activities on the school premises to be provided with separate men's and women's shower facilities to accommodate students. Based on preliminary discussion with the plumbing official, showers will be required at Framingham Fuller School. Showers should be provided for the largest population expected to use them at a given time (e.g. physical education class, or after school sporting event).

Fuller Plumbing Fixtures Calculation

630 Students 120 Staff

Educational Use - Use Group E (elementary)

Required Fixtures per Code						Toilet Female Required		Toilet Male Required		Urinals Male Required		Lavatories each sex Required			Drinking Fountain Required
Students						1 per 30		1 per 90		1 per 90		1 per 90			1 per 75
Staff						1 per 20		1 per 25		33%		1 per 40			-

	Occupants			Unisex Toilet		Toilet - Female		Toilet - Male		Urinals		Lavatories			Drinking Fountain					
Floor Level	Total	Male	Female	Required	Provided	Required	Provided	Required	Provided	Required	Provided	Each sex Required	Female Provided	Male Provided	Required	Provided	Classrm Sinks	Showers	Mop Sinks	Notes
					See Below															
Floor 1 Students	210	105	105	0	1	4	12	2	5	2	7	2	11	11	3	3				
Floor 1 Staff	40	20	20	0	13	1	-	1	-	1		1	1	1	-	-			3	
Floor 2 Students	210	105	105	0	1	4	8	2	2	2	6	2	8	8	3	3				
Floor 2 Staff	50	25	25	0	3	2	-	1	-	1		1	1	1	-	-			2	
Floor 3 Students	210	105	105	0	1	4	8	2	2	2	6	2	8	8	3	3				
Floor 3 Staff	30	15	15	0	2	1	-	1	-	1		1	1	1	-	-			2	
	750	375	375	0	21	16	28	9	9	9	19	9	30	30	9	9	0	0	7	

Unisex Toilets provided:

Students 3 SPED
1 at Lockers

Staff 1 Central Office
1 Medical Suite
1 Kitchen
6 General

Total Toilet Fixtures Required 34

Total Toilet Fixtures Provided 77

Community Service Areas - Use Group E - Non-Simultaneous Use

420 Auditorium, 600 Gym

Required Fixtures per Code	Toilet Female Required		Toilet Male Required		Urinals Male Required	
	1 per 200		1 per 600		1 per 200	

Assembly Use

Floor Level	Occupants Total	Occupants Male	Occupants Female			Toilet Female Required	Toilet Female Provided	Toilet Male Required	Toilet Male Provided	Urinals Male Required	Urinals Male Provided	Notes
Floor 1	1,020	510	510			3	7	1	2	3	5	Plus 2 Unisex
						3	7	1	2	3	5	

Total Toilet Fixtures Required 7

Total Toilet Fixtures Provided 14 17 With Unisex

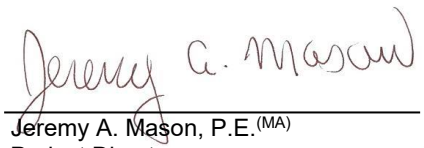
CONCLUSION

The building is to be constructed in accordance with the requirements of the applicable Codes. During this process, the building will be designed to provide levels of safety at least equivalent to the provisions contained in the applicable codes. To achieve these levels of safety, the following primary features are provided:

1. The Building will be of Type IIA protected non-combustible construction and will comply with the separated mixed-use provisions of the MSBC.
2. The building will be fully sprinklered and provided with standpipes as outlined herein.
3. The means of egress system will be provided as outlined in this report and will meet the requirements of MSBC.
4. The building will be provided with a manual fire alarm system and emergency voice/alarm communication abilities.
5. The atrium will be provided with a smoke control system that maintains tenability 6-feet above the highest walking surface. The smoke control system will be provided with standby power.
6. The building will be designed to be fully accessible in accordance with MAAB and ADAAG.
7. Plumbing fixtures will be provided in accordance with the provisions in the tables detailed above.

Prepared by,

Howe Engineers, Inc.



Jeremy A. Mason, P.E.(MA)
Project Director

7. Utility Analysis

Fuller School is located on the north side of Flagg Drive. The site is relatively flat and is surrounded by woods. Along the north, and east, as well along the opposite side of Flagg Road are wetland areas within the woods, subject to local and state wetland regulations.

Water Service
An existing water main is present along Flagg Drive directly in front of the school, along with two water lines on either side of the school each servicing separate hydrants, additional hydrants are located along Flagg Drive itself. The adjacent Farley School building is shown with a looped water system, also with additional hydrants. The school appears to be serviced by a 1-3/4" domestic water service, and is currently un-sprinklered.

Sewer Service
An existing sewer main is present along Flagg Drive directly in front of the school.

Gas Service
A gas main is present along this portion of Flagg Drive. The heating system for the building is comprised of 3 gas boilers.

Stormwater
The on-site drainage system appears to be a simple system comprised of catch basins and manholes which either discharge directly into the adjacent wetlands, or connect out to the existing street drainage system, which in turn discharges into the nearby wetlands.

Flood Plain
The site does not appear to be in a flood plain.

Potential Site Improvements
Water Service
The existing 1-3/4" water service may need to be upgraded or relocated depending on current flow conditions and anticipated demands due to renovations or other building upgrades. A separate fire service connection may be required to comply with current building codes.

Sewer Service
The existing sewer service may need to be upgraded or relocated depending on anticipated demands due to renovations or other building upgrades. Additionally, if the existing sewer service is original and was installed using clay pipe typical of the time, consideration should be given to upgrade to a more durable material such as PVC or ductile iron, given the possible age and general condition of the sewer service.

Gas Service
The existing gas service may need to be upgraded or relocated

depending on anticipated demands due to renovations or other building upgrades.

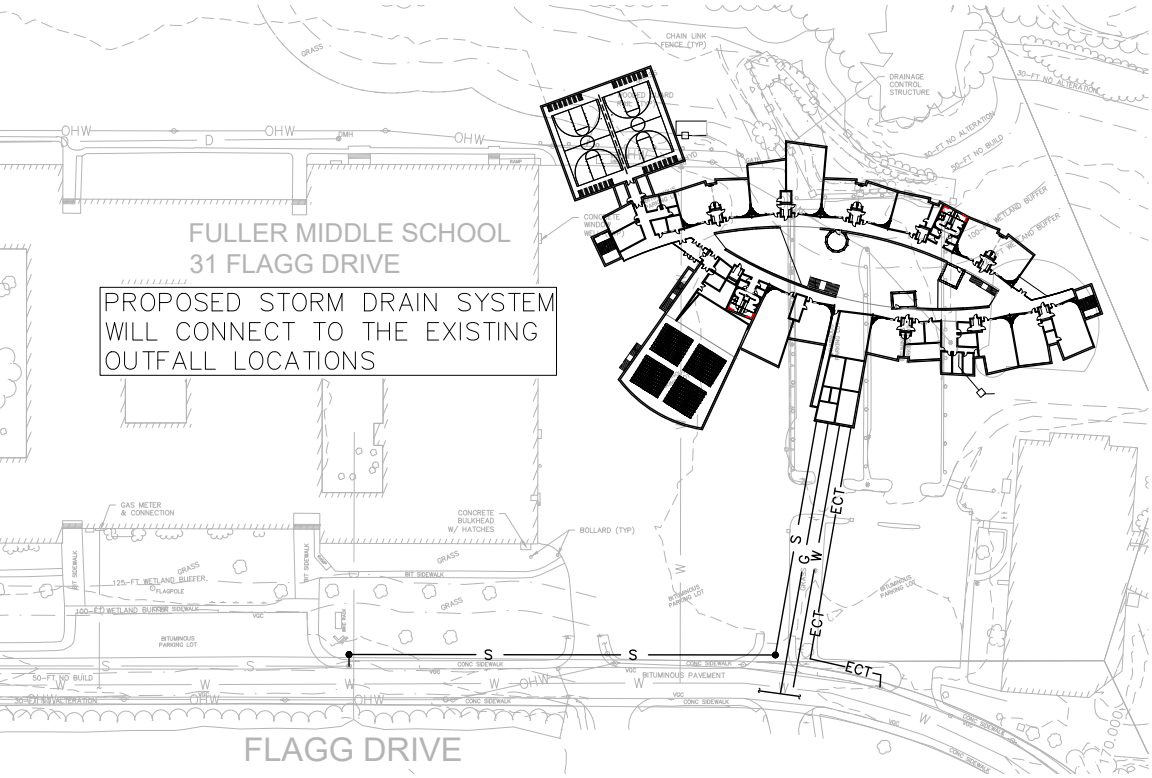
Stormwater

The existing on-site drainage system does not appear to meet current stormwater management standards. Depending on the proposed site improvements the existing system will need to be upgraded to provide mitigation to reduce stormwater runoff, increase groundwater infiltration, and increase stormwater discharge quality. These improvements could include above or below ground stormwater infiltration/detention systems, deep sump catch basins, and water quality structures.

MEPA Analysis

Per MEPA – 301 CMR 11.03: Review Thresholds, all of the proposed concepts represent a Replacement Project, replacing or reconstructing a previous use on a Project Site.

Pre-Concept 0, is a building renovation, with no effective changes to the site, all the remaining concepts show a reduction in impervious area and will decrease potential environmental impacts, therefore review thresholds do not apply, and a MEPA review is not required.



Conceptual diagram of connection to existing utilities.

8. Massing Study

The massing of the new Fuller Middle School was considered carefully in relationship to the campus of which it will become a part. Most notable is the relationship with the adjacent Farley building which is approximately three stories in aggregate height. The new building, together with its penthouse structure, will approximate the same height as the Farley. However, it will be deeply set back from the street and will be much narrower in footprint - providing a greatly increased sense of open and green space along Flagg Drive.

The segmentally curved façade, though three stories in actual height from adjacent grade, will be an apparent two stories at the entrance because of the sloped lawn leading to the second floor entrance. The mass of the building is articulated into sub masses by minor indentations between pairs of classrooms and articulated bays which are extensions of the classroom space evoking a more welcoming residential scale.

The primary entry to the school is marked by a one story from the entrance grade administration pavilion, which is thrust forward in front of the building.

3-D masing of southeast.

At the roof level, mechanical equipment will be screened by architecturally treated enclosing walls set back the frontage of the building. The largely fenestration-free mass of the gymnasium/ auditorium complex to the north will be visible from the west parking area adjacent to the community entrance, and less visible from the front view of the school.

3-D masing of northwest.

9. Building Systems Narratives

9.1 Sustainable Design Elements

Sustainable design features are incorporated into each dicipline description. Please reference the sub-sections below.

- Building Structure
- Fire Protection
- Plumbing
- HVAC
- Duct Concept Diagrams
- Electrical
- Information Technology

Fuller Middle School
Framingham, MA
July 25, 2018

STRUCTURAL NARRATIVE

FOUNDATIONS/GROUND FLOOR

- Preliminary geotechnical information is found in a report by McPhail Associates dated June 4, 2018 titled "Preliminary Foundation Engineering Report"
- The existing site consists of a layer of alluvial/organic silt, peat, or loamy sand up to 8 feet below ground surface. This material is not suitable for bearing and should be removed or improved. Based on the depth of suitable bearing (generally if deeper than 3 feet below grade), ground improvement (rammed aggregate piers) may be more economical than over-excavating and backfilling with controlled structural fill. Typically, there is a 2 foot layer of crushed stone above the ground improvement piers to provide a uniform bearing surface for the foundations and slab.
- Foundations bearing on ground improvement or on structural backfill will be designed as reinforced concrete spread footings. There will be a perimeter frost wall and footing between column footings extending at least 4 feet below grade.
- The soil under the ground floor slab should be removed down to the suitable bearing material or improved. A 5" slab on grade reinforced with welded wire fabric should bear on ground improvement or on controlled backfill.
- Groundwater was encountered at a depth of 0 to 8 feet below ground surface. Temporary dewatering will likely be required during construction, and any slabs or elevator pits that are below the design water elevation will be designed for hydrostatic pressure. These areas should be waterproofed on the underside. Perimeter and underslab drainage should be included to shed water away from the building. A vapor barrier should be placed below the slab on grade.
- Foundation walls on the perimeter of the building will be 16" thick reinforced concrete to support façade elements. They will have pilasters to support the columns.

SUPERSTRUCTURE

- Floor construction
    - 3 ¼" light-weight concrete over 3"-18 gauge galvanized composite deck. The slab will be reinforced with 6x6 W2.1xW2.1 welded wife fabric.
    - For a typical 30'x30' bay, beams will be W14's with ¾" diameter shear studs. Beam depths will increase for longer spans and at spandrels which need to be stiffer to support façade elements.
    - Floor plates that do not stack will be framed with moment connections and transfer beams.
- Roof construction

  - 3"- 18 gauge galvanized metal roof deck on W14 steel framing. Concrete can be used locally to provide a surface for mechanical units. Alternatively, larger units can be supported on galvanized steel dunnage above the roof.
  - Steel roof screens (to shield mechanical units) will be anchored to the roof beams.
  - Roof framing can be designed to be "PV-ready" for negligible cost.
- Columns supporting 3 floors will be W12's.
- Gymnasium
  - The gym roof will be framed with long-span trusses designed for equipment such as basketball backstops.
  - 3"-18 gauge galvanized metal roof deck.
  - The columns in the gym will be W12's
  - A series of steel wind girts will be required where the façade material changes.
- Auditorium
  - The auditorium roof will be framed with long-span trusses designed for theater lighting.
  - 3"-18 gauge galvanized acoustic metal roof deck.
  - The columns in the gym will be W12's.
  - The stage will be built-up from cold-formed metal framing.
- Atrium
  - The atrium floor will be supported by building columns and steel hangers up to the roof steel.
  - Portions of the atrium will cantilever by moment-connecting the steel beams.
  - A curved bent plate will form the slab edge
  - The atrium roof will be supported by steel beams or trusses.

LATERAL SYSTEM

- The lateral force resisting system will consist of steel concentrically braced frames. The braces will be HSS 8x8 members spanning diagonally between columns. Assume 6 bays per floor in each direction.

COST ASSUMPTIONS

FOUNDATIONS

- Ground improvement (rammed aggregate piers) over entire building site at 10'x10' grid.
- Remove 2' soil and provide 2' crushed stone over entire building site.
- Footings: 10'x10'x2' spread footing on a 30'x30' grid with 3 PSF rebar.
- Frost wall footings: 3'x1' continuous footing along perimeter with 3 PSF rebar.
- 2'x2' pilasters at perimeter columns.
- Frost wall: 16" thick x 3' deep continuous along perimeter with 5 PSF rebar.
- 5" slab on grade with 6x6 W2.9xW2.9 WWF
- 12" thick pad + 12" thick walls for 5' deep elevator pit

SUPERSTRUCTURE

- Steel framing:
  - Floors- 13 PSF including beams, columns, connections, braced frames.

    - Roof- 10 PSF including beams, bridging, and connections.
- 3 ¼" ltwt concrete on 3"-18 ga composite metal deck for 2nd and 3rd floor
- ¾" diameter x 4 ½" shear studs at 12" oc for all floor beams.
- ½" bent plate at slab edges.
- 3"-18 ga metal roof deck (acoustic deck at auditorium)
- Stairs will be metal pan with steel stringers.

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PLUMBING SYSTEMS

NARRATIVE REPORT

The following is the Plumbing system narrative, which defines the scope of work and capacities of the Plumbing system as well as the Basis of Design. The Plumbing Systems shall be designed and constructed for ***LEED v4 for Schools*** where indicated on this narrative.

1. CODES

   A. All work installed under Section 220000 shall comply with the MA Building Code, MA Plumbing Code and all state, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

   A. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Plumbing work and all items incidental thereto, including commissioning and testing.

3. GENERAL

   A. The Plumbing Systems that will serve the project are cold water, hot water, tempered water, sanitary waste and vent system, grease waste system, special waste system, storm drain system, and natural gas.

   B. The Building will be serviced by Municipal water and Municipal sewer system.

   C. All Plumbing in the building will conform to Accessibility Codes and to Water Conserving sections of the Plumbing Code.

4. DRAINAGE SYSTEM

   A. Soil, Waste, and Vent piping system is provided to connect to all fixtures and equipment. System runs from 10 feet outside building and terminates with stack vents through the roof.

   B. A separate Grease Waste System starting with connection to an exterior concrete grease interceptor running thru the kitchen and servery area fixtures and terminating with a vent terminal through the roof. Point of use grease interceptors are to be provided at designated kitchen fixtures. The exterior grease interceptor is provided under Division 33 scope.

   C. Storm Drainage system is provided to drain all roofs with roof drains piped through the building to a point 10 feet outside the building.

D. Drainage system piping will be service weight cast iron piping; hub and spigot with gaskets for below grade; no hub with gaskets, bands and clamps for above grade 2 in. and larger. Waste and vent piping 1-1/2 in. and smaller will be type 'L' copper.

E. A separate Special Waste System shall be provided starting with a connection to an interior limestone chip acid neutralizer, running thru the building to collect science classroom fixtures and terminating with vent terminals through the roof. Special Waste and Vent piping will be Schedule 40 electric heat fused polypropylene piping, fittings and traps, flame retardant above grade and non-flame retardant below ground.

F. In existing buildings, existing drainage piping may be reused if adequately sized for intended use. Integrity of existing piping will be confirmed via video inspection.

5. WATER SYSTEM

A. New 4 inch domestic water service from the municipal water system will be provided. A meter and backflow preventer will be provided.

B. Cold water distribution main is provided. Non-freeze wall hydrants with integral back flow preventers are provided along the exterior of the building.

C. Domestic hot water heating will be provided with a combination of gas fired, high efficiency, condensing water heater (800,000 BTUH input), with separate storage tank (300 gallon). System is to be equipped with thermostatically controlled mixing devices to control water temperature to the fixtures.

D. A pump will re-circulate hot water from the piping system. Water temperature will be 120 deg. to serve general use fixtures. A 140 deg. F hot water will be supplied to the kitchen dishwasher.

E. Water piping will be type 'L' copper with wrot copper sweat fittings, silver solder or press-fit system. All piping will be insulated with 1 in. thick high density fiberglass.

F. A dedicated non-potable cold and hot water system will be provided to Science Classrooms. Water system will be protected with a reduced pressure backflow preventer. A dedicated tank type water heater will be provided to deliver hot water to all Science Classroom sinks.

G. Tepid (70 deg. F – 90 deg. F) water will be provided to the emergency shower/eyewash fixtures in Science Classrooms as required by code.

6. GAS SYSTEM

A. Natural gas service will be provided for the building and will serve the boilers, domestic water heaters, kitchen cooking equipment, roof top equipment.

B. Gas piping will be Schedule 40 black steel pipe with threaded gas pattern malleable fittings for 2 in. and under and butt welded fittings for 2-1/2 in. and larger.

7. FIXTURES ***LEED v4 for Schools Credit WEp1 & WEc3***

A. Furnish and install all fixtures, including supports, connections, fittings, and any incidentals to make a complete installation.

B. Fixtures shall be the manufacturer's guaranteed label trademark indicating first quality. All acid resisting enameled ware shall bear the manufacturer's symbol signifying acid resisting material.

C. Vitreous china and acid resisting enameled fixtures, including stops, supplies and traps shall be of one manufacturer by Kohler, American Standard, or Sloan, or equal. Supports shall be Zurn, Smith, Josam, or equal. All fixtures shall be white. Faucets shall be Speakman, Chicago, or equal.

D. Fixtures shall be as scheduled on drawings.

1. Water Closet: High efficiency toilet, 1.28 gallon per flush, wall hung, vitreous china, siphon jet. Manually operated 1.28 gallon per flush-flush valve.

2. Urinal: High efficiency 0.13 gallon per flush urinal, wall hung, vitreous china. Manually operated 0.13 gallon per flush-flush valve.

3. Lavatory: Wall hung/countertop ADA lavatory with 0.35 GPM metering mixing faucet programmed for 10 second run-time cycle.

4. Sink: ADA stainless steel countertop sink with gooseneck faucet and 0.5 GPM aerator.

5. Drinking Fountain: Barrier free hi-low wall mounted electric water cooler, stainless steel basin with bottle filling stations.

6. Janitor Sink: 24 x 24 x 10 Terrazo mop receptor Stern-Williams or equal.

7. Laboratory Sinks: Faucets with vacuum breakers and 0.74 GPM aerators.

8. Emergency Shower/Eyewash: Recessed barrier free eye wash and shower safety station with ceiling mounted exposed shower and "in wall" drop-down eye wash with drain pan.

8. DRAINS

A. Drains are cast iron, caulked outlets, nickaloy strainers, and in waterproofed areas and roofs shall have galvanized iron clamping rings with 6 lb. lead flashings to bond 9 in. in all directions. Drains shall be Smith, Zurn, Josam, or equal.

9. VALVES

A. Locate all valves so as to isolate all parts of the system. Shutoff valves 3 in. and smaller shall be ball valves, solder end or screwed, Apollo, or equal.

10. INSULATION

A. All water piping shall be insulated with snap-on fiberglass insulation Type ASJ-SSL, equal to Johns Manville Micro-Lok HP.

11. CLEANOUTS

A. Cleanouts shall be full size up to 4 in. threaded bronze plugs located as indicated on the drawings and/or where required in soil and waste pipes.

B. Cleanouts for Special Waste System shall be Zurn #Z9A-C04 polypropylene cleanout plug with Zurn #ZANB-1463-VP nickel bronze scoriated floor access cover.

12. ACCESS DOORS

A. Furnish access doors for access to all concealed parts of the plumbing system that require accessibility. Coordinate types and locations with the Architect.

13. WATER HEATER

A. Gas fired, high efficiency, condensing water heaters (800,000 BTUH input), with separate storage tank (300 gallon).

14. GREASE INTERCEPTOR

A. The kitchen Grease Waste System shall be a completely separate system beginning at the exterior grease interceptor through the kitchen and vented individually through the roof. Do not connect soil lines to the grease waste nor sanitary vents to the grease vent. Furnish and install the cast iron tees and associated piping within the grease trap including 5-foot length on the outlet. All the piping within the grease trap shall be made up with caulked and leaded joints. Install an exterior cleanout as detailed at the point where the line leaves the kitchen area. Grease trap is furnished and set in place including manhole access covers by the General Contractor.

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HVAC SYSTEMS

NARRATIVE REPORT

The following is the HVAC Systems narrative, which defines the scope of work and capacities of the HVAC systems, as well as, the Basis of Design for the proposed Middle School.

1. CODES

   All work installed under Division 230000 shall comply with the Massachusetts State Building Code, IMC 2012, IECC 2015, and all local, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

   The work of Division 230000 is described within the narrative report. The HVAC project scope of work shall consist of providing new HVAC equipment and systems as described here within. All new work shall consist of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Heating, Ventilating and Air Conditioning work and all items incidental thereto, including commissioning and testing.

3. BASIS OF DESIGN

   Project weather and Code temperature values are listed herein based on weather data values as determined from ASHRAE weather data tables and the International Energy Conservation Code.

   Outside: Winter 5 deg. F, Summer 88 deg. F DB 73 deg. F WB

   Inside: 70 deg. F +/- 2 deg. F for heating, 75 deg. F +/- 2 deg. F (50% +/- 5%RH) for cooling for [classroom, administration, auditorium, cafeteria and gymnasium] areas with full air conditioning. 80 deg. F +/- 2 deg. F (55% RH) for cooling for [locker and kitchen] areas with partial air conditioning/dehumidification ventilation. Unoccupied temperature setback will be provided at 60 deg. F (adj.) for heating and 80 deg. F. (adj.) for cooling.

   Generally outside air is provided at the rate of 15 cfm/person in all classrooms and large group spaces, and 15 cfm/person for the combination Auditorium, Gymnasium and Cafeteria. In all cases ASHRAE guide 62.1-2013 and the International Mechanical Code will be met as a minimum. All occupied areas will be designed to maintain 800 PPM carbon dioxide maximum.

   The building HVAC system shall be designed as a high efficiency HVAC system that shall meet the related HVAC system requirements of LEED for Schools v4, with a minimum goal of Silver level certification.

4. SYSTEM DESCRIPTION

A. Central Heating Plant:

Heating for the entire building will be through the use of a high efficiency gas-fired condensing Boiler Plant.

The Boiler Plant shall be provided with (3) 2,700 MBH input boilers and (2) end suction base mounted pumps with a capacity of 790 GPM each which will be located in a mechanical room. In addition to new boilers and pumps, new hot water accessories including air separators and expansion tanks shall be provided.

The Boiler Plant will supply heating hot water to heating equipment and systems located throughout the building through a two-pipe fiberglass insulated schedule 40 black steel piping system. The Boiler Plants shall supply a maximum hot water temperature of 160 deg F on a design heating day and the hot water supply water temperature will be adjusted downward based on an outside temperature reset schedule to improve the overall operating efficiency of the power plants. Primary and standby end suction base mounted pumps will be provided with variable frequency drives for variable volume flow through the water distribution system for improved energy efficiency.

Combustion air for each boiler will be directly ducted to each boiler through a galvanized ductwork distribution system. Venting from each boiler shall be through separate double wall aluminized stainless steel (AL29-4C) vent system and shall discharge approximately 12 feet above the roof level. Final venting height will be dependent on the location of building intake air locations and adjacent roofs.

B. Central Cooling Plant:

Chilled water cooling for the majority of the building will be through the use of a high efficiency air cooled chiller plant.

The chiller plant shall be provided with (2) high efficiency oil-less magnetic compressor air cooled design chillers and (2) chilled water end suction base mounted pumps with VFD drives. The chillers will be mounted on the roof and the pumps and chilled water accessories will be located in a penthouse mechanical enclosure. In addition to new boilers and pumps, new chilled water accessories including air separators and expansion tanks shall be provided.

The chiller plant will supply chilled water to air conditioning air handling unit equipment located throughout the building through a two-pipe fiberglass insulated schedule 40 black steel piping system. Primary and standby end suction base mounted pumps will be provided with variable frequency drives for variable volume flow through the water distribution system for improved energy efficiency.

The chiller plant shall be provided with (2) 175 ton chillers and (2) chilled water end suction base mounted pumps with a capacity of 800 GPM each.

C. Mechanical Equipment Rooftop Enclosure: The Hot water heating plant including all boilers, hot water heating pumps, air separator, expansion tanks, accessories and plant controllers shall be installed in a mechanical equipment rooftop enclosure. The Rooftop enclosure shall also contain the building chilled water pumps, expansion tanks, air separator, accessories and chiller plant controller, building DHW heater, main DHW circulators and DHW controller. Refer to HVAC Outline specifications and narratives for specific equipment and material product and installation requirements.

D. Classroom Heating and Ventilation (General Classrooms, including SPED, Art, Music, Maker Space, Fab Lab, Tech, Learning Commons/Cafeteria, and Media Center areas):

Rooftop air handling units, with roof penthouse service enclosure, supply and return fan with VFDs, static plate type energy recovery section, hot water heating section with modulating capacity control, chilled water cooling coil with modulating capacity control, static plate reheat section, MERV 13 filtration, variable air volume and carbon dioxide controls which will reduce outside air as allowed maintaining a maximum of 800 PPM and will be provided to serve a full air conditioning displacement ventilation system. Supply air will be provided to the space through a galvanized steel supply duct distribution system and shall be connected to VAV (variable air volume) terminal boxes and wall mounted displacement ventilation diffusers located within the classrooms. Return air will be drawn back to the units by ceiling return air registers located within the classroom and will be routed back to the rooftop unit by a galvanized sheetmetal return air ductwork distribution system. Supplemental hot water radiation heating will be provided along exterior walls.

<u>Classrooms with Displacement Ventilation and Full Air Conditioning:</u>

The classroom space temperature would be controlled to 75 deg. F. +/- 2 deg F, based on a design cooling day of 88 deg F db/73 deg f. wb.

The following rooftop air handling equipment will be required to serve the Classroom areas to provide full air conditioning:

Four (4) air handling units with a capacity of 22,000 CFM (70 tons cooling, 680 MBH heating)

E. Gymnasium:

The Gymnasium will be served by a rooftop air handling unit, with roof penthouse service enclosure, supply and return fan with VFDs, static plate type energy recovery section, hot water heating section with modulating capacity control, chilled water cooling coil, static plate reheat section, MERV 13 filtration, and carbon dioxide controls which will reduce outside air as allowed maintaining a maximum of 800 PPM and will be provided to serve a full air conditioning displacement ventilation system. Supply air will be provided to the space through a galvanized steel supply duct distribution system and shall be connected to wall mounted displacement ventilation diffusers located within the Gymnasium. As levels of carbon dioxide drop, generally relating to a reduction in population, the variable frequency drive located in the rooftop unit will modulate to reduce air flow and ventilation while always maintaining a maximum of 800 ppm. Return air will be drawn back to the unit by ceiling return air registers located within the Gymnasium and will be routed back to the rooftop unit by a galvanized sheetmetal return air ductwork distribution system. Supplemental hot water radiation heating will be provided along exterior walls.

The Gymnasium will be served by (1) one rooftop air handling unit that will have a capacity of 15,000 CFM (40 Tons Cooling, 500 MBH Heating).

F. Locker Rooms and PE/Health Offices:

The Locker Rooms and adjacent office areas will be provided with new roof-mounted air handling units, with roof penthouse service enclosure, of the 100% outside air design with static plate energy recovery section. The unit will be approximately 3,500 CFM and will include a supply and exhaust fan with VFDs, 200 MBH hot water heating section with modulating capacity control, chilled water cooling for dehumidification, static plate type energy recovery and reheat sections and MERV 13 filtration.

Supply air ventilation will be provided to each space through new galvanized supply duct which will travel throughout the area to a series of ceiling mounted supply registers. New exhaust air ductwork and air distribution devices shall be installed and shall be routed from the rooms to the new air handling units.

G. Auditorium and Stage:

The Auditorium and Stage will be provided with a new roof-mounted air handling unit, with roof penthouse service enclosure, of the recirculation design capable of providing 100% outside air variable volume fully air conditioned displacement ventilation air distribution to the Auditorium and Stage areas. The Auditorium unit will be approximately 12,000 CFM and will include supply and return fans with VFDs, 600 MBH hot water heating section with modulating capacity control, 40 ton cooling coil with modulating capacity control, static plate energy recovery and reheat sections, and MERV 13 filtration.

Supply air ventilation to the Auditorium will be provided to the space through a galvanized steel supply duct distribution system that will connect to displacement diffusers under the seating. In addition, carbon dioxide controls will be installed which will monitor the overall level of carbon dioxide at a threshold level of 800 ppm. As levels drop generally relating to a reduction in population, the air handling unit outside air damper will modulate to reduce air flow and ventilation while always maintaining a maximum of 800 ppm. Return air will be drawn back to the unit by return air registers located high on walls within the space or near the ceiling of the space. Supplemental hot water radiation heating will be provided along exterior walls.

H. Administration Area, Guidance Offices and adjacent Lobby/Circulation areas

Spatial heating and air-conditioning for the Administration area and Guidance offices will be served by variable volume air system with perimeter radiant heating panels. The system will be of a recirculation design with CO2 demand ventilation capable of providing 100% outside air (economizer) and variable air volume operation full air conditioning displacement ventilation air distribution.

One (1) rooftop unit will be provided; the rooftop unit will be approximately 6,000 CFM and will include roof penthouse service enclosure, supply and return fans with VFDs, 300 MBH hot water heating section with modulating capacity control, static plate type energy recovery and reheat sections, MERV 13 filtration, 21 ton capacity chilled water cooling coil with modulating capacity control, and exhaust air energy recovery section. Supply air

ventilation will be provided to each space that will satisfy building code requirements based on population.

It is proposed that spatial heating and air-conditioning for zones will be provided by a full air conditioning displacement air ventilation system with CO2 demand ventilation controls. Supplemental hot water radiation heating will be provided along exterior walls.

I. Kitchen:

The Kitchen areas shall be provided with a new Kitchen exhaust air fan and make-up air rooftop unit with hot water heating. The Kitchen will be heated by a roof mounted heating and ventilation make-up air handling unit with hot water heating and chilled water dehumidification (partial cooling).

A variable volume Kitchen exhaust hood control system consisting of Kitchen exhaust stack temperature and smoke density sensors, supply and exhaust fan variable speed drives, and associated controller will be provided by the Kitchen Equipment Vendor. This system installation shall be field installed and coordinated with the ATC and Electrical Contractors.

J. Lobby, Corridor, and Entry Way Heating:

New hot water convectors, cabinet unit heaters and fin tube radiation heating equipment shall be installed to provide heating to these areas. Corridors shall be ventilated from adjacent air handling unit systems.

K. Custodial Support / Mechanical Room / Adjacent Storage Areas:

Custodial support areas will be heated and ventilated by an indoor hot water heating and ventilation unit. The heating and ventilation unit will have an estimated capacity of 3,500 CFM. Storage areas will be heated by hot water radiation heating equipment. Horizontal type unit heaters will heat areas adjacent to the loading dock. All custodial closets will be exhausted by exhaust air fan systems.

L. Utility Areas:

Utility areas will be provided with exhaust air fan systems for ventilation, and will typically be heated with horizontal type ceiling suspended unit heaters.

The Main Electric Rooms and IDF Rooms will be air conditioned by high efficiency ductless AC cooling units.

M. Atrium Smoke Exhaust System

A smoke exhaust and control evacuation system will be provided for the atrium. The system, including all equipment and control components, shall be interlocked to the building fire alarm system and shall be powered by emergency power. The system shall consist of roof mounted smoke exhaust duty rated fans, ductwork, dampers and associated controls. The system shall be designed to purge smoke exhaust from the top of the Atrium. Make-up air shall be provided at the lower first and second floor levels

also be connected to the smoke control system.

The Atrium smoke control system design shall be modeled and reviewed by a third-party consultant. As part of the third party's design review CFD and fire dynamic modeling shall be performed to determine the proper smoke exhaust system equipment sizing. After the system is installed, the smoke control system operation shall be tested and verified by a third-party consultant to ensure proper system operation.

N. Testing, Adjusting, Balancing & Commissioning:

All new HVAC systems shall be tested, adjusted, balanced and commissioned as part of the project scope.

O. Automatic Temperature Controls – Building Energy Management System:

A new DDC (direct digital control) automatic temperature control (ATC) and building energy management (BEMS) system shall be installed to control and monitor building HVAC systems. The building lighting control system shall also be integrated into the new building energy management system. Energy metering shall be installed to monitor the energy usage of building HVAC systems and utilities (fuel, gas, water). A building energy dashboard system and kiosk shall be provided to display building energy and water usage. The new building energy management system shall be provided by Advanced Energy Management Systems.

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FIRE PROTECTION SYSTEMS

NARRATIVE REPORT

The following is the Fire Protection system narrative, which defines the scope of work and capacities of the Fire Protection system, as well as, the Basis of Design.

1. CODES

   A. All work installed under Section 210000 shall comply with the MA Building Code and all state, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

   A. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Fire Protection work and all items incidental thereto, including commissioning and testing.

3. GENERAL

   A. In accordance with the provisions of the Massachusetts Building Code, a school building of greater than 12,000s.f. must be protected with an automatic sprinkler system.

4. DESCRIPTION

   A. The new School will be served by a new 8 inch fire service, double check valve assembly, wet alarm valve complete with electric bell, and fire department connection meeting local thread standards.

   B. System will be a combined standpipe/sprinkler system with control valve assemblies to limit the sprinkler area controlled to less than 52,000 s.f. as required by NFPA 13-2013.

   C. Control valve assemblies shall consist of a supervised shutoff valve, check valve, flow switch and test connection with drain. Standpipes meeting the requirements of NFPA 14-2013 shall be provided in the egress stairwells and in the Stage area. Roof manifolds will be provided at each standpipe.

   D. All areas of the building, including all finished and unfinished spaces, combustible concealed spaces, all electrical rooms and closets will be sprinklered.

   E. All sprinkler heads will be quick response, pendent in hung ceiling areas and upright in unfinished areas.

   F. Fire department valves and cabinets will be provided on each side of the Stage in the Building.

5. BASIS OF DESIGN

A. The mechanical rooms, kitchen, science classrooms, and storage rooms are considered Ordinary Hazard Group 1; stage is considered Ordinary Hazard Group 2; all other areas are considered light hazard.

B. Required Design Densities:

Light Hazard Areas	0.10 GPM over 1,500 s.f.
Ordinary Hazard Group 1	0.15 GPM over 1,500 s.f.
Ordinary Hazard Group 2	0.20 GPM over 1,500 s.f.

C. Sprinkler spacing (max.):

Light Hazard Areas:	225 s.f.
Ordinary Hazard Areas:	130 s.f.

D. A flow test will be performed to determine if there is adequate water to serve the project without a fire pump.

6. PIPING

A. Sprinkler piping 1-1/2 in. and smaller shall be ASTM A-53, Schedule 40 black steel pipe. Sprinkler/standpipe piping 2 in. and larger shall be ASTM A-135, Schedule 10 black steel pipe.

7. FITTINGS

A. Fittings on fire service piping, 2 in. and larger, shall be Victaulic Fire Lock Ductile Iron Fittings conforming to ASTM A-536 with integral grooved shoulder and back stop lugs and grooved ends for use with Style 009-EZ or Style 005 couplings. Branch line fittings shall be welded or shall be Victaulic 920/920N Mechanical Tees. Schedule 10 pipe shall be roll grooved. Schedule 40 pipe, where used with mechanical couplings, shall be roll grooved and shall be threaded where used with screwed fittings. Fittings for threaded piping shall be malleable iron screwed sprinkler fittings.

8. JOINTS

A. Threaded pipe joints shall have an approved thread compound applied on male threads only. Teflon tape shall be used for threads on sprinkler heads. Joints on piping, 2 in. and larger, shall be made up with Victaulic, or equal, Fire Lock Style 005, rigid coupling of ductile iron and pressure responsive gasket system for wet sprinkler system as recommended by manufacturer.

9. DOUBLE CHECK VALVE ASSEMBLY

A. Double check valve assembly shall be MA State approved, U.L./F.M. approved, with iron body bronze mounted construction complete with supervised OS & Y gate valves and test cocks. Furnish two spare sets of gaskets and repair kits.

B. Double check valve detector assembly shall be of one of the following:

1. Watts Series 757-OSY
2. Wilkins 350A-OSY
3. Conbraco Series 4S-100
4. Or equal

10. SPRINKLERS

A. All sprinklers to be used on this project shall be Quick Response type and shall be stamped with date of manufacture and temperature rating. Temperature ratings shall be determined by the location of the heads per NFPA 13-2013, section 8.3.2.5, and shall be minimum 155 degrees F. throughout except in special areas around heat producing equipment, skylights, and attics in which case use temperature rating to conform with hazard as specified in NFPA 13-2013. Orifice diameter and K factor shall be appropriate to meet the hydraulic design criteria, the available water supply, and NFPA Standards.

B. Furnish spare heads of each type installed located in a cabinet along with special sprinkler wrenches. The number of spares and location of cabinet shall be in complete accord with NFPA 13-2013.

C. Sprinklers shall be manufactured by Tyco, Victaulic, Viking, or equal.

D. Upright sprinkler heads in areas with no ceilings shall be Tyco Model "TY-FRB" Quick Response, upright natural brass finish heads. Include heavy duty sprinkler guards in all mechanical rooms, storage rooms, and gymnasium. In pool equipment area, all heads shall be stainless steel.

E. Sidewall heads shall be Tyco Model "TY-FRB" Quick Response with white polyester head and escutcheon.

F. Pendent wet sprinkler heads shall be Tyco Model "TY-FRB" Quick Response recessed adjustable escutcheon, white polyester finish.

G. Concealed heads shall be Tyco Model "RFII" Quick Response concealed type, 1-1/2 inch adjustment white cover plate. In special areas, as may be noted on the Drawings, provide alternate cover plate finishes (5 custom colors).

11. ROOF MANIFOLD

A. Roof manifold shall be Croker #6820 polished brass 2-way fire department outlet connection assembly – 2-1/2” x 2-1/2” x 4”.

B. Roof Manifold shall be manufactured by Croker, Potter Roemer, Elkhart or equal.

12. FIRE STANDPIPE EQUIPMENT

A. Fire Department Valves shall be Croker Series 5015 Fire Department Valves fitted with 2-1/2 inch x 1-1/2 inch reducer, caps and chains all conforming to Local Fire Department thread standard. Valves shall be polished chrome plated and shall be mounted in a recessed cabinet as indicated on Drawings.

B. Cabinets for the Fire Department Valves shall be Croker model 1710 - 18 inch x 18 inch x 10 inch deep. cabinet, fully recessed, solid door, prime painted steel. Include graphic and door catch.

C. Provide 32 inch x 32 inch access panels at floor control locations or recessed cabinets as appropriate to the wall construction. Provide graphic.

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Fuller Middle School
Framingham, MA
J#680 015 00.00
L#60587/Page 1/September 7, 2018

ELECTRICAL SYSTEMS

NARRATIVE REPORT

The following is the Electrical Systems narrative, which defines the scope of work and capacities of the Power and Lighting systems, as well as, the Basis of Design. The Electrical systems shall be designed and constructed for ***LEED v4*** where indicated on this narrative. This project shall conform to LEED Silver rating.

1. CODES

   All work installed under Section 260000 shall comply with the International Building Code (IBC) as amended by Massachusetts and all local, county, and federal codes, laws, statutes, and authorities having jurisdiction.

2. DESIGN INTENT

   The work of Section 260000 is indicated in this narrative report. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Electrical work and all items incidental thereto, including commissioning and testing.

3. SEQUENCE OF OPERATIONS AND INTERACTIONS

   A. Classroom and Corridor lighting will be controlled via “addressable relays”, which is achieved through programming networked controls. The control of the relays will be by automatic means, such as an occupancy sensor in each classroom. The system will have a BacNet gateway and will be interfaced with the DDC control system for schedule functions. The controllability shall be in conformance with associated LEED credit in indoor environmental quality.

   B. Automatic control of receptacles based on occupancy will be provided for at least 50% of the receptacles. Installed in private offices, open offices, and computer classrooms. Controlled receptacles will be marked per NEC 406.3 (E).

   C. Exterior lighting will be controlled by photocell “ON” and “scheduled” for “OFF” operation. The parking area lighting will be controlled by “zones” with dimmable capability.

   D. Emergency and Exit lighting will be run through life safety panels to be “ON “during normal power conditions, as well as, power outage conditions. The emergency lighting system will have time control so that lights are “ON” only when building is occupied.

4. DESCRIPTION OF THE SYSTEMS

A. Electrical Distribution System:

1. Service ratings for the building are designed for a connected load of 10 watts/S.F. The service capacity will be sized for 2,500 Amperes with a 100% rated main breaker. The main buss will be sized at 3,000 Amperes and will have an available space provision at the end of the gear to accommodate a future grid connected photovoltaic array. The switchboard will be furnished with a service entrance transient voltage surge protection device (SPD) rated at 240 kA and digital metering unit to monitor voltage, current, power factor, demand KW and with a data communication port for interface with BMS. Main switchboards short circuit rating with a data communication port for interface with BMS. Main switchboards short circuit rating will be coordinated with the Utility Company but it is estimated to be 65 KAIC.

B. Interior Lighting System:

1. Classroom lighting fixtures consist of ceiling mounted indirect LED luminaries with dimming drivers. The fixtures will be pre-wired for dimming control where natural daylight is available and also for multi-level switching. Office lighting fixtures will consist of similar fixtures to classrooms. Offices on the perimeter with windows shall have daylight dimming controls**.**

   In general, lighting power density will be 30 percent less than IECC 2015. The power density reduction relates to ***LEED v4 for Schools.***

2. Lighting levels will be approximately 30 foot candles in classrooms and offices. The daylight dimming footcandle level will be in compliance with ***LEED v4 for Schools.***

3. Gymnasium lighting will be comprised of indirect LED fixtures with dimming drivers. The fixtures will be provided with protective wire guards. The light level will be designed for approximately 50 foot candles.

   Daylight dimming will be provided within 15 feet of skylights or glazing. Daylight dimming controls will be similar in operation to classrooms.

4. Corridor lighting will be comprised of linear indirect lighting using LED light source. The corridor light level will be designed for approximately 15 foot candles. Corridor lighting will be on a schedule through the DDC system control and only “on” during occupied hours. The corridor lighting will have two level control.

5. Auditorium lighting will be cove pendant LED fixtures with DMX dimming drivers. The light levels will be designed for approximately 20 foot candles.

6. Cafeteria lighting will consist of cove mounted LED linear fixtures with dimming drivers.

7. Kitchen and Servery lighting will consist of recessed 2 ft. x 2 ft. lensed gasketed LED panels. Light levels will be approximately 50 foot candles.

8. Library lighting will consist of indirect LED fixtures and dimming drivers. Light levels will be approximately 30 foot candles.

9. Each area will be locally switched and designed for multi-level controls. Each classroom, office space and toilet rooms will have an occupancy sensor to turn lights off when unoccupied. Daylight sensors will be installed in each room where natural light is available for dimming of light fixtures. Corridors will have occupancy sensors for shutdown of lighting, similar to classrooms.

10. The entire school will be controlled with an automatic lighting control system using the DDC control system for schedule programming of lights.

C. Emergency Lighting System:

1. An exterior roof mounted 250 kW natural gas fueled emergency generator with sound attenuated housing will be provided. Light fixtures and LED exit signs will be installed to serve all egress areas such as corridors, intervening spaces, toilets, stairs and exit discharge exterior doors. The administration area lighting will be connected to the emergency generator.

2. The generator will be sized to include life safety systems, legally required systems (smoke evacuation) and optional standby systems including boilers and circulating pumps, communications systems and kitchen refrigeration.

D. Site Lighting System:

1. Fixtures for area lighting will be pole mounted cut-off ‘LED’ luminaries in the parking area and roadways. The exterior lighting will be connected to the automatic lighting control system for photocell on and timed off operation. The site lighting fixtures will be dark sky compliant. The illumination level is 1.0 fc for parking areas.

2. Building perimeter fixtures will be wall mounted cut-off over exterior doors for exit discharge.

E. Wiring Devices:

1. Each classroom will have a minimum of (2) duplex receptacles per teaching wall and (2) double duplex receptacles on dedicated circuits at classroom computer workstations. The teacher’s workstation will have a double duplex receptacle also on a dedicated circuit.

2. Office areas will generally have (1) duplex outlet per wall. At each workstation a double duplex receptacle will be provided.

3. Corridors will have a cleaning receptacle at approximately 25 foot intervals.

4. Exterior weatherproof receptacles will be installed at exterior doors. The outlets will automatically be switched off from schedule.

5. A system of computer grade panelboards with double neutrals and transient voltage surge suppressors will be provided for receptacle circuits.

F. Fire/Mass Notification System:

1. A fire/mass notification system and detection system will be provided with 60 battery back-up. The system will be of the addressable type where each device will be identified at the control panel and remote annunciator by device type and location to facilitate search for origin of alarms. The notification system will be in conformance with NFPA 72 Chapter 24 emergency communications systems.

2. Smoke detectors will be provided in open areas, corridors, stairwells and other egress ways.

3. The sprinkler system will be supervised for water flow and tampering with valves.

4. Speaker/strobes will be provided in egress ways, classrooms, assembly spaces, open areas and other large spaces. Strobe only units will be provided in single toilets and conference rooms.

5. Manual pull stations will be provided at exit discharge doors.

6. The system will be remotely connected to automatically report alarms to fire department via an approved method by the fire department.

G. Addressable Dual Speaker/Strobe Units for Fire and Mass Notification application:

1. One-way Tone/Voice Communication:
   a. The evacuation alarm and alert signals shall be capable of being initiated automatically from the fire alarm control panel (FACP) and transmitted to any speaker circuit, selected speaker circuits or all speaker circuits.
   b. The alarm signal, alert signal and live and pre-recorded voice announcements shall be capable of manual transmission from the FACP to any speaker circuit, selected speaker circuits or all speaker circuits by manual selection of the associated speaker circuit control switches.
   c. Live voice announcements, via the hand-held microphone or patched in external source, by use of speaker control switches, shall take priority over all previously activated alarm inputs. In addition to NFPA 72 requirements, the system shall be capable of priority live voice announcements over subsequent alarm conditions. In no case shall subsequent alarms disrupt emergency live voice announcements. Mass notification activation is the only condition allowed to override the fire alarm event.
   d. Addressable Visual Unit (Xenon Strobe) and Visual/Fire/MNS unit:
      1) Combination white/amber strobe/MNS units - Provide Truealert Synchronized white strobe (fire)/yellow strobe (MNS event) all in one unit. Unit shall be red with “FIRE” in white lettering. Yellow strobe shall include “ALERT” in white lettering.

2) Provide candela rating indicated on drawings and in accordance with NFPA requirements.

3) Adjacent to all combination visual units shown on drawings provide an addressable speaker

4) Systems that require separate wiring and control modules to support the specified functionality shall be provided at no additional cost.

2. Addressable Textual Notification Appliance (MNS): Textual Notification Appliance is to operate on a compatible Signaling Line Circuit (SLC) and is to provide a high visibility, multi-color LED text message display.

H. Uninterruptible Power Supply (UPS):

1. Two (2) 24 kW, three (3) phase centralized UPS systems will be provided with 8-minute battery back-up.

2. The system will provide conditioned power to sensitive electronic loads, telecommunication systems, bridge over power interruptions of short duration and allow an orderly shutdown of servers, communication systems, etc. during a prolonged power outage.

3. The UPS systems will also be connected to the stand by generator.

I. Lightning Protection System:

1. A system of lightning protection devices will be provided.

2. The lightning protection equipment will include air terminals, conductors, conduits, fasteners, connectors, ground rods, etc.

3. The facility will be issued a UL Master Label Certificate.

J. Renewable Energy System Provisions:

1. The base project will include:

a. Electrical provisions will be made for a roof mounted renewable energy system for a grid connected photovoltaic PV system intended to reduce the facilities demand for power.

K. Two-way Communication System:

1. A Two-Way Communications System will be provided at the elevator lobbies that do not have grade access. Area of rescue assistance call boxes will be provided at Elevator Lobbies with no grade access. The call boxes connect to a main panel located adjacent to the Fire Alarm annunciator panel.

L. Distributed Antennae System (DAS):

1. A public safety radio distributed antenna system (DAS) which consists of bi-directional amplifiers (BDA), donor antennas, coverage antennas, coax cable, coax connectors, splitters, combiners and couplers. These devices will be used as part of a system for in-building public safety 2-way radio system communication.

M. Closed-Circuit TV System(CCTV):

1. A Closed-Circuit TV system will consist of computer servers with image software, computer monitors and IP based closed circuit TV cameras. The head end server will be located in the head end (MDF) room and will be rack mounted. The system can be accessed from any PC within the facility or externally via an IP address. Each camera can be viewed independently. The network video recorders (SAN) will record all cameras and store this information for 45 days at 30 images per second (virtual real time).

2. The location of the cameras is generally in corridors and exterior building perimeter. The exterior cameras are 360 degree multi-sensor type.

3. The system will fully integrate with the access control system to allow viewing of events from a single alarm viewer. Camera images and recorded video will be linked to the access system to allow retrieval of video that is associated with an event.

N. Intrusion System:

1. An intrusion system will consist of security panel, keypads, motion detectors and door contacts. The system is addressable which means that each device will be identified when an alarm occurs. The system is designed so that each perimeter classroom with grade access will have dual tech sensors along the exterior wall and corridors, door contacts at each exterior door.

2. The system can be partitioned into several zones. Therefore, it is possible to use the Gym area while the remainder of the school remains alarmed.

3. The system will include a digital transmitter to summons the local police department in the event of an alarm condition

4. The intrusion system will be connected to the automated lighting control system to automatically turn on lighting upon an alarm.

O. Card Access System:

1. A card access system includes a card access controller, door controllers and proximity readers/keypads. Proximity readers will be located at various locations. Each proximity reader will have a distinctive code to identify the user and a log will be kept in memory. The log within the panel can be accessed through a computer.

2. The alarm condition will also initiate real time recording on the integrated CCTV System. The system may be programmed with graphic maps allowing the end-user to quickly identify alarm conditions and lock/unlock doors.

3. The system is modular and may be easily expanded to accommodate any additional devices.

5. TESTING REQUIREMENTS

The Electrical Contractor shall provide testing of the following systems with the Owner and Owner's Representative present:

- Lighting and power panels for correct phase balance.
- Emergency generator.
- Lighting control system (interior and exterior).
- Fire alarm system.
- Security system.
- Lightning protection system.

Testing reports shall be submitted to the Engineer for review and approval before providing to the Owner.

6. OPERATION MANUALS AND MAINTENANCE MANUALS

When the project is completed, the Electrical Contractor shall provide operation and maintenance manuals to the Owner.

7. RECORD DRAWINGS AND CONTROL DOCUMENTS

When the project is completed, an as-built set of drawings, showing all lighting and power requirements from contract and addendum items, will be provided to the Owner.

8. COMMISSIONING

The project shall be commissioned per Section 018000 of the specifications.

9. SITE UTILITIES

The Electric, Telephone and Cable TV utilities will be underground for each system provided. Existing town network services shall be maintained.

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L#60589/Page 1/September 7, 2018

TECHNOLOGY SYSTEMS

NARRATIVE REPORT

The following is the Technology Systems narrative, which defines the scope of work and capacities of the Communications system infrastructure, as well as, the Basis of Design.

1. CODES

   A. All work installed under Section 270000 shall comply with the Massachusetts Building Code, IBC 2009, and all local, county, and federal codes, laws, statues, and authorities having jurisdiction.

2. DESIGN INTENT

   A. All work is new and consists of furnishing all materials, equipment, labor, transportation, facilities, and all operations and adjustments required for the complete and operating installation of the Technology and Security work and all items incidental thereto, including commissioning and testing.

3. TECHNOLOGY

   A. The data system infrastructure will consist of fiber optic backbone cabling. Horizontal wiring will consist of Category 6A UTP Non-Plenum rated cabling for both data and telephone systems for gigabit connectivity. The telephone infrastructure will accommodate VOIP based voice systems. A new IP telephone system will be used.

   B. Each classroom will have four (4) data outlets for student computers. Two (2) data with video and audio connections to a wall mounted touch screen monitor will be provided at teacher's station. A wall phone will be provided for communications with administration in each classroom. Wireless access points will be provided in all classrooms and other spaces with two (2) CAT6A cables.

   C. A central paging system will be provided and integrated with the telephone system. The speakers shall be IP.

   D. A wireless GPS/LAN based master clock system will be provided with 120V wireless remote clocks that act as transceivers.

   E. The Main Distribution Frame (MDF) will contain all core network switching and IP voice switch. Intermediate Distribution Frames (IDFs) will serve each floor/wing of the school. A fiber optic backbone will be provided from each IDF to MDF. The backbone will be designed for 10 Gbps Ethernet.

4. TESTING REQUIREMENTS

The Technology Contractor shall provide testing of the following systems with the Owner and Owner's Representative present:

- Telephone and data cabling
- Fiber optic backbone cabling
- Paging system
- Wireless clock system
- A/V wiring for classrooms

Testing reports shall be submitted to the Engineer for review and approval before providing to the Owner.

5. OPERATION MANUALS AND MAINTENANCE MANUALS

When the project is completed, the Technology Contractor shall provide operation and maintenance manuals to the Owner.

6. RECORD DRAWINGS AND CONTROL DOCUMENTS

When the project is completed, an as-built set of drawings, showing all lighting and power requirements from contract and addendum items, will be provided to the Owner.

7. COMMISSIONING

The project shall be commissioned per Commissioning Section of the specifications.

10. Sustainable Building Design Documents

10.1 LEED Letter

Statement Regarding MSBA High Efficiency Green School Program

The Fuller Middle School shall be designed to achieve at least a LEED Certified certification.

This is an acknowledgement that the City of Framingham has identified a goal of 2% additional reimbursement from the MSBA High Efficiency Green School Program. As their Designer, I have submitted a completed LEED scorecard showing 48 attempted points, which will meet that goal.

The scope of work for this project will include the construction elements and performance tasks to achieve the goal, and all subsequent documents, including but not limited to, specifications, drawings and cost estimates will match the scope of work indicated in the submitted scorecard.

It should be noted that LEED Certified certification requires 40 to 49 points, and that it is anticipated that a cost benefit analysis will be performed during Design Development, to refine the list of targeted points as appropriate for this project, so that the final approved points will conservatively fall within this window.

Jonathan Levi FAIA

LEED for Schools v4 Project Scorecard

Project Name: **Fuller Middle School**
Project Addres 31 Flagg Dr, Framingham MA
Date Updated: June 26, 2018

	Yes	?	No			
	1	0	0		**Integrative Process**	1
D	1			Credit 1	**Integrative Process**	1

	Yes	?	No			
	1	6	8		**Location & Transportation**	15
D			N/A	Credit 1	**LEED for Neighborhood Development Location**	15
D	1			Credit 2	**Sensitive Land Protection**	1
D			2	Credit 3	**High Priority Site**	2
D		2	3	Credit 4	**Surrounding Density and Diverse Uses**	5
D		1	3	Credit 5	**Access to Quality Transit**	4
D		1		Credit 6	**Bicycle Facilities**	1
D		1		Credit 7	**Reduced Parking Footprint**	1
D		1		Credit 8	**Green Vehicles**	1

	Yes	?	No			
	4	7	1		**Sustainable Sites**	12
C	Y			Prereq 1	**Construction Activity Pollution Prevention**	Required
D	Y			Prereq 2	**Environmental Site Assessment**	Required
D	1			Credit 1	**Site Assessment**	1
D		2		Credit 2	**Site Development - Protect or Restore Habitat**	2
D		1		Credit 3	**Open Space**	1
D		3		Credit 4	**Rainwater Management**	3
D	1	1		Credit 5	**Heat Island Reduction**	2
D	1			Credit 6	**Light Pollution Reduction**	1
D			1	Credit 7	**Site Master Plan**	1
D	1			Credit 8	**Joint Use of Facilities**	1

	Yes	?	No			
	5	5	2		**Water Efficiency**	12
D	Y			Prereq 1	**Outdoor Water Use Reduction**	Required
D	Y			Prereq 2	**Indoor Water Use Reduction**	Required
D	Y			Prereq 3	**Building-level Water Metering**	Required
D	2			Credit 1	**Outdoor Water Use Reduction**	2
D	2	5		Credit 2	**Indoor Water Use Reduction**	7
D			2	Credit 3	**Cooling Tower Water Use**	2
D	1			Credit 4	**Water Metering**	1

	Yes	?	No			
	17	12	2		**Energy & Atmosphere**	31
C	Y			Prereq 1	**Fundamental Commissioning and Verification**	Required
D	Y			Prereq 2	**Minimum Energy Performance**	Required
D	Y			Prereq 3	**Building-level Energy Metering**	Required
D	Y			Prereq 4	**Fundamental Refrigerant Management**	Required
C	5	1		Credit 1	**Enhanced Commissioning**	6
D	11	5		Credit 2	**Optimize Energy Performance**	16
D	1			Credit 3	**Advanced Energy Metering**	1
C			2	Credit 4	**Demand Response**	2
D		3		Credit 5	**Renewable Energy Production** (1%/5%/10%)	3
D		1		Credit 6	**Enhanced Refrigerant Management**	1
C		2		Credit 7	**Green Power and Carbon Offsets** (50%/100%)	2

	Yes	?	No		Materials & Resources	13
	6	2	5			
D	Y			Prereq 1	**Storage & Collection of Recyclables**	Required
C	Y			Prereq 2	**Construction and Demolition Waste Management Planning**	Required
C	3		2	Credit 1	**Building Life-cycle Impact Reduction**	5
C	1		1	Credit 2	**Building Product Disclosure and Optimization**-Environmental Product	2
C		1	1	Credit 3	**Building Product Disclosure and Optimization**-Sourcing of Raw Matls.	2
C		1	1	Credit 4	**Building Product Disclosure and Optimization**-Material Ingredients	2
C	2			Credit 5	**Construction and Demolition Waste Management**	2

	Yes	?	No		Indoor Environmental Quality	#REF!	16
	10	5	1				
D	Y			Prereq 1	**Minimum IAQ Performance**		Required
D	Y			Prereq 2	**Environmental Tobacco Smoke (ETS) Control**		Required
D	Y			Prereq 3	**Minimum Acoustical Performance**		Required
D	2			Credit 1	**Enhanced IAQ Strategies**		2
C	1	1	1	Credit 2	**Low-Emitting Materials** (3/5/6)		3
C	1			Credit 3	**Construction IAQ Management Plan**		1
C	1	1		Credit 4	**IAQ Assessment**		2
D		1		Credit 5	**Thermal Comfort**		1
D	1	1		Credit 6	**Interior Lighting**		2
D	2	1		Credit 7	**Daylight**		3
D	1			Credit 8	**Quality Views**		1
D	1			Credit 9	**Acoustic Performance**		1

	Yes	?	No		Innovation	6
	3	3	0			
D	1			Credit 1	**Innovation: TBD**	1
D		1		Credit 2	**Innovation: TBD**	1
D		1		Credit 3	**Innovation: TBD**	1
C	1			Credit 4	**Innovation: EP**	1
C		1		Credit 5	**Innovation: Pilot Credit**	1
C	1			Credit 6	**LEED Accredited Professional**	1

	Yes	?	No		Regional Priority Credits - earn up to 4 points	4
	1	3	0			
		1		Credit 1	**EAc5 Renewable Energy Production (2pt / 3%)**	1
		1		Credit 2	**WEc2 - Indoor Water Use Reduction (4 pts)**	1
	1			Credit 3	**MRc1 Building Life-Cycle Impact Reduction (2pts)**	1
		1		Credit 4	**EAc2 Optimize Energy Performance (8pts)**	1
			N/A	*Credit 5*	*SSc4 - Rainwater Management (2 pts)*	
			N/A	*Credit 6*	*LTc3 - High Priority Site (2 Pts)*	

Yes	?	No	Project Totals (Certification Estimates)	110
48	43	19		

Certified: 40-49 points, **Silver:** 50-59 points, **Gold:** 60-79 points, **Platinum:** 80+ points

11. Accessibility ADA/MAAB

The following Accessibility report is an excerpt from the Fire Protection and Life Safety Code Compliance Strategy Report included in section 6. Please see Section 6 for the full report.

ACCESSIBILITY

As new construction, the new School will be designed to be fully accessible and comply with MAAB as well as the 2010 Americans with Disabilities Act.

GENERAL REQUIREMENTS

The Fuller School must be designed to meet MAAB as well as the 2010 Americans with Disabilities Act. Both ADAAG and MAAB require that all entrances are accessible, changing rooms and showers are accessible, and that all bathrooms be designed to be accessible. Finally, it should be noted that MAAB requires all exterior pathways to be fully accessible and that if parking is provided that a certain percentage be accessible.

The following accessible features should be provided in the building.

- All bathrooms and locker rooms should be accessible. Locker rooms should include the following features:
  - 36-inch wide accessible routes around all lockers. (including between benches and lockers)
  - 5% but not less than one accessible locker
  - At least one accessible shower stall
  - Accessible toilet and plumbing fixtures
- The elevator will be fully accessible
- All entrances must be accessible
- All exterior walkways must be accessible
- Classrooms must be accessible including all laboratory/ science classrooms. 5% but not less than one (1) of each type of equipment/ learning station should be accessible

Public and Common Use Spaces

The public and common use spaces are those spaces inside or outside the buildings that are used by residents and/or visitors. This includes the parking and assembly spaces on the ground floor. These spaces must be accessible per the requirements of 521 CMR and the 2010 ADAAG. These spaces should be on an accessible route at least 36- inches wide which connects accessible parking, accessible entrances, and public and common use spaces. Wherever possible, the accessible route should be the shortest possible route (521 CMR 10.2). All doorways and openings located in common use and public use spaces and along accessible routes should comply with 521 CMR Sections 26.2 through 26.11 and ADAAG Section 404.

Accessible Means of Egress

All spaces or elements that are required to be accessible must be provided with at least one accessible means of egress. In spaces required to be provided with multiple means of egress, each space must be served by at least two accessible means of egress. Exit access stairways are permitted to be considered part of the accessible means of egress when they are provided with a clear width of at least 48 inches between the handrails and two-way communication is provided at the elevator landings in accordance with 780 CMR Section 1009.3. The building is fully sprinklered and areas of refuge are not required to be provided at the exit access stairways. Two-way communication is required to be provided at the elevator landings, so that the exit access stairways in the school can be considered as part of the accessible means of egress.

Parking

Parking will be provided in accordance with the following MAAB table based on the number of spaces provided for the residential occupants and the potential assembly occupants. **One in eight accessible spaces, but not less than one, must be van accessible.**

23.2.1	Total Parking in Lot	Required Minimum Number of Accessible Spaces
	15-25	1
	26-50	2
	51-75	3
	76- 100	4
	101-150	5
	151-200	6
	201-300	7
	301-400	8
	401-500	9
	501-1,000	2% of total
	1,001 and over	20 plus 1 for each 100 over 1000

Accessible Seating Requirements

In places of assembly with fixed seating, the minimum number of accessible spaces provided must be in accordance with the table below:

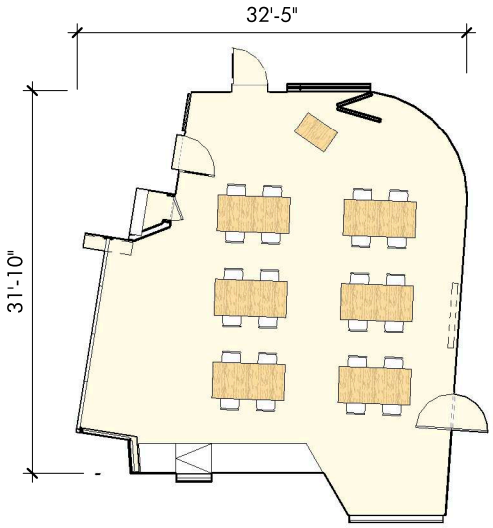
Total Seating	Wheelchair Spaces
4 to 25	1
26 to 50	2
51 to 300	4
301 to 500	6
over 500	6, one additional space for each total seating capacity increase of 100.

When more than 150 seats are provided, the wheelchair seating locations must be provided in more than one (1) location and must be dispersed through the seating area. Accessible seating must be integral with the rest of the seating. I.e. should to shoulder. Bleachers should be ordered with cutouts where accessible seating will be provided. In addition to wheelchair seating locations, 1% of all fixed seats must be a companion seat consisting of an aisle seat with no armrests on the aisle side.

Accessible seating positions are permitted to be clustered for bleachers, balconies and other areas having sight lights with a slope greater than 5%. Equivalent accessible viewing positions may be located on levels having accessible egress.

Ticket box offices and concession stands must be located on an accessible route, and a portion of the counter must be a maximum of 36 inches high for a length of at least 36 inches. A counter or auxiliary counter can be used to achieve this requirement.

1.1 CLASSROOM - GENERAL



FUNCTIONAL CRITERIA

Description: general instructional classroom

Area: 900 sf

Quantity: 21

Occupant Load: 24 (1 teacher, 23 students)

LOCATIONAL CRITERIA

Users: teachers, students

TECHNICAL CRITERIA

Floor: VCT

Walls: writable surfaces

Ceiling: exposed deck / ACT / GWB

Acoustical: partial acoustical

Doors: wood full-lite

Windows: required, operable

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: wall receptacles & data outlets

Communication: paging system, wireless data intercom, clock system, wall phone jacks

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system, cantilevered counter, folding screen, operable partition, panorama wall

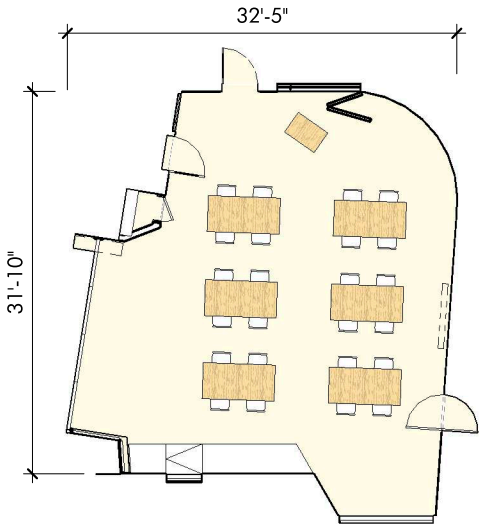
Storage: enclosed teacher storage, wall mounted shelving units, mobile base cabinets

Furnishings: 1 moveable instructor podium, 6 student tables, 24 chairs all with wheels

Equipment: 1 telephone (wall-mounted), sound lift system, 1 wireless access point, 1 LED touch screen monitor

OTHER INFORMATION

1.2 ELL CLASSROOMS



FUNCTIONAL CRITERIA

Description: general instructional classroom

Area: 900 sf

Quantity: 6

Occupant Load: 24 (1 teacher, 23 students)

LOCATIONAL CRITERIA

Users: teachers, students

TECHNICAL CRITERIA

Floor: VCT

Walls: writable surfaces

Ceiling: exposed deck / ACT / GWB

Acoustical: partial acoustical

Doors: wood full-lite

Windows: required, operable

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: wall receptacles & data outlets

Communication: paging system, wireless data intercom, clock system, wall phone jacks

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system, cantilevered counter, folding screen, operable partition, panorama wall

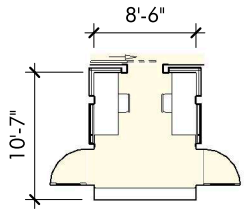
Storage: enclosed teacher storage, wall mounted shelving units, mobile base cabinets

Furnishings: 1 moveable instructor podium, 6 student tables, 24 chairs all with wheels

Equipment: 1 telephone (wall-mounted), sound lift system, 1 wireless access point, 1 LED touch screen monitor

OTHER INFORMATION

1.3 TEACHER PLANNING



FUNCTIONAL CRITERIA

Description: office for teacher; coupled and attached to set of two classrooms

Area: 90 sf

Quantity: 15

Occupant Load: 2 teachers

LOCATIONAL CRITERIA

Users: teachers (shared)

TECHNICAL CRITERIA

Floor: VCT

Walls: glazed-visual access

Ceiling: ACT

Acoustical: .

Doors: wood full-lite, sliding @ corridor

Windows: .

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties: work counters, full wall shelving

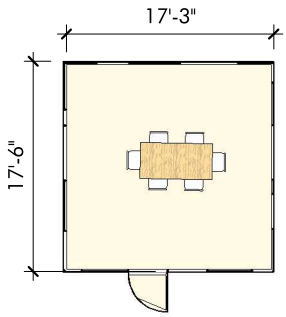
Storage: mobile under counter storage

Furnishings: 2 desk chairs

Equipment: .

OTHER INFORMATION Shared space between Classrooms

1.4 CLASSROOM BREAKOUT



FUNCTIONAL CRITERIA

Description: general instructor area

Area: 290 sf

Quantity: 7

Occupant Load: 6 (1 teacher, 5 students)

LOCATIONAL CRITERIA

Users: teacher, students

TECHNICAL CRITERIA

Floor: VCT
Walls: writable surfaces, glazed-visual access
Ceiling:
Acoustical:
Doors: wood full-lite
Windows:
Mechanical: low volume displacement ventilation
Plumbing/FP: fire protection only
Lighting: indirect LED cove
Electrical: general outlets on (3) walls

Communication: telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties:

Storage:

Furnishings: 1 table, 6 desk chairs

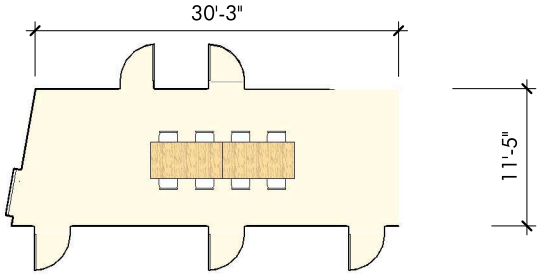
Equipment:

OTHER INFORMATION

1.5 WORKSPACE

FUNCTIONAL CRITERIA

Description: professional development / itinerant / workspace



Area: 400 sf

Quantity: 1

Occupant Load: 12

LOCATIONAL CRITERIA

Users: teachers, administrators

TECHNICAL CRITERIA

Floor: VCT

Walls: writable surfaces, acoustical surfaces

Ceiling:

Acoustical: ACT / GWB

Doors:

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

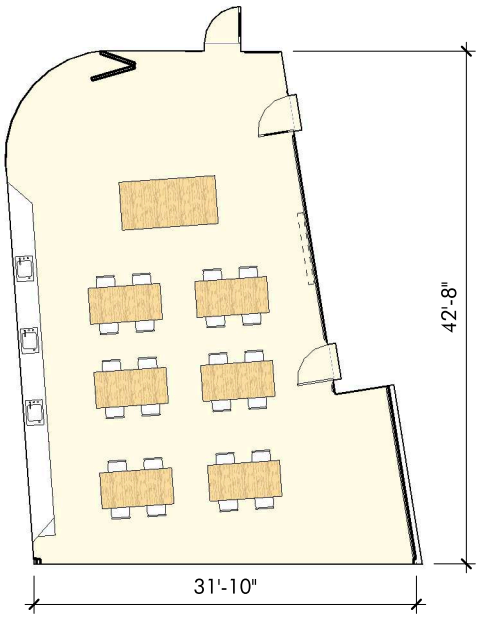
Storage:

Furnishings: meeting table, chairs, marker/magnetic system

Equipment: wireless access point

OTHER INFORMATION

1.6 SCIENCE CLASSROOM/LAB



FUNCTIONAL CRITERIA

Description: science instruction classroom

Area: 1,195 sf

Quantity: 6

Occupant Load: 24 (1 teacher, 23 students)

LOCATIONAL CRITERIA

Users: teacher, students

TECHNICAL CRITERIA

Floor: VCT
Walls: magnetic / writable surface
Ceiling: exposed deck / ACT / GWB
Acoustical: partial acoustical / GWB
Doors: wood w/ full side-lite
Windows: required, operable
Mechanical: low volume displacement ventilation
Plumbing/FP: sink, eye wash w/floor drain
Lighting: indirect LED cove
Electrical: power to equipment, GFCI at counter

Communication: paging speaker, clock, telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties: counter w/ backsplash, operable partition, panorama wall, folding screen

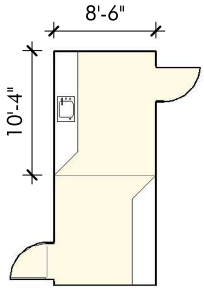
Storage: upper cabinets w/lock, mobile undercounter storage unit w/lock

Furnishings: 1 moveable instructor podium, 6 moveable tables (counter height), 24 chairs, moveable demonstration table

Equipment: 1 LED touch screen monitor

OTHER INFORMATION

1.7 PREP ROOM



FUNCTIONAL CRITERIA

Description: science instruction

Area: 80 sf

Quantity: 6

Occupant Load: 1 teacher

LOCATIONAL CRITERIA

Users: teacher, students

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling: ACT

Acoustical:

Doors:

Windows:

Mechanical: low volume displacement ventilation, chem exhaust

Plumbing/FP: sink, eye wash w/floor drain

Lighting: indirect LED cove

Electrical: power to equipment, GFCI at counter

Communication: paging speaker, clock, telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties: counter w/ backsplash

Storage: upper cabinets w/lock, mobile undercounter storage unit w/lock

Furnishings: 2 chairs

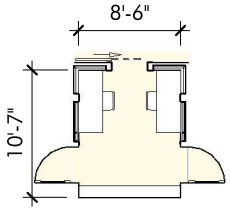
Equipment: chemical storage cabinet, refrigerator

OTHER INFORMATION adjacent prep room areas between science classrooms combined for larger shared prep space

1.8 SCIENCE TEACHER PLANNING

FUNCTIONAL CRITERIA

Description: office for science teacher; coupled and attached to set of two classrooms



Area: 90 sf

Quantity: 3

Occupant Load: 2 teachers

LOCATIONAL CRITERIA

Users: teachers (shared)

TECHNICAL CRITERIA

Floor: VCT

Walls: magnetic/writable surfaces, glazed-visual access

Ceiling: ACT

Acoustical:

Doors: wood full-lite, sliding @ corridor

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties: work counters, full wall shelving

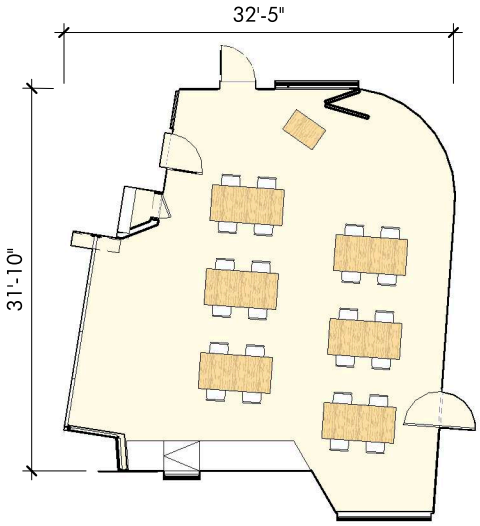
Storage: mobile under counter storage

Furnishings: 2 desk chairs

Equipment:

OTHER INFORMATION shared space between classrooms

2.1 SELF-CONTAINED SPED



FUNCTIONAL CRITERIA

Description: SPED instructional classroom

Area: 900 sf

Quantity: 6

Occupant Load:

LOCATIONAL CRITERIA

Users: special education teachers, students

TECHNICAL CRITERIA

Floor: VCT

Walls: magnetic / writable surface

Ceiling: exposed deck / ACT / GWB

Acoustical: acoustical surface

Doors: wood w/ fulllite

Windows: required, operable

Mechanical: low volume displacement ventilation

Plumbing/FP:

Lighting: indirect LED cove

Electrical: wall receptacles, teaching station outlets

Communication: paging system, wireless data intercom, clock system, interactive LED screen

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system, cantilevered counter, folding screen, operable partition, panorama wall

Storage: enclosed teacher storage, wall mounted shelving units, mobile base cabinets

Furnishings: 4 student desks, 16 chairs

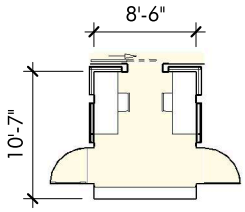
Equipment: 1 telephone (wall-mounted), printer, 1 wireless access point, 1 LED touch screen monitor

OTHER INFORMATION

2.2 SPED TEACHER PLANNING

FUNCTIONAL CRITERIA

Description: office for SPED teacher; coupled and attached to set of two classrooms



Area: 90 sf

Quantity: 3

Occupant Load: 2 teachers

LOCATIONAL CRITERIA

Users: teachers (shared)

TECHNICAL CRITERIA

Floor: VCT

Walls: magnetic/writable surfaces, glazed-visual access

Ceiling: ACT

Acoustical:

Doors: wood full-lite, sliding @ corridor

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties: counter, full wall shelving

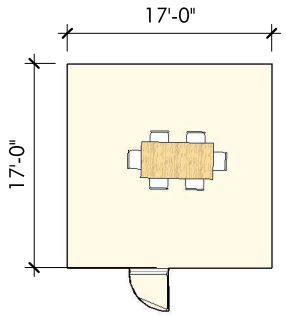
Storage: mobile under counter storage

Furnishings: 2 desks and desk chairs

Equipment:

OTHER INFORMATION

2.3 SPED CLASSROOM BREAKOUT



FUNCTIONAL CRITERIA

Description: general SPED instructor area

Area: 300 sf

Quantity: 2

Occupant Load: 6 (1 teacher, 5 students)

LOCATIONAL CRITERIA

Users: teacher, students

TECHNICAL CRITERIA

Floor: VCT

Walls: magnetic/writable surfaces, glazed-visual access

Ceiling:

Acoustical:

Doors: wood full-lite

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

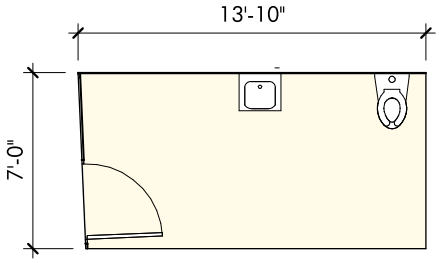
Storage:

Furnishings: 1 table, 6 desk chairs

Equipment:

OTHER INFORMATION

2.4 SELF-CONTAINED SPED TOILET



FUNCTIONAL CRITERIA

Description:

Area: 95 sf

Quantity: 3

Occupant Load:

LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor: tile
Walls: tile
Ceiling: GWB
Acoustical:
Doors: solid
Windows:
Mechanical:
Plumbing/FP:
Lighting:
Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

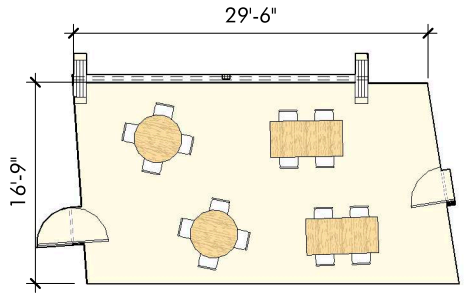
Storage:

Furnishings:

Equipment:

OTHER INFORMATION

2.5 RESOURCE ROOM



FUNCTIONAL CRITERIA

Description: SPED group and individual instruction

Area: 520 sf

Quantity: 3

Occupant Load:

LOCATIONAL CRITERIA

Users: adjustment counselor, students, special education teachers & aides

TECHNICAL CRITERIA

Floor: VCT

Walls: writable surfaces, acoustical surfaces

Ceiling: ACT

Acoustical: acoustical surface

Doors:

Windows: required

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: wall receptacles, teaching station outlets

Communication: paging system, wireless data intercom, clock system, interactive LED screen

FIXTURES/ FURNISHINGS

Casework/Specialties: marker/magnetic system, operable partition

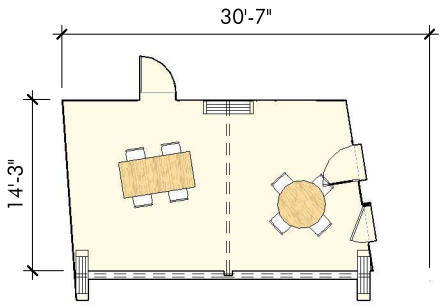
Storage:

Furnishings: 4 tables, 16 stacking chairs

Equipment: 1 telephone (wall-mounted), 1 wireless access point, 1 LED monitor

OTHER INFORMATION

2.6 READING ROOM



FUNCTIONAL CRITERIA

Description: SPED small group instruction

Area: 345 sf

Quantity: 3

Occupant Load:

LOCATIONAL CRITERIA

Users: special education teachers, students

TECHNICAL CRITERIA

Floor: VCT
Walls: writable surfaces
Ceiling: ACT
Acoustical: acoustical surface
Doors:
Windows: required
Mechanical: low volume displacement ventilation
Plumbing/FP: fire protection only
Lighting: indirect LED cove
Electrical: wall receptacles, teaching station outlets

Communication: paging system, wireless data intercom, clock system, interactive LED screen

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system, operable partitions

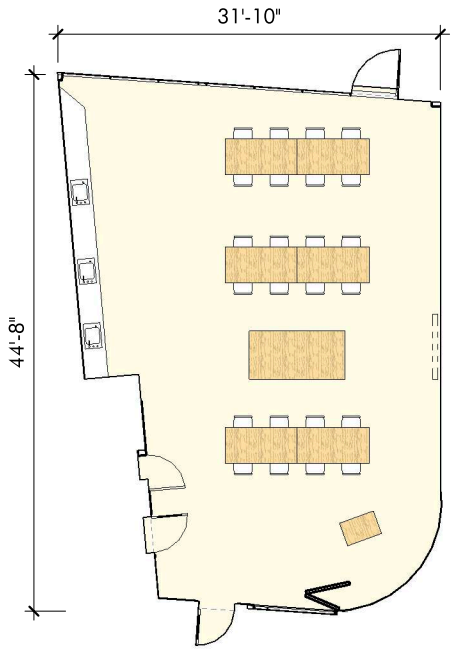
Storage:

Furnishings: group tables, chairs

Equipment: 1 wireless access point, 1 LED monitors

OTHER INFORMATION

3.1 ART CLASSROOM



FUNCTIONAL CRITERIA

Description: instructional space for visual arts and crafts

Area: 1,185 sf

Quantity: 1

Occupant Load: 24 (1 teacher, 23 students)

LOCATIONAL CRITERIA

Users: art teacher, students

TECHNICAL CRITERIA

Floor: VCT

Walls: magnetic wall covering

Ceiling: exposed deck / ACT / GWB

Acoustical:

Doors: wood full-lite

Windows: required

Mechanical: low volume displacement ventilation

Plumbing/FP: 3 work sinks

Lighting: indirect LED cove

Electrical: wall receptacles, teaching station outlets

Communication: paging system, wireless data intercom, clock system, interactive LED screen

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system, operable partition, folding screen, panorama wall, work counter and base cabinets

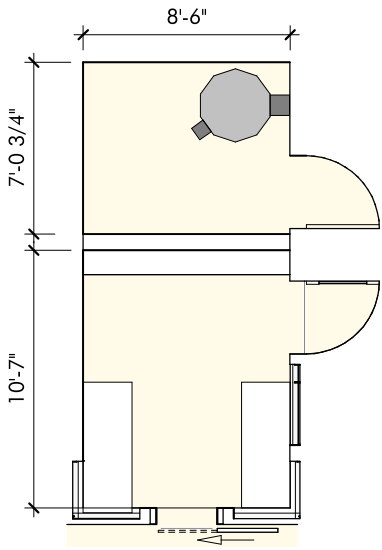
Storage: open shelving, art storage cabinets, mobile undercounter cabinets

Furnishings: 1 teacher's table, 1 desk chair, 6 student tables, 24 stacking chairs, demonstration table

Equipment: 1 telephone, LED touch screen display, 1 wireless access point

OTHER INFORMATION outdoor access

3.2 ART WORKROOM W/ STORAGE & KILN



FUNCTIONAL CRITERIA

Description: space for kiln and material/equipment storage

Area: 150 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: art teachers

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: kiln exhaust, baseboard heating

Plumbing/FP: fire protection only

Lighting: ambient and task level

Electrical: power to kiln, general outlets per wall

Communication: paging system, work counter and base cabinets

FIXTURES/ FURNISHINGS

Casework/Specialties:

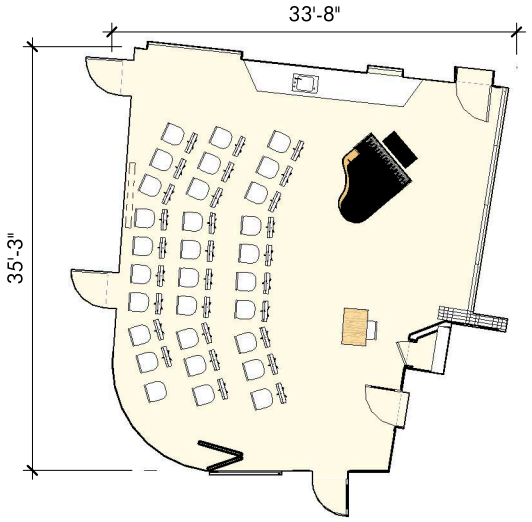
Storage: flat art shelving, storage shelves

Furnishings:

Equipment: kiln

OTHER INFORMATION Kiln area, storage area

3.3 BAND ROOM



FUNCTIONAL CRITERIA

Description: instruction/practice space for band; storage of music equipment

Area: 970 sf

Quantity: 2

Occupant Load: 100

LOCATIONAL CRITERIA

Users: music teachers, students

TECHNICAL CRITERIA

Floor: VCT

Walls: writable surfaces, acoustical surfaces

Ceiling: acoustic

Acoustical: reverberance noise control

Doors:

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: sink with bubbler and soap dispenser

Lighting: indirect LED cove

Electrical: wall receptacles, teaching station outlets

Communication: paging system, wireless data intercom, clock system, interactive LED screen

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system, folding screen, operable partition-acoustic, panorama wall

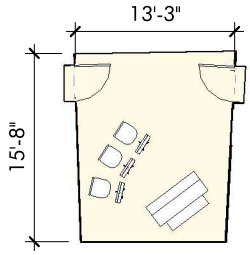
Storage: mobile under counter cabinets, instrument storage

Furnishings: shelving, chairs, 1 moveable instructor podium, music stands

Equipment: LED touch screen display, 1 wireless access point, portable risers, piano, music stands

OTHER INFORMATION double-height space

3.4 MUSIC PRACTICE ROOM



FUNCTIONAL CRITERIA

Description: space for small group practice

Area: 200 sf

Quantity: 2

Occupant Load:

LOCATIONAL CRITERIA

Users: music teachers, students

TECHNICAL CRITERIA

Floor: VCT
Walls: acoustical surfaces
Ceiling: ACT, acoustic
Acoustical: insulation at walls, reverberant sound control
Doors:
Windows: desirable
Mechanical: displacement through floor diffuser
Plumbing/FP: fire protection only
Lighting: indirect LED cove
Electrical: general outlets on (3) walls

Communication: telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties:

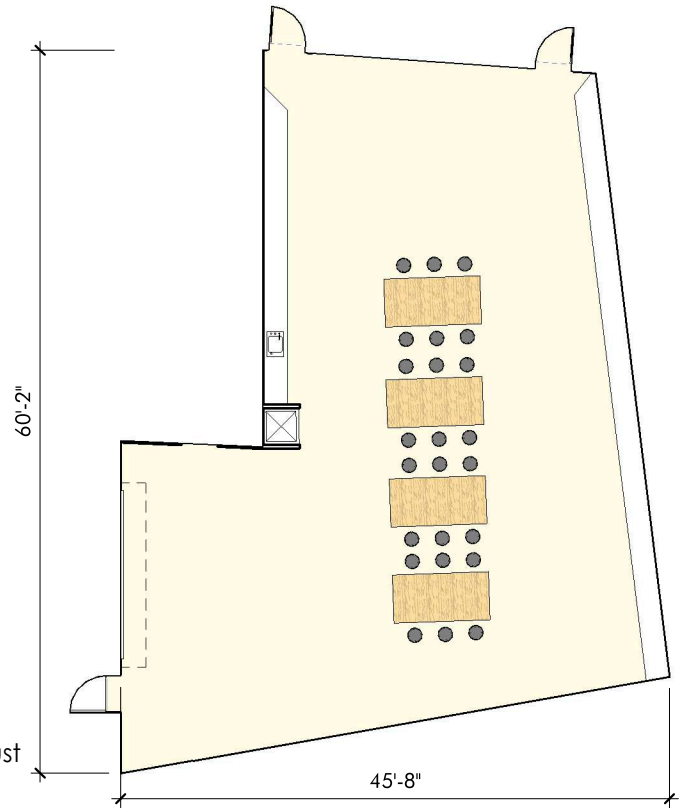
Storage:

Furnishings: chairs, music stands

Equipment: piano/keyboard

OTHER INFORMATION

4.1 TECH MAKER SPACE



FUNCTIONAL CRITERIA

Description: analog fabrication (shop, boat building)

Area: 1,980 sf

Quantity: 1

Occupant Load: 24 (1 teacher, 23 students)

LOCATIONAL CRITERIA

Users: teachers, students

TECHNICAL CRITERIA

Floor: VCT

Walls: magnetic / writable surface, acoustic

Ceiling: acoustic, double-height

Acoustical: acoustical surface

Doors: wood full-lite

Windows: required, high volume equipment exhaust

Mechanical: low volume displacement ventilation

Plumbing/FP: 1 sink with bubbler and soap dispenser, eyewash w/ drain

Lighting: indirect LED cove

Electrical: wall receptacles, teaching station outlets, overhad power drops

Communication: paging system, wireless data intercom, clock system

FIXTURES/ FURNISHINGS

Casework/Specialties: teacher's storage, counter/work benches

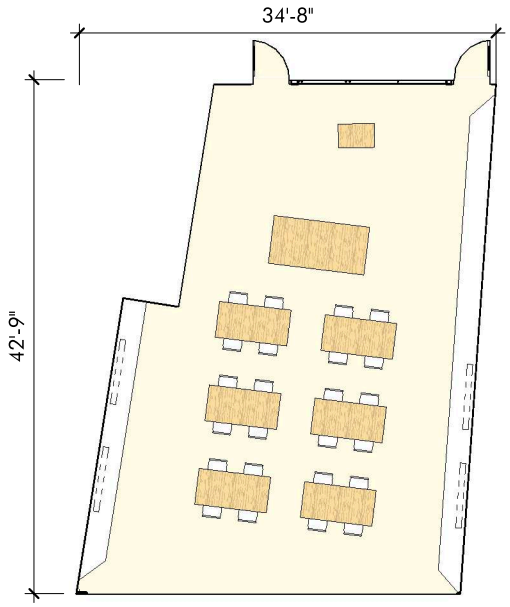
Storage: mobile base cabinets

Furnishings: teacher's desk and chair, work table w/ 24 stools, chairs

Equipment: LED screen, woodworking equipment, metalworking equipment, vacuum exhaust

OTHER INFORMATION

4.2 FAB LAB / TECH CLASSROOM



FUNCTIONAL CRITERIA

Description: digital fabrication

Area: 1,190 sf

Quantity: 1

Occupant Load: 24 (1 teacher, 23 students)

LOCATIONAL CRITERIA

Users: teacher, students

TECHNICAL CRITERIA

Floor: VCT

Walls: acoustic

Ceiling: ACT, acoustic

Acoustical:

Doors:

Windows: required, equipment exhaust

Mechanical: low volume displacement ventilation

Plumbing/FP:

Lighting: indirect LED cove

Electrical: wall receptacles, teaching station outlets

Communication: paging system, wireless data intercom, clock system, interactive LED screen

FIXTURES/ FURNISHINGS

Casework/Specialties: teacher's storage, open shelving, work benches, counters

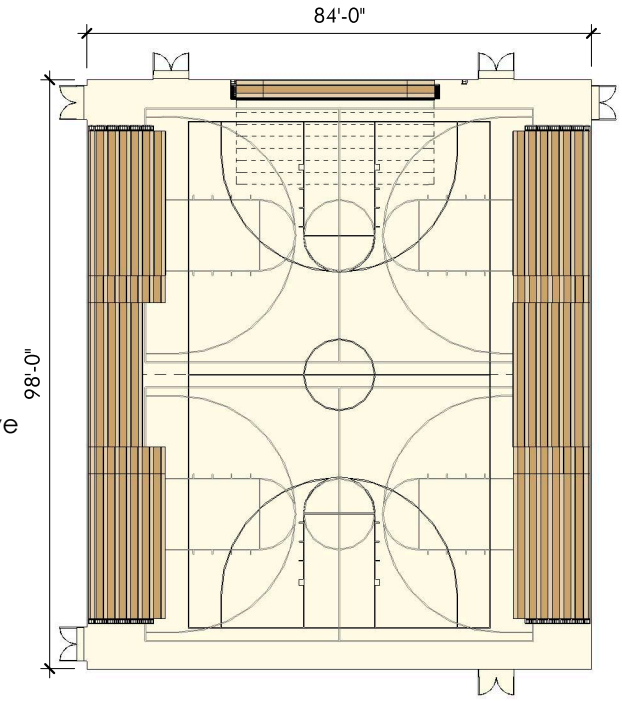
Storage:

Furnishings: 1 moveable instructor podium, 6 student tables, 24 chairs, mobile under counter cabinets

Equipment: 4 LED screens, 3D printer, computer stations, laser cutter, digital fabrication equipment

OTHER INFORMATION

5.1 GYMNASIUM



FUNCTIONAL CRITERIA

Description: physical education, sports activities space, occasional assemblies, community use

Area: 8,300 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: gym teachers, students, community, adaptive PE

TECHNICAL CRITERIA

Floor: atheletic wood flooring

Walls: acoustical surfaces, wall mats

Ceiling: acoustic

Acoustical:

Doors: wood

Windows: clerestory, glare control

Mechanical: low volume displacement ventilation

Plumbing/FP: cages on sprinkler heads

Lighting: LED

Electrical:

Communication: paging system, wireless data intercom, clock system, telephone, local sound system, asst. listening sysem

FIXTURES/ FURNISHINGS

Casework/Specialties: pull-out bleachers

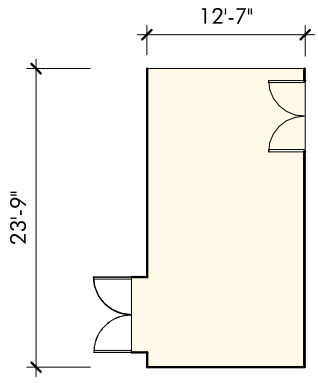
Storage:

Furnishings:

Equipment: retractable and adjustable height basketball back boards, divider curtain, scoreboard bleachers

OTHER INFORMATION separate access for night use

5.2 GYM STORE ROOM



FUNCTIONAL CRITERIA

Description: storage for gym related equipment

Area: 300 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: gym teachers, students

TECHNICAL CRITERIA

Floor:

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: ventilation only

Plumbing/FP: fire protection only

Lighting: utility florescent

Electrical: general receptacles

Communication: none

FIXTURES/ FURNISHINGS

Casework/Specialties:

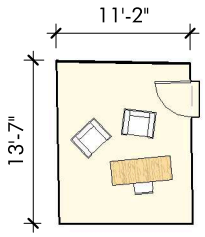
Storage: metal shelving, locking cabinets

Furnishings:

Equipment:

OTHER INFORMATION

5.3 HEALTH INSTRUCTOR'S OFFICE



FUNCTIONAL CRITERIA

Description: office for athletic director

Area: 150 sf

Quantity: 2

Occupant Load: 1

LOCATIONAL CRITERIA

Users: athletic director

TECHNICAL CRITERIA

Floor: VCT

Walls: magnetic/writable surfaces

Ceiling: ACT

Acoustical:

Doors: wood full-lite

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system

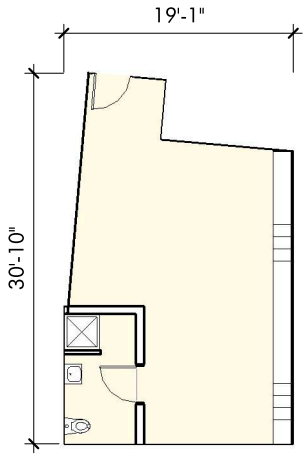
Storage: locking cabinets

Furnishings: desk, 1 desk chair, 2 side chairs, bookshelves

Equipment:

OTHER INFORMATION

5.4 LOCKER ROOMS - GIRLS / BOYS W/ TOILETS



FUNCTIONAL CRITERIA

Description: locker rooms for athletic use

Area: 500 sf

Quantity: 2

Occupant Load:

LOCATIONAL CRITERIA

Users: students

TECHNICAL CRITERIA

Floor: water proof, washable
Walls: water resistant, washable
Ceiling: GWB
Acoustical:
Doors:
Windows:
Mechanical: ventilation only
Plumbing/FP: shower, sink, toilet
Lighting: indirect LED cove
Electrical: GFCI outlets

Communication: paging system, wireless data intercom, clock system

FIXTURES/ FURNISHINGS

Casework/Specialties: 24 lockers

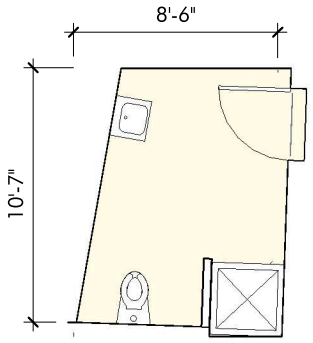
Storage:

Furnishings: bench

Equipment:

OTHER INFORMATION includes toilet/shower area

5.5 UNISEX TOILET/SHOWER



FUNCTIONAL CRITERIA

Description:

Area: 85 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor: tile

Walls: tile

Ceiling: GWB

Acoustical:

Doors:

Windows:

Mechanical:

Plumbing/FP: toilet, sink, shown, floor drain

Lighting:

Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

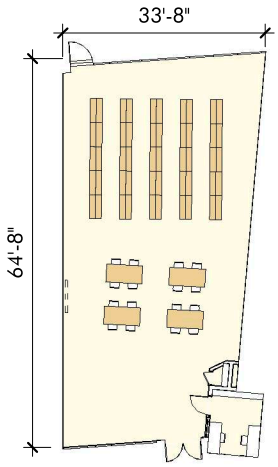
Storage:

Furnishings:

Equipment:

OTHER INFORMATION

6.1 MEDIA CENTER/READING ROOM



FUNCTIONAL CRITERIA

Description: information and media center for the school

Area: 1,990 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: media staff, teachers, students

TECHNICAL CRITERIA

Floor: VCT
Walls: magnetic/writable surfaces
Ceiling: exposed deck / ACT / GWB
Acoustical: reverberance noise control
Doors: wood full-lite
Windows: required, glare control
Mechanical: low volume displacement ventilation
Plumbing/FP: fire protection only
Lighting: indirect LED cove
Electrical: receptacles for charging portable devices

Communication: paging system, clock system, wireless mic, amplification system

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system

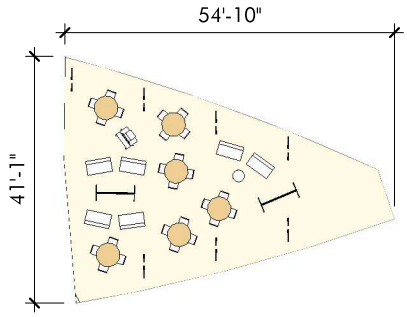
Storage:

Furnishings: reading tables, stacking chairs, computer tables, desk chairs, work tables, moveable bookshelves, soft seating

Equipment: research computer stations, printer station, 1 staff computer, 1 staff printer, copier, LED touch screen display, 1 wireless access point

OTHER INFORMATION double-height space

6.2 COHORT COMMONS



FUNCTIONAL CRITERIA

Description: group study, breakout, project space, and meeting space

Area: 1,430 sf

Quantity: 3

Occupant Load:

LOCATIONAL CRITERIA

Users: teacher, students

TECHNICAL CRITERIA

Floor: VCT

Walls: acoustical surfaces

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP:

Lighting: indirect LED cove

Electrical: wall receptacles, teaching station outlets, multiple data points

Communication: paging system, wireless data intercom, clock system, interactive LED screen

FIXTURES/ FURNISHINGS

Casework/Specialties:

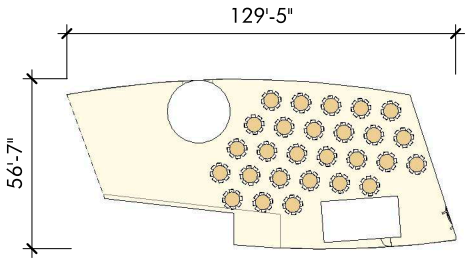
Storage:

Furnishings: tables/chairs, soft seating, writable surfaces

Equipment: LED touch screen display, 1 wireless access point

OTHER INFORMATION

7.1 LEARNING COMMONS



FUNCTIONAL CRITERIA

Description: lunch spaces, whole school assemblies, some community use

Area: 4,725 sf

Quantity: 1

Occupant Load: 300

LOCATIONAL CRITERIA

Users: students, teachers, aids, general staff, kitchen staff

TECHNICAL CRITERIA

Floor: VCT

Walls: display space

Ceiling:

Acoustical: reverberance noise control

Doors:

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP:

Lighting: indirect LED cove, zoned controls

Electrical:

Communication: paging system, wireless data intercom, clock system, telephone, local sound system, asst. listening system

FIXTURES/ FURNISHINGS

Casework/Specialties: security grille

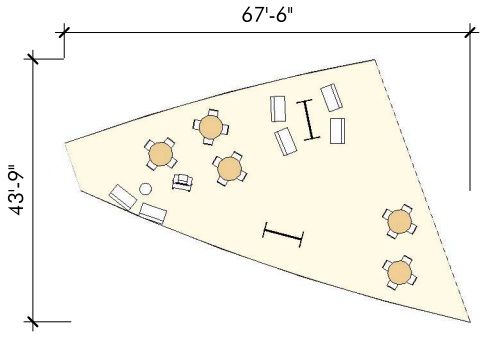
Storage:

Furnishings: flip-top tables, stacking chairs

Equipment: LED touch screen display, wireless access point

OTHER INFORMATION

7.2 STAGE / LEARNING COMMONS



FUNCTIONAL CRITERIA

Description:

Area: 1,590 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: students, teachers, aids, general staff

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: low volume displacement system

Plumbing/FP:

Lighting: indirect LED

Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

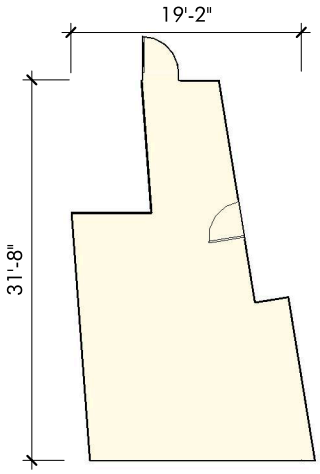
Storage:

Furnishings: mobile furnishings

Equipment:

OTHER INFORMATION

7.3 CHAIR/TABLE/EQUIPMENT STORAGE



FUNCTIONAL CRITERIA

Description: storage are for cafeteria furniture

Area: 430 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: custodial staff, teachers

TECHNICAL CRITERIA

Floor:

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: ventilation only

Plumbing/FP: fire protection only

Lighting: utility florescent

Electrical: general receptacles

Communication: none

FIXTURES/ FURNISHINGS

Casework/Specialties:

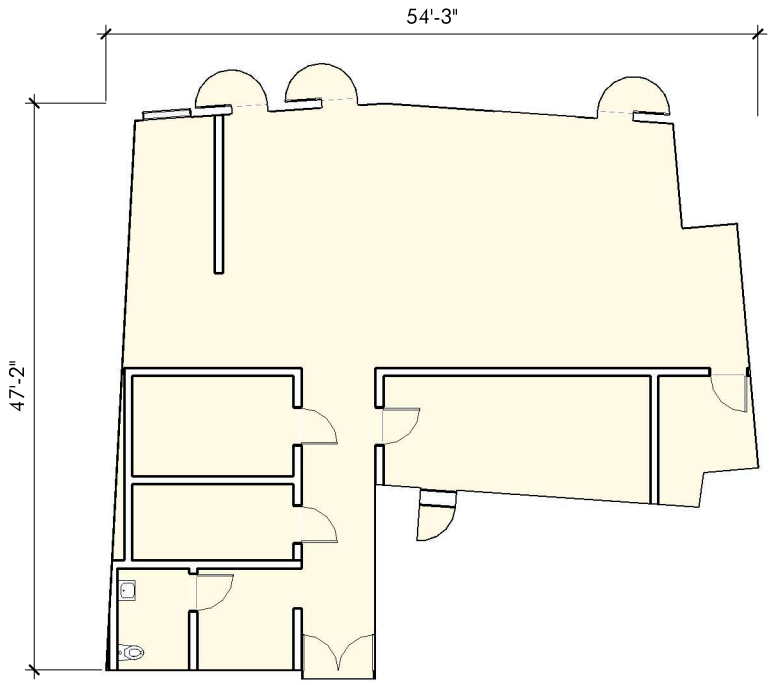
Storage:

Furnishings:

Equipment:

OTHER INFORMATION

7.4 KITCHEN



FUNCTIONAL CRITERIA

Description: area for food prep

Area: 1,915 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: kitchen staff

TECHNICAL CRITERIA

Floor: quarry tile
Walls: FRCP
Ceiling: ACT
Acoustical:
Doors:
Windows:
Mechanical: exhaust hoods and makeup air
Plumbing/FP: plumbing to floor drains, sinks, high temp sprinkler head
Lighting: direct fluorescent
Electrical:

Communication: paging system, intercom, clock system, telephone

FIXTURES/ FURNISHINGS

Casework/Specialties: serving counter, coiling grille @ serving counter

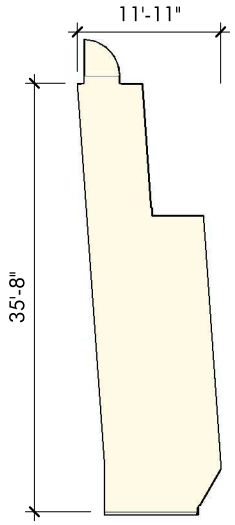
Storage: food storage: dry goods, cold storage

Furnishings:

Equipment: food prep equipment

OTHER INFORMATION Includes toilet room, office, dry storage, cooler, freezer

7.5 STAFF LUNCH ROOM



FUNCTIONAL CRITERIA

Description: staff lunch spaces

Area: 300 sf

Quantity: 1

Occupant Load: 40

LOCATIONAL CRITERIA

Users: teachers. aids. general staff, kitchen staff

TECHNICAL CRITERIA

Floor: VCT

Walls: easy to clean, display space

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP:

Lighting: indirect LED cove

Electrical:

Communication: paging system, wireless data intercom, clock system, telephone, local sound system

FIXTURES/ FURNISHINGS

Casework/Specialties:

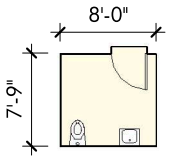
Storage:

Furnishings: flip-top tables, stacking chairs

Equipment: 1 wireless access point

OTHER INFORMATION

8.1 MEDICAL SUITE TOILET



FUNCTIONAL CRITERIA

Description: toilet dedicated to medical area

Area: 60 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: students, nurses

TECHNICAL CRITERIA

Floor: porcelain tile
Walls: wall tile
Ceiling: GWB
Acoustical:
Doors:
Windows:
Mechanical:
Plumbing/FP: sink, toilet
Lighting:
Electrical: GFCI

Communication: telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties:

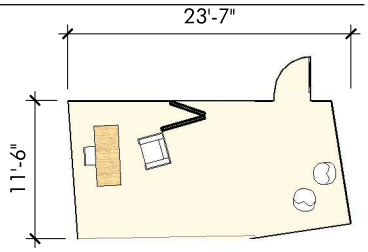
Storage:

Furnishings:

Equipment:

OTHER INFORMATION

8.2 NURSE'S OFFICE / WAITING ROOM



FUNCTIONAL CRITERIA

Description: private office for nurse; health records storage

Area: 250 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: students, nurses

TECHNICAL CRITERIA

Floor: VCT
Walls: easy to clean
Ceiling:
Acoustical:
Doors:
Windows: required
Mechanical: high air exchange
Plumbing/FP:
Lighting: indirect LED cove
Electrical: general outlets on (3) walls, (1) d-duplex at workstation, CO detection
Communication: telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties: folding screen

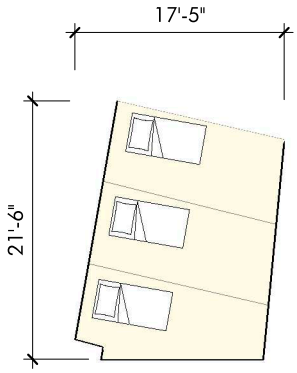
Storage: secure closet, wall mounted or freestanding shelving units, locking cabinets

Furnishings: nurse's desk and file storage, soft waiting seating

Equipment: refrigerator, wireless access point

OTHER INFORMATION

8.3 EXAMINATION ROOM/RESTING



FUNCTIONAL CRITERIA

Description:	clinical treatment, observation and testing of students
Area:	100 sf
Quantity:	3
Occupant Load:	

LOCATIONAL CRITERIA

Users:	students, nurses

TECHNICAL CRITERIA

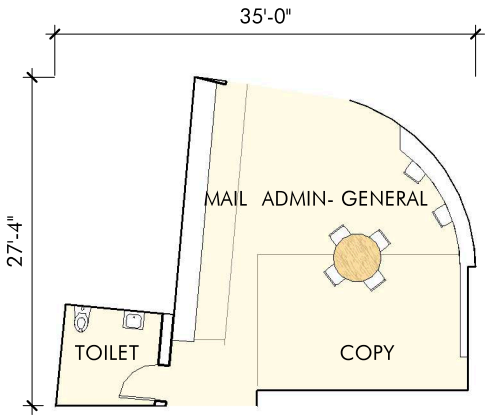
Floor:	VCT
Walls:	easy to clean
Ceiling:	
Acoustical:	
Doors:	
Windows:	
Mechanical:	high air exchange
Plumbing/FP:	
Lighting:	indirect LED cove
Electrical:	general outlets on (3) walls, (1) d-duplex at workstation, CO detection
Communication:	telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties:	privacy curtains
Storage:	
Furnishings:	recovery beds
Equipment:	

OTHER INFORMATION

9.1 GENERAL OFFICE/ WAITING ROOM /TOILET



FUNCTIONAL CRITERIA

Description: administrative center for cohort

Area: 425 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: teachers, administrators, students, parents

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling: GWB

Acoustical:

Doors:

Windows:

Mechanical: displacement through floor diffuser

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: telephone, data, clock system, PA system controls

FIXTURES/ FURNISHINGS

Casework/Specialties: reception desk, counter, tech board, cabinetry, coiling security screen

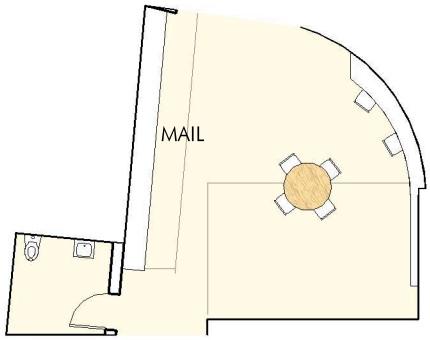
Storage: secure storage/coat closet, filing cabinets

Furnishings: chairs

Equipment: PA system controls, video signage controls, wireless access point

OTHER INFORMATION access to dedicated admin toilet room

9.2 TEACHER'S MAIL AND TIME ROOM



FUNCTIONAL CRITERIA

Description: mail distribution, teachers sign in/out

Area: 95 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: teachers, administrators, students, parents

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical:

Plumbing/FP: fire protection only

Lighting:

Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties: counter, mail boxes

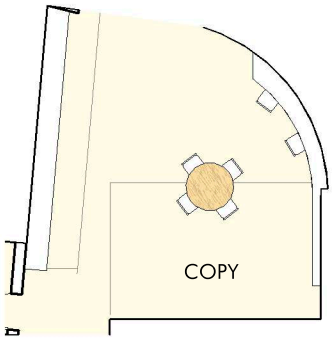
Storage:

Furnishings:

Equipment:

OTHER INFORMATION

9.3 DUPLICATING ROOM



FUNCTIONAL CRITERIA

Description: administrative center for cohort, mail distribution, teachers sign in/out

Area: 200 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: teachers, administrators

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling: ACT

Acoustical:

Doors:

Windows: required

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: telephone, data, clock system, PA system controls

FIXTURES/ FURNISHINGS

Casework/Specialties:

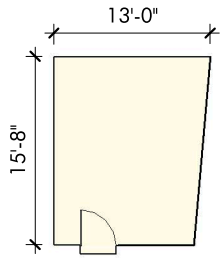
Storage:

Furnishings:

Equipment: copy machine

OTHER INFORMATION access to dedicated admin toilet room

9.4 RECORDS ROOM



FUNCTIONAL CRITERIA
Description:

Area: 200 sf

Quantity: 1
Occupant Load:

LOCATIONAL CRITERIA
Users:

TECHNICAL CRITERIA
Floor:
Walls:
Ceiling:
Acoustical:
Doors:
Windows:
Mechanical:
Plumbing/FP:
Lighting:
Electrical:

Communication:

FIXTURES/ FURNISHINGS
Casework/Specialties:

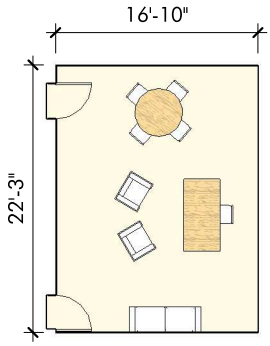
Storage:

Furnishings:

Equipment:

OTHER INFORMATION

9.5 PRINCIPAL'S OFFICE W/CONFERENCE AREA



FUNCTIONAL CRITERIA

Description: office of the school principal with area for private small conferences

Area: 375 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: principal

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling:

Acoustical:

Doors:

Windows: required

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: paging system, wireless data intercom, clock system, telephone

FIXTURES/ FURNISHINGS

Casework/Specialties:

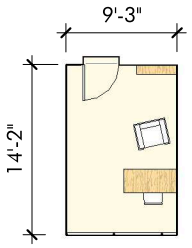
Storage: bookshelves, lockable cabinet or closet

Furnishings: 1 desk, 1 office chair, side chairs, 1 medium conference table, filing cabinets

Equipment: 1 computer, 1 printer, 1 telephone, paging system, wireless data intercom, clock system

OTHER INFORMATION access to dedicated admin toilet room

9.6 PRINCIPAL'S SECRETARY / WAITING



FUNCTIONAL CRITERIA

Description: administrative area adjacent to principal and assistant principal

Area: 125 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: principal's secretary, students, parents

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: paging system, wireless data intercom, clock system, telephone

FIXTURES/ FURNISHINGS

Casework/Specialties:

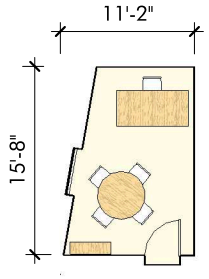
Storage: lockable wall mounted or free standing shelving units

Furnishings: 1 desk, 1office chair, filing cabinets

Equipment: 1 desktop computer, 1 printer, 1 telephone, 1 fax machine, 1 wireless access point

OTHER INFORMATION access to dedicated admin toilet room

9.7 ASSISTANT PRINCIPAL'S OFFICE



FUNCTIONAL CRITERIA

Description: office of the school assistant principal with area for private small conferences

Area: 150 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: assistant principal

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling:

Acoustical:

Doors:

Windows: required

Mechanical: displacement through floor diffuser

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: paging system, wireless data intercom, clock system, telephone

FIXTURES/ FURNISHINGS

Casework/Specialties:

Storage: bookshelves, lockable cabinet or closet

Furnishings: 1 desk, 1 office chair, side chairs, 1 medium conference table, filing cabinets

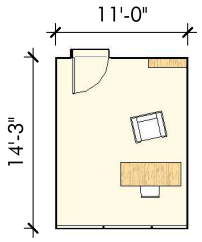
Equipment: 1 computer, 1 printer, 1 telephone, paging system, wireless data intercom, clock system, interactive LED screen

OTHER INFORMATION access to dedicated admin toilet room

9.8 SUPERVISORY/SPARE OFFICE

FUNCTIONAL CRITERIA

Description: administrative office



Area: 150 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: teachers, administrators

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: paging system, wireless data intercom, clock system, telephone

FIXTURES/ FURNISHINGS

Casework/Specialties:

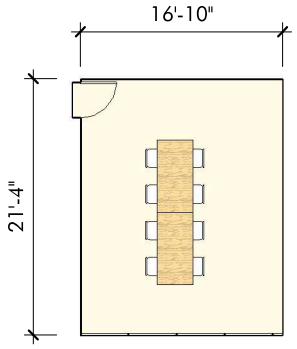
Storage: shelving units

Furnishings: 1 desk, 1office chair, side chairs, filing cabinets

Equipment: 1 computer, 1 printer, 1 telephone

OTHER INFORMATION

9.9 CONFERENCE ROOM



FUNCTIONAL CRITERIA

Description:	room to hold small meetings between staff, teachers, or visitors, teachers' professional development
Area:	350 sf
Quantity:	1
Occupant Load:	

LOCATIONAL CRITERIA

Users:	teachers, administrators, visitors

TECHNICAL CRITERIA

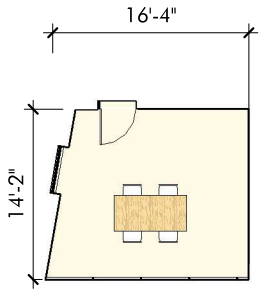
Floor:	
Walls:	writable surfaces, acoustical surfaces
Ceiling:	
Acoustical:	
Doors:	
Windows:	
Mechanical:	displacement through floor diffuser
Plumbing/FP:	fire protection only
Lighting:	indirect LED cove
Electrical:	general outlets on (3) walls, (1) d-duplex at workstation
Communication:	telephone (with speakerphone), data, clock, data wireless intercom

FIXTURES/ FURNISHINGS

Casework/Specialties:	magnetic writable wall surface w/marker bumper rail system
Storage:	teacher's storage, open shelving
Furnishings:	conference table, chairs
Equipment:	interactive LED screen, wireless access point

OTHER INFORMATION

9.10 SMALL CONFERENCE ROOM



FUNCTIONAL CRITERIA

Description: room to hold small meetings between staff, teachers, or visitors, teachers' professional development
Area: 210 sf
Quantity: 1
Occupant Load:

LOCATIONAL CRITERIA

Users: teachers, administrators, visitors

TECHNICAL CRITERIA

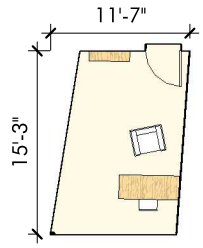
Floor:
Walls: writable surfaces, acoustical surfaces
Ceiling:
Acoustical:
Doors:
Windows:
Mechanical: displacement through floor diffuser
Plumbing/FP: fire protection only
Lighting: indirect LED cove
Electrical: general outlets on (3) walls, (1) d-duplex at workstation
Communication: telephone (with speakerphone), data, clock, data wireless intercom

FIXTURES/ FURNISHINGS

Casework/Specialties:
Storage: teacher's storage, open shelving
Furnishings: 1 conference table, 12 chairs, marker/magnetic system
Equipment: interactive LED screen, wireless access point

OTHER INFORMATION

9.11 GUIDANCE OFFICE



FUNCTIONAL CRITERIA

Description: office for guidance counselor, used also for private counseling of students and meetings with parents, part of the satellite admin suite
Area: 150 sf
Quantity: 6 (2 per admin suite)
Occupant Load:

LOCATIONAL CRITERIA

Users: guidance staff, students, parents

TECHNICAL CRITERIA

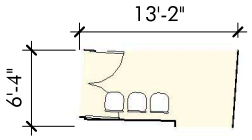
Floor: VCT
Walls: writable surfaces
Ceiling:
Acoustical:
Doors:
Windows: required
Mechanical: low volume displacement ventilation
Plumbing/FP: fire protection only
Lighting: indirect LED cove
Electrical: general outlets on (3) walls, (1) d-duplex at workstation
Communication: telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system
Storage: shelving units
Furnishings: 1 desk, 1 office chair, filing cabinets
Equipment: 1 computer, 1 printer, 1 telephone

OTHER INFORMATION satellite admin suite

9.12 GUIDANCE WAITING ROOM



FUNCTIONAL CRITERIA

Description: part of the satellite admin suites (3)

Area: 75 sf

Quantity: 3 (1 per admin suite)

Occupant Load:

LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor: VCT

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical:

Plumbing/FP:

Lighting:

Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

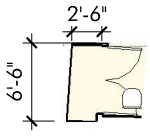
Storage:

Furnishings: chairs

Equipment:

OTHER INFORMATION satellite admin suite

9.13 GUIDANCE STOREROOM



FUNCTIONAL CRITERIA

Description: part of the satellite admin suites (3)

Area: 15 sf

Quantity: 3 (1 per admin suite)

Occupant Load:

LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor:
Walls:
Ceiling:
Acoustical:
Doors:
Windows:
Mechanical:
Plumbing/FP:
Lighting:
Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

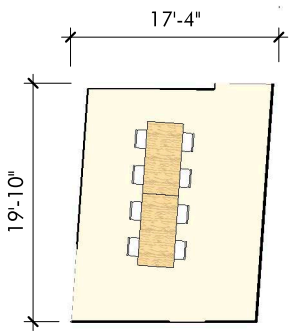
Storage:

Furnishings:

Equipment:

OTHER INFORMATION satellite admin suite

9.14 TEACHERS' WORK ROOM



FUNCTIONAL CRITERIA

Description: part of the satellite admin suites (3)

Area: 300 sf

Quantity: 3 (1 per admin suite)

Occupant Load: 8

LOCATIONAL CRITERIA

Users: faculty and administration

TECHNICAL CRITERIA

Floor:

Walls: writable surfaces, acoustical surfaces

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: 1 sink with bubbler and soap dispenser

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: paging system, wireless data intercom, clock system, telephone

FIXTURES/ FURNISHINGS

Casework/Specialties: itinerant teaching staff lockable storage units

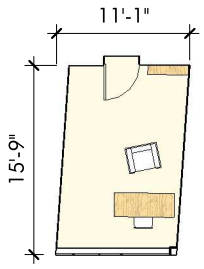
Storage:

Furnishings: large work table, 8 chairs

Equipment: 1 wireless access point, 1 color printer, lockable records storage

OTHER INFORMATION satellite admin suite

9.15 DEPT HEAD/COACH OFFICE



FUNCTIONAL CRITERIA

Description: part of the satellite admin suites (3)

Area: 150 sf

Quantity: 6 (2 per admin suite)

Occupant Load:

LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor: VCT

Walls: writable surfaces

Ceiling: ACT

Acoustical:

Doors:

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: paging system, wireless data intercom, clock system, telephone

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system

Storage:

Furnishings: desks and desk chairs, seating, bookshelve

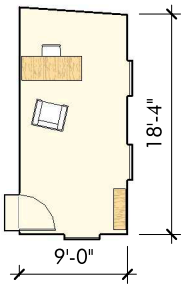
Equipment:

OTHER INFORMATION

10.1 CUSTODIAN'S OFFICE

FUNCTIONAL CRITERIA

Description:



Area: 165 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor: VCT

Walls: writable surfaces, visual access

Ceiling: ACT

Acoustical:

Doors:

Windows:

Mechanical: low volume displacement ventilation

Plumbing/FP: fire protection only

Lighting: indirect LED cove

Electrical: general outlets on (3) walls, (1) d-duplex at workstation

Communication: paging system, wireless data intercom, clock system, telephone

FIXTURES/ FURNISHINGS

Casework/Specialties: magnetic writable wall surface w/marker bumper rail system

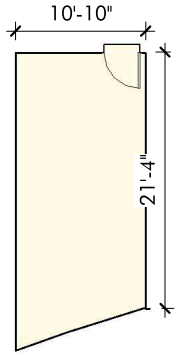
Storage:

Furnishings: desks and desk chairs, seating, bookshelve

Equipment:

OTHER INFORMATION

10.2 CUSTODIAN'S WORKSHOP



FUNCTIONAL CRITERIA

Description:

Area: 250 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor:
Walls:
Ceiling:
Acoustical:
Doors:
Windows:
Mechanical:
Plumbing/FP:
Lighting:
Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

Storage:

Furnishings:

Equipment:

OTHER INFORMATION

10.3 CUSTODIAN'S STORAGE

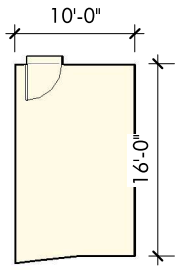
FUNCTIONAL CRITERIA

Description:

Area: 130 sf

Quantity: 3

Occupant Load:



LOCATIONAL CRITERIA

Users: custodians

TECHNICAL CRITERIA

Floor:
Walls:
Ceiling:
Acoustical:
Doors:
Windows:
Mechanical:
Plumbing/FP:
Lighting:
Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

Storage:

Furnishings:

Equipment:

OTHER INFORMATION

10.4 RECYCLING/TRASH ROOM

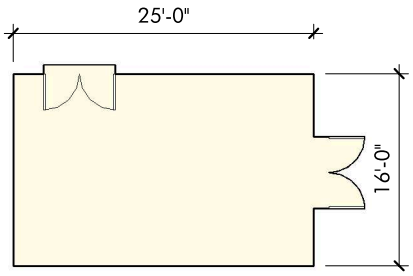
FUNCTIONAL CRITERIA

Description:

Area: 400 sf

Quantity: 1

Occupant Load:



LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor:

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical:

Plumbing/FP:

Lighting:

Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

Storage:

Furnishings:

Equipment:

OTHER INFORMATION

10.5 RECEIVING AND GENERAL SUPPLY

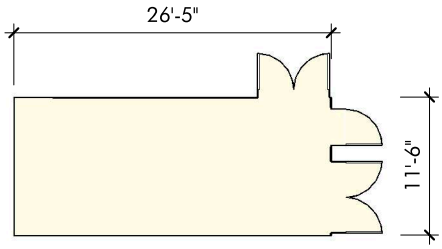
FUNCTIONAL CRITERIA

Description:

Area: 310 sf

Quantity: 1

Occupant Load:



LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor:
Walls:
Ceiling:
Acoustical:
Doors:
Windows:
Mechanical:
Plumbing/FP:
Lighting:
Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

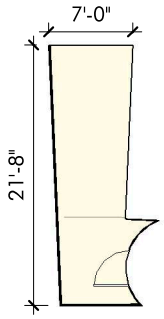
Storage:

Furnishings:

Equipment:

OTHER INFORMATION

10.6 STORE ROOM



FUNCTIONAL CRITERIA

Description:

Area: 145 sf

Quantity: 3

Occupant Load:

LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor:

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: ventilation only

Plumbing/FP: fire protection only

Lighting: utility florescent

Electrical: general receptacles

Communication: none

FIXTURES/ FURNISHINGS

Casework/Specialties:

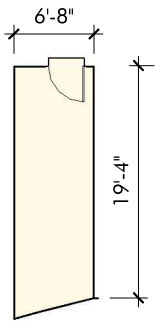
Storage:

Furnishings:

Equipment:

OTHER INFORMATION

10.7 NETWORK/TELECOM ROOM



FUNCTIONAL CRITERIA

Description:

Area: 190 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users: IT staff

TECHNICAL CRITERIA

Floor:

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical:

Plumbing/FP:

Lighting:

Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

Storage:

Furnishings:

Equipment:

OTHER INFORMATION

11.1 AUDITORIUM

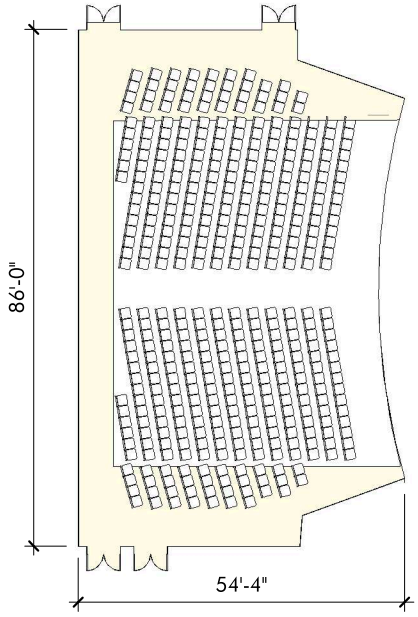
FUNCTIONAL CRITERIA

Description: general purpose auditorium

Area: 4,200 sf

Quantity: 1

Occupant Load:



LOCATIONAL CRITERIA

Users: students, teachers, community

TECHNICAL CRITERIA

Floor: concrete, carpet at aisles
Walls: acoustic
Ceiling: acoustic
Acoustical:
Doors:
Windows:
Mechanical: low volume displacement ventilation
Plumbing/FP:
Lighting: indirect LED + theater
Electrical:

Communication: wireless data intercom, clock system, local sound system, mobile theater lighting, asst. listening system

FIXTURES/ FURNISHINGS

Casework/Specialties: fixed assembly seating

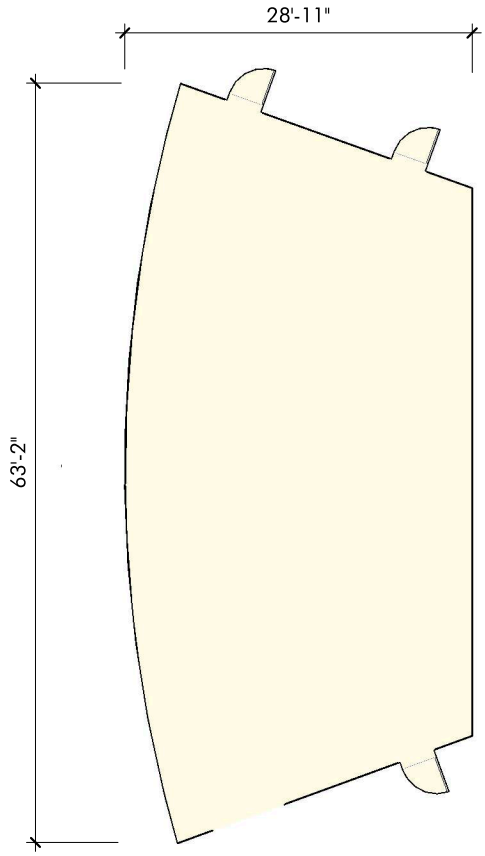
Storage:

Furnishings:

Equipment: projector, sound system with floor jacks, 2 wireless access points, projection screen

OTHER INFORMATION

11.2 STAGE



FUNCTIONAL CRITERIA

Description:

Area: 1,600 sf

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor: mountable for equipment

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical:

Plumbing/FP:

Lighting:

Electrical:

Communication:

FIXTURES/ FURNISHINGS

Casework/Specialties:

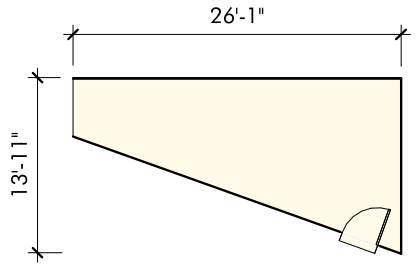
Storage:

Furnishings:

Equipment: stage curtains

OTHER INFORMATION

11.3 AUDITORIUM STORAGE



FUNCTIONAL CRITERIA

Description: storage are for all stage equipment

Area: 400 sf (total area)

Quantity: 1

Occupant Load:

LOCATIONAL CRITERIA

Users:

TECHNICAL CRITERIA

Floor:

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: ventilation only

Plumbing/FP: fire protection only

Lighting: utility florescent

Electrical: general receptacles

Communication: none

FIXTURES/ FURNISHINGS

Casework/Specialties:

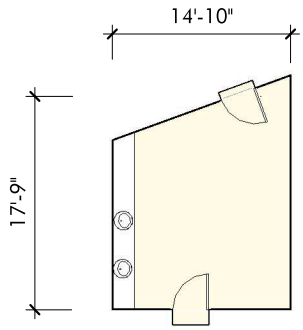
Storage:

Furnishings:

Equipment:

OTHER INFORMATION 2 locations

11.4 DRESSING ROOM



FUNCTIONAL CRITERIA

Description: dressing area

Area: 250 sf

Quantity: 2

Occupant Load: 20

LOCATIONAL CRITERIA

Users: students

TECHNICAL CRITERIA

Floor:

Walls:

Ceiling:

Acoustical:

Doors:

Windows:

Mechanical: ventilation only

Plumbing/FP: 2 sinks

Lighting: indirect LED cove

Electrical: general outlets on (3) walls

Communication: telephone, data

FIXTURES/ FURNISHINGS

Casework/Specialties: counter

Storage:

Furnishings:

Equipment:

OTHER INFORMATION

13. Construction Methodology

The project will be constructed under the Construction Management at Risk methodology in accordance with M.G.L. Chapter 149A. The cost estimates, proposed project schedule, estimated reimbursement rate and the Total Project Budget reflect this delivery method.

14. Ineligible Spaces

The project includes the following ineligible spaces:

• 420 Seat Auditorium	10,050	SF
• Gymnasium Space in excess of 6,500 SF	2,700	SF
• Administration Space over Guideline	2,715	SF
	15,465	SF

15. District Reimbursement Rate

The base reimbursement rate for this project from MSBA is 57.83%, with a preliminary estimate of 4.48% additional incentive points, for a total of 62.31%.

Category	Reimbursement Points
Reimbursement Rate before Incentives	57.83
Maintenance	1.48
CM @ Risk	1.00
Newly Formed Regional School District	0.00
Major Reconstruction or Reno/Reuse	0.00
Overlay Zoning District – c. 40R or c. 40S	0.00
Overlay Zoning 100 Units or 50% units 1,2,3 family units)	0.00
Energy Efficiency – “Green Schools”	2.00
Model Schools	0.00
Total Incentive Points	4.48
Anticipated MSBA Reimbursement Rate with Incentives	62.31

16. Total Project Budget

The Project Budget for the Fuller Middle School is $98,276,878 as defined in the completed /27/18 Project Budget Form, dated September 12, 2018. The budget is attached at the end of this section and represents the District's not to exceed Total Project Budget.

Throughout this process, the Committee has endeavored to maintain a public, transparent and open process. The Committee has reached out to residents to gain input and feedback through open public forums, the District's website, flyers, cable television, and email. The Committee has promoted events, updated the District website and shared information with the community.

The design has been developed through an open public process with significant community participation. The Committee has sponsored seven (7) public forums to the community to review and discuss the project. Additionally, the Committee has engaged in formal and informal dialog with representatives of City constituent groups, representing a wide spectrum of the general public.

A group of residents have formed a ballot question committee to assist in the voting preparation. Their mission will be to spread the word on the benefits of the project, encourage voter participation and promote approval of the project by the voters.

The District will bring the project to the City Council for the appropriation vote in November 2018 and then the City will hold a debt exclusion vote under Proposition 2 ½ in order to exclude debt service costs from the levy limit on December 11, 2018.

Total Project Budget

City of Framingham
Fuller Middle School

School Building Committee Reviewed on: **8/27/2018**

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
Feasibility Study Agreement				
OPM Feasibility Study	$175,000	$0	$175,000	
A&E Feasibility Study	$545,000	$0	$545,000	
Environmental & Site	$145,000	$0	$145,000	
Other	$135,000	$0	$135,000	
Feasibility Study Agreement Subtotal	**$1,000,000**	**$0**	**$1,000,000**	**$623,100**
Administration				
Legal Fees	$80,000	$80,000	$0	**$0**
Owner's Project Manager				
Design Development	$175,445	$286,361	-$110,916	
Construction Contract Documents	$242,886	$0	$242,886	
Bidding	$115,789	$0	$115,789	
Construction Contract Administration	$1,727,876	$0	$1,727,876	
Closeout	$95,905	$0	$95,905	
Extra Services	$40,000	$0	$40,000	
Reimbursable & Other Services	$40,000	$0	$40,000	
Cost Estimates	$80,000	$0	$80,000	
Advertising	$20,000	$0	$20,000	
Permitting	$50,000	$0	$50,000	
Owner's Insurance	$120,000	$0	$120,000	
Other Administrative Costs	$100,000	$0	$100,000	
Administration Subtotal	**$2,887,901**	**$366,361**	**$2,521,540**	**$1,571,172**
Architecture and Engineering				
Basic Services				
Design Development	$2,059,998	$837,936	$1,222,062	
Construction Contract Documents	$2,746,664	$0	$2,746,664	
Bidding	$137,334	$0	$137,334	
Construction Contract Administration	$1,833,398	$0	$1,833,398	
Closeout	$89,265	$0	$89,265	
Other Basic Services	$0	$0	$0	
Basic Services Subtotal	**$6,866,659**	**$837,936**	**$6,028,723**	
Reimbursable Services				
Construction Testing	$30,000	$0	$30,000	
Printing (over minimum)	$20,000	$0	$20,000	
Other Reimbursable Costs	$180,000	$0	$180,000	
Hazardous Materials	$170,984	$0	$170,984	
Geotechnical & Geo-Environmental	$155,925	$0	$155,925	
Site Survey	$44,000	$0	$44,000	
Wetlands	$44,000	$0	$44,000	
Traffic Studies	$38,500	$0	$38,500	
Architectural/Engineering Subtotal	**$7,550,068**	**$837,936**	**$6,712,132**	**$4,182,329**
CM at Risk Preconstruction Services				
Pre-Construction Services	$400,000	**$0**	$400,000	**$249,240**
Site Acquisition				
Land / Building Purchase	$0	$0	$0	
Appraisal Fees	$0	$0	$0	
Recording fees	$0	$0	$0	
Site Acquisition Subtotal	**$0**	**$0**	**$0**	**$0**

Total Project Budget

City of Framingham
Fuller Middle School

School Building Committee Reviewed on: **8/27/2018**

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
Construction Costs				
SUBSTRUCTURE				
Foundations	$3,342,276	$0		
Basement Construction	$0	$0		
SHELL				
SuperStructure	$4,939,081	$0		
Exterior Closure	$0	$0		
Exterior Walls	$4,172,373	$0		
Exterior Windows	$3,024,209	$0		
Exterior Doors	$109,600	$0		
Roofing	$2,266,611	$0		
INTERIORS				
Interior Construction	$5,705,569	$0		
Staircases	$494,685	$0		
Interior Finishes	$4,619,453	$0		
SERVICES				
Conveying Systems	$242,200	$0		
Plumbing	$2,051,850	$0		
HVAC	$7,052,250	$0		
Fire Protection	$752,345	$0		
Electrical	$5,232,218	$0		
EQUIPMENT & FURNISHINGS				
Equipment	$1,448,669	$0		
Furnishings	$1,779,353	$0		
SPECIAL CONSTRUCTION & DEMOLITION				
Special Construction	$0	$0		
Existing Building Demolition	$1,563,200	$0		
In-Building Hazardous Material Abatement	$1,500,000	$388,800		
Asbestos Containing Floor Material Abatement	$0	$0		
Other Hazardous Material Abatement	$0	$0		
BUILDING SITEWORK				
Site Preparation	$2,816,982	$2,941,071		
Site Improvements	$2,786,868	$0		
Site Civil / Mechanical Utilities	$715,840	$0		
Site Electrical Utilities	$400,000	$0		
Other Site Construction	$0	$0		
Scope Excluded Site Cost		$0		
Construction Trades Subtotal	$57,015,632	$3,329,871		
Contingencies (Design and Pricing)	$5,395,243	$315,097		
General Conditions	$3,651,036	$213,231		
General Requirments	$2,642,476	$154,328		
Insurance	$964,661	$56,339		
Bonds	$698,690	$40,805		
GMP Fee	$1,992,863	$116,389		
Traffic Mitigation	$200,000	$11,681		
GMP Contingency	$1,900,000	$110,965		
Escalation to Mid-Point of Construction	$3,474,828	$202,940		
Ineligible Auditorium & PE Areas beyond Guidelines		$7,264,250		
Overall Excluded Construction Cost		$17,816,886		
Construction Budget	**$77,935,429**	**$29,632,781**	**$48,302,648**	**$30,097,380**
Alternates				
	$0		$0	
Alternates Included in the Total Project Budget	$0	$0	$0	
Alternates Excluded from the Total Project Budget	$0		$0	
Subtotal to be Included in Total Project Budget	**$0**	**$0**	**$0**	**$0**
Miscellaneous Project Costs				
Utility Company Fees	$280,000	$0	$280,000	
Testing Services	$300,000	$0	$300,000	
Swing Space / Modulars	$0	$0	$0	
Other Project Costs (Mailing & Moving)	$200,000	$200,000	$0	
Misc. Project Costs Subtotal	**$780,000**	**$200,000**	**$580,000**	**$361,398**
Furnishings and Equipment				
Furniture, Fixtures, and Equipment	$1,134,000	$378,000	$756,000	
Technology	$1,134,000	$378,000	$756,000	
FF&E Subtotal	**$2,268,000**	**$756,000**	**$1,512,000**	**$942,127**
Soft Costs that exceed 20% of Construction Cost		$0		

Total Project Budget

City of Framingham
Fuller Middle School

School Building Committee Reviewed on: **8/27/2018**

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
Project Budget	**$92,821,398**	**$31,793,078**	**$61,028,320**	**$38,026,746**

Board Authorization	
Design Enrollment	630
Total Building Gross Floor Area (GSF)	136,790
Total Project Budget (excluding Contingencies)	$92,821,398
Scope Items Excluded or Otherwise Ineligible	$31,793,078
Third Party Funding (Ineligible)	$0
Estimated Basis of Maximum Total Facilities Grant[1]	$61,028,320
Reimbursement Rate[3, 4]	62.31%
Est. Max. Total Facilities Grant (before recovery)[1]	$38,026,746
Cost Recovery[5]	$0
Estimated Maximum Total Facilities Grant[1]	$38,026,746

Construction Contingency[2]	$3,896,771
Ineligible Construction Contingency[2]	$3,117,417
"Potentially Eligible" Construction Contingency[2]	$779,354
Owner's Contingency[2]	$1,558,709
Ineligible Owner's Contingency[2]	$0
"Potentially Eligible" Owner's Contingency[2]	$1,558,709
Total Potentially Eligible Contingency[2]	$2,338,063
Reimbursement Rate[3, 4]	62.31%
Potential Additional Contingency Grant Funds[2]	$1,456,847
Maximum Total Facilities Grant	$39,483,593
Total Project Budget	$98,276,878

57.83	Reimbursement Rate Before Incentive Points
4.48	Total Incentive Points[3, 4]
62.31%	MSBA Reimbursement Rate

NOTES

This template was prepared by the MSBA as a tool to assist Districts and consultants in understanding MSBA policies and practices regarding potential impact on the MSBA's calculation of a potential Basis of Total Facilities Grant and potential Total Maximum Facilities Grant. This template does not contain a final, exhaustive list of all evaluations which the MSBA may use in determining whether items are eligible for reimbursement by the MSBA. The MSBA will perform an independent analysis based on a review of information and estimates provided by the District for the proposed school project that may or may not agree with the estimates generated by the District using this template.

1. Does not include any potentially eligible contingency funds and is subject to review and audit by the MSBA.
2. The proposed demolition of the _____ School is expected to result in the MSBA recovering a portion of state funds previously paid to the District for the ____ project at the existing facilities completed in ___. The MSBA will perform an independent analysis based on a review of information and estimates provided by the District for the proposed school project that may or may not agree with the estimated cost recovery generated by the District and its consultants using this template.
3. Pursuant to Section 3.20 of the Project Funding Agreement and the applicable policies and guidelines of the Authority, any project costs associated with the reallocation or transfer of funds from either the Owner's contingency or the Construction contingency to other budget line items shall be subject to review by the Authority to determine whether any such costs are eligible for reimbursement by the Authority. All costs are subject to review and audit by the MSBA.

By signing this Total Project Budget, I hereby certify that I have read and understand the form and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and complete.

_____

By:
Title: Chair of School Building Committee

By signing this Total Project Budget, I hereby certify that I have read and understand the form and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and complete.

_____

By:
Title: Chief Executive Officer

Date: _____

By signing this Total Project Budget, I hereby certify that I have read and understand the form and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and complete.

_____

By:
Title: Superintendent of Schools

Date: _____

By signing this Total Project Budget, I hereby certify that I have read and understand the form and further certify, to the best of my knowledge and belief, that the information supplied by the District in the table above is true, accurate, and complete.

_____

By:
Title: Chair of School Committee

Date: _____

P:\2017\17050\03-DESIGN\3.4 Submissions\3-SD Submission\Total Project Cost Templates\for 8-27-18 SBC Meeting\[Total Project Budget - Schematic Design Submission.xlsx]PS and B TPB

17. Designer Construction Cost Estimate

The Construction Cost is $77,935,429, defined in the detailed construction estimate, dated August 24, 2018 as prepared by Miyakoda Consulting. The estimate is attached to the end of this section.

Fuller Middle School

Framingham, MA

August 24, 2018

Module 4: Schemtic Report

Schematic Estimate

Owner's Project Manager

SMMA

1000 Massachusetts Ave.

Cambridge, MA

Architect:

Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

Estimator:

Miyakoda Consulting
PO Box 47
Raynham, MA 02767
(617) 799-5832

Fuller Middle School

Fuller Middle School

INTRODUCTION

Description:

1. Construction of the Framingham Middle School
2. The scope of the work includes all related sitework, hardscape/landscape, and underground utilities

Particulars:

1. Drawings received from Jonathan Levi Architects
2. Detailed quantity takeoff from these documents where possible
3. Experience with similar projects of this nature with JLA

Assumptions:

1. The project will be constructed by a Construction Manager
2. Our costs assume that there will be at least three subcontractors submitting unrestricted bids in each sub-trade
3. Unit rates are based on current dollars
4. General Conditions and Requirements value covers Sub-Contractor's bond, site office overheads, and building permit applications
5. Fee markup is calculated on a percentage basis of direct construction costs. The value covers Contractor's bond, insurance and profit
6. Design and Pricing Contingency markup is an allowance for unforeseen design issues, design detail development and specification clarifications
7. Escalation has been included to midpoint of construction. The construction start date is June 2020.
8. Atrium ceiling unit rate allowance at $15/SF per email on August 23, 2018 from Philip Gray
9. Reduce skylight quantity by 20% per email on August 23, 2018 from Philip Gray

Exclusions:

1. Design fees and other soft costs
2. Owner's project administration
3. Construction of temporary facilities (Options priced separately)
4. Relocation expenses
5. Printing and advertising
6. Existing condition surveys and investigations
7. Work beyond the boundary of the site
8. Testing
9. Specialties, loose furnishings, fixtures and equipment beyond those noted
10. Preconstruction Fee
11. Construction Contingency
12. Traffic Improvements

miyakoda CONSULTING

Fuller Middle School

Fuller Middle School
136,790 GSF

MAIN SUMMARY - NEW CONSTRUCTION

DESCRIPTION			***TOTAL***	***COST/SF***
Direct Trade Costs With Site				
New Construction	136,790	GSF	$47,232,741	$345.29
Site Development			$6,719,690	
Direct Trade Cost SubTotal			**$53,952,431**	**$394.42**
Design and Pricing Contingency	10.00%	$53,952,431	$5,395,243	$39.44
Building Cost			**$59,347,674**	**$433.86**
Demolish Existing Building	195,400	GSF	$1,563,200	$11.43
Hazardous Waste Abatement (Budget provided)			$1,500,000	$10.97
Trade Cost SubTotal			**$62,410,874**	**$456.25**
General Conditions	5.85%	$62,410,874	$3,651,036	$26.69
General Requirements	4.00%	$66,061,910	$2,642,476	$19.32
Traffic mitigation			$200,000	$1.46
Insurance	1.40%	$68,904,387	$964,661	$7.05
Bonds	1.00%	$69,869,048	$698,690	$5.11
Construction Contingency		$70,567,739	$1,900,000	$13.89
CM Fee	2.75%	$72,467,739	$1,992,863	$14.57
Estimated Construction Cost Total			**$74,460,601**	**$544.34**
Escalation (Assume June 2019 Start of Construction)	4.67%	$74,460,601	$3,474,828	$25.40
Estimated Construction Cost Total			**$77,935,429**	**$569.75**

Alternate: Add Irrigation (including markkup) $205,000

Fuller Middle School

Fuller Middle School
136,790 GSF

DIRECT COST SUMMARY - NEW CONSTRUCTION

DIV.	*ELEMENTS*	*SITEWORK*	*BUILDING*	*TOTAL*
A	***SUBSTRUCTURES***			
A10	FOUNDATIONS			
	Foundations		$2,562,654	$2,562,654
	Slab on Grade		$779,622	$779,622
	FOUNDATIONS TOTAL		**$3,342,277**	**$3,342,277**
A20	BASEMENT CONSTRUCTION		$0	
A	**SUBSTRUCTURES TOTAL**			**$3,342,277**
B	***SHELL***			
B10	STRUCTURE			
	Upper Floor Construction		$2,940,342	$2,940,342
	Roof Construction		$1,998,739	$1,998,739
	STRUCTURE TOTAL		**$4,939,081**	**$4,939,081**
B20	EXTERIOR CLOSURE			
	Exterior walls		$4,172,373	$4,172,373
	Exterior windows		$3,024,209	$3,024,209
	Exterior Doors		$109,600	$109,600
	EXTERIOR CLOSURE TOTAL		**$7,306,183**	**$7,306,183**
B30	ROOFING			
	Roof Coverngs		$2,266,611	$2,266,611
	ROOFING TOTAL		**$2,266,611**	**$2,266,611**
B	**SHELL TOTAL**			**$14,511,874**
C	***INTERIORS***			
C10	INTERIOR CONSTRUCTION			
	Partitions		$2,999,135	$2,999,135
	Interior Doors, frames & Hardware		$822,935	$822,935
	Fittings		$1,883,499	$1,883,499
	INTERIOR CONSTRUCTION TOTAL		**$5,705,569**	**$5,705,569**

Fuller Middle School

Fuller Middle School
136,790 GSF

DIRECT COST SUMMARY - NEW CONSTRUCTION

DIV.	*ELEMENTS*	*SITEWORK*	*BUILDING*	*TOTAL*
C20	STAIRCASES			
	Staircases		$494,685	$494,685
	STAIRCASES TOTAL		**$494,685**	**$494,685**
C30	INTERIOR FINISHES			
	Wall finishes		$1,919,375	$1,919,375
	Floor finishes		$1,388,941	$1,388,941
	Ceiling finishes		$1,311,137	$1,311,137
	INTERIOR FINISHES TOTAL		**$4,619,453**	**$4,619,453**
C	**INTERIORS TOTAL**			**$10,819,707**
D	***SERVICES***			
D10	VERTICAL MOVEMENT			
	Conveying System		$242,200	$242,200
	VERTICAL MOVEMENT TOTAL		**$242,200**	**$242,200**
D20	PLUMBING			
	Plumbing		$2,051,850	$2,051,850
	PLUMBING TOTAL		**$2,051,850**	**$2,051,850**
D30	HVAC			
	HVAC		$7,052,250	$7,052,250
	HVAC TOTAL		**$7,052,250**	**$7,052,250**
D40	FIRE PROTECTION			
	Fire Protection		$752,345	$752,345
	FIRE PROTECTION TOTAL		**$752,345**	**$752,345**
D50	ELECTRICAL			
	Service and distribution		$5,232,218	$5,232,218
	ELECTRICAL TOTAL		**$5,232,218**	**$5,232,218**
D	**SERVICES TOTAL**			**$15,330,863**
E	***EQUIPMENT AND FURNISHINGS***			

Fuller Middle School

Fuller Middle School
136,790 GSF

DIRECT COST SUMMARY - NEW CONSTRUCTION

DIV.	*ELEMENTS*	*SITEWORK*	*BUILDING*	*TOTAL*
E10	EQUIPMENT			
	Institutional Equipment		$1,448,669	$1,448,669
	EQUIPMENT TOTAL		**$1,448,669**	**$1,448,669**
E20	FURNISHINGS			
	Specialties / Millwork		$1,779,352	$1,779,352
	FURNISHINGS TOTAL		**$1,779,352**	**$1,779,352**
D	**EQUIPMENT AND FURNISHINGS TOTAL**			**$3,228,021**
F	***SPECIAL CONSTRUCTION & DEMOLITION***			
F10	SPECIAL CONSTRUCTION			
	Special construction		$0	$0
	SPECIAL CONSTRUCTION TOTAL		**$0**	**$0**
F20	SELECTIVE DEMOLITION			
	Selectice Demolition		$0	$0
	SELECTIVE DEMOLITION TOTAL		**$0**	**$0**
D	**SPECIAL CONSTRUCTION & DEMOLITION TOTAL**			**$0**
G	***BUILDING SITEWORK***			
G10	G10 SITE PREPARATION			
	G1010 Site Clearing	$508,778		$508,778
	G1020 Site Demolition and Relocation	$98,000		$98,000
	G1030 Site Earthwork	$2,210,205		$2,210,205
	G10 SITE PREPARATION TOTAL	**$2,816,982**		**$2,816,982**
G20	G20 SITE IMPROVEMENTS			
	G2020 Roadways	$1,140,114		$1,140,114
	G2030 Pedestrian Paving	$329,516		$329,516
	G2040 Site Development	$1,317,238		$1,317,238
	G20 SITE IMPROVEMENTS TOTAL	**$2,786,868**		**$2,786,868**
G30	G30 SITE CIVIL/MECHANICAL UTILITIES			

Fuller Middle School

Fuller Middle School
136,790 GSF

DIRECT COST SUMMARY - NEW CONSTRUCTION

DIV.	*ELEMENTS*	*SITEWORK*	*BUILDING*	*TOTAL*
	G3010 Water Supply	$480,840		$480,840
	G3030 Storm Sewer	$220,000		$220,000
	G3040 Heating Distribution	$15,000		$15,000
	G30 SITE CIVIL/MECHANICAL UTILITIES TOTAL	**$715,840**		**$715,840**
G40	G40 SITE ELECTRICAL UTILITIES			
	G4010 Site Electrical Utilities	$400,000		$400,000
	G40 SITE ELECTRICAL UTILITIES TOTAL	**$400,000**		**$400,000**
G	**BUILDING SITEWORK TOTAL**			**$6,719,690**
	CONSTRUCTION TRADE TOTAL	**$6,719,690**	**$47,232,741**	**$53,952,431**

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
10	**A10 FOUNDATIONS**				
11					
12	**A1010 FOUNDATIONS**				
13	*Earthwork*				
14	Slab-on-Grade platform preparation in Sitework Tab	**64,548**	SF		
15	Continuous footing w/foundation wall	**2,004**	LF		
16	Excavation	**4,781.33**	CY	$12.00	See below
17	Backfill from import	**4,132**	CY	$22.00	See below
18	Spread footings	**140**	EA		
19	Excavation	**400**	CY	$12.00	See below
20	Backfill from import		CY	$22.00	See below
21	Elevator pits - 8'-0"W x 8'-0"L x 5'-0"D	**1**	EA		
22	Excavation	**26**	CY	$12.00	See below
23	Backfill from import	**1**	CY	$22.00	See below
24	Disposal				
25	Cast to off-site waste	**1,074**	CY	$22.00	See below
26	Grade & compact	**64,548**	SF	$1.00	See below
27	24" base course sand & gravel below slab on grade	**2,391**	CY	$35.00	See below
28					
29	Building overexcavation:				
30	Over-excavation to remove topsoil	**11,953**	CY	$8.00	$95,627
31	Over-excavation	**11,356**	CY	$7.50	$85,170
32	Dispose materials	**5,977**	CY	$18.00	$107,580
33	Structural fill	**5,110**	CY	$22.00	$112,428
34	Ground improvement (rammed aggregate piers) over entire building site at 10'x10' grid and 10' at perimeter	**4,552**	LF	$175.00	$796,603
35					
36	Building Area:				
37	Cut and fill for building	**2,391**	CY	$8.00	$19,125
38	2" Gravel base to building	**4,781**	CY	$35.00	$167,335
39					
40	*Concrete*				
41	*Continuous footings; 3' x 1' 0" typ.*	***2,004***	*LF*		
42	Concrete; material	**234**	CY	$130.00	$30,420
43	Concrete; place (combination of pumping/trucking)	**234**	CY	$85.00	$19,890
44	Reinforcement w/ftn wall dowels (10#/lf)	**20,038**	LB	$1.10	$22,041
45	Formwork	**8,015**	SF	$9.00	$72,135
46	*Spread footings; 10'x10'x2'*	***140***	*EA*		
47	Concrete; material	**1,085**	CY	$130.00	$141,050
48	Concrete; place	**1,085**	CY	$85.00	$92,225
49	Reinforcement (100#/cy)	**108,500**	LB	$1.10	$119,350
50	Formwork	**11,719**	SF	$8.00	$93,752
51	*Foundation walls; 16" thick x 4' 0" high typ.*	***8,015***	*SF*		

DETAILED ESTIMATE - NEW CONSTRUCTION

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
52	Concrete; material	**415**	CY	$130.00	$53,950
53	Concrete; place	**415**	CY	$85.00	$35,275
54	Reinforcement (150#/cy)	**62,250**	LB	$1.00	$62,250
55	Formwork	**16,832**	SF	$8.00	$134,656
56	Brick shelf	**2,004**	LF	$5.00	$10,019
57	Elevator pits - 8'-0"W x 8'-0"L x 5'-0"D	**1**	EA	$5,000.00	$5,000
58	Anchor bolts	**558**	SET	$35.00	$19,532
59					
60	*Retaining Wall:*				
61	Footing	*123*	*lf*		
62	Concrete; material	**14**	CY	$130.00	$1,820
63	Concrete; place	**14**	CY	$85.00	$1,190
64	Reinforing	**910**	LBS	$1.10	$1,001
65	Formwork	**258**	SF	$9.00	$2,322
66	Wall	*1,968*	*sf*		
67	Concrete	**120**	CY	$130.00	$15,600
68	Placing	**120**	CY	$85.00	$10,200
69	Reinforing	**18,000**	LBS	$1.10	$19,800
70	Formwork	**4,133**	SF	$8.00	$33,064
71	Brick veneer	**2,460**	SF	$34.00	$83,640
72	Cap at retaining wall	**123**	LF	$150.00	$18,450
73	Miscellaneous concrete	**1**	LS	$20,000.00	$20,000
74					
75	*Thermal & Moisture Protection*				
76	2" rigid insulation at foundation walls	**8,015**	SF	$2.50	$20,038
77	Waterproofing elevator pit	**225**	SF	$18.00	$4,050
78	Damp proofing to foundation walls	**8,015**	SF	$4.50	$36,068
79	**A1010 FOUNDATIONS TOTAL**				**$2,562,654**
80					
81	**A1030 SLAB ON GRADE**				
82	*Concrete*				
83	*Slab on grade, 5" thick, WWF, top of slab 314' 0"*	***64,548***	*SF*		
84	Concrete; material	**1,004**	CY	$130.00	$130,530
85	Concrete; place & finish	**64,548**	SF	$2.25	$145,233
86	Reinforcement (6x6 mesh)	**74,230**	SF	$0.75	$55,673
87	Slab depressions	**1,000**	LF	$75.00	$75,000
88	Slab thickening at stair 5'x2'x1' deep	**9**	LOC	$2,500.00	$22,500
89	*Slab on grade at loading dock, 6" thick, #4 bars*	***350***	*SF*		
90	Concrete; material	**6**	CY	$125.00	$810
91	Concrete; place & finish	**350**	SF	$2.50	$875
92	Reinforcement; #4@12"bew	**469**	LBS	$1.10	$516
93	*Miscellaneous*				

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
94	Allow for additional work for auditorium flooring	**1**	LS	$50,000.00	$50,000
95	Housekeeping & mechanical equipment pads	**1**	LS	$10,000.00	$10,000
96	Miscellaneous concrete	**1**	LS	$40,000.00	$40,000
97					
98	*Special Foundation Conditions*				
99	Dewatering during excavation	**1**	LS	$50,000.00	$50,000
100					
101	*Thermal & Moisture Protection*				
102	2" rigid insulation under slab	**64,548**	SF	$2.50	$161,370
103	Vapor retarder under slab	**74,230**	SF	$0.50	$37,115
104	**A1030 SLAB ON GRADE TOTAL**				**$779,622**
105					
106	**A10 FOUNDATIONS TOTAL**				**$3,342,277**
107					
108					
109	**A20 BASEMENT**				
110					
111	No anticipated work				
112					
113	**TOTAL SYSTEM A20 BASEMENT**				**$0**
114					
115					
116	**B10 STRUCTURE**				
117					
118	**B1010 UPPER FLOOR CONSTRUCTION**				
119	*Concrete*				
120	*Slab on deck topping, 3 ¼" light weight, WWF*	*72,242*	*SF*		
121	Concrete; material	**1,003**	CY	$130.00	$130,437
122	Reinforcement (6x6 mesh)	**79,466**	SF	$0.75	$59,600
123	Rebar at corners and openings	**3,973**	LBS	$1.10	$4,371
124	Concrete; place & finish	**72,242**	SF	$2.50	$180,605
125					
126	*Steel Framing; 13#/sf, allowance provided*	*483*	*TNS*		
127	Wide flange beams	**213**	TNS	$3,500.00	$745,500
128	W-shapes >100#/lf	**18**	TNS	$4,100.00	$73,800
129	WT-shapes	**81**	TNS	$4,000.00	$324,000
130	HSS-shapes	**36**	TNS	$4,050.00	$145,800
131	HSS columns	**72**	TNS	$4,050.00	$291,600
132	HSS brace frames	**63**	TNS	$4,200.00	$264,600
133	Plates, bent plates and angles	**140**	EA	$75.00	$10,463
134	Moment connections	**1**	LS	$50,000.00	$50,000
135	Shear studs	**10,320**	EA	$5.00	$51,600

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
136	3" deep x 18ga galv composite floor deck	**72,242**	SF	$4.25	$307,029
137					
138	*Thermal & Moisture Protection*				
139	Firestopping	**136,790**	GSF	$0.30	$41,037
140	Fireproofing	**136,790**	SF	$1.90	$259,901
141	**B1010 UPPER FLOOR CONSTRUCTION TOTAL**				**$2,940,342**
142					
143	**B1020 ROOF CONSTRUCTION**				
144	*Structural steel; beams, bridging, and connections, 10#/sf, (Allowance provided)*	**375**	TNS	$3,600.00	$1,350,000
145	3" deep x 18ga galv composite roof deck	**74,914**	SF	$4.25	$318,385
146	Premium for galv acoustic roof deck at Auditorium, Gym	**14,765**	SF	$3.00	$44,295
147	Other misc plates, connections	**74,914**	SF	$1.00	$74,914
148	Rough blocking to roof	**136,790**	SF	$0.50	$68,395
149					
150	*Mechanical roof top equipment*				
151	Roof screen, galv, assume 12' high; HSS shapes	**3**	TNS	$3,750.00	$12,750
152	Galvanized bar grating	**1,000**	SF	$55.00	$55,000
153	Roof soffit/fascia framing; assumed qty	**500**	LF	$150.00	$75,000
154	**B1020 ROOF CONSTRUCTION TOTAL**				**$1,998,739**
155					
156	**TOTAL SYSTEM B10 SUPERSTRUCTURE**				**$4,939,081**
157					
158					
159	**B20 EXTERIOR CLOSURE**				
160					
161	**B2010 EXTERIOR WALLS**	**68,885**	SF		
162					
163	Exterior brick wall; 8x8 iron spot brick	**43,231**	SF	$37.00	$1,599,538
164	3" insulation at brick	**43,231**	SF	$4.00	$172,923
165	Air vapor barrier at brick	**43,231**	SF	$5.50	$237,769
166	1/2" sheathing at brick	**43,231**	SF	$2.00	$86,462
167	6" metal stud @ Auditorium, Gym, Stairs and BOH	**21,644**	SF	$8.00	$173,152
168	6" metal stud at brick	**21,587**	SF	$8.00	$172,694
169	5/8 GWB at brick	**21,587**	SF	$2.25	$48,570
170	Caulking and sealants at brick	**43,231**	SF	$0.65	$28,100
171					
172	Trespa - at projections/window bay	**7,249**	SF	$70.00	$507,430
	Furring	**7,249**	SF	$3.50	$25,372
174	3" insulation at Trespa cladding -	**7,249**	SF	$4.00	$28,996
175	Air vapor barrier at Trespa cladding -	**7,249**	SF	$5.50	$39,870
176	1/2" sheathing at Trespa cladding -	**7,249**	SF	$2.00	$14,498
177	6" metal stud at Trespa cladding -	**7,249**	SF	$8.00	$57,992

DETAILED ESTIMATE - NEW CONSTRUCTION

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
178	5/8 GWB at Trespa cladding -	**7,249**	SF	$8.00	$57,992
179	Caulking and sealants at Trespa cladding - Ext. soffit	**7,249**	SF	$2.25	$16,310
180					
181	Trespa - Exterior soffit at projections/window bay	**1,249**	SF	$70.00	$87,430
	Furring	**1,249**	SF	$3.50	$4,372
183	3" insulation at Trespa cladding - Exterior soffit	**1,249**	SF	$4.00	$4,996
184	Air vapor barrier at Trespa cladding - Exterior soffit	**1,249**	SF	$5.50	$6,870
185	1/2" sheathing at Trespa cladding - Exterior soffit	**1,249**	SF	$2.00	$2,498
186	6" metal stud at Trespa cladding - Exterior soffit	**1,249**	SF	$8.00	$9,992
187	5/8 GWB at Trespa cladding - Exterior soffit	**1,249**	SF	$2.25	$2,810
188	Caulking and sealants at Trespa cladding - Ext. soffit	**1,249**	SF	$0.65	$812
189					
190	*Miscellaneous*				
191	Articulation to exterior	**1**	LS	$200,000.00	$200,000
192	Miscellaneous metals in exterior closure	**44,480**	SF	$2.00	$88,960
193	Through wall sheet mtl flashing sheathing & rigid insul.	**44,480**	SF	$0.35	$15,568
194	Corrugated perforated metal; mechanical RTU screen	**6,715**	SF	$60.00	$402,900
195	Temporary enclosures	**1**	LS	$50,000.00	$50,000
196	Louver panels in penthouse; allow	**500**	SF	$55.00	$27,500
197	**B2010 EXTERIOR WALLS TOTAL**				**$4,172,373**
198					
199	**B2020 EXTERIOR WINDOWS**	**24,405**	SF		
200	Curtain wall	**17,240**	SF	$110.00	$1,896,389
201	Storefront; Exterior	**4,310**	SF	$95.00	$409,464
202	Windows	**2,855**	SF	$90.00	$256,986
203	Aluminum sun shades attached to CW @ south elevation	**1,270**	LF	$150.00	$190,500
204	Blocking for openings	**6,467**	LF	$10.00	$64,670
205					
206	*Mechanical louvers in exterior closure*				
207	Window caulking	**1**	LS	$70,000.00	$70,000
208	Elevator vent	**1**	EA	$1,200.00	$1,200
209	Exterior mockup	**1**	LS	$50,000.00	$50,000
210	Allow for premium cost for security glazing	**1**	LS	$50,000.00	$50,000
211	Miscellaneous louvers	**500**	SF	$70.00	$35,000
212	**B2020 EXTERIOR WINDOWS TOTAL**				**$3,024,209**
213					
214	**B2030 EXTERIOR DOORS**				
215	Exterior; Overhead coiling door, motor operated; allow	**1**	EA	$10,000.00	$10,000
216	Exterior HM doors; complete	**17**	LEAF	$1,800.00	$30,600
217	Aluminum entry doors including hardware	**23**	LEAF	$3,000.00	$69,000
218	**B2030 EXTERIOR DOORS TOTAL**				**$109,600**
219					
220	**TOTAL SYSTEM B20 EXTERIOR CLOSURE**				**$7,306,183**

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
221					
222					
223	***B30 ROOFING***				
224					
225	**B3010 ROOF COVERINGS**				
226					
227	*Roofing*				
228	*TPO membrane roofing system*	***70,918***	*SF*		
229	Main roof	**38,547**	SF	$12.00	$462,564
230	Gym & Auditorium	**14,765**	SF	$12.00	$177,180
231	Low roof	**9,330**	SF	$12.00	$111,960
232	Low roof/Canopy	**770**	SF	$12.00	$9,240
233	Vertical roof membrane, 42'-48'h	**7,506**	SF	$13.00	$97,578
234	1/2" cover board	**70,918**	SF	$1.25	$88,648
235	6" insulation	**70,918**	SF	$2.50	$177,295
236	Vapor retarder	**70,918**	SF	$0.50	$35,459
237	1/2" substrate board	**70,918**	SF	$1.25	$88,648
238	Polycarbonate entrance canopy	**690**	SF	$150.00	$103,500
239					
240	*Roofing Accessories*				
241	Miscellaneous roof accessories	**1**	LS	$75,000.00	$75,000
242	Paver walkway	**1,546**	SF	$15.00	$23,190
243					
244	*Roof openings*				
245	Glazed angled clerestory; Gym & Auditorium	**1,855**	SF	$90.00	$166,950
246	3' & 6' Ø double dome acrylic bubble skylight; Auditorium	**1**	LS	$50,000.00	$50,000
247	Glazed aluminum-framed skylight (reduced by 20%)	**3,996**	SF	$150.00	$599,400
248	**B3010 ROOF COVERINGS TOTAL**				**$2,266,611**
249					
250	**TOTAL SYSTEM B30 ROOFING**				**$2,266,611**
251					
252					
253	**C10 INTERIOR CONSTRUCTION**				
254					
255	**C1010 PARTITIONS**				
256					
257	*Gypsum board partitions*				
258	Partitions at auditorium, gym, locker rooms, elevator shaft	**22,394**	SF	$18.50	$414,289
259	Drywall partitions	**81,305**	SF	$12.50	$1,016,313
260	Chasewalls	**5,676**	SF	$10.00	$56,760
261	Rough carpentry internal partitions and ceilings	**136,790**	GSF	$1.50	$205,185
262	Misc metals for interior construction	**136,790**	SF	$2.50	$341,975

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
263					
264	*Operable partition*				
265	Operable paritions between classroom pair, magnetic writable surface both sides	**3,360**	SF	$100.00	$336,000
266					
267	*Interior windows*				
268	Interior window	**2,110**	SF	$60.00	$126,600
269					
270	*Interior storefront*				
271	Interior storefront; Breakrooms, circular & square shape	**4,860**	SF	$85.00	$413,100
272					
273	*Interior penetration firestopping*				
274	Interior caulking	**136,790**	GSF	$0.50	$68,395
275	Top-of-partition firestopping	**136,790**	GSF	$0.15	$20,519
276	**C1010 PARTITIONS TOTAL**				**$2,999,135**
277					
278	**C1020 INTERIOR DOORS, FRAMES & HARDWARE**				
279	*Hollow Metal Doors and Frames:*				
280	HM frames	**250**	EA	$250.00	$62,500
281	HM frames for pair doors	**80**	EA	$275.00	$22,000
282	Wood doors	**410**	EA	$300.00	$123,000
283	Premium cost for acoustical doors	**1**	LS	$15,000.00	$15,000
284					
285	*Coiling security screen*				
286	Cafeteria	**1,372**	SF	$55.00	$75,460
287	Kitchen	**336**	SF	$55.00	$18,480
288	Admin area	**114**	SF	$55.00	$6,270
289					
290	*Aluminum-Framed Entrances and Storefronts:*				
291	Interior glazed aluminum doors	**6**	EA	$2,500.00	$15,000
292	Pairs of doors	**8**	PR	$5,000.00	$40,000
293					
294	*Access Doors and Frames*				
295	Access doors	**100**	EA	$250.00	$25,000
296					
297	Door sidelights	**900**	SF	$55.00	$49,500
298	Glazing to doors	**1**	AL	$3,000.00	$3,000
299					
300	Hardware	**410**	SET	$550.00	$225,500
301	Powered door openers	**4**	LOC	$3,000.00	$12,000
302	Paint door frames	**330**	EA	$85.00	$28,050
303	Paint door	**410**	EA	$65.00	$26,650

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
304	Blocking at doors	**5,610**	LF	$2.50	$14,025
305	Door Installation	**410**	EA	$150.00	$61,500
306	**C1020 INTERIOR DOORS, FRAMES & HARDWARE TOTAL**				**$822,935**
307					
308	**C1030 FITTINGS**				
309	*Misc. Metals*				
310	Misc. metals	**136,790**	SF	$1.00	$136,790
311	Furnishings; miscellaneous metals	**136,790**	GSF	$0.50	$68,395
312					
313	Furnishings; miscellaneous wood blocking	**136,790**	GSF	$0.25	$34,198
314					
315	Tackboards	**2,688**	SF	$12.00	$32,256
316	Markerboards	**5,376**	SF	$18.00	$96,768
317	Tackable wall; allow	**3,000**	SF	$10.50	$31,500
318					
319	*Interior guardrails*				
320	Handrailing	**150**	LF	$250.00	$37,500
321	Glass guardrail in Common areas	**365**	LF	$550.00	$200,750
322	Railings in auditorium	**1**	LS	$50,000.00	$50,000
323	Vertical duct enclosure	**4,200**	LF	$90.00	$378,000
324					
325	*Signage*				
326	Commerative plaque	**2**	LOC	$1,500.00	$3,000
327	Dimensional characters; School name	**1**	AL	$5,000.00	$5,000
328	Plastic panel signs for room idenfication, way finding, hazard identification	**1**	AL	$7,500.00	$7,500
329	Framed paper signs	**1**	AL	$2,500.00	$2,500
330	Miscellaneous signage	**136,790**	GSF	$0.30	$41,037
331					
332	*Wall & corner guards*				
333	Stainless steel corner guards	**1**	LS	$10,000.00	$10,000
334					
335	*Toilet compartments (plastic laminate)*				
336	Toilet compartments	**20**	EA	$1,200.00	$24,000
337	Toilet compartments - ADA	**14**	EA	$1,400.00	$19,600
338	*Urinal screen*	**20**	EA	$850.00	$17,000
339					
340	*Lockers*				
341	Student lockers 15"x12"x36" w/angled top, phenolic w/plam finish and wd veneer sides and back	**630**	EA	$300.00	$189,000
342	angled glass display cabinets above lockers	**365**	LF	$275.00	$100,375
343	athletic / pe lockers: metal 2-tier 30”h. x 15”w x 15”d	**50**	EA	$250.00	$12,500

DETAILED ESTIMATE - NEW CONSTRUCTION

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
344	Kitchen staff lockers, single tier, 12" x 12" x 6' high	**6**	EA	$250.00	$1,500
345					
346	*Toilet accessories*				
347	Combination PTD/WR unit	**8**	EA	$150.00	$1,200
348	Towel dispenser/waste receptacle	**45**	EA	$100.00	$4,500
349	Soap dispensers	**45**	EA	$35.00	$1,575
350	Toilet paper dispensers	**48**	EA	$65.00	$3,120
351	Sanitary napkin disposal units	**21**	EA	$250.00	$5,250
352	Robe hook	**15**	EA	$25.00	$375
353	Fold-down shower seat	**1**	EA	$200.00	$200
354	Grab bars	**28**	PR	$160.00	$4,480
355	Mirrors - in private bathrooms	**14**	EA	$150.00	$2,100
356	Mop holder w/shelf (Janitors)	**6**	EA	$200.00	$1,200
357					
358	*Fire extinguisher cabinets*				
359	Fully recessed/non-rated	**14**	EA	$450.00	$6,156
360	Semi-recessed/non-rated	**6**	EA	$300.00	$1,800
361					
362	*Other fittings*				
363	Curtain track, carriers and curtains	**2**	EA	$200.00	$400
364	Chainlink fence & gate; custodial area; allow	**250**	SF	$40.00	$10,000
365	Miscellaneous specialties and furnishings	**136,790**	GSF	$2.50	$341,975
366	**C1030 FITTINGS TOTAL**				**$1,883,499**
367					
368	**TOTAL SYSTEM C10 INTERIOR CONSTRUCTION**				**$5,705,569**
369					
370					
371	**C20 STAIRCASES**				
372					
373	**C2010 STAIRCASES**				
374	*Interior stairs*				
375	Egress stairs	**5**	FLT	$20,000.00	$100,000
376	Monumental/open stairs	**4**	FLT	$65,000.00	$260,000
377					
378	*Stair finishes*				
379	Railings	**1**	LS	$75,000.00	$75,000
380	VCT treads & risers with rubber nosing	**690**	LFR	$15.50	$10,695
381	VCT tile at landings	**1,124**	SF	$8.00	$8,990
382	Monumental/open stairs; assume porcelain tile	**4**	FLT	$10,000.00	$40,000
383	**C2010 STAIRCASES TOTAL**				**$494,685**
384					
385	**TOTAL C20 STAIRCASES**				**$494,685**

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
386					
387					
388	**C30 INTERIOR FINISHES**				
389					
390	**C3010 WALL FINISHES**				
391	P.lam panel wall cover 8' high at Corridors & Public areas	**7,500**	SF	$20.00	$150,000
392	*Auditorium walls:*				
393	50% acoustic wood wall system	**4,564**	SF	$25.00	$114,100
394	50% ground faced block; premium	**4,564**	SF	$5.00	$22,820
395	FRP; fiber reinforced panels in Kitchen, Custodian	**1,896**	SF	$15.00	$28,440
396	Interior aluminum glazing	**8,508**	SF	$80.00	$680,640
397	Ceramic tile walls 9' high at Toilets	**13,068**	SF	$18.00	$235,224
398	Wall base; 12" VCT	**12,630**	LF	$5.00	$63,150
399	Metal trim detail	**12,630**	LF	$5.00	$63,150
400	Vented rubber wall base	**364**	LF	$3.00	$1,092
401	Metal trim detail	**364**	LF	$5.00	$1,820
402	Exposed column covers; allowance	**1**	LS	$15,000.00	$15,000
403	*Academic areas:*				
404	Magnetic writable surface wall covering at walls; 6' h	**5,040**	SF	$17.00	$85,680
405	over curved gwb partition at curved wall	**3,780**	SF	$19.50	$73,710
406	Fabric wrapped acoustic wall panels @ Music areas	**882**	SF	$15.00	$13,230
407	Fixed sound absorbing wood fiber/fabric in Gym	**1,456**	SF	$15.00	$21,840
408	Wall pads with cutout for MEH units; allow	**1**	AL	$1,500.00	$1,500
409	Cafeteria fixed sound absorbing panel, wood fiber; allow	**2,000**	SF	$15.00	$30,000
410	Paint drywall partitions	**241,586**	SF	$0.75	$181,189
411	Paint	**136,790**	GSF	$1.00	$136,790
412	**C3010 WALL FINISHES TOTAL**				**$1,919,375**
413					
414	**C3020 FLOOR FINISHES**	*129,951*	*SF*		
415	*Tile:*				
416	Porcelain tile flooring at Toilets	**4,587**	SF	$18.00	$82,566
417	Quarry tile at Kitchen	**1,917**	SF	$16.00	$30,672
418					
419	*Flooring*				
420	Self-leveling, gypsum cement; 2"maxxon topping slab-acoustic at floors 2 & 3, below VCT flooring	**107,240**	SF	$3.75	$402,150
421	VCT flooring; Corridors, Academic area, Admin area	**107,240**	SF	$5.50	$589,820
422	Wood athletic flooring at Gym	**8,230**	SF	$25.00	$205,750
423	Wood flooring at Stage	**1,167**	SF	$25.00	$29,175
424	*Auditorium:*				
425	slab on grade power troweled concrete at seats	**2,240**	SF	$9.00	$20,160
426	carpet at aisles	**1,750**	SF	$5.00	$8,750

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
427	*Painting*				
428	Sealed concrete at back of house	**2,370**	SF	$1.75	$4,148
429	*Entrance mats*				
430	Mat	**450**	SF	$35.00	$15,750
431	**C3020 FLOOR FINISHES TOTAL**				**$1,388,941**
432					
433	**C3030 CEILING FINISHES**	*131,868*	*SF*		
434	ACT ceilings at Corridors, Public, Admin areas, Teacher Pl	**63,829**	SF	$5.00	$319,145
435	ACT ceiling in BOH areas, locker rooms	**3,190**	SF	$5.00	$15,950
436	ACT ceiling, washable in kitchen	**1,917**	SF	$5.50	$10,544
437	*Academic areas: classrooms, science, media, art, music, etc*				
438	Exposed deck, painted 2/3 of room	**27,056**	SF	$1.25	$33,820
439	ACT ceiling 1/3 of ceiling area	**12,568**	SF	$5.00	$62,842
440	GWB soffit, light cove	**1,320**	LF	$35.00	$46,200
441	Ceilings in classrooms	**672**	LF	$250.00	$168,000
442	3D-metal panel ceiling at band/chorus	**1,806**	SF	$45.00	$81,270
443	Auditorium ceiling; painted exposed metal deck	**6,432**	SF	$1.50	$9,648
444	50% suspended wood panel ceiling	**3,216**	SF	$40.00	$128,640
445	Gym ceiling; suspended lay in pre painted tegular edge tectum plank	**2,058**	SF	$10.00	$20,575
446	Atrium ceiling ($15 allowance)	**21,479**	SF	$15.00	$322,185
447	exposed deck, painted	**8,230**	SF	$1.50	$12,345
448	GWB - MR ceiling at Toilets	**6,840**	SF	$10.50	$71,815
449	Paint GWB ceilings w/high performance coating at Toilets	**8,160**	SF	$1.00	$8,160
450	**C3030 CEILING FINISHES TOTAL**				**$1,311,137**
451					
452	**TOTAL SYSTEM C30 INTERIOR FINISHES**				**$4,619,453**
453					
454					
455	**D10 CONVEYING SYSTEMS**				
456					
457	**D1010 CONVEYING SYSTEMS**				
458	Elevators; 4 stops	**1**	EA	$235,000.00	$235,000
459	Elevator pit ladder	**1**	EA	$1,500.00	$1,500
460	Sill angles	**4**	EA	$175.00	$700
461	Hoist beam	**1**	EA	$5,000.00	$5,000
462	**D1010 CONVEYING SYSTEMS TOTAL**				**$242,200**
463					
464	**TOTAL SYSTEM D10 CONVEYING SYSTEMS**				**$242,200**
465					
466					
467	**D15 MECHANICAL**				

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
468					
469	**D20 PLUMBING**				
470	Plumbing	**136,790**	GSF	$15.00	$2,051,850
471	**D20 PLUMBING TOTAL**				**$2,051,850**
472					
473	**D30 HVAC**				
474	HVAC	**136,790**	GSF	$50.00	$6,839,500
475	Pre-fab rooftop mechanical room	**821**	GSF	$250.00	$205,250
589	roof	**746**	SF		incl.
588	exterior wall panels	**1,344**	SF		incl.
590	metal stud framing, backup to exterior wall, insul.	**1,344**	SF		incl.
479	Allowance for lifting structure up to roof	**1**	AL	$7,500.00	$7,500
480	**D30 HVAC TOTAL**				**$7,052,250**
481					
482	**D40 FIRE PROTECTION**				
483	Sprinkler Coverage	**136,790**	SF	$5.50	$752,345
484	**D40 FIRE PROTECTION TOTAL**				**$752,345**
485					
486	**TOTAL SYSTEM D15 MECHANICAL**				**$9,856,445**
487					
488					
489	**D50 ELECTRICAL**				
490					
491	**D5011 SERVICE & DISTRIBUTION**				
492	Interior Electrical	**136,790**	GSF	$37.00	$5,061,230
493	Mass notification	**136,790**	GSF	$1.25	$170,988
494	**D5011 SERVICE & DISTRIBUTION TOTAL**				**$5,232,218**
495					
496	**TOTAL SYSTEM D50 ELECTRICAL**				**$5,232,218**
497					
498					
499	**E10 EQUIPMENT**				
500					
501	**E1020 INSTITUTIONAL EQUIPMENT**				
502	*Projection Screens*				
540	Motorized projection screen; Gym, Cafeteria; allow	**2**	EA	$17,500.00	$35,000
504	Projection screen - Admin/Conference	**1**	EA	$3,500.00	$3,500
540	*Residential Appliances*				
540	Refrigerator/Freezer, microwave oven	**5**	RMS	$1,700.00	$8,500
540	Dishwasher	**1**	EA	$1,200.00	$1,200
540	Undercounter refrigerator @ Nurse	**1**	EA	$650.00	$650
509	*Food service equipment*				

DETAILED ESTIMATE - NEW CONSTRUCTION

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
510	Dining & Food Service (Budget provided)	1	AL	$398,115.00	$398,115
511	*Auditorium/Theatre Equipment*				
512	AV	1	AL	$185,000.00	$185,000
513	Lighting and dimming	1	AL	$195,000.00	$195,000
514	Rigging	1	AL	$180,000.00	$180,000
515	Floor mounted fold up auditorium seating	420	EA	$275.00	$115,500
516	*Science Room Equipment*				
517	Science Room Equipment	1	AL	$100,000.00	$100,000
518	*Gymnasium equipment*				
519	Electronic scoreboard	1	EA	$7,500.00	$7,500
520	Shot clock/shot timer	1	EA	$1,250.00	$1,250
521	Pull up bar	1	EA	$850.00	$850
522	Stall bar	1	EA	$850.00	$850
523	Vertical ladder	1	EA	$550.00	$550
524	Rope hoist	1	EA	$500.00	$500
525	Overhead mounted folding backstops w/glass backboards	6	EA	$6,500.00	$39,000
526	Gym motorized divider curtains	1	EA	$40,000.00	$40,000
552	Sleeves & floor plates for badminton & volleyball uprights; all(	2	SETS	$6,000.00	$12,000
528	Gym equipment controls-power touch	1	LS	$5,000.00	$5,000
529	Gym wall safety pads to be 8'-8" high	1,385	SF	$20.00	$27,704
530	Telescoping bleachers, motorized	760	SEAT	$100.00	$76,000
531	Loading dock equipment	1	LS	$15,000.00	$15,000
532	**E1020 INSTITUTIONAL EQUIPMENT TOTAL**				**$1,448,669**
533					
534	**TOTAL SYSTEM E10 FITTINGS & EQUIPMENT**				**$1,448,669**
535					
536					
537	**E20 FURNISHINGS**				
538					
539	**E2020 SPECIALTIES / MILLWORK**				
540	*Academic areas: classrooms, science, media, art, music, vocationa*	*44*	*RMS*		
541	plam upper w/ss counter	945	LF	$400.00	$378,000
542	mobile storage-36"wx27"h (4) per classroom	176	EA	$600.00	$105,600
543	shelving at exterior wall-(4) adjustable shelves	945	LF	$200.00	$189,000
544	folding screen – 6' x 8' x 2"	42	EA	$1,000.00	$42,000
545	*Science classrooms, Science Prep room*	*6*	*RMS*		
546	plam upper and base cabinets w/solid epoxy counter	240	LF	$665.00	$159,600
547	mobile storage- 36"wx27"h (6) per classroom	36	EA	$600.00	$21,600
548	*Teacher Planning [tp] rooms :*	*21*	*RMS*		
549	plam counters	220	LF	$240.00	$52,800
550	shelving-full width-(5) adjustable shelves	220	LF	$250.00	$55,000
551	*Corridors and Public areas:*				

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
552	wood cantelevered benches at classroom glazed partitions	**42**	EA	$350.00	$14,700
553	Bench	**1**	AL	$200,000.00	$200,000
554	*Administration areas, Offices, Medical:*				
555	plam custom base & upper cabinets w/plam counter	**20**	LF	$630.00	$12,600
556	tackable surface backsplash; (5) adj shelves at offices	**120**	LF	$250.00	$30,000
557	Auditorium millwork; allowance	**1**	AL	$125,000.00	$125,000
558	*Toilet rooms:*				
559	solid surface counters w/concealed steel brackets	**250**	LF	$240.00	$60,000
560	*Other areas:*				
561	Adjustable Mail slots	**1**	LS	$3,500.00	$3,500
562	Window stools - Solid surfacing material	**1,199**	LF	$35.00	$41,959
563					
564	Window treatment, manually operated roller shades	**13,630**	GSF	$5.00	$68,152
565	motorized roller shades @ exterior CW and SF	**10,775**	GSF	$12.00	$129,300
566	roller shade at interior doors w/lites & glazed partitions	**5,760**	GSF	$4.00	$23,040
567					
568	Interior specialty shade	**45**	EA	$1,500.00	$67,500
569					
570	**E2020 SPECIALTIES / MILLWORK TOTAL**				**$1,779,352**
571					
572	**TOTAL SYSTEM E20 FURNISHINGS**				**$1,779,352**
573					
574					
575	**F10 SPECIAL CONSTRUCTION**				
576					
577	**F1010 SPECIAL CONSTRUCTION**				
578	No work in this section				
579	**F1010 SPECIAL CONSTRUCTION TOTAL**				**$0**
580					
581	**TOTAL SYSTEM F10 SPECIAL CONSTRUCTION**				**$0**
582					
583					
584	**F20 SELECTIVE DEMOLITION**				
585					
586	**F2020 SELECTIVE DEMOLITION**				
587	Demolition of existing building allowance	**195,400**	SF		Main Summary
588	Haz mat removal allowance				Main Summary
589	**F2020 SELECTIVE DEMOLITION TOTAL**				**$0**
590					
591	**TOTAL SYSTEM F20 DEMOLITION**				**$0**
592					
593				**TOTAL BUILDING SUMMARY**	**$47,232,741**

DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL

594

Fuller Middle School

Framingham, MA
136,790 GSF

SITEWORK: NEW CONSTRUCTION

	DESCRIPTION	*QUANTITY*	*UNIT*	*UNIT COST*	*TOTAL*
10	**G10 SITE PREPARATION**				
11					
12	**G1010 Site Clearing**				
13	31 10 00 Site Clearing				
14	Site clearing	**298,137**	SF	$0.50	$149,069
15	Safety barricade	**1**	AL	$10,000.00	$10,000
16	Construction fence, install, maintain, remove & reinstall;	**8,277**	LF	$12.00	$99,324
17	for all phases				
18	Double construction gate	**2**	PR	$2,500.00	$5,000
19	Temporary construction entrance	**2**	LOC	$7,000.00	$14,000
20	Add premium for moving and reinstalling for 3 phases	**1**	LS	$37,385.00	$37,385
21	Temp signs	**1**	LS	$3,000.00	$3,000
22	Wash down/re-fueling/parking allowance	**3,000**	SF	$2.00	$6,000
23	31 23 19 Dewatering and Drainage				
24	Dewatering for sitework excavation; allow	**1**	LS	$50,000.00	$50,000
25	31 25 00 Erosion and Sedimentation Controls				
26	Temporary seed cover	**1**	AL	$10,000.00	$10,000
27	Install and maintain perimeter erosion control	**7,500**	LF	$14.00	$105,000
28	Haybale at stockpile topsoil for reuse; allow	**2,500**	LF	$8.00	$20,000
29					
30	**G1020 Site Demolition and Relocation**				
31	02 41 00 Demolition				
32	Saw cut existing pavement	**300**	LF	$10.00	$3,000
33	Miscellaneous demolition	**1**	AL	$95,000.00	$95,000
34					
35	*G1020.01 Building Demolition*				
36	*02 30 00 Building Demolition*				
37	Building demoltion				See Main Summary
38					
39	**G1030 Site Earthwork**				
40	Strip and stockpile existing topsoil	**10,516**	CY	$7.50	$78,870
41	Rock excavation				NIC
42	Rough and fine grading	**24,377**	SY	$1.50	$36,566
43	Cut and fill for building	**2,391**	CY	$8.00	$19,128
44	Gravel base to building	**2,391**	CY	$8.00	$19,125
45	Cut	**17,537**	CY	$8.00	$140,296
46	Fill using existing	**15,783**	CY	$6.00	$94,700
47	Imported fill	**27,658**	CY	$22.00	$608,477
48	Spread loam	**32,000**	CY	$11.00	$352,000
49	Cut and fill at roadway/parking lot	**13,682**	CY	$8.00	$109,456
50	Cut and fill at sidewalks	**1,589**	CY	$8.00	$12,712
51	Ground improvement at bus loop	**16,500**	SF	$12.00	$198,000
52	Temporary parking	**1**	AL	$490,875.00	$490,875

SITEWORK: NEW CONSTRUCTION

	DESCRIPTION	*QUANTITY*	*UNIT*	*UNIT COST*	*TOTAL*
53	Allow for miscellaneous repairs during construction	**1**	LS	$50,000.00	$50,000
55	**G10 SITE PREPARATION TOTAL**				**$2,816,982**
56					
57					
58	**G20 SITE IMPROVEMENTS**				
59					
60	**G2020 Roadways**				
61	*32 12 00 Flexible Paving*				
62	Vehicular asphalt pavement	**176,490**	SF	$3.00	$529,470
63	Asphalt walkway paving	**8,215**	SF	$2.25	$18,484
64	Gravel base to roadway & parking lot	**6,689**	CY	$35.00	$234,115
65	32 16 00 Curbs and Gutters				
66	Granite curb	**7,969**	LF	$42.00	$334,698
67	Bit. Berm Curb	**2,398**	LF	$5.00	$11,990
68	32 17 00 Paving Specialties				
69	Crosswalk	**2,109**	SF	$2.50	$5,273
70	Parking stall painting	**289**	EA	$15.00	$4,335
71	Parking stall painting; HC	**10**	EA	$75.00	$750
72	Misc. marking other than above	**1**	LS	$1,000.00	$1,000
73					
74	**G2030 Pedestrian Paving**				
75	32 13 10 Rigid Paving				
76	Concrete paving	**34,687**	SF	$8.00	$277,496
77	Gravel base to concrete pavement	**642**	CY	$35.00	$22,470
78	Concrete steps	**69**	LFR	$150.00	$10,350
79	Curb cut	**16**	EA	$450.00	$7,200
80	Concrete pad	**1**	AL	$12,000.00	$12,000
81					
82	**G2040 Site Development**				
83	*G2040.01 Fences and Gates*				
84	32 31 00 Fences and Gates				
85	Vehical guardrail	**271**	LF	$250.00	$67,750
86					
87	*G2040.02 Site and Street Furnishes*				
88	32 18 00 Athletic and Recreational Surfacing				
89	Multipurpose field #1	**81,000**	SF		
90	Rough/fine grading	**81,000**	SF	$1.00	NIC
91	Cut and fill	**3,510**	CY	$10.00	NIC
92	8" Stone base	**2,200**	CY	$28.00	NIC
93	Sand base	**550**	CY	$38.00	NIC
94	Underdrain	**81,000**	SF	$1.50	NIC
95	Sports seed mix	**81,000**	SF	$0.60	$48,600

Fuller Middle School

Framingham, MA
136,790 GSF

SITEWORK: NEW CONSTRUCTION

	DESCRIPTION	*QUANTITY*	*UNIT*	*UNIT COST*	*TOTAL*
96	Remove and install new irrigation System	**81,000**	SF	$3.00	$243,000
97	Multipurpose field #2	**81,000**	SF		
98	Rough/fine grading	**81,000**	SF	$1.00	NIC
99	Cut and fill	**3,510**	CY	$10.00	NIC
100	8" Stone base	**2,200**	CY	$28.00	NIC
101	Sand base	**550**	CY	$38.00	NIC
102	Underdrain	**81,000**	SF	$1.50	NIC
103	Sports seed mix	**81,000**	SF	$0.60	$48,600
104					
105	Baseball field				Existing to Remain
106	Rough/fine grading				
107	Cut and fill				
108	8" Stone base				
109	Sand base				
110	Underdrain				
111	Infield surfacing				
112	Sod				
113	Irrigation				
114	Base plate				
115	Closed dugout				
116	Play field equipment				
117					
118	Bike rack	**2**	EA	$3,500.00	$7,000
119	Color Galvanized Handrails	**379**	LF	$250.00	$94,750
120	Aluminum players bench on concrete slab	**8**	EA	$1,200.00	$9,600
121	Flagpole	**2**	EA	$7,500.00	$15,000
122	Signage	**1**	EA	$15,000.00	$15,000
123	Outdoor fitness equipment				NIC
124	Traffic signs	**1**	AL	$30,000.00	$30,000
125	Miscellaneous site improvements	**1**	LS	$100,000.00	$100,000
126					
127	**G2050.02 Lawns and Grasses**				
128	32 92 00 Turfs and Grasses				
129	Respread top soil	**6,496**	CY	$8.00	$51,968
130	Topsoil for planting beds, shrubs and perennials	**252**	CY	$25.00	$6,300
131	Mulch	**1**	LS	$35,000.00	$35,000
132	Hydroseed	**357,629**	SF	$0.50	$178,815
133	Sod	**29,477**	SF	$1.50	$44,216
134					
135	**G2050.03 Trees, Plants and Ground Covers**				
136	32 93 00 Plants				
137	Trees	**159**	EA	$750.00	$119,250
138	Shrubs	**5,913**	SF	$30.00	$177,390

	DESCRIPTION	*QUANTITY*	*UNIT*	*UNIT COST*	*TOTAL*
139	Allow for ground cover	**1**	LS	$25,000.00	$25,000
140					
141	**G20 SITE IMPROVEMENTS TOTAL**				**$2,786,868**
142					
143					
144	**G30 SITE CIVIL/MECHANICAL UTILITIES**				
145					
146	**G3010 Water Supply**				
147	33 10 00 Water Distribution				
148	Domestic water line	**1,889**	LF	$60.00	$113,340
149	Fire protection line	**1,600**	LF	$70.00	$112,000
150	Hydrant	**2**	EA	$4,500.00	$9,000
151					
152	33 31 00 Sanitary Sewerage				
153	33 31 00 Sanitary Sewerage				
154	All incl. trench and backfill				
155	Sewer line	**420**	LF	$75.00	$31,500
156	Sanitary sewage	**1**	LS	$200,000.00	$200,000
157	Grease trap	**1**	EA	$15,000.00	$15,000
158					
159	**G3030 Storm Sewer**				
160	33 41 00 Storm Utility Drainage				
161	All incl. trench and backfill				
162	Storm drainage	**1**	LS	$100,000.00	$100,000
163	Gravel and sod buffer for pretreatment	**1**	LS	$2,500.00	$2,500
164	Stormceptors	**1**	LS	$25,000.00	$25,000
165	Rain garden	**1**	AL	$75,000.00	$75,000
166	Catch basines	**5**	EA	$3,500.00	$17,500
167					
168	**G3040 Heating Distribution**				
169	33 50 00 Gas Service				
170	Connection to existing gas main				By Other
171	Gas line piping, incl's valves (2)				By Other
172	Allowance for gas	**1**	LS	$15,000.00	$15,000
173					
174	**G30 SITE CIVIL/MECHANICAL UTILITIES TOTAL**				**$715,840**
175					
176					
177	**G40 SITE ELECTRICAL UTILITIES**				
178					
179	**G4010 Site Electrical Utilities**				
180	33 70 00 Electrical Utilities				
181	Site electrical system	**1**	LS	$350,000.00	$350,000

Fuller Middle School

Framingham, MA

136,790 GSF

SITEWORK: NEW CONSTRUCTION

	DESCRIPTION	*QUANTITY*	*UNIT*	*UNIT COST*	*TOTAL*
182	Site demolition and make safe	**1**	LS	$50,000.00	$50,000
183					
184	**G40 SITE ELECTRICAL UTILITIES TOTAL**				**$400,000**
185					
186				**TOTAL SITEWORK SUMMARY**	**$6,719,690**
187					

18. OPM Construction Cost Estimate

An independent estimate was completed by A.M. Fogarty dated August 24, 2018 showing a construction cost of $77,959,221. The estimate is attached to the end of this section.

A.M. Fogarty
& Assoc., Inc.
175 Derby St., Suite 5, Hingham, MA 02043
TEL: (781) 749-7272 • FAX: (781) 740-2652
ptim@amfogarty.com
"Construction Cost Consultants"

Schematic Cost Estimate
Fuller Middle School
Framingham, MA

24-Aug-18

NEW BUILDING				$47,650,660
SITEWORK				$6,353,374
BUILDING DEMOLITION	196,000	GSF	$8.00	$1,568,000
ASBESTOS REMOVAL (cdw 11/7/17)				$892,616
VAT REMOVAL (cdw 11/7/17)				$388,800
OTHER HAZARDOUS MATERIAL (cdw 11/7/17)				$223,940
TOTAL DIRECT COST (estimated to the mid-point of construction)				$57,077,390
Chapter 149 a:				
DESIGN CONTINGENCY		10%		$5,707,739
CM CONTINGENCY		3%		$1,883,554
ESCALATION (ebp 7/19, bid 12/19)		5%		$3,233,434
GENERAL CONDITIONS	30	MOS	$150,000	$4,500,000
GENERAL REQUIREMENTS		2.5%		$1,810,053
TRAFFIC MITIGATION				$200,000
BUILDING PERMIT		waived		
P&P BOND		0.85%		$632,503
GENERAL LIABILITY INSURANCE		1.35%		$1,013,103
FEE		2.5%		$1,901,444
TOTAL CONSTRUCTION COST				$77,959,221
COST PER S.F.				$569.92

ALTERNATES:

ALTERNATE NO. 1 - ADD IRRIGATION SYSTEM (82,800 SF)	$123,369

PROJECT:	Fuller Middle School	NO. OF SQ. FT.:	136,790
LOCATION:	Framingham, MA	COST PER SQ. FT.:	$394.80
CLIENT:	SMMA		
DATE:	24-Aug-18		

No.: 17002

SUMMARY

	TOTAL	PERCENT OF PROJECT	COST PER SF
A. SUBSTRUCTURE			
A10 - FOUNDATIONS			
A1010 STANDARD FOUNDATIONS	2,419,398	4%	17.69
A1020 SPECIAL FOUNDATIONS	0	0%	0.00
A1030 SLAB ON GRADE	857,080	2%	6.27
A20 - BASEMENT CONSTRUCTION			
A2010 BASEMENT EXCAVATION	0	0%	0.00
A2020 BASEMENT WALLS	0	0%	0.00
B. SHELL			
B10 - SUPERSTRUCTURE			
B1010 FLOOR CONSTRUCTION	3,073,518	6%	22.47
B1020 ROOF CONSTRUCTION	2,140,710	4%	15.65
B20 - EXTERIOR ENCLOSURE			
B2010 EXTERIOR WALLS	4,468,772	8%	32.67
B2020 EXTERIOR WINDOWS	3,263,185	6%	23.86
B2030 EXTERIOR DOORS	159,306	0%	1.16
B30 - ROOFING			
B3010 ROOF COVERINGS	1,793,968	3%	13.11
B3020 ROOF OPENINGS	636,960	1%	4.66
C. INTERIORS			
C10 - INTERIOR CONSTRUCTION			
C1010 PARTITIONS	3,323,651	6%	24.30
C1020 INTERIOR DOORS	585,755	1%	4.28
C1030 FITTINGS	1,683,075	3%	12.30
C20 - STAIRS			
C2010 STAIR CONSTRUCTION	414,584	1%	3.03
C2020 STAIR FINISHES	54,332	0%	0.40
C30 - INTERIOR FINISHES			
C3010 WALL FINISHES	1,509,783	3%	11.04
C3020 FLOOR FINISHES	1,176,293	2%	8.60
C3030 CEILING FINISHES	1,624,091	3%	11.87
D. SERVICES			
D10 - CONVEYING			
D1010 ELEVATORS & LIFTS	218,037	0%	1.59
D20 - PLUMBING			
D2010 PLUMBING	2,270,043	4%	16.60

	TOTAL	PERCENT OF PROJECT	COST PER SF
D30 - HVAC			
D3010 HVAC	7,193,755	13%	52.59
D40 - FIRE PROTECTION			
D4010 SPRINKLERS	744,753	1%	5.44
D4020 STANDPIPES	0	0%	0.00
D4030 FIRE PROTECTION SPECIALTIES	0	0%	0.00
D4090 OTHER FIRE PROTECTION SYSTEMS	0	0%	0.00
D50 - ELECTRICAL			
D5010 ELECTRICAL SERVICE & DISTRIBUTION	1,521,036	3%	11.12
D5020 LIGHTING & BRANCH WIRING	1,436,295	3%	10.50
D5030 COMMUNICATION & SECURITY	1,780,078	3%	13.01
D5090 OTHER ELECTRICAL SYSTEMS	646,245	1%	4.72
E. EQUIPMENT & FURNISHINGS			
E10 - EQUIPMENT			
E1010 COMMERCIAL EQUIPMENT	398,115	1%	2.91
E1020 INSTITUTIONAL EQUIPMENT	0	0%	0.00
E1030 VEHICULAR EQUIPMENT	0	0%	0.00
E1090 OTHER EQUIPMENT	946,518	2%	6.92
E20 - FURNISHINGS			
E 2010 FIXED FURNISHINGS	1,311,326	2%	9.59
E2020 MOVABLE FURNISHINGS	0	0%	0.00
F. SPECIAL CONSTRUCTION & DEMOLITION			
F10 - SPECIAL CONSTRUCTION			
F1010 SPECIAL STRUCTURES	0	0%	0.00
F20 - SELECTIVE BUILDING DEMOLITION			
F2010 BUILDING ELEMENTS DEMOLITION	0	0%	0.00
F2020 HAZARDOUS COMPONENTS ABATEMENT	0	0%	0.00
G. BUILDING SITEWORK			
G10 - SITE PREPARATION			
G1010 SITE CLEARING	701,822	1%	5.13
G1020 SITE DEMOLITION & RELOCATIONS	0	0%	0.00
G1030 SITE EARTHWORK	1,771,979	3%	12.95
G1040 HAZARDOUS WASTE REMEDIATION	0	0%	0.00
G20 - SITE IMPROVEMENTS			
G2010 ROADWAYS	1,036,689	2%	7.58
G2020 PARKING LOTS	0	0%	0.00
G2030 PEDESTRIAN PAVING	365,863	1%	2.67
G2040 SITE DEVELOPMENT	317,465	1%	2.32
G2050 LANDSCAPING	1,014,403	2%	7.42

	TOTAL	PERCENT OF PROJECT	COST PER SF
G30 - SITE MECHANICAL UTILITIES			
G3010 WATER SUPPLY	205,210	0%	1.50
G3020 SANITARY SEWER	47,725	0%	0.35
G3030 STORM SEWER	391,419	1%	2.86
G3040 HEATING DISTRIBUTION	0	0%	0.00
G3050 COOLING DISTRIBUTION	0	0%	0.00
G3060 FUEL DISTRIBUTION	38,500	0%	0.28
G3090 OTHER SITE MECHANICAL UTILITIES	0	0%	0.00
G40 - SITE ELECTRICAL UTILITIES			
G4010 ELECTRICAL DISTRIBUTION	228,573	0%	1.67
G4020 SITE LIGHTING	233,726	0%	1.71
G4030 SITE COMMUNICATIONS & SECURITY	0	0%	0.00
G4090 OTHER SITE ELECTRICAL UTILITIES	0	0%	0.00
G90 - OTHER SITE CONSTRUCTION			
G9090 OTHER SITE SYSTEMS	0	0%	0.00
TOTAL DIRECT COST	54,004,034	100%	394.80

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
A. SUBSTRUCTURE				
A10 - FOUNDATIONS				
A1010 STANDARD FOUNDATIONS				
033000 CAST IN PLACE CONCRETE				
Column Footing Perm - (10' x10' x2' @ 70 ea):				
4000 psi, NW, (incl. placement)	519	CY	195.00	101,205
Formwork	5,600	SFCA	9.25	51,800
Rebar	51,900	LBS	1.20	62,280
**unit cost $414.81*				
Column Footing Int. - (10' x10' x 2' @ 50 ea):				
4000 psi, NW, (incl. placement)	370	CY	195.00	72,150
Formwork	4,000	SFCA	9.25	37,000
Rebar	37,000	LBS	1.20	44,400
**unit cost $415.00*				
Perim Wall Footing 1' x 3' (927 LF):				
4000 psi, NW, (incl. placement)	103	CY	195.00	20,085
Formwork	1,854	SFCA	8.00	14,832
Rebar	5,150	LBS	1.20	6,180
**unit cost $399.00*				
Retaining Wall Footing 2' x 6' (211 LF):				
4000 psi, NW, (incl. placement)	94	CY	195.00	18,330
Formwork	633	SFCA	8.00	5,064
Rebar	7,050	LBS	1.20	8,460
**unit cost $338.87*				
Foundation Wall 16" thick x height varies (1,600 lf):				
4000 psi, NW, (incl. placement)	375	CY	205.00	76,875
Formwork - 4' or less	11,760	SFCA	12.75	149,940
Formwork - 8'	720	SFCA	15.00	10,800
Formwork - 16'	2,720	SFCA	20.00	54,400
Brick Shelf	1,470	LF	14.50	21,315
Reinforcing steel	56,250	LBS	1.20	67,500
**unit cost $1,015.55*				
Retaining Wall 16" thick x 16' h (188 lf):				
4000 psi, NW, (incl. placement)	149	CY	205.00	30,545
Formwork radial - 16'	6,016	SFCA	23.25	139,872
Reinforcing steel	22,350	LBS	1.20	26,820
**unit cost $1,323.74*				
Auditorium Foundations:				
Wall footing	11	CY	350.00	3,850
12" Knee wall	15	CY	850.00	12,750
Entry Ramp:				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Wall footing	9	CY	350.00	3,150
Foundation wall	17	CY	900.00	15,300
Loading Dock:				
Wall footing - 8'	3	CY	350.00	1,050
Foundation wall	18	CY	975.00	17,550
Misc. Foundations:				
Tie Beam @ Brace Frame	10	CY	675.00	6,750
12" Elevator mat (2 EA)	6	CY	650.00	3,900
Elev sump pit	1	EA	900.00	900
12" Elevator pit wall	6	CY	900.00	5,400
Interior Mechanical pads - allow	1	LS	5,000.00	5,000
Concrete Pilaster	35	CY	1,050.00	36,750
Setting Anchor Bolts and Grout	130	EA	235.00	30,550
072100 INSULATION				
2" Rigid found. insul - ret. wall	1,360	SF	3.20	4,352
2" Rigid found. insul - frost wall	6,240	SF	3.20	19,968
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Foundation dampproofing	6,240	SF	1.90	11,856
Retaining wall waterproofing	1,360	SF	6.85	9,316
Elev. pit waterproofing	1	LOC	4,300.00	4,300
310000 EARTHWORK				
Ground Improvements:				
Geopiers	82,000	FTP	10.50	861,000
Foundation Earthwork:				
Building Cut (to elev 162.5)	3,554	CY	12.00	42,648
Excavate Footings	1,700	CY	15.00	25,500
Stockpile Cut for Future fill	5,254	CY	6.50	34,151
Gravel Sub Base - 24" (bldg ftp)	4,781	CY	34.00	162,554
Slab Fill	2,000	CY	28.00	56,000
Dewatering	1	LS	25,000.00	25,000
Foundation drain		NIC		
				2,419,398

A1020 SPECIAL FOUNDATIONS

NOT USED

0

A1030 SLAB ON GRADE

310000 EARTHWORK

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
12" Gravel base - SOG	2,390	CY	28.00	66,920
Excavate plumbing trenches	64,548	SF	0.50	32,274
Moisture mitigation		W/ C 3020		
033000 CAST IN PLACE CONCRETE				
5" Slab on Grade - Typ:				
3,500 psi, NW, (incl. placement)	1,004	CY	220.00	220,880
6x6 W2.9 X W2.9	64,548	SF	1.68	108,441
Control Joint	4,300	LF	2.60	11,180
Form slab depression	200	LF	3.00	600
Trowel Finish	64,548	SF	2.10	135,551
*unit cost $7.38				
Ext. 6" Entry Stoop w/Reinf Edge		W /Site paving		
Misc. Slabs and Concrete:				
Ext. 6" Loading Dock	320	SF	10.00	3,200
Entry Ramp	266	SF	10.00	2,660
Loading Dock Stair Structure-allow	1	LS	7,500.00	7,500
Gyp cement underlayment(spec 035413)		n/a		
072100 INSULATION				
2" Rigid Slab Insul.-100%	64,548	SF	3.30	213,008
072616 BELOW GRADE VAPOR RETARDER				
Stegro vapor barrier (15 mil)	64,548	SF	0.85	54,866
*Excludes under slab waterproofing system				
				857,080
TOTAL A10 FOUNDATIONS				3,276,478
B. SHELL				
B10 - SUPERSTRUCTURE				
B1010 FLOOR CONSTRUCTION				
051200 STRUCTURAL STEEL				
Steel Allowance (72,242 GSF):				
TYP Floor Frame (13 lbs /68,861 SF)	469.5730	TONS	3,700.00	1,737,420
HSS Beam		Included Above		
Wide Flange Beam		Included Above		
HSS Column		Included Above		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
HSS Brace Frame		Included Above		
FND wall deck support angle		Included Above		
Relieving angle		Included Above		
Atrium corridor support hangers		Included Above		
Shear stud (10/100sf)	7,300	EA	5.35	39,055
TOTAL STEEL WEIGHT	470	TONS		
033000 CAST IN PLACE CONCRETE				
TYP 6 1/2" LW Deck fill	68,861	SF	8.45	581,875
Gyp cement underlayment(spec 035413):				
2" Maxxon acoustic topping slab 2nd & 3rd flr	68,861	SF	4.00	275,444
053100 STEEL DECKING				
3" x 18 Ga. Comp Deck- Typ	68,861	SF	3.15	216,912
078120 FIREPROOFING (No Spec)				
Allow:				
Intumescent paint	1	LS	30,000.00	30,000
Spray fireproofing	68,861	SF	2.80	192,811
				3,073,518
B1020 ROOF CONSTRUCTION				
051200 STRUCTURAL STEEL				
Steel Allowance (65,892 GSF):				
TYP Roof Frame (10 # /52,733 SF)	263.6650	TONS	3,700.00	975,561
AUD Roof Frame (10 # / 6,505 SF)	32.5250	TONS	3,950.00	128,474
Gym Roof Frame (10 # / 8,346 SF)	41.7300	TONS	3,800.00	158,574
Atrium Roof Frame (10 # /15,000 SF)	75.0000	TONS	4,250.00	318,750
Truss		Included Above		
HSS Beam		Included Above		
Wide Flange Beam		Included Above		
HSS Column		Included Above		
HSS Brace Frame		Included Above		
Atrium corridor support hangers		Included Above		
Relieving angle		Included Above		
Roof edge angle		Included Above		
Galv. RTU dunnage		Included Above		
Moment connection		Included Above		
Shear stud (10/100sf)	972	EA	5.50	5,346
Color Galv		N/A		
Premium -AESS		N/A		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Allow:				
12'H Mech roof screen (7 lbs/sf @ 6,756 SF)	23.6460	TONS	4,200.00	99,313
033000 CAST IN PLACE CONCRETE				
Allow - TYP 6 1/2" LW Deck fill @:				
LVL 2 main entrance terrace	2,193	SF	8.45	18,531
LVL 2 & 3 terrace (2 loc)	756	SF	8.45	6,388
Pre Fab Roof Top Mech enclosure	772	SF	8.45	6,523
Roof Top mech equip -allow	6,000	SF	8.45	50,700
Allow - Roof top 8" x 12"H Concrete Curb @:				
Pre-fab mech PH unit	115	LF	82.00	9,430
Misc Equip curbs	1	LS	5,000.00	5,000
053100 STEEL DECKING				
1 1/2" x 18Ga comp deck	9,721	SF	2.95	28,677
3" x 18 Ga roof deck - gym	8,346	SF	3.22	26,874
3" x 18 Ga acoustical roof deck -Aud	6,505	SF	7.95	51,715
3" x 18 Ga roof deck - atrium	11,481	SF	3.22	36,969
3" x 18 Ga Typ. Flat roof deck	27,320	SF	3.22	87,970
078120 FIREPROOFING (No Spec)				
Allow:				
Intumescent paint	1	LS	25,000.00	25,000
Spray fireproofing	36,041	SF	2.80	100,915
				2,140,710
TOTAL B10 SUPERSTRUCTURE				5,214,227
B20 - EXTERIOR ENCLOSURE				
B2010 EXTERIOR WALLS				
100% GSF Exterior -70,258				
040001 MASONRY*				
BLDG CMU Backup :		N/A		
Masonry Veneer Building:				
8" x 8" iron spot Brick 1st - 3rd flr (80% solid area)	31,964	SF	33.00	1,054,812
Brick window jamb return	6,500	LF	45.00	292,500
3" Mineral Fiber Insulation		W/072000		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
SS Masonry flashing	1	LS	35,000.00	35,000
Staging		inc. w/ unit		
2nd Floor Main Entry:				
4'6"H Brick Partial HT wall-complete	52	LF	560.00	29,120
6'H Radial Brick Partial HT wall-complete	171	LF	700.00	119,700
Radial Retaining wall brick finish- both sides	3,000	SF	35.00	105,000
Retaining Wall Cap	188	LS	175.00	32,900
Concrete stair masonry trim		NIC		
Concrete ramp masonry trim		NIC		
Aud GF block veneer 50% wall fin		W /C3010		
054000 COLD FORMED METAL FRAMING				
Exterior wall Backup:				
6" x 16 Ga. stud @ Typ 14'	27,628	SF	9.85	272,136
6" x 16 Ga. stud @ Gym 28-36'	6,383	SF	9.85	62,873
6" x 16 Ga. stud @ Aud 28-35'	5,944	SF	9.85	58,548
6" x 16 Ga. stud @ Elev override 12'h	492	SF	9.85	4,846
6" x 16 Ga. stud @ PH stair 10'	680	SF	9.85	6,698
6" x 16 Ga. stud @ atrium 2'h	806	SF	9.85	7,939
6" x 16 Ga. stud @ atrium 6'h	3,132	SF	9.85	30,850
1/2" Dens glass sheathing	45,065	SF	3.30	148,715
* Mech Penthouse Unit - Complete		W / HVAC		
Roof Edge Framing :				
Parapet roof edge		NIC		
Projected roof edge		NIC		
Ext Ceiling Framing @ :				
Canopy & covered entry	1,048	SF	6.50	6,812
1/2" Dens glass sheathing	1,048	SF	3.50	3,668
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Galv, loose lintel @ HM egress	67	LF	36.00	2,412
Misc metals @ ext wall	1	LS	25,000.00	25,000
Reliving angle		W /Structural		
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Control and expansion joints	1	LS	30,000.00	30,000
Fluid Applied air & vapor barrier:				
Exterior Wall	45,065	SF	7.20	324,468
Canopy & covered entry	1,048	SF	7.20	7,546
072100 INSULATION				
Exterior Wall:				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
3" Mineral Fiber Insulation	45,065	SF	3.65	164,487
Spray foam at perm openings	9,299	LF	8.00	74,392
Exterior Ceiling Insulation @ :				
Covered entry	1,048	SF	5.00	5,240
074000 WALL PANELS & TRIM				
Additional Exterior Wall Framing:				
3"Horiz furr	13,101	SF	4.00	52,404
Exterior Wall Panel System:				
Trespa Phenolic 1st - 3rd flr (20% solid area)	7,991	SF	76.00	607,316
Elev override 12'h	492	SF	76.00	37,392
PH stair 10'	680	SF	76.00	51,680
Atrium 2'h	806	SF	76.00	61,256
Atrium 6'h	3,132	SF	76.00	238,032
*Insulated spandrel panels also included as part of the window system				
Exterior Ceiling /Soffit Panel System:				
Prefinished Soffit / Ceiling Panel	1,048	SF	76.00	79,648
12'H Mech roof screen(NIC Struct Frame):				
Corrugated Perf Mtl wall panel-complete	6755	SF	40.00	270,200
Screen wall cap	563	LF	40.00	22,520
090007 PAINTING*				
Misc exterior painting -allow	1	LS	10,000.00	10,000
092116 GYPSUM WALLBOARD ASSEMBLIES				
1 lyr 5/8" gyp @ ext. 6" x 16 Ga. Stud	45,065	SF	2.50	112,663
109000 MISCELLANEOUS SPECIALTIES				
Ext bldg mtd signage -allow	1	LS	20,000.00	20,000
				4,468,772
B2020 EXTERIOR WINDOWS				
061000 ROUGH CARPENTRY				
P.T. - perim blocking 2x6	9,009	LF	5.65	50,901
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Flex flashing - perim	9,009	LF	8.00	72,072
Exterior sealants - perim.	9,009	LF	7.50	67,568

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
080001 METAL WINDOWS*				
14' Curtainwall/Storefront:				
Class/admin 3'w (33 loc)	1,386	SF	115.00	159,390
Class/admin 4'w (3 loc)	168	SF	115.00	19,320
Class/admin 8'w (41 loc)	4,592	SF	115.00	528,080
Class/admin 9'w (1 loc)	126	SF	115.00	14,490
3 Section knuckle 15' (17 loc)	3570	SF	115.00	410,550
Full bay (13 loc)	5,324	SF	115.00	612,260
Main entry	75	SF	115.00	8,625
Aud entry	162	SF	115.00	18,630
Full Ht Curtainwall/Storefront:				
Toilet rm 3'w	476	SF	115.00	54,740
Stair hall	1,510	SF	115.00	173,650
Media ctr	900	SF	115.00	103,500
SW entry/terrace	2,139	SF	115.00	245,985
NE entry/terrace	2,569	SF	115.00	295,435
Alum Storefront System:				
Sloped Gym clerestory(86' 6"x 10')	865	SF	115.00	99,475
Sloped Aud clerestory (79'x9')	711	SF	115.00	81,765
*Includes perimeter int/ext sealants, glass, glazing , spandrel and alum break metal				
ALLOW:				
Security Glazing Film 2nd flr entry	1	LS	50,000.00	50,000
Exterior Wall Mock-up	1	LS	35,000.00	35,000
Horizontal Sun Shade 4' Projection (150 lf/flr)	450	LF	315.00	141,750
Vert. Sun Shade		N/A		
084500 TRANSLUCENT WALL ASSEMBLIES		N/A		
089000 METAL WALL LOUVERS				
Misc Alum louvers -allow	1	LS	20,000.00	20,000
				3,263,185
B2030 EXTERIOR DOORS				
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
OH door frame @:				
Tech-Makerspace (14'x 10')	1	EA	500.00	500
061000 ROUGH CARPENTRY				
P.T. - perim blocking HM open	256	LF	8.00	2,048

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Perim. Ext HM opening:				
Flex flashing - perim	256	LF	8.00	2,048
Exterior sealants - perim.	256	LF	7.50	1,920
080001 METAL WINDOWS*				
8' Alum. Doors (Incl. Hardware):				
1st Flr Entry - dbl	4	PR	8,250.00	33,000
2nd Flr Entry - sgl	1	EA	4,500.00	4,500
2nd Flr Entry - dbl	1	PR	8,250.00	8,250
2nd & 3rd Flr Terrace - dbl	2	PR	8,250.00	16,500
Stair egress - sgl	2	EA	4,500.00	9,000
Art class - sgl	1	EA	4,500.00	4,500
Media ctr - sgl	1	EA	4,500.00	4,500
Tech-Makerspace- sgl	1	EA	4,500.00	4,500
081113 HOLLOW METALWORK				
Ext 7' Insulated HM Doors and Frame:				
PH Roof access- sgl	1	EA	850.00	850
Receiving-sgl	1	EA	850.00	850
Receiving-dbl	2	EA	1,450.00	2,900
Aud -dbl	2	EA	1,450.00	2,900
Gym -dbl	4	EA	1,450.00	5,800
Storage -dbl	1	EA	1,450.00	1,450
083323 SPECIAL DOORS				
Motor Operated Insulated OH Door:				
Tech-Makerspace (14'x 10')	1	EA	12,500.00	12,500
087100 DOOR HARDWARE				
Auto opener -allow:	1	LOC	7,600.00	7,600
Ext HM Door HDW SET:				
PH Roof access- sgl	1	EA	650.00	650
Receiving-sgl	1	EA	1,200.00	1,200
Receiving-dbl	2	EA	2,500.00	5,000
Aud -dbl	2	EA	3,850.00	7,700
Gym -dbl	4	EA	3,850.00	15,400
Storage -dbl	1	EA	975.00	975
*Hardware also included with 080001				
090007 PAINTING*				
Paint HM door & Frame - sgl	2	EA	120.00	240
Paint HM door & Frame - dbl	9	EA	225.00	2,025
				159,306

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
TOTAL B20 - EXTERIOR ENCLOSURE				7,891,263
B30 - ROOFING				
B3010 ROOF COVERINGS				
061000 ROUGH CARPENTRY				
Flat Roof Blocking @:				
Base flashing	2,058	LF	12.50	25,725
Typ roof fascia	3,307	LF	12.50	41,338
Expansion joint	86	LF	40.00	3,440
6' dome skylight curb (3 EA)	57	LF	35.00	1,995
Gable skylight curb (4 EA)	573	LF	45.00	25,785
Flash Pre Fab Roof Top Mech encl curb	115	LF	35.00	4,025
Equip blocking	1	LS	7,500.00	7,500
Roof hatch-allow	1	EA	750.00	750
Stage vent-allow	1	EA	750.00	750
Atrium vent-allow	2	EA	750.00	1,500
070002 ROOFING AND FLASHING*				
White 60 mil PVC Roofing w/6" Insulation (NIC Pre-fab mech rm 772 sf):				
Typ Flat roof	44,601	SF	13.75	613,264
Low slope Aud & Gym roof	14,851	SF	13.75	204,201
Low slope PH roof	200	SF	13.75	2,750
LVL 2 main entrance roof w/ terrace pavers	2,193	SF	48.00	105,264
LVL 2 & 3 roof w/ terrace pavers(2 loc)	756	SF	48.00	36,288
1/2 " glass mat cover bd -100%	61,601	SF	1.68	103,490
5/8" glass mat protection bd -100%	61,601	SF	1.68	103,490
Roof vapor retarder-100%	61,601	SF	0.95	58,521
High Roof Rubber Walkway Pad	1,518	SF	7.00	10,626
Membrane flashing	61,601	SF	0.50	30,801
Base flashing	2,058	LF	32.00	65,856
(Spec)ZCC Typ roof fascia	3,307	LF	18.00	59,526
(Note 11/A200) Alum Typ roof fascia		NIC		
Expansion joint	86	LF	185.00	15,910
Flash 6' dome skylight curb (3 EA)	57	LF	45.00	2,565
Flash gable skylight curb (4 EA)	573	LF	45.00	25,785
Flash Pre Fab Roof Top Mech encl curb	115	LF	45.00	5,175
080002 GLASS AND GLAZING*				
Main Entrance Canopy -Complete:				
Clear Polycarb glazing w/ alum struct	679	SF	350.00	237,650
				1,793,968

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
B3020 ROOF OPENINGS				
070002 ROOFING AND FLASHING*				
Roof hatch-allow	1	EA	4,200.00	4,200
Stage vent-allow	2	EA	13,500.00	27,000
Elevator vent	1	EA	1,500.00	1,500
085200 SKYLIGHTS				
6' Dome Skylight (3 loc)	95	SF	135.00	12,825
Gable Skylight w/ 42% slope (4 loc)	3,997	SF	135.00	539,595
Gable Skylight Endwall (8 loc)	384	SF	135.00	51,840

				636,960
TOTAL B30 ROOFING				2,430,928
C. INTERIORS				
C10 - INTERIOR CONSTRUCTION				
C1010 PARTITIONS				
040001 MASONRY*				
Interior CMU Partition:		NIC		
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Folding Panel partition Support:				
Typ classroom (14 EA)	224	LF	145.00	32,480
Music classroom (1 EA)	16	LF	145.00	2,320
SPED suite (3 EA)	84	LF	145.00	12,180
Folding Grille Support:				
Café/Learning common (1 EA)	69	LF	200.00	13,800
Coiling Grille Support:				
Servery(1 EA)	16	LF	100.00	1,600
Main office(1 EA)	10.5	LF	100.00	1,050
061000 ROUGH CARPENTRY				
Interior blocking	136,790	GSF	0.50	68,395
Misc. rough carpentry	136,790	GSF	0.50	68,395
072100 INSULATION				
Firestopping	136,790	GSF	0.65	88,914

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Joint sealants	136,790	GSF	0.85	116,272
079513 EXPANSION JOINT COVER ASSEMBLIES				
Int Wall Expansion joints	1	LS	10,000.00	10,000
081113 HOLLOW METALWORK				
Interior H.M Windows, Sidelites and Transoms:				
Observ. / therapy rm wind		N/A		
Aud control booth wind		N/A		
Stair - dbl		N/A		
083323 SPECIAL DOORS				
Access panels	1	LS	30,000.00	30,000
Folding Grille :				
Café/Learning common (1 EA-69 LF x 12' H)	828	SF	120.00	99,360
Coiling Grille :				
Servery(1 EA-16LF x 10'H)	160	SF	95.00	15,200
Main office(1 EA-10' 6"LF x10'H)	105	SF	95.00	9,975
080001 METAL WINDOWS*				
10'H Aluminum Storefront Frame, Glass & Glazing-Allow:				
1st Floor Vestibule (3 loc)	466	SF	92.00	42,872
2nd Floor Vestibule (2 loc)	56	SF	92.00	5,152
Office/ vestibule security window -Allow:				
2nd Flr Main office	1	EA	5,000.00	5,000
080002 GLASS AND GLAZING*				
Alum channel ,Glass & Glazing @ Interior Windows, Sidelites and Transoms :				
Corr/class & admin wind 7'W x 7' 4"H	2,206	SF	62.00	136,772
Corr /music class wind 7'W x 7' 4"H	103	SF	62.00	6,386
Corr /music class wind 3'W x 7' 4"H	44	SF	62.00	2,728
Corr & class /teach prep rm SL 8' 2" H	3,277	SF	62.00	203,174
Corr & music class /teach prep rm SL 8' 2" H	151	SF	62.00	9,362
Typ Breakout Room (4 EA) SL 8' 2" H	1,160	SF	62.00	71,920
Radial Breakout Room (5 EA) SL 8' 2" H	1,283	SF	62.00	79,546
Media Center SL 8' 2" H(6 loc)	322	SF	62.00	19,964
Class & admin /corridor SL 8' 2" H(6 loc)	118	SF	62.00	7,316
Graduated glass premium-allow	1	LS	30,000.00	30,000
092116 GYPSUM WALLBOARD				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Elevator shaft - 42'H	1,743	SF	18.00	31,374
Gym - 28'H	1,736	SF	15.50	26,908
Gym chase - 32'H	2,704	SF	12.50	33,800
Aud chase - 32'H	2,704	SF	12.50	33,800
Auditorium - 14'H	1,078	SF	15.50	16,709
Auditorium stage front -32'H	2,056	SF	15.50	31,868
Auditorium dressing rm - 32'H	1,920	SF	15.50	29,760
Aud. furr w/gyp @ fnd	300	SF	9.00	2,700
TYP -14' Drywall Partitions:				
1 side class radial mech chase	8,922	SF	11.00	98,142
1 side class closet chase	2,014	SF	9.00	18,126
1 side radial plumb chase	1,123	SF	11.00	12,353
1 side plumb chase	6,649	SF	9.00	59,841
Chase @ fnd wall	1,152	SF	9.00	10,368
Drinking fountain chase wall	689	SF	9.00	6,201
4" Toilet rm	7,773	SF	10.50	81,617
4" Radial Toilet rm	1,368	SF	15.00	20,520
4" Class /admin	2,810	SF	10.50	29,505
6" Class /admin	19,582	SF	12.00	234,984
8" Class /admin	8,359	SF	14.00	117,026
6" Corridor	19,188	SF	13.00	249,444
6" Corridor bulkhead 6'H	4,533	SF	13.00	58,929
8" Corridor	6,817	SF	15.00	102,255
12" Corridor/vest	615	SF	11.50	7,073
1 HR Mech / elec rm	2,190	SF	12.50	27,375
2 HR Mech / elec rm	2,209	SF	15.50	34,240
Stair hall	2,187	SF	15.50	33,899
Kitchen / servery perim	1,940	SF	15.50	30,070
Misc. kitchen/servery part.	1,940	GSF	5.00	9,700
Typ Breakout Room (4 EA NIC SL 8' 2" H)	2,816	SF	12.50	35,200
Radial Breakout Room (5 EA NIC SL 8' 2" H)	3,115	SF	16.00	49,840
Music Rm	4,866	SF	24.50	119,217
Tile Backer Bd Premium @:				
Multi user toilet rm	9,621	SF	1.85	17,799
Single user toilet rm	3,660	SF	1.85	6,771
Misc. GWB assemblies	136,790	GSF	1.00	136,790
Load, Distribute and Misc.	136,790	GSF	0.25	34,198
*Partitions include sound attenuation, tape & joint compound finish				
109000 MISCELLANEOUS SPECIALTIES				
Folding Panel partition:				
16' x 8' H Typ classroom (14 EA)	1,792	SF	110.00	197,120
16' x 8' H Music classroom (1 EA)	128	SF	110.00	14,080
28' x8' H SPED suite (3 EA)	672	SF	110.00	73,920
*Includes pass dr & white bd finish				
				3,323,651

C1020 INTERIOR DOORS

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
081113 HOLLOW METALWORK				
Int. HM Frame 7'H:				
Single Door	124	EA	285.00	35,340
Double Door	10	EA	305.00	3,050
Int. HM Frame 8' 6"H:				
Single Door	108	EA	320.00	34,560
Barn Door Single	24	EA	400.00	9,600
081416 WOOD AND PLASTIC DOORS				
Birch Full Lite Solid Core Wood Door - Prefinished 36"x8'x6":				
Classroom & Admin- sgl	54	EA	720.00	38,880
Music classroom -sgl	4	EA	720.00	2,880
Interconnecting class / teach prep rm - sgl	39	EA	720.00	28,080
Music Intercon class / teach prep rm - sgl	2	EA	720.00	1,440
Media ctr- sgl	1	EA	720.00	720
Breakout room - sgl	9	EA	720.00	6,480
Teacher planning room - sgl barn dr	24	EA	850.00	20,400
Birch SC Wood Door - Prefinished 7'H:				
Storage Rm- sgl	8	EA	465.00	3,720
Storage Rm - dbl	2	EA	930.00	1,860
Mech/elec. Rm- sgl	9	EA	495.00	4,455
Mech/elec. Rm - dbl	4	EA	930.00	3,720
Stairhall - sgl	6	EA	1,500.00	9,000
Back of house corridor - dbl	1	EA	1,500.00	1,500
Sgl user toilet rm	14	EA	495.00	6,930
Multi user toilet / locker rm	4	EA	495.00	1,980
Kitchen/servery - sgl	3	EA	525.00	1,575
Classroom closet - sgl	34	EA	1,350.00	45,900
Interconnecting Class - sgl	8	EA	465.00	3,720
Interconnecting Sci Prep room - sgl	6	EA	465.00	2,790
Office - sgl	24	EA	675.00	16,200
Gym - dbl	1	EA	1,500.00	1,500
Aud- dbl	2	EA	1,500.00	3,000
Stage - sgl	3	EA	650.00	1,950
Music Practice rm - sgl	2	EA	495.00	990
Media Center - sgl	1	EA	675.00	675
Dressing rm - sgl	2	EA	465.00	930
080002 GLASS AND GLAZING*				
Glass & Glazing @ Interior Door				
*inc. w/ door cost				
087100 DOOR HARDWARE				
Interior Finish Hardware Set @ Birch Full Lite Solid Core Wood Door - Prefinished 36"x102" Door:				
Classroom & Admin- sgl	54	EA	850.00	45,900
Music classroom -sgl	4	EA	1,500.00	6,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Interconnecting class / teach prep rm - sgl	39	EA	600.00	23,400
Music Intercon class / teach prep rm - sgl	2	EA	600.00	1,200
Media ctr- sgl	1	EA	850.00	850
Breakout room - sgl	9	EA	850.00	7,650
Teacher planning room - sgl barn dr	24	EA	900.00	21,600
Interior Finish Hardware Set @ Birch SC Wood Door - Prefinished 7'H:				
Storage Rm- sgl	8	EA	450.00	3,600
Storage Rm - dbl	2	EA	650.00	1,300
Mech/elec. Rm- sgl	9	EA	650.00	5,850
Mech/elec. Rm - dbl	4	EA	950.00	3,800
Stairhall - sgl	6	EA	4,000.00	24,000
Back of house corridor - dbl	1	EA	4,000.00	4,000
Sgl user toilet rm	14	EA	950.00	13,300
Multi user toilet / locker rm	4	EA	950.00	3,800
Kitchen/servery - sgl	3	EA	1,200.00	3,600
Classroom closet - sgl	34	EA	450.00	15,300
Interconnecting Class - sgl	8	EA	450.00	3,600
Interconnecting Sci Prep room - sgl	6	EA	450.00	2,700
Office - sgl	24	EA	850.00	20,400
Gym - dbl	1	EA	3,500.00	3,500
Aud- dbl	2	EA	3,500.00	7,000
Stage - sgl	3	EA	1,500.00	4,500
Music Practice rm - sgl	2	EA	1,500.00	3,000
Media Center - sgl	1	EA	850.00	850
Dressing rm - sgl	2	EA	850.00	1,700
080001 METAL WINDOWS*				
8' Aluminum (Frame, Door, Glass, Glazing and Hdw):				
1st Flr Entry Vestibule - dbl	2	PR	8,300.00	16,600
2nd Flr Entry Vestibule- sgl	1	EA	4,200.00	4,200
2nd Flr Entry Vestibule- dbl	1	PR	8,300.00	8,300
083323 SPECIAL DOORS		W/ Partitions		
090007 PAINTING*				
Paint Int HM door frame:				
7' HM door frame - sgl	124	EA	100.00	12,400
7' HM door frame - dbl	10	EA	135.00	1,350
8' 6" HM door frame - sgl	109	EA	120.00	13,080
8' 6" HM pocket door frame - sgl	24	EA	150.00	3,600
				585,755
C1030 FITTINGS				
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Auditorium:				
Guard rail @ seating aisle	91	LF	265.00	24,115

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Auditorium equip. supports	1	LS	15,000.00	15,000
Stage front access stair & rails		NIC		
Interior Metals:				
Lobby guard rail	208	LF	400.00	83,200
OT/PT equip support-allow	1	RM	2,500.00	2,500
Gym equip supports	1	LS	10,000.00	10,000
Concealed stl angle @ corr built-in bench		W/ Unit Cost		
Concealed stl angle @ casework ctr		W/ Unit Cost		
Misc. metals	136,790	GSF	0.50	68,395
Atrium Vertical Duct Enclosure	4,200	SF	90.00	378,000
Exterior Rails:				
Loading dock stair/ramp guardrail	15	LF	265.00	3,975
Loading dock stair/ramp wall rail	15	LF	150.00	2,250
2nd flr entry terrace guardrail	30	LF	500.00	15,000
2nd & 3rd flr Terrace rail	59	LF	500.00	29,500
High roof rails		NIC		
*Interior Rails are also included w/ C2010				
*Exterior Rails are also included w/ G2010				
062000 FINISH CARPENTRY				
Utility & closet shelving	1	LS	10,000.00	10,000
Typ Window sill		nic		
Gym clerestory window sill	87	LF	55.00	4,758
Aud clerestory window sill	79	LF	55.00	4,345
Custom Casework:				
Corridor Locker Enclosure (nic mtl locker) - allow:				
1st flr freestanding	270	LF	480.00	129,600
2nd & 3rd flr freestanding -guardrail	634	LF	480.00	304,320
Main Office 2nd Floor:				
Radial Reception counters	15	LF	650.00	9,750
Allow- Library / Media Center (1 EA):				
Circulation desk	20	LF	1,200.00	24,000
Book shelving sys		NIC		
Allowance:				
Display Cases	1	LS	20,000.00	20,000
Trash/ recycle ctr	1	EA	10,000.00	10,000
*Balance of casework is included w/ E2010				
102113 COMPARTMENTS & CUBICLES				
Solid Plastic Toilet Partitions:				
Std. partition	20	EA	1,220.00	24,400
HC partition	14	EA	1,430.00	20,020
Urinal screen	13	EA	310.00	4,030

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
102813 TOILET ACCESSORIES				
SGL User Toilet Rm Accessories (14 ea):				
Tilt mirror @ wall hung lav	14	EA	220.00	3,080
Soap dispenser	14	EA	45.00	630
Toilet tissue dispenser	14	EA	48.00	672
San. prod. disposal	14	EA	60.00	840
Toilet grab bars	28	EA	85.00	2,380
Paper towel dispenser-allow	14	EA	135.00	1,890
Waste receptacle - allow	14	EA	150.00	2,100
Elec hand dryer - allow		NIC		
Coat hook -allow	14	EA	25.00	350
Public Fixed diaper changing sta - allow	2	EA	550.00	1,100
ADA SHW accessories -allow	1	EA	550.00	550
Multi User Toilet & Locker Rm Accessories (14 ea):				
3'H mirror lav ctr	750	SF	38.00	28,500
Soap dispenser	54	EA	45.00	2,430
Toilet tissue dispenser	34	EA	48.00	1,632
San. prod. disposal	34	EA	60.00	2,040
Toilet grab bars	28	EA	85.00	2,380
Paper towel dispenser-allow	40	EA	135.00	5,400
Waste receptacle - allow	40	EA	150.00	6,000
Elec hand dryer - allow		NIC		
Coat hook -allow	34	EA	25.00	850
Locker rm accessories	2	EA	1,000.00	2,000
Janitor shelf	7	EA	200.00	1,400
*Excludes classroom and workroom accessories				
101100 MARKERBOARDS & TACKBOARDS				
Allow:				
4'H Tack Board	30	EA	400.00	12,000
*Dry-erase wall covering is included in C3010				
*Classroom folding panel partition include white bd finish				
109000 MISCELLANEOUS SPECIALTIES				
Allow:				
Building directory	1	EA	5,000.00	5,000
Dedication plaque	1	EA	3,800.00	3,800
Room ID sign	136,790	GSF	0.22	30,094
Misc Int. ADA signage	136,790	GSF	0.12	16,415
Phenolic Locker:				
15" wx12"dx36"H Student corridor (nic enclosure)	723	EA	350.00	253,050
Metal Locker- allow:				
15"wx15"dx30"H PE student 2 tiered (50/RM)	100	EA	215.00	21,500
12" PE staff	4	EA	265.00	1,060
12" Custodian staff	4	EA	265.00	1,060
12" Kitchen staff	4	EA	265.00	1,060

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Locker base @ :				
Student corridor		W /Enclosure		
PE student	62.5	LF	36.00	2,250
PE staff	4	LF	36.00	144
Custodian staff	4	LF	36.00	144
Kitchen staff	4	LF	36.00	144
Allow Free Standing Wood Bench:				
PE locker rm (12LF/EA)	24	LF	50.00	1,200
Health office cubicle track w/ curtain	3	EA	1,325.00	3,975
Fire extinguisher and cab	20	EA	475.00	9,500
AED cabinets	4	EA	750.00	3,000
Secure wall panels:				
OT/PT rm (ea)	320	SF	15.00	4,800
Observ. / therapy rm (ea)	320	SF	15.00	4,800
Padded athletic flr tiles:				
OT/PT rm (ea)	100	SF	15.00	1,500
Observ. / therapy rm (ea)	100	SF	15.00	1,500
Misc wall & corner guards - allow	1	LS	7,500.00	7,500
Misc specialties	136,790	GSF	0.25	34,198
				1,683,075
TOTAL C10 - INTERIOR CONSTRUCTION				5,592,481

C20 - STAIRS

C2010 STAIR CONSTRUCTION

050001 MISCELLANEOUS & ORNAMENTAL IRON*

5' W Metal Pan Stair @ Learning Commons 1st- 2nd (1 FLT):				
Metal pan stair treads/risers	120	LFR	85.00	10,200
Metal pan landing	30	SF	55.00	1,650
Guardrail	66	LF	400.00	26,400
8' W Metal Pan Stair @ Learning Commons 1st- 2nd (1 FLT):				
Metal pan stair treads/risers	192	LFR	85.00	16,320
Metal pan landing	48	SF	55.00	2,640
Guardrail	66	LF	400.00	26,400
5' W Metal Pan Stair @ Learning Commons 2nd - 3rd(1 FLT):				
Metal pan stair treads/risers	120	LFR	85.00	10,200
Metal pan landing	30	SF	55.00	1,650
Guardrail	66	LF	400.00	26,400
13' 6"W Metal Pan Stair @ Learning Commons 2nd - 3rd(1 FLT):				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Metal pan stair treads/risers	324	LFR	85.00	27,540
Metal pan landing	68	SF	55.00	3,713
Guardrail	66	LF	400.00	26,400
6'6" W Metal Pan Stair Hall (2 loc 1st - 3rd 4 FLT):				
Metal pan stair treads/risers	624	LFR	85.00	53,040
Metal pan landing	352	SF	55.00	19,360
Wall rail	128	LF	165.00	21,120
Guardrail	128	LF	400.00	51,200
Guardrail flr open	12	LF	400.00	4,800
Cane rail	2	EA	1,350.00	2,700
6'6" W Metal Pan Stair @ Penthouse (1 FLT):				
Metal pan stair treads/risers	156	LFR	85.00	13,260
Metal pan landing	88	SF	55.00	4,840
Wall rail	32	LF	165.00	5,280
Guardrail	32	LF	400.00	12,800
Access gate	1	EA	1,800.00	1,800
Aud Rails & Stairs		W/ C1030		
Lobby rails		W/ C1030		
033000 CAST IN PLACE CONCRETE				
Conc stair pan fill :				
Metal pan stair treads and risers	1,536	LFR	22.00	33,792
Metal pan landing	616	SF	18.00	11,079
				414,584

C2020 STAIR FINISHES

090005 RESILIENT FLOORING*				
Metal Pan Stair Learning Commons Stair (4 FLT):				
Rubber treads and risers	756	LFR	14.25	10,773
Rubber tile landing	176	SF	12.50	2,194
Metal Pan Stair Hall (5 FLT):				
Rubber treads and risers	780	LFR	14.25	11,115
Rubber tile landing	440	SF	12.50	5,500
Aud Stair Finish		W/ C1030		
090007 PAINTING*				
Paint Metal Pan Stair & Rail:				
5' W @ Learning Commons 1st- 3rd	2	FLTS	2,500.00	5,000
8' W @ Learning Commons 1st- 2nd	1	FLTS	2,750.00	2,750
13' 6"W @ Learning Commons 1st- 2nd - 3rd	1	FLTS	4,500.00	4,500
6'6" W @ Stair Hall	5	FLTS	2,500.00	12,500

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL

				54,332
TOTAL C20 - STAIRS				468,915
C30 - INTERIOR FINISHES				
C3010 WALL FINISHES				
040001 MASONRY*				
Auditorium-28'H:				
GF block veneer 50% wall fin	3,460	SF	33.00	114,180
Entry Vestibule:				
Ext brick veneer wall fin -allow		NIC		
062000 FINISH CARPENTRY				
Learning Commons/ Corridors Full Ht P Lam Wall Panel & Trim- Allow :				
1st Flr	750	SF	40.00	30,000
2nd Flr	750	SF	40.00	30,000
3rd Flr	750	SF	40.00	30,000
Misc Wood Wall Panel & Trim- Allow :				
Media ctr	500	SF	55.00	27,500
Gym	500	SF	55.00	27,500
Auditorium 50% wall fin	3,460	SF	55.00	190,300
Science Lab Classroom (6 EA):	600	SF	55.00	33,000
Tech-Makerspace (1 EA):	100	SF	55.00	5,500
Fab-lab (1 EA):	100	SF	55.00	5,500
Art Class Room (1 EA):	100	SF	55.00	5,500
Teacher Prep Room (24 EA):	2,400	SF	55.00	132,000
Typ, SPED & ELL Classroom (33 EA):	3,300	SF	55.00	181,500
Music Classroom (2 EA):	200	SF	55.00	11,000
097200 DRY-ERASE WALL COVERING				
Dry Erase Curved wall (sf/loc):				
Typ, SPED & ELL Classroom (33 EA):	1,056	SF	25.00	26,400
Music Classroom (2 EA):	200	SF	25.00	5,000
097600 FIBERGLASS REINF. PLASTIC WALL PANELS				
8' FRP Wall Panel -allow:				
Main Kitchen	1,200	SF	11.00	13,200
Janitor closet	3,080	SF	11.00	33,880
097000 ACOUSTICAL ROOM COMPONENTS				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Tectum Wall Panel- Allow:				
Gymnasium	1,800	SF	19.00	34,200
Allow Fabric Wrapped Acoustical Panels :				
4'H Band Rm (1 ea)	450	SF	36.00	16,200
4' H Chorus Rm (1 ea)	450	SF	36.00	16,200
2'H Music practice rm (2 EA)	224	SF	36.00	8,064
Media center	200	SF	36.00	7,200
Auditorium	500	SF	36.00	18,000
Café / Learning commons	250	SF	36.00	9,000
*Includes sections 097112 & 097713				
090002 TILE*				
Tile backer bd prem		w/092116		
Ceramic Wall Tile 98"H :				
Locker rm		NIC		
ADA SHW (3' x 3')		W / Plumbing		
Multi user toilet rm	9,621	SF	18.00	173,178
Single user toilet rm	3,660	SF	18.00	65,880
Porcelain Wall Tile - Allow :				
Learning Commons & corridors		NIC		
Aud & Gym Corridor		NIC		
Servery		NIC		
Stair hall		NIC		
090007 PAINTING*				
Interior painting- walls	136,790	GSF	1.90	259,901
Vinyl wall covering		NIC		
				1,509,783
C3020 FLOOR FINISHES				
033000 CAST IN PLACE CONCRETE				
Sealed Concrete:				
Auditorium seating	2,265	SF	1.30	2,945
Mech & elec rm	1,058	SF	1.30	1,375
Receiving back of house	2,069	SF	1.30	2,690
Custodian Closet(6 EA)	876	SF	1.30	1,139
093000 TILE				
SGL User Toilet Room (14 EA) :				
Porcelain flr tile	968	SF	25.50	24,684
ADA SHW (3' x 3')		W / Plumbing		
Metal wall base	428	LF	15.00	6,420

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Threshold	14	EA	95.00	1,330
WPG @ membrane upper lvl	562	SF	8.75	4,918
Multi User Toilet Room(14 EA):				
Porcelain flr tile	3,313	SF	25.50	84,482
Metal wall base	1,147	LF	15.00	17,205
Threshold	14	EA	95.00	1,330
WPG @ membrane upper lvl	1,994	SF	8.75	17,448
Quarry Tile:				
Kitchen / servery	1,940	SF	16.50	32,010
Wall base & transitions		inc.		
090005 RESILIENT FLOORING*				
Moisture mitigation -allow	45,000	SF	1.00	45,000
VCT - typ	100,855	SF	4.50	453,848
Wall base 12" VCT w/ Schluter top edge where exp	28,500	LF	7.50	213,750
*Includes sections 0965000 & 096513				
095000 WOOD & ATHLETIC FLOOR				
Moisture mitigation -allow	8,281	SF	4.75	39,335
Stage Flooring	1,881	SF	14.00	26,334
Stage nosing	63	LF	38.00	2,394
Stage wall base	172	LF	9.85	1,694
Gym Hardwood Flooring	8,281	SF	19.75	163,550
Vented wall base Gym	365	LF	9.85	3,595
096800 CARPET				
Moisture mitigation -allow		N/A		
Media center	1,904	SF	5.00	9,520
Auditorium aisles	1,750	SF	6.00	10,500
Admin suite		N/A		
124813 MATS				
Walk off mat - allow (4 loc)	400	SF	22.00	8,800
Exterior entrance grate		NIC		
				1,176,293
C3030 CEILING FINISHES				
062000 FINISH CARPENTRY				
Typ, Sci, Art, Music, SPED & ELL Classroom:				
P Lam Summer Beam Cladding	672	LF	230.00	154,560
092116 GYPSUM WALLBOARD				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Soffits @:				
OP partition Typ classroom (14 EA)	224	LF	95.00	21,280
OP partition Music classroom (1 EA)	16	LF	95.00	1,520
OP partition SPED suite (3 EA)	84	LF	95.00	7,980
Folding Grille Café/Learning common (1 EA)	69	LF	125.00	8,625
Class rm angled soffit	42	RM	1,500.00	63,000
Dome Skylight 3'H	171	SF	18.00	3,078
Pyramid Skylight 5'H	2,865	SF	18.00	51,570
Lobby floor opening - 3'H	2,934	SF	18.00	52,812
Corridor locker		NIC		
Casework		NIC		
Misc gyp soffits	136,790	GSF	0.50	68,395
Gyp Ceiling System :				
SGL User Toilet Room	977	SF	10.25	10,014
Multi User Toilet Room	3,313	SF	10.25	33,958
1 HR Mech / elec rm	472	SF	10.25	4,838
2 HR Mech / elec rm	586	SF	10.25	6,007
Stair hall -allow 50%	1,130	SF	10.25	11,583
Monumental Stair		NIC		
090003 ACOUSTICAL TILE*				
ACT Ceiling System @ :				
Kitchen / servery	1,940	SF	5.70	11,058
Receiving back of house	2,069	SF	5.00	10,345
Custodian Closet(6 EA)	876	SF	5.00	4,380
Media center	1,904	SF	15.00	28,560
Admin, workroom & storage	14,616	SF	5.00	73,080
Classroom - 1/3 rm	14,878	SF	5.50	81,829
Breakout rooms	2,808	SF	5.00	14,040
Specialty Ceiling:				
Commons /corr 1st flr -Exp mtl tile	8,943	SF	15.00	134,145
Commons /corr 1st floor -Opt plank	1,667	SF	8.25	13,753
Commons /corr 2nd flr -Exp mtl tile	7,409	SF	15.00	111,135
Commons /corr 2nd floor -Opt plank	1,331	SF	8.25	10,981
Commons /corr 3rd flr -Exp mtl tile	5,127	SF	15.00	76,905
Commons /corr 3rd floor -Opt plank	1,641	SF	8.25	13,538
Music class - metal panel (2 EA)	1,902	SF	45.00	85,590
Music practice rm (2 EA)	408	SF	45.00	18,360
Main gym Tectum plank -50%	4,141	SF	20.00	82,820
Allow -Stage reflector Auditorium	1	LS	75,000.00	75,000
Auditorium Wd panel clg- 50%	2,167	SF	75.00	162,525
Exterior Soffit panel		W /Ext Wall		
090007 PAINTING*				
Paint gyp ceiling	6,478	SF	1.00	6,478
Paint gyp soffits	1	LS	25,000.00	25,000
Paint exposed structure- 100%:				
Stage	2,108	SF	2.00	4,216

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Paint Exposed Structure:				
Classroom - exp deck 2/3 rm	29,756	SF	2.00	59,512
Atrium 3rd flr	4,503	SF	2.00	9,006
Auditorium - 50%	2,167	SF	2.00	4,334
Main gym -50%	4,141	SF	2.00	8,282
				1,624,091
TOTAL C30 - INTERIOR FINISHES				4,310,168
D. SERVICES				
D10 - CONVEYING				
D1010 ELEVATORS & LIFTS				
140001 ELEVATORS & LIFTS*				
Passenger elevator (1 door)	4	STOP	53,000.00	212,000
*Includes roof level stop				
Stage lift		N/A		
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Elev. framing	1	EA	3,000.00	3,000
Elev. pit ladder	1	EA	1,537.00	1,537
Elev. sump grate	1	EA	1,500.00	1,500
				218,037
TOTAL D10 - CONVEYING				218,037
D20 - PLUMBING				
D2010 PLUMBING				
220001 PLUMBING*				
Plumbing Fixtures:				
Water closet	20	EA	1,850.00	37,000
ADA water closet	28	EA	1,850.00	51,800
Urinal	20	EA	1,650.00	33,000
Wall hung lavatory	14	EA	1,375.00	19,250
Ctr top lavatory	54	EA	1,100.00	59,400
Corridor drinking fountain	6	EA	3,150.00	18,900
Staff lunch room sink	1	EA	1,550.00	1,550
Music room sink	2	EA	1,550.00	3,100
Art room sink	3	EA	2,100.00	6,300

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Health office sink	1	EA	1,550.00	1,550
Typ classroom sink		N/A		
Typ classroom TP sink		N/A		
Media TP sink		N/A		
Tech-Makerspace sink	1	EA	1,550.00	1,550
Fab-lab sink	1	EA	1,550.00	1,550
Aud Dressing room sink (2 EA)	2	EA	1,550.00	3,100
ADA shower	1	EA	2,500.00	2,500
Mop service basin	6	EA	1,400.00	8,400
Kitchen mop service basin	1	EA	1,400.00	1,400
Fix Connection	161	EA	450.00	72,450
Sanitary and Vent Piping	6,200	LF	39.00	241,800
Domestic Piping	8,855	LF	44.50	394,048
FPSC wall hydrant	1	LS	10,000.00	10,000
HB hose bibb	1	LS	10,000.00	10,000
Floor Drains	1	LS	25,000.00	25,000
Science Class Room Equipment(6 EA):				
L-1 Student Lab Sink	18	EA	1,775.00	31,950
L-3 demonstration table (1-faucet)	6	EA	1,775.00	10,650
Emergency eye wash/shower (inc fd)	6	EA	3,100.00	18,600
Prep room sink	3	EA	1,775.00	5,325
Fix Connection	33	EA	350.00	11,550
Sanitary and Vent Piping	1,600	LF	49.00	78,400
Domestic Piping	1,980	LF	41.00	81,180
Acid Neutralization system	1	LS	22,500.00	22,500
Mixing Valve:				
MV-1	1	EA	7,500.00	7,500
MV-2 - science room	6	EA	1,250.00	7,500
Misc. Mix valve	2	EA	450.00	900
Pumps:				
RP-1 & RP-2	2	EA	15,000.00	30,000
RP-3	1	EA	4,500.00	4,500
RP-4	1	EA	4,500.00	4,500
Science Room Gas Fired Hot Water Heater:				
GWH-1	1	EA	25,000.00	25,000
Gas Fire Hot Water Supply Boiler:				
BLR-1, 2 (Lochinvar - Armor X2 -				
Gas Fired Water Heater	1	LS	55,000.00	55,000
hw Storage Tank	2	EA	18,000.00	36,000
Boiler Valve and Trim	1	LS	30,000.00	30,000
Interior Grease Interceptor:				
GI-1 & GI-2	2	EA	8,500.00	17,000
Exterior Grease Interceptor:				
EGI-1	1	EA	12,500.00	12,500
Auto Sensor (hard wire):				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Flush valve	68	EA	520.00	35,360
Lav Sensor	68	EA	495.00	33,660
Main Kitchen equipment hookup	1	LS	50,000.00	50,000
Roof/Storm Drain System				
Underground D/W/V Pipe:				
5"	510	LF	48.00	24,480
6"	900	LF	61.00	54,900
8"	200	LF	96.00	19,200
10"	50	LF	110.00	5,500
12"	20	LF	132.00	2,640
FCO	15	LF	425.00	6,375
Above Ground D/W/V Pipe:				
4"-10"	2,200	LF	60.00	132,000
CO	25	EA	400.00	10,000
Roof drain	55	EA	1,450.00	79,750
Overflow Nozzle	10	EA	1,650.00	16,500
Insulate leader	1,375	LF	13.00	17,875
Sanitary System				
Underground D/W/V Pipe:				
3"	300	LF	38.00	11,400
4"	1,500	LF	44.00	66,000
8"	500	LF	95.00	47,500
FCO	20	EA	425.00	8,500
Gas Pipe:				
2" - 6" Main	250	LF	80.00	20,000
1" - 1/2' lab connection		NIC		
Kitchen Piping	1	LS	15,000.00	15,000
Boiler Room Connections	1	LS	15,000.00	15,000
Science room shut off		NIC		
Gas turret		NIC		
Kitchen Master Shut off	1	LS	4,000.00	4,000
Underground Water Service:				
6"	10	LF	150.00	1,500
Meter Install	1	EA	1,200.00	1,200
6" BFP	1	EA	12,500.00	12,500
Test , permit misc gc	1	LS	50,000.00	50,000
General Requirement Temp Gas and Water	1	LS	35,000.00	35,000
				2,270,043
TOTAL D20 - PLUMBING	$16.60 /SF			2,270,043

D30 - HVAC

D3010 HVAC

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
230001 HVAC*				
Prefab Roof top mechanical rm	821	GSF	75.00	61,575
Packaged Rooftop Unit:				
RTU- Classroom (4 total)	88,000	CFM	13.50	1,188,000
RTU- Gym (1 total)	15,000	CFM	13.50	202,500
RTU- Locker Rm. (1 total)	3,500	CFM	15.00	52,500
RTU- Auditorium. (1 total)	12,000	CFM	13.50	162,000
RTU- Admin. (1 total)	6,000	CFM	11.00	66,000
Sound Attenuation	249,000	CFM	0.65	161,850
HW System:				
HWB-1 (FBN-2000)	1	EA	35,000.00	35,000
HWB-2 (FBN-2000)	1	EA	35,000.00	35,000
HWB-3 (FBN-2000)	1	EA	35,000.00	35,000
HWB-4 (FBN-2000)	1	EA	35,000.00	35,000
HWP-1,2	4	EA	15,000.00	60,000
BP 1-4	4	EA	2,250.00	9,000
VFD	4	EA	3,200.00	12,800
Chemical feed	1	LS	40,000.00	40,000
Air separator	2	EA	2,800.00	5,600
Expansion tank	2	EA	3,200.00	6,400
8" Feed Manifold	50	LF	350.00	17,500
6" Manifold S&R	100	LF	225.00	22,500
Boiler piping trim and valves	1	LS	30,000.00	30,000
12" Flue	240	LF	220.00	52,800
Flue Roof Term and Mast	4	EA	1,500.00	6,000
PH Tank	1	LS	1,500.00	1,500
Intake Louver and Damper	1	LS	6,000.00	6,000
Exhaust Louver and Damper	1	LS	6,000.00	6,000
Elec Room Exhaust fan and Louver	1	LS	3,500.00	3,500
Elec Room Exhaust and Intake louver damper	1	EA	3,500.00	3,500
Air-Cooled Chiller:				
ACC - 1 (175 ton)	2	EA	175,000.00	350,000
Chiller rough in, valve and trim	1	LS	20,000.00	20,000
Glycol	1	LS	18,500.00	18,500
Air separator	2	EA	3,500.00	7,000
100 Gal expansion tank	3	EA	4,000.00	12,000
500 Gal buffer tank	1	EA	7,500.00	7,500
CW Pump	2	EA	8,500.00	17,000
AC Split System:				
ACCU	11	EA	4,200.00	46,200
HP	11	EA	3,850.00	42,350
Line set	11	EA	1,500.00	16,500
Air Distribution:				
Auto Damper	16	EA	1,400.00	22,400
Fire damper	30	EA	550.00	16,500

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Galvanized ductwork	125,000	LBS	9.35	1,168,750
Decorative Atrium Ductwork	25,000	LBS	10.00	250,000
1" Duct insul	110,000	SF	3.90	429,000
EPDM wrap	3,000	SF	12.00	36,000
Kitchen hood exhaust duct - welded	1,250	LBS	17.50	21,875
Alum. dishwasher ductwork	500	LBS	12.00	6,000
Fire wrap at duct	400	SF	9.00	3,600
Displacement Box, Grills and Registers	136,790	GSF	0.85	116,272
VAV Box	55	EA	1,120.00	61,600
Distraction fan	3	EA	8,500.00	25,500
Terminal box	3	EA	850.00	2,550
Kitchen Exhaust	1	EA	5,500.00	5,500
Melink hood control	1	LS	12,500.00	12,500
Dish Washer Exhaust	1	EA	4,200.00	4,200
Bathroom Exhaust	2	EA	3,500.00	7,000
General Exhaust Fan	4	EA	3,500.00	14,000
MAU - 1	1	LS	30,000.00	30,000
Atrium Smoke Exhaust system	1	LS	145,000.00	145,000
Hydraunic Heater:				
Cab heater	9	EA	2,650.00	23,850
Convector	20	EA	1,400.00	28,000
Perimeter Radiant Heat	1,200	LF	165.00	198,000
Modulating Valve	68	EA	285.00	19,380
Isolation valve	136	EA	92.00	12,512
Mechanical Piping:				
AHU Valving	8	EA	3,500.00	28,000
Misc. Control Valve	8	EA	2,500.00	20,000
HVAC Pipe	136,790	GSF	7.25	991,728
Temperature Control:				
AHU/ERV	8	EA	25,000.00	200,000
Chiller and Cooling Equipment	1	LS	30,000.00	30,000
Boiler and Heating	1	LS	20,000.00	20,000
Pump	6	EA	1,800.00	10,800
FCU	1	EA	1,500.00	1,500
Hydronic point	40	EA	1,500.00	60,000
Exhaust Fan	8	EA	1,500.00	12,000
CO2 Sensor	45	EA	1,250.00	56,250
Misc. temp control	1	LS	75,000.00	75,000
Seismic & vibrator control	1	LS	35,000.00	35,000
Test and balance	136,790	GSF	0.65	88,914
Commission coordination	1	LS	25,000.00	25,000
GC & misc.	1	LS	25,000.00	25,000
*Fire safing carried w/ fittings				
*excludes temporary heat and ventilation				----------
				7,193,755

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
TOTAL D30 - HVAC	$52.59 /sf			7,193,755
D40 - FIRE PROTECTION				
D4010 SPRINKLERS				
210001 FIRE SUPPRESSION*				
Sprinkler System	136,790	GSF	4.75	649,753
Fire Pump (room shown on archi)	1	EA	95,000.00	95,000
				744,753
TOTAL D40 - FIRE PROTECTION	$5.44 /sf			744,753
D50 - ELECTRICAL				
D5010 ELECTRICAL SERVICE & DISTRIBUTION				
260001 ELECTRICAL*				
3,000 AMP Service, Panels and Feeders	1	LS	80,000.00	80,000
Panels and Feeders	136,790	SF	4.35	595,037
Transformer	4	EA	8,000.00	32,000
Digital metering	1	LS	35,000.00	35,000
250 kw Emergency Power	1	EA	165,000.00	165,000
General Power Devices	136,790	SF	2.30	314,617
24kw UPS	2	EA	17,500.00	35,000
Mechanical Wiring	136,790	SF	1.75	239,383
PV Rough-in	1	LS	25,000.00	25,000
				1,521,036
D5020 LIGHTING & BRANCH WIRING				
Interior Lighting	136,790	SF	8.50	1,162,715
Lighting Control	136,790	SF	2.00	273,580
				1,436,295
D5030 COMMUNICATION & SECURITY				
Division 27:				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Section 271100 - Communications Equipment Rm Fittings:				
Allow for idf/mdf Fitout	1	LS	75,000.00	75,000
Section 271500 - Communications Horizontal Cabling:				
Tele/data wiring, box and data port	136,790	SF	4.75	649,753
Section 272100 - Data Communications Network Equip - LAN/Wi-Fi Equip:				
Equipment total includes:		w/ff&e		
Server rack				
Phone system rack				
Public address rack				
Video surv. rack				
Media dist. rack				
Telecom rack				
Fiber dist. rack				
Section 273100 - Voice Communication Equipment (Avaya):				
Phone System		nic		
Section 274100 - Cafeteria Sound System	1	LS	50,000.00	50,000
Section 274100 - Gym Sound System	1	LS	50,000.00	50,000
Section 274100 - Media Center Sound System	1	LS	50,000.00	50,000
Section 274100 - Band	1	LS	35,000.00	35,000
Section 274110 Media Distribution System (IPTV):		nic		
Section 274120 Speech Reinforcement Systems:				
Classroom Reinforcement		nic		
Section 275116 - Public Address System:				
PA and Clock System	136,790	SF	0.95	129,951
Scoreboard and shot clock	1	LS	25,000.00	25,000
Section 275319 Bi-Directional Amplification System (DAS):				
DAS System	1	LS	110,000.00	110,000
Division 28:				
Section 281300 - Access Control and				
Section 281600 - Intrusion Detection Systems:				
Access Control	136,790	SF	2.50	341,975
Section 282000 - Video Surveillance CCTV System:				
Head end rack w/equip & poe ethernet sw	1	LS	85,000.00	85,000
Interior dome camera	35	EA	1,850.00	64,750
Ext. WP - exterior bkt mtd	20	EA	2,200.00	44,000
Section 282000 - Door Intercom/Video System (A1 phone):				
Master station - video	1	EA	1,650.00	1,650
Door entrance sta - video UP	2	EA	1,250.00	2,500
PS power supply	1	EA	500.00	500
System cabling	1	LS	10,000.00	10,000
Central controller w/program	1	LS	10,000.00	10,000
Area of refuge system	1	LS	45,000.00	45,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL

				1,780,078
D5090 OTHER ELECTRICAL SYSTEMS				
Fire Alarm	136,790	SF	3.00	410,370
Mass notification	136,700	SF	1.25	170,875
Lightning Protection	1	LS	65,000.00	65,000

				646,245
TOTAL D50 - ELECTRICAL	$39.36 /sf			5,383,654
E. EQUIPMENT & FURNISHINGS				
E10 - EQUIPMENT				
E1010 COMMERCIAL EQUIPMENT				
114000 FOOD SERVICE EQUIPMENT				
Kitchen equipment & casework *Kitchen equipment & casework Quote 8/9/2018	1	LS	398,115.00	398,115

				398,115
E1090 OTHER EQUIPMENT				
113100 APPLIANCES (No Spec)				
Staff Dinning Rm (1 ea):				
Refrigerator -full size	1	EA	1,400.00	1,400
Microwave	1	EA	500.00	500
Dishwasher		N/A		
Teacher Planning Rm		NIC		
Medical Suite :				
Refrigerator -full size	1	EA	1,400.00	1,400
SPED Learning Ctr :		N/A		
Kitchen washer and dryer	W / Kitchen Equipment			
Science rm appliance	W / Science Equipment			
116600 ATHLETIC & SPORTS EQUIPMENT				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Main Gym:				
Basketball backstops - electric	6	EA	9,500.00	57,000
8' 8" H Wall padding -allow	1,176	SF	17.00	19,992
Motor op divider curtain (62'x28')-allow	1,736	SF	16.00	27,776
Volley ball court equip.	2	PR	700.00	1,400
Tennis court equip.	2	PR	700.00	1,400
Scoreboard		W / Electrical		
Wall Mtd Motor op Bleacher	640	SEAT	85.00	54,400
Additional Wall Mtd Motor op Bleacher	120	SEAT	85.00	10,200
116143 THEATRICAL EQUIPMENT(No Spec)				
Auditorium - Allow:				
Aud. Motorized stage rigging and curtain	1	LS	160,000.00	160,000
Lighting and Dimming System	1	LS	195,000.00	195,000
Aud Audio Visual System	1	LS	185,000.00	185,000
Auditorium fixed seat	420	EA	295.00	123,900
115213 PROJECTION SCREENS				
Projection screen - elec op-Allow:				
Auditorium	1	EA	15,000.00	15,000
Café/Learning commons	1	EA	15,000.00	15,000
Gym	1	EA	10,000.00	10,000
Media center	1	EA	10,000.00	10,000
119000 MISC. EQUIPMENT				
Science Lab Classroom Equipment (6 EA):				
Safety glasses monitor case	1	EA	1,000.00	1,000
Glassware pegboards (1/RM)	6	EA	350.00	2,100
Fume hood	6	nic		
First aid kit	6	EA	300.00	1,800
OH track - equip support	6	EA	2,500.00	15,000
Safety SHW		w/ plumbing		
Fire blanket	6	EA	500.00	3,000
Fire ext & cab (1/RM)	6	EA	425.00	2,550
Misc equipment	6	RM	500.00	3,000
Science Shared Prep Room Equipment (3 EA):				
Refrigerator - full size	3	EA	750.00	2,250
Dishwasher - under -counter	3	EA	1,100.00	3,300
Ice maker - under -counter	3	EA	1,100.00	3,300
Glassware pegboards (1/RM)	1	EA	350.00	350
Acid storage cabinets	3	EA	1,000.00	3,000
Flammable material storage cab.	3	EA	2,500.00	7,500

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Misc equipment	3	RM	500.00	1,500
Additional Science Lab Equipment - Allow:				
Water distiller		NIC		
Autoclave sterilizer		NIC		
Steam table		NIC		
Robotics equip		NIC		
Allow:				
Loading dock bumpers	1	LS	3,500.00	3,500
Kiln	1	EA	4,000.00	4,000
Metal storage shelving		NIC		
Library equipment		NIC		
Loading dock trash compactor		NIC		
Loading dock dumpster		NIC		
Power op changing table- Hoyer lift		NIC		
Vault main office		NIC		
				946,518
TOTAL E10 - EQUIPMENT				1,344,633
E20 - FURNISHINGS				
E 2010 FIXED FURNISHINGS				
122413 WINDOW TREATMENT				
Allow:				
Exterior Manual op Window Shade	15,166	SF	8.00	121,328
Exterior Motor Op Shade:				
Aud clerestory	711	SF	28.00	19,908
Gym clerestory		NIC		
Interior Specialty Shade:				
P lam bifold screen @ corr window(7'w x 8' Hx2")	45	EA	1,500.00	67,500
123550 CASEWORK				
Corridor built-in bench 7'w	315	LF	400.00	126,000
Solid surface lav ctr	250	LF	265.00	66,250
5 tier 4'W shelving @ class closet-34 loc	680	LF	28.00	19,040
Science Lab Classroom (6 EA):				
Sink			w/ plumbing	
Epoxy ctr w/ 24" backsplash(no base cab 44 LF/RM)	264	LF	285.00	75,240
Mobile storage cab (36"wx27"h 6/RM)	36	EA	750.00	27,000
P lam Wall cab (44 LF/RM)	264	LF	210.00	55,440
Teachers demo table		NIC		
Student table		NIC		
Science Shared Prep Room (3 EA):				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Sink			w/ plumbing	
Epoxy ctr w/ 24" backsplash(no base cab 10.5 LF/RM)	32	LF	285.00	8,978
P lam Wall cab (10.5 LF/RM)	31.5	LF	210.00	6,615
Tech-Makerspace (1 EA):				
Counter w/ backsplash(no base cab)	20	LF	230.00	4,600
P lam Wall cab	20	LF	210.00	4,200
Fab-lab (1 EA):				
Counter w/ backsplash(no base cab)	68	LF	230.00	15,640
P lam Wall cab	68	LF	210.00	14,280
Art Class Room (1 EA):				
Counter w/ backsplash(no base cab)	25	LF	230.00	5,750
P lam Wall cab	25	LF	210.00	5,250
Teacher Prep Room (24 EA):				
P Lam ctr w/ wd edge (11'/loc)	264	LF	230.00	60,720
12" Shelving (5 tier- 42' 6"/loc)	1020	LF	45.00	45,900
Typ, SPED & ELL Classroom (33 EA):				
Ext wall 30" P Lam ctr w/ wd edge (12' 6"/loc)	412.5	LF	265.00	109,313
Ext wall 30" P Lam flip top ctr w/ wd edge (3'/loc)	99	LF	325.00	32,175
Mobile storage cab (36"wx27"h 4/RM)	132	EA	750.00	99,000
Ext wall 4 tier shelving unit (10' /loc)	330	LF	400.00	132,000
Music Classroom (2 EA):				
Ext wall 30" P Lam ctr w/ wd edge (20'/loc)	40	LF	265.00	10,600
Ext wall 30" P Lam flip top ctr w/ wd edge (3'/loc)	6	LF	325.00	1,950
Mobile storage cab (36"wx27"h 4/RM)	8	EA	750.00	6,000
Ext wall 4 tier shelving unit (14' /loc)	28	LF	400.00	11,200
Allow-Staff Lunch Room (1 EA):				
Base cab w/ SS ctr	10	LF	425.00	4,250
Wall cab	10	LF	200.00	2,000
Allow-Medical Suite:				
Base cab w/ ctr	6	LF	425.00	2,550
Wall cab	6	LF	200.00	1,200
Aud Dressing room (2 EA):				
Allow- Counter w/ backsplash(no base cab)	26	LF	300.00	7,800
Allow-Main Admin Suite:				
Work ctr	10	LF	245.00	2,450
Base cab w/ ctr	10	LF	350.00	3,500
Wall cab	10	LF	220.00	2,200
Mail box unit w/ base cab	10	LF	850.00	8,500
Reception desk		W / C1030		
Misc. Casework Allowance:				
Media Center (1 EA):		W / C1030		
Cafeteria /Learning Commons		NIC		
Common cohort Area 260		NIC		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Common cohort Area 310		NIC		
Music Practice rooms		NIC		
Music storage		NIC		
Gymnasium		NIC		
Auditorium		NIC		
Kitchen & Serving area		NIC		
Guidance suite (3 loc)		NIC		
SPED suite (3 loc)		NIC		
15'x15' Breakout Room (1 EA)		NIC		
18'x18' Breakout Room (2 EA)		NIC		
26'x14' Breakout Room (1 EA)		NIC		
20' Dia. Breakout Room (5 EA)		NIC		
Mobile Student table		NIC		
Art storage rm (1 EA):				
Auditorium millwork	1	LS	125,000.00	125,000
129000 MISCELLANEOUS FURNISHING				
Choral classroom risers		W/FFE		
Band classroom risers		W/FFE		
Stage risers		W/FFE		
				1,311,326
E2020 MOVABLE FURNISHINGS		NIC		
				0
TOTAL E20 - FURNISHINGS				1,311,326
F. SPECIAL CONSTRUCTION & DEMOLITION				
F10 - SPECIAL CONSTRUCTION				
F1010 SPECIAL STRUCTURES		N/A		
				0
TOTAL F10 - SPECIAL CONSTRUCTION				0
F20 - SELECTIVE BUILDING DEMOLITION				
F2010 BUILDING ELEMENTS DEMOLITION		See Grand Summary		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
				0
F2020 HAZARDOUS COMPONENTS ABATEMENT	See Grand Summary			
				0
TOTAL F20 - SELECTIVE BUILDING DEMOLITION				0

G. BUILDING SITEWORK

G10 - SITE PREPARATION

G1010 SITE CLEARING

311000 SITE PREPARATION & CLEARING

Construction entrance	1	EA	7,500.00	7,500
Construction fence	4,000	LF	12.00	48,000
Erosion control	3,200	LF	4.50	14,400
Drain inlet protection	25	EA	50.00	1,250
Erosion control maintenance	1	LS	15,000.00	15,000
Strip & stack top soil - 6"	5,900	CY	9.25	54,575
Selective Clear and Grub	1	LS	20,000.00	20,000
Saw cut walk	25	LF	5.00	125
Saw cut drive	25	LF	5.00	125
Protection:				
Plywood Protection Fence at Existing Building	250	LF	225.00	56,250
Site - Remove Existing:				
Cut and Cap	1	LS	5,000.00	5,000
Sanitary and Drain pipe	1,435	LF	35.00	50,225
Water Line	900	LF	31.00	27,900
Utility structures	10	EA	425.00	4,250
Wood guardrail	300	LF	15.00	4,500
Bit walk	201,786	SF	0.85	171,518
Conc. walk	14,967	SF	1.00	14,967
Bit Walkway	8,874	SF	0.90	7,987
Misc. site demolition	1	LS	25,000.00	25,000
Ground improvements	16,500	SF	10.50	173,250
				701,822

G1020 SITE DEMOLITION & RELOCATIONS

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Building Removal	SEE GRAND SUMMARY			
				0
G1030 SITE EARTHWORK				
310000 EARTHWORK				
Site Cut and Fill to Rough Grade:				
Site Cut	12,095	CY	10.25	123,974
Site Fill - reuse mat'l	17,349	CY	11.00	190,839
Site Fill - supply	24,320	CY	19.75	480,320
Site Rough Grading	101,781	SY	2.30	234,096
Layout, Mobilization, Supervision	1	LS	300,000.00	300,000
Temporary Access Road and Phasing Logistics:				
Temporary Parking (90 spaces)	89,000	SF	4.75	422,750
Temp Draiange		N/A		
Dust Control	1	LS	10,000.00	10,000
Street Sweeping	1	LS	10,000.00	10,000
				1,771,979
G1040 HAZARDOUS WASTE REMEDIATION				
		NIC		
				0
TOTAL G10 - SITE PREPARATION				2,473,801
G20 - SITE IMPROVEMENTS				
G2010 ROADWAYS				
321000 PAVING AND CURBING				
Bituminous Pavement (1 1/2" Wear & 2 1/2" Base):				
Bit Pavement - parking and road	18,983	SY	27.00	512,541
12" Gravel base @ bit drive	6,327	CY	31.50	199,301
Bituminous Pavement (1 1/2" Wear & 2 1/2" Base):				
Bit Pavement - fire lane	1,294	SY	27.00	34,938
12" Gravel base @ bit drive	432	CY	31.50	13,608
Curbing:				
Granite curb - straight	2,898	LF	41.50	120,267
Granite curb - radial	1,267	LF	45.50	57,649
Granite curb - sloped	55	LF	39.75	2,186

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Precast Concrete - straight		N/A		
Precast Concrete - radial		N/A		
Bit Berm Curb	2,000	LF	4.25	8,500
Street Patch at New Curb	1,154	LF	50.00	57,700
Parking striping	1	LS	15,000.00	15,000
Pavement patch @ utilities	1	LS	15,000.00	15,000
				1,036,689

G2020 PARKING LOTS

*Included with G2010

0

G2030 PEDESTRIAN PAVING

321000 PAVING AND CURBING

Bituminous Walks:				
Bituminous pavement - per civil	516	SY	25.45	13,132
Bituminous pavement - per landscape	182	SY	25.45	4,632
8" Gravel @ bit walk	155	CY	33.00	5,115
Concrete Walk:				
5" Concrete Pavement - per civil	17,774	SF	7.35	130,639
5" Concrete Pavement - per landscape	11,082	SF	7.35	81,453
8" Gravel @ conc. walks	714	CY	34.00	24,276
Add for Colored Concrete	1	LS	75,000.00	75,000
Concrete Unit Pavers - Patio (per archi drwgs):				
Unit paver	1,315	SF	20.00	26,300
8" Gravel @ paver	49	CY	34.00	1,666
HC tactile paver	10	EA	365.00	3,650
				365,863

G2040 SITE DEVELOPMENT

323100 SITE IMPROVEMENTS

Gateway and Bandstand	1	LS	100,000.00	100,000
Front Entry:				
Concrete Stair and Railing	4	LOC	10,000.00	40,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Steel Guard Rail:				
Entry Ramp Guard railing	115	LF	350.00	40,250
Bollards:				
6" Galv. Metal bollard @ equip pads	20	EA	950.00	19,000
323100 SITE IMPROVEMENTS				
Allowance:				
Wood Guard rail	251	LF	65.00	16,315
Trash/recycle receptacle	10	EA	2,000.00	20,000
Bike loops	20	EA	450.00	9,000
Entry sign	1	LS	30,000.00	30,000
Electronic school zone signals		NIC		
Parking/traffic signage	1	LS	7,500.00	7,500
Bench	10	EA	2,500.00	25,000
Dumpster pad	200	SF	16.00	3,200
Flag pole w/base	1	EA	7,200.00	7,200
				317,465
G2050 LANDSCAPING				
329000 PLANTING				
Trees:				
Tree - 3 1/2" cal	142	EA	900.00	127,800
Evergreen/screen trees (8-10' ht)	1	LS	30,000.00	30,000
Ornamental trees (8-10' ht)	1	LS	30,000.00	30,000
Shrubs & Perennials	1	LS	75,000.00	75,000
Mulch - allowance	200	CY	65.00	13,000
Lawn:				
Sod lawn	15,495	SF	1.00	15,495
Low mow fescue hydroseed lawn	435,679	SF	0.35	152,488
Meadow Mix	180,619	SF	0.35	63,217
12" Soil @ plant bed	438	CY	48.00	21,024
6" Loam - Lawn (inc.'s 8" at sports field)	12,710	CY	48.00	610,080
Credit to amend existing soil	-5,900	CY	35.00	-206,500
Irrigation System- Repair/Replace	82,800	SF	1.00	82,800
				1,014,403
TOTAL G20 - SITE IMPROVEMENTS				2,734,420

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
G30 - SITE MECHANICAL UTILITIES				
G3010 WATER SUPPLY				
330000 UTILITIES				
Site Connection	1	LOC	7,500.00	7,500
4" Domestic	30	LF	69.50	2,085
6" Domestic	125	LF	77.00	9,625
8" Main	1,500	LF	95.00	142,500
6" Fire hydrant service line	30	LF	85.00	2,550
Hydrant	3	EA	2,350.00	7,050
8" Gate valve	2	EA	1,650.00	3,300
6" Gate valve	4	EA	1,400.00	5,600
Temporary Construction Water Service	1	LS	25,000.00	25,000
				205,210
G3020 SANITARY SEWER				
330000 UTILITIES				
Grease trap W/ BLDG Conn	INC. W/ PLUMBING			
8" PVC	425	LF	85.00	36,125
Sanitary manhole	1	EA	4,100.00	4,100
Exist. sanitary manhole - site conn.	1	EA	7,500.00	7,500
				47,725
G3030 STORM SEWER				
330000 UTILITIES				
Site Drainage :				
Area drain	1	LS	25,000.00	25,000
Catch basin	18	EA	4,500.00	81,000
Drain Manhole	7	EA	4,500.00	31,500
Treatment chamber	4	EA	12,500.00	50,000
Head wall and Outfall	4	EA	10,000.00	40,000
Loading dock trench drain	20	LF	95.00	1,900
Bio retention basin	1	LS	100,000.00	100,000
Piping and Trenching:				
12" HDPE	2,089	LF	21.00	43,869
24" HDPE	550	LF	33.00	18,150
				391,419

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
G3060 FUEL DISTRIBUTION				
330000 UTILITIES				
Gas Service:				
Gas Pipe		By utility		
Trench excavation & backfill	750	LF	48.00	36,000
Service Meter Pad	1	EA	2,500.00	2,500
				38,500
G3090 OTHER SITE MECHANICAL UTILITIES		N/A		
				0
TOTAL G30 - SITE MECHANICAL UTILITIES				682,854
G40 - SITE ELECTRICAL UTILITIES				
G4010 ELECTRICAL DISTRIBUTION				
330000 UTILITIES				
Generator Pad	200	SF	25.00	5,000
Transformer pad	200	SF	25.00	5,000
Trench, Backfill and Concrete:				
Primary Ductbank	1,000	LF	70.00	70,000
Secondary ductbank	200	LF	85.00	17,000
Entrance Sign Power Feed (no concrete)	1,500	LF	22.00	33,000
Entrance Sign T/D Feed (no concrete)	1,500	LF	22.00	33,000
260001 ELECTRICAL*				
D&R all secondary feeders from xfmr in vault	1	LS	4,970.00	4,970
Co-ord PRI service removal	1	LS	1,704.00	1,704
Co-ord communication serv removal	1	LS	426.00	426
Exist. gen/set D&R complete	1	LS	9,030.00	9,030
Exist. gen/set wiring complete	1	LS	1,420.00	1,420
Co-rod removal of O/H service thru wood pole to modulars	1	LS	1,704.00	1,704
D&R exist. O/H sec service from modulars to pole xfmrs (bucket truck)	1	LS	2,652.00	2,652

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Ductbank				
Pole dressing - PRI	1	EA	684.00	684
AA				
PVC-4"C-w/PS	4,000	LF	5.65	22,600
BB				
PVC-4"C-w/PS	800	LF	5.65	4,520
CC				
Site Sign Feed:				
PVC-1"C-single mode fiber	1,500	LF	4.13	6,195
PVC-1"C-3#8 $ 1#10	1,500	LF	4.75	7,125
Xfmr pad grounding	1	EA	859.00	859
Gen/set pad grounding	1	EA	588.00	588
Xfmr pad 90 deg & sleeves	1	EA	608.00	608
Gen/set 90 Deg & sleeves	1	EA	488.00	488
				228,573
G4020 SITE LIGHTING				
330000 UTILITIES				
Site light trenching	2,500	LF	18.50	46,250
Light Pole base - 12' Precast	29	EA	1,500.00	43,500
260001 ELECTRICAL*				
Lighting Fixtures:				
ZF - Flag pole light	1	EA	763.00	763
ZT22-20'alum w/twin head	29	EA	3,368.00	97,672
Pedestrian lighting	1	LS	25,000.00	25,000
Pole base anchor bolts setups	29	EA	53.25	1,544
Pole base grounding w/elbow	29	EA	186.50	5,409
Pole base sleeves & nipples	29	EA	181.50	5,264
PVC-1 1/4"C-2#8 & 1#10	2,500	LF	3.33	8,325
				233,726
TOTAL G40 - SITE ELECTRICAL UTILITIES				462,299

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
ALTERNATE NO. 1 - ADD IRRIGATION SYSTEM (82,800 SF)				
Add:				
Irrigation System	82800	SF	1.00	82,800
Irrigation bfp	1	EA	1,600.00	1,600
Meter and Irrigation feed	1	LS	5,000.00	5,000
SUBTOTAL				89,400
DESIGN CONTINGENCY		10 %		8,940
SUBTOTAL				98,340
CM CONTINGENCY		3 %		2,950
SUBTOTAL				101,290
ESCALATION (winter 2019)		6 %		6,077
SUBTOTAL				107,368
GENERAL CONDITIONS		7 %		7,516
SUBTOTAL				114,883
GENERAL REQUIREMENTS		2.5 %		2,872
SUBTOTAL				117,755
BUILDING PERMIT		0 %		0
SUBTOTAL				117,755
P&P BOND		0.85 %		1,001
SUBTOTAL				118,756
GENERAL LIABILITY INSURANCE		1.35 %		1,603
SUBTOTAL				120,360
FEE		2.5 %		3,009
TOTAL ALTERNATE NO. 1				123,369

19. Reconciled Cost Estimate

The Designer's and Owner's Project Manager's Construction Cost estimates were reconciled in an all-day meeting with the Designer, OPM and both estimators. The Designer estimate was $77,049,778, defined in the detailed construction estimate dated August 20, 2018, prepared by Miyakoda Consulting and attached to the end of this section. The Owner's Project Manager Estimate was $80,292,089, defined in the detailed construction estimate, dated August 20, 2018 as prepared by A.M. Fogarty and attached to the end of this section. These estimates were then reconciled.

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"Construction Cost Consultants"

Schematic Cost Estimate
Fuller Middle School
Framingham, MA

20-Aug-18

NEW BUILDING				$49,140,684
SITEWORK				$6,392,573
BUILDING DEMOLITION	196,000	GSF	$7.50	$1,470,000
ASBESTOS REMOVAL (cdw 11/7/17)				$1,115,770
VAT REMOVAL (cdw 11/7/17)				$486,000
OTHER HAZARDOUS MATERIAL (cdw 11/7/17)				$279,925
TOTAL DIRECT COST (estimated to the mid-point of construction)				$58,884,952
Chapter 149 a:				
DESIGN CONTINGENCY		10%		$5,888,495
CM CONTINGENCY		3%		$1,943,203
ESCALATION (winter 2019)		6%		$4,002,999
GENERAL CONDITIONS	30	MOS	$135,000	$4,050,000
GENERAL REQUIREMENTS		2.5%		$1,869,241
BUILDING PERMIT		waived		
P&P BOND		0.85%		$651,431
GENERAL LIABILITY INSURANCE		1.35%		$1,043,419
FEE		2.5%		$1,958,344
TOTAL CONSTRUCTION COST				$80,292,084
COST PER S.F.				$598.42

ALTERNATES:

ALTERNATE NO. 1 - ADD IRRIGATION SYSTEM (82,800 SF)	$123,369

PROJECT:	Fuller Middle School	NO. OF SQ. FT.:	134,173
LOCATION:	Framingham, MA	COST PER SQ. FT.:	$413.89
CLIENT:	SMMA		
DATE:	20-Aug-18	*GSF excludes prefab mechanical penthouse	
		*GSF at 2nd flr 34,740 scaled	

No.: 17002

SUMMARY

	TOTAL	PERCENT OF PROJECT	COST PER SF
A. SUBSTRUCTURE			
A10 - FOUNDATIONS			
A1010 STANDARD FOUNDATIONS	2,768,436	5%	20.63
A1020 SPECIAL FOUNDATIONS	0	0%	0.00
A1030 SLAB ON GRADE	953,902	2%	7.11
A20 - BASEMENT CONSTRUCTION			
A2010 BASEMENT EXCAVATION	0	0%	0.00
A2020 BASEMENT WALLS	0	0%	0.00
B. SHELL			
B10 - SUPERSTRUCTURE			
B1010 FLOOR CONSTRUCTION	2,989,990	5%	22.28
B1020 ROOF CONSTRUCTION	2,514,341	5%	18.74
B20 - EXTERIOR ENCLOSURE			
B2010 EXTERIOR WALLS	4,419,598	8%	32.94
B2020 EXTERIOR WINDOWS	3,263,185	6%	24.32
B2030 EXTERIOR DOORS	159,306	0%	1.19
B30 - ROOFING			
B3010 ROOF COVERINGS	1,780,218	3%	13.27
B3020 ROOF OPENINGS	801,960	1%	5.98
C. INTERIORS			
C10 - INTERIOR CONSTRUCTION			
C1010 PARTITIONS	3,449,918	6%	25.71
C1020 INTERIOR DOORS	585,755	1%	4.37
C1030 FITTINGS	1,520,282	3%	11.33
C20 - STAIRS			
C2010 STAIR CONSTRUCTION	414,584	1%	3.09
C2020 STAIR FINISHES	54,332	0%	0.40
C30 - INTERIOR FINISHES			
C3010 WALL FINISHES	1,504,811	3%	11.22
C3020 FLOOR FINISHES	1,738,605	3%	12.96
C3030 CEILING FINISHES	1,842,013	3%	13.73
D. SERVICES			
D10 - CONVEYING			
D1010 ELEVATORS & LIFTS	218,037	0%	1.63
D20 - PLUMBING			
D2010 PLUMBING	2,258,043	4%	16.83

	TOTAL	PERCENT OF PROJECT	COST PER SF
D30 - HVAC			
D3010 HVAC	7,512,374	14%	55.99
D40 - FIRE PROTECTION			
D4010 SPRINKLERS	732,322	1%	5.46
D4020 STANDPIPES	0	0%	0.00
D4030 FIRE PROTECTION SPECIALTIES	0	0%	0.00
D4090 OTHER FIRE PROTECTION SYSTEMS	0	0%	0.00
D50 - ELECTRICAL			
D5010 ELECTRICAL SERVICE & DISTRIBUTION	1,499,053	3%	11.17
D5020 LIGHTING & BRANCH WIRING	1,274,644	2%	9.50
D5030 COMMUNICATION & SECURITY	1,887,320	3%	14.07
D5090 OTHER ELECTRICAL SYSTEMS	502,100	1%	3.74
E. EQUIPMENT & FURNISHINGS			
E10 - EQUIPMENT			
E1010 COMMERCIAL EQUIPMENT	398,115	1%	2.97
E1020 INSTITUTIONAL EQUIPMENT	0	0%	0.00
E1030 VEHICULAR EQUIPMENT	0	0%	0.00
E1090 OTHER EQUIPMENT	663,018	1%	4.94
E20 - FURNISHINGS			
E 2010 FIXED FURNISHINGS	1,434,426	3%	10.69
E2020 MOVABLE FURNISHINGS	0	0%	0.00
F. SPECIAL CONSTRUCTION & DEMOLITION			
F10 - SPECIAL CONSTRUCTION			
F1010 SPECIAL STRUCTURES	0	0%	0.00
F20 - SELECTIVE BUILDING DEMOLITION			
F2010 BUILDING ELEMENTS DEMOLITION	0	0%	0.00
F2020 HAZARDOUS COMPONENTS ABATEMENT	0	0%	0.00
G. BUILDING SITEWORK			
G10 - SITE PREPARATION			
G1010 SITE CLEARING	578,572	1%	4.31
G1020 SITE DEMOLITION & RELOCATIONS	0	0%	0.00
G1030 SITE EARTHWORK	1,637,419	3%	12.20
G1040 HAZARDOUS WASTE REMEDIATION	0	0%	0.00
G20 - SITE IMPROVEMENTS			
G2010 ROADWAYS	1,131,736	2%	8.43
G2020 PARKING LOTS	0	0%	0.00
G2030 PEDESTRIAN PAVING	365,863	1%	2.73
G2040 SITE DEVELOPMENT	251,150	0%	1.87
G2050 LANDSCAPING	931,603	2%	6.94

	TOTAL	PERCENT OF PROJECT	COST PER SF
G30 - SITE MECHANICAL UTILITIES			
G3010 WATER SUPPLY	252,063	0%	1.88
G3020 SANITARY SEWER	24,350	0%	0.18
G3030 STORM SEWER	719,019	1%	5.36
G3040 HEATING DISTRIBUTION	0	0%	0.00
G3050 COOLING DISTRIBUTION	0	0%	0.00
G3060 FUEL DISTRIBUTION	38,500	0%	0.29
G3090 OTHER SITE MECHANICAL UTILITIES	0	0%	0.00
G40 - SITE ELECTRICAL UTILITIES			
G4010 ELECTRICAL DISTRIBUTION	228,573	0%	1.70
G4020 SITE LIGHTING	233,726	0%	1.74
G4030 SITE COMMUNICATIONS & SECURITY	0	0%	0.00
G4090 OTHER SITE ELECTRICAL UTILITIES	0	0%	0.00
G90 - OTHER SITE CONSTRUCTION			
G9090 OTHER SITE SYSTEMS	0	0%	0.00
TOTAL DIRECT COST	55,533,257	100%	413.89

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
A. SUBSTRUCTURE				
A10 - FOUNDATIONS				
A1010 STANDARD FOUNDATIONS				
033000 CAST IN PLACE CONCRETE				
Column Footing Perm - (10' x10' x2' @ 70 ea):				
4000 psi, NW, (incl. placement)	519	CY	195.00	101,205
Formwork	5,600	SFCA	9.25	51,800
Rebar	51,900	LBS	1.20	62,280
**unit cost $414.81*				
Column Footing Int. - (10' x10' x 2' @ 50 ea):				
4000 psi, NW, (incl. placement)	370	CY	195.00	72,150
Formwork	4,000	SFCA	9.25	37,000
Rebar	37,000	LBS	1.20	44,400
**unit cost $415.00*				
Perim Wall Footing 1' x 3' (927 LF):				
4000 psi, NW, (incl. placement)	103	CY	195.00	20,085
Formwork	1,854	SFCA	8.00	14,832
Rebar	5,150	LBS	1.20	6,180
**unit cost $399.00*				
Retaining Wall Footing 2' x 6' (211 LF):				
4000 psi, NW, (incl. placement)	94	CY	195.00	18,330
Formwork	633	SFCA	8.00	5,064
Rebar	7,050	LBS	1.20	8,460
**unit cost $338.87*				
Foundation Wall 16" thick x height varies (1,600 lf):				
4000 psi, NW, (incl. placement)	375	CY	205.00	76,875
Formwork - 4' or less	11,760	SFCA	12.75	149,940
Formwork - 8'	720	SFCA	15.00	10,800
Formwork - 16'	2,720	SFCA	20.00	54,400
Brick Shelf	1,470	LF	14.50	21,315
Reinforcing steel	56,250	LBS	1.20	67,500
**unit cost $1,015.55*				
Retaining Wall 16" thick x 16' h (188 lf):				
4000 psi, NW, (incl. placement)	149	CY	205.00	30,545
Formwork radial - 16'	6,016	SFCA	23.25	139,872
Reinforcing steel	22,350	LBS	1.20	26,820
**unit cost $1,323.74*				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Auditorium Foundations:				
Wall footing	11	CY	350.00	3,850
12" Knee wall	15	CY	850.00	12,750
Entry Ramp:				
Wall footing	9	CY	350.00	3,150
Foundation wall	17	CY	900.00	15,300
Loading Dock:				
Wall footing - 8'	3	CY	350.00	1,050
Foundation wall	18	CY	975.00	17,550
Misc. Foundations:				
Tie Beam @ Brace Frame	10	CY	675.00	6,750
12" Elevator mat (2 EA)	6	CY	650.00	3,900
Elev sump pit	1	EA	900.00	900
12" Elevator pit wall	6	CY	900.00	5,400
Interior Mechanical pads - allow	1	LS	5,000.00	5,000
Concrete Pilaster	35	CY	1,050.00	36,750
Setting Anchor Bolts and Grout	130	EA	235.00	30,550
072100 INSULATION				
2" Rigid found. insul - ret. wall	1,360	SF	3.20	4,352
2" Rigid found. insul - frost wall	6,240	SF	3.20	19,968
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Foundation dampproofing	6,240	SF	1.90	11,856
Retaining wall waterproofing	1,360	SF	6.85	9,316
Elev. pit waterproofing	1	LOC	4,300.00	4,300
310000 EARTHWORK				
Ground Improvements:				
Geopiers	82,000	FTP	10.50	861,000
Foundation Earthwork:				
Building Cut (to elev 159.5)	10,745	CY	12.00	128,940
Stockpile Cut for Future fill	10,745	CY	6.50	69,843
Structural Fill - 24" (bldg ftp)	4,781	CY	34.00	162,554
Slab Fill	8,368	CY	28.00	234,304
Dewatering	1	LS	25,000.00	25,000
Foundation drain	1,700	LF	32.50	55,250
Earthwork Allowance:				
Ledge Removal	200	CY	95.00	19,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
				2,768,436
A1020 SPECIAL FOUNDATIONS		NOT USED		0
A1030 SLAB ON GRADE				
310000 EARTHWORK				
12" Gravel base - SOG	2,390	CY	28.00	66,920
Excavate plumbing trenches	64,548	SF	0.50	32,274
Moisture mitigation		W/ C 3020		
033000 CAST IN PLACE CONCRETE				
5" Slab on Grade - Typ:				
3,500 psi, NW, (incl. placement)	1,004	CY	220.00	220,880
6x6 W2.9 X W2.9	64,548	SF	1.68	108,441
Control Joint	4,300	LF	2.60	11,180
Form slab depression	200	LF	3.00	600
Trowel Finish	64,548	SF	2.10	135,551
*unit cost $7.38				
Ext. 6" Entry Stoop w/Reinf Edge		W /Site paving		
Misc. Slabs and Concrete:				
Ext. 6" Loading Dock	320	SF	10.00	3,200
Entry Ramp	266	SF	10.00	2,660
Loading Dock Stair Structure-allow	1	LS	7,500.00	7,500
Gyp cement underlayment(spec 035413)		n/a		
072100 INSULATION				
2" Rigid Slab Insul.-100%	64,548	SF	3.30	213,008
072616 BELOW GRADE VAPOR RETARDER				
Stegro vapor barrier (15 mil)	64,548	SF	0.85	54,866
*Excludes under slab waterproofing system				
220001 PLUMBING*				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Under slab drainage system	64,548	SF	1.50	96,822
				953,902
TOTAL A10 FOUNDATIONS				3,722,337

B. SHELL

B10 - SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

051200 STRUCTURAL STEEL

Steel Allowance (68,861 GSF):				
TYP Floor Frame (13 lbs /68,861 SF)	447.5965	TONS	3,700.00	1,656,107
HSS Beam		Included Above		
Wide Flange Beam		Included Above		
HSS Column		Included Above		
HSS Brace Frame		Included Above		
FND wall deck support angle		Included Above		
Relieving angle		Included Above		
Atrium corridor support hangers		Included Above		
Shear stud (10/100sf)	6,886	EA	5.35	36,840
TOTAL STEEL WEIGHT	448	TONS		

033000 CAST IN PLACE CONCRETE

TYP 6 1/2" LW Deck fill	68,861	SF	8.45	581,875
Gyp cement underlayment(spec 035413):				
2" Maxxon acoustic topping slab 2nd & 3rd flr	68,861	SF	4.00	275,444

053100 STEEL DECKING

3" x 18 Ga. Comp Deck- Typ	68,861	SF	3.15	216,912

078120 FIREPROOFING (No Spec)

Allow:

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Intumescent paint	1	LS	30,000.00	30,000
Spray fireproofing	68,861	SF	2.80	192,811
				2,989,990

B1020 ROOF CONSTRUCTION

051200 STRUCTURAL STEEL

Steel Allowance (65,892 GSF):				
TYP Roof Frame (12 # /52,733 SF)	316.3980	TONS	3,700.00	1,170,673
AUD Roof Frame (13 # / 6,505 SF)	42.2825	TONS	3,950.00	167,016
Gym Roof Frame (13 # / 8,346 SF)	54.2490	TONS	3,800.00	206,146
Atrium Roof Frame (13 # /15,000 SF)	97.5000	TONS	4,250.00	414,375
Truss		Included Above		
HSS Beam		Included Above		
Wide Flange Beam		Included Above		
HSS Column		Included Above		
HSS Brace Frame		Included Above		
Atrium corridor support hangers		Included Above		
Relieving angle		Included Above		
Roof edge angle		Included Above		
Galv. RTU dunnage		Included Above		
Moment connection		Included Above		
Shear stud (10/100sf)	972	EA	5.50	5,346
Color Galv		N/A		
Premium -AESS		N/A		
Allow:				
12'H Mech roof screen (7 lbs/sf @ 6,756 SF)	23.6460	TONS	4,200.00	99,313

033000 CAST IN PLACE CONCRETE

Allow - TYP 6 1/2" LW Deck fill @:				
LVL 2 main entrance terrace	2,193	SF	8.45	18,531
LVL 2 & 3 terrace (2 loc)	756	SF	8.45	6,388
Pre Fab Roof Top Mech enclosure	772	SF	8.45	6,523
Roof Top mech equip -allow	6,000	SF	8.45	50,700
Allow - Roof top 8" x 12"H Concrete Curb @:				
Pre-fab mech PH unit	115	LF	82.00	9,430
Misc Equip curbs	1	LS	5,000.00	5,000

053100 STEEL DECKING

1 1/2" x 18Ga comp deck	9,721	SF	2.95	28,677

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
3" x 18 Ga roof deck - gym	8,346	SF	3.22	26,874
3" x 18 Ga acoustical roof deck -Aud	6,505	SF	7.95	51,715
3" x 18 Ga roof deck - atrium	11,481	SF	3.22	36,969
3" x 18 Ga Typ. Flat roof deck	26,320	SF	3.22	84,750
072100 INSULATION				
Installation of sound absorb insul @ acous mtl deck		inc. w/ deck		
078120 FIREPROOFING (No Spec)				
Allow:				
Intumescent paint	1	LS	25,000.00	25,000
Spray fireproofing	36,041	SF	2.80	100,915
				2,514,341
TOTAL B10 SUPERSTRUCTURE				5,504,331
B20 - EXTERIOR ENCLOSURE				
B2010 EXTERIOR WALLS				
100% GSF Exterior -70,258				
040001 MASONRY*				
BLDG CMU Backup :		N/A		
Masonry Veneer Building:				
8" x 8" iron spot Brick 1st - 3rd flr (80% solid are	31,964	SF	33.00	1,054,812
Brick window jamb return	6,500	LF	45.00	292,500
3" Mineral Fiber Insulation		W/072000		
SS Masonry flashing	1	LS	35,000.00	35,000
Staging		inc. w/ unit		
2nd Floor Main Entry:				
4'6"H Brick Partial HT wall-complete	52	LF	560.00	29,120
6'H Radial Brick Partial HT wall-complete	171	LF	700.00	119,700
Radial Retaining wall brick finish-6'Exp	1,026	SF	35.00	35,910
Retaining Wall Cap	188	LS	175.00	32,900
Concrete stair masonry trim		NIC		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Concrete ramp masonry trim		NIC		
Aud GF block veneer 50% wall fin		W /C3010		
054000 COLD FORMED METAL FRAMING				
Exterior wall Backup:				
6" x 16 Ga. stud @ Typ 14'	27,628	SF	9.85	272,136
6" x 16 Ga. stud @ Gym 28-36'	6,383	SF	9.85	62,873
6" x 16 Ga. stud @ Aud 28-35'	5,944	SF	9.85	58,548
6" x 16 Ga. stud @ Elev override 12'h	492	SF	9.85	4,846
6" x 16 Ga. stud @ PH stair 10'	680	SF	9.85	6,698
6" x 16 Ga. stud @ atrium 2'h	806	SF	9.85	7,939
6" x 16 Ga. stud @ atrium 6'h	3,132	SF	9.85	30,850
1/2" Dens glass sheathing	45,065	SF	3.30	148,715
* Mech Penthouse Unit - Complete		W / HVAC		
Roof Edge Framing :				
Parapet roof edge		NIC		
Projected roof edge		NIC		
Ext Ceiling Framing @ :				
Canopy & covered entry	1,048	SF	6.50	6,812
1/2" Dens glass sheathing	1,048	SF	3.50	3,668
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Galv, loose lintel @ HM egress	67	LF	36.00	2,412
Misc metals @ ext wall	1	LS	25,000.00	25,000
Reliving angle		W /Structural		
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Control and expansion joints	1	LS	30,000.00	30,000
Fluid Applied air & vapor barrier:				
Exterior Wall	45,065	SF	7.20	324,468
Canopy & covered entry	1,048	SF	7.20	7,546
072100 INSULATION				
Exterior Wall:				
3" Mineral Fiber Insulation	45,065	SF	3.65	164,487
Spray foam at perm openings	9,299	LF	8.00	74,392

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Exterior Ceiling Insulation @ :				
Covered entry	1,048	SF	5.00	5,240
074000 WALL PANELS & TRIM				
Additional Exterior Wall Framing:				
3"Horiz fiberglass furr	13,101	SF	6.00	78,606
Exterior Wall Panel System:				
Trespa Phenolic 1st - 3rd flr (20% solid area)	7,991	SF	78.00	623,298
Elev override 12'h	492	SF	78.00	38,376
PH stair 10'	680	SF	78.00	53,040
Atrium 2'h	806	SF	78.00	62,868
Atrium 6'h	3,132	SF	78.00	244,296
*Insulated spandrel panels also included as part of the window system				
Exterior Ceiling /Soffit Panel System:				
Prefinished Soffit / Ceiling Panel	1,048	SF	45.00	47,160
12'H Mech roof screen(NIC Struct Frame):				
Corrugated Perf Mtl wall panel-complete	6755	SF	40.00	270,200
Screen wall cap	563	LF	40.00	22,520
090007 PAINTING*				
Misc exterior painting -allow	1	LS	10,000.00	10,000
092116 GYPSUM WALLBOARD ASSEMBLIES				
1 lyr 5/8" gyp @ ext. 6" x 16 Ga. Stud	45,065	SF	2.50	112,663
109000 MISCELLANEOUS SPECIALTIES				
Ext bldg mtd signage -allow	1	LS	20,000.00	20,000
				4,419,598
B2020 EXTERIOR WINDOWS				
061000 ROUGH CARPENTRY				
P.T. - perim blocking 2x6	9,009	LF	5.65	50,901
071000 DAMPPROOF., WATERPROOF. & CAULKING*				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Flex flashing - perim	9,009	LF	8.00	72,072
Exterior sealants - perim.	9,009	LF	7.50	67,568
080001 METAL WINDOWS*				
14' Curtainwall/Storefront:				
Class/admin 3'w (33 loc)	1,386	SF	115.00	159,390
Class/admin 4'w (3 loc)	168	SF	115.00	19,320
Class/admin 8'w (41 loc)	4,592	SF	115.00	528,080
Class/admin 9'w (1 loc)	126	SF	115.00	14,490
3 Section knuckle 15' (17 loc)	3570	SF	115.00	410,550
Full bay (13 loc)	5,324	SF	115.00	612,260
Main entry	75	SF	115.00	8,625
Aud entry	162	SF	115.00	18,630
Full Ht Curtainwall/Storefront:				
Toilet rm 3'w	476	SF	115.00	54,740
Stair hall	1,510	SF	115.00	173,650
Media ctr	900	SF	115.00	103,500
SW entry/terrace	2,139	SF	115.00	245,985
NE entry/terrace	2,569	SF	115.00	295,435
Alum Storefront System:				
Sloped Gym clerestory(86' 6"x 10')	865	SF	115.00	99,475
Sloped Aud clerestory (79'x9')	711	SF	115.00	81,765
*Includes perimeter int/ext sealants, glass, glazing , spandrel and alum break metal				
ALLOW:				
Security Glazing Film 2nd flr entry	1	LS	50,000.00	50,000
Exterior Wall Mock-up	1	LS	35,000.00	35,000
Horizontal Sun Shade 4' Projection (150 lf/flr)	450	LF	315.00	141,750
Vert. Sun Shade		N/A		
084500 TRANSLUCENT WALL ASSEMBLIES		N/A		
089000 METAL WALL LOUVERS				
Misc Alum louvers -allow	1	LS	20,000.00	20,000
				3,263,185
B2030 EXTERIOR DOORS				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
OH door frame @:				
Tech-Makerspace (14'x 10')	1	EA	500.00	500
061000 ROUGH CARPENTRY				
P.T. - perim blocking HM open	256	LF	8.00	2,048
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Perim. Ext HM opening:				
Flex flashing - perim	256	LF	8.00	2,048
Exterior sealants - perim.	256	LF	7.50	1,920
080001 METAL WINDOWS*				
8' Alum. Doors (Incl. Hardware):				
1st Flr Entry - dbl	4	PR	8,250.00	33,000
2nd Flr Entry - sgl	1	EA	4,500.00	4,500
2nd Flr Entry - dbl	1	PR	8,250.00	8,250
2nd & 3rd Flr Terrace - dbl	2	PR	8,250.00	16,500
Stair egress - sgl	2	EA	4,500.00	9,000
Art class - sgl	1	EA	4,500.00	4,500
Media ctr - sgl	1	EA	4,500.00	4,500
Tech-Makerspace- sgl	1	EA	4,500.00	4,500
081113 HOLLOW METALWORK				
Ext 7' Insulated HM Doors and Frame:				
PH Roof access- sgl	1	EA	850.00	850
Receiving-sgl	1	EA	850.00	850
Receiving-dbl	2	EA	1,450.00	2,900
Aud -dbl	2	EA	1,450.00	2,900
Gym -dbl	4	EA	1,450.00	5,800
Storage -dbl	1	EA	1,450.00	1,450
083323 SPECIAL DOORS				
Motor Operated Insulated OH Door:				
Tech-Makerspace (14'x 10')	1	EA	12,500.00	12,500
087100 DOOR HARDWARE				
Auto opener -allow:	1	LOC	7,600.00	7,600
Ext HM Door HDW SET:				
PH Roof access- sgl	1	EA	650.00	650

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Receiving-sgl	1	EA	1,200.00	1,200
Receiving-dbl	2	EA	2,500.00	5,000
Aud -dbl	2	EA	3,850.00	7,700
Gym -dbl	4	EA	3,850.00	15,400
Storage -dbl	1	EA	975.00	975
*Hardware also included with 080001				
090007 PAINTING*				
Paint HM door & Frame - sgl	2	EA	120.00	240
Paint HM door & Frame - dbl	9	EA	225.00	2,025
				159,306
TOTAL B20 - EXTERIOR ENCLOSURE				7,842,089
B30 - ROOFING				
B3010 ROOF COVERINGS				
061000 ROUGH CARPENTRY				
Flat Roof Blocking @:				
Base flashing	2,058	LF	12.50	25,725
Typ roof fascia	3,307	LF	12.50	41,338
Expansion joint	86	LF	40.00	3,440
6' dome skylight curb (3 EA)	57	LF	35.00	1,995
Gable skylight curb (4 EA)	573	LF	45.00	25,785
Flash Pre Fab Roof Top Mech encl curb	115	LF	35.00	4,025
Equip blocking	1	LS	7,500.00	7,500
Roof hatch-allow	1	EA	750.00	750
Stage vent-allow	1	EA	750.00	750
Atrium vent-allow	2	EA	750.00	1,500
070002 ROOFING AND FLASHING*				
White 60 mil PVC Roofing w/6" Insulation (NIC Pre-fab mech rm 772 sf):				
Typ Flat roof	43,601	SF	13.75	599,514
Low slope Aud & Gym roof	14,851	SF	13.75	204,201
Low slope PH roof	200	SF	13.75	2,750
LVL 2 main entrance roof w/ terrace pavers	2,193	SF	48.00	105,264
LVL 2 & 3 roof w/ terrace pavers(2 loc)	756	SF	48.00	36,288
1/2 " glass mat cover bd -100%	61,601	SF	1.68	103,490

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
5/8" glass mat protection bd -100%	61,601	SF	1.68	103,490
Roof vapor retarder-100%	61,601	SF	0.95	58,521
High Roof Rubber Walkway Pad	1,518	SF	7.00	10,626
Membrane flashing	61,601	SF	0.50	30,801
Base flashing	2,058	LF	32.00	65,856
(Spec)ZCC Typ roof fascia	3,307	LF	18.00	59,526
(Note 11/A200) Alum Typ roof fascia		NIC		
Expansion joint	86	LF	185.00	15,910
Flash 6' dome skylight curb (3 EA)	57	LF	45.00	2,565
Flash gable skylight curb (4 EA)	573	LF	45.00	25,785
Flash Pre Fab Roof Top Mech encl curb	115	LF	45.00	5,175
080002 GLASS AND GLAZING*				
Main Entrance Canopy -Complete:				
Clear Polycarb glazing w/ alum struct	679	SF	350.00	237,650
				1,780,218
B3020 ROOF OPENINGS				
070002 ROOFING AND FLASHING*				
Roof hatch-allow	1	EA	4,200.00	4,200
Stage vent-allow	2	EA	13,500.00	27,000
Atrium vent-allow	2	EA	15,000.00	30,000
Elevator vent	1	EA	1,500.00	1,500
085200 SKYLIGHTS				
6' Dome Skylight (3 loc)	95	SF	135.00	12,825
Gable Skylight w/ 42% slope (4 loc)	4,997	SF	135.00	674,595
Gable Skylight Endwall (8 loc)	384	SF	135.00	51,840
				801,960
TOTAL B30 ROOFING				2,582,178
C. INTERIORS				
C10 - INTERIOR CONSTRUCTION				
C1010 PARTITIONS				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
040001 MASONRY*				
Interior CMU Partition:		NIC		
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Folding Panel partition Support:				
Typ classroom (14 EA)	224	LF	145.00	32,480
Music classroom (1 EA)	16	LF	145.00	2,320
SPED suite (3 EA)	84	LF	145.00	12,180
Folding Grille Support:				
Café/Learning common (1 EA)	69	LF	200.00	13,800
Coiling Grille Support:				
Servery(1 EA)	16	LF	100.00	1,600
Main office(1 EA)	10.5	LF	100.00	1,050
061000 ROUGH CARPENTRY				
Interior blocking	134,173	GSF	0.50	67,087
Misc. rough carpentry	134,173	GSF	0.50	67,087
072100 INSULATION				
Firestopping	134,173	GSF	0.65	87,212
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Joint sealants	134,173	GSF	0.85	114,047
079513 EXPANSION JOINT COVER ASSEMBLIES				
Int Wall Expansion joints	1	LS	10,000.00	10,000
081113 HOLLOW METALWORK				
Interior H.M Windows, Sidelites and Transoms:				
Observ. / therapy rm wind		N/A		
Aud control booth wind		N/A		
Stair - dbl		N/A		
083323 SPECIAL DOORS				
Access panels	1	LS	30,000.00	30,000
Folding Grille :				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Café/Learning common (1 EA-69 LF x 12' H)	828	SF	120.00	99,360
Coiling Grille :				
Servery(1 EA-16LF x 10'H)	160	SF	95.00	15,200
Main office(1 EA-10' 6"LF x10'H)	105	SF	95.00	9,975
080001 METAL WINDOWS*				
10'H Aluminum Storefront Frame, Glass & Glazing-Allow:				
1st Floor Vestibule (3 loc)	466	SF	92.00	42,872
2nd Floor Vestibule (2 loc)	56	SF	92.00	5,152
Office/ vestibule security window -Allow:				
2nd Flr Main office	1	EA	5,000.00	5,000
080002 GLASS AND GLAZING*				
Alum channel ,Glass & Glazing @ Interior Windows, Sidelites and Transoms :				
Corr/class & admin wind 7'W x 7' 4"H	2,206	SF	62.00	136,772
Corr /music class wind 7'W x 7' 4"H	103	SF	62.00	6,386
Corr /music class wind 3'W x 7' 4"H	44	SF	62.00	2,728
Corr & class /teach prep rm SL 8' 2" H	3,277	SF	62.00	203,174
Corr & music class /teach prep rm SL 8' 2" H	151	SF	62.00	9,362
Typ Breakout Room (4 EA) SL 8' 2" H	1,160	SF	62.00	71,920
Radial Breakout Room (5 EA) SL 8' 2" H	1,283	SF	62.00	79,546
Media Center SL 8' 2" H(6 loc)	322	SF	62.00	19,964
Class & admin /corridor SL 8' 2" H(6 loc)	118	SF	62.00	7,316
Graduated glass premium-allow	1	LS	30,000.00	30,000
092116 GYPSUM WALLBOARD				
Elevator shaft - 42'H	1,743	SF	18.00	31,374
Gym - 28'H	1,736	SF	15.50	26,908
Gym chase - 32'H	2,704	SF	12.50	33,800
Aud chase - 32'H	2,704	SF	12.50	33,800
Auditorium - 14'H	1,078	SF	15.50	16,709
Auditorium stage front -32'H	2,056	SF	15.50	31,868
Auditorium dressing rm - 32'H	1,920	SF	15.50	29,760
Aud. furr w/gyp @ fnd	300	SF	9.00	2,700
TYP -14' Drywall Partitions:				
1 side class radial mech chase	8,922	SF	11.00	98,142
1 side class closet chase	2,014	SF	9.00	18,126
1 side radial plumb chase	1,123	SF	11.00	12,353
1 side plumb chase	6,649	SF	9.00	59,841

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Chase @ fnd wall	1,152	SF	9.00	10,368
Drinking fountain chase wall	689	SF	9.00	6,201
4" Toilet rm	7,773	SF	10.50	81,617
4" Radial Toilet rm	1,368	SF	15.00	20,520
4" Class /admin	2,810	SF	10.50	29,505
6" Class /admin	19,582	SF	12.00	234,984
8" Class /admin	8,359	SF	14.00	117,026
6" Corridor	19,188	SF	13.00	249,444
6" Corridor bulkhead 6'H	4,533	SF	13.00	58,929
8" Corridor	6,817	SF	15.00	102,255
12" Corridor/vest	615	SF	11.50	7,073
1 HR Mech / elec rm	2,190	SF	12.50	27,375
2 HR Mech / elec rm	2,209	SF	15.50	34,240
Stair hall	2,187	SF	15.50	33,899
Kitchen / servery perim	1,940	SF	15.50	30,070
Misc. kitchen/servery part.	1,940	GSF	5.00	9,700
Typ Breakout Room (4 EA NIC SL 8' 2" H)	2,816	SF	12.50	35,200
Radial Breakout Room (5 EA NIC SL 8' 2" H)	3,115	SF	16.00	49,840
Music Rm	4,866	SF	24.50	119,217
Tile Backer Bd Premium @:				
Multi user toilet rm	9,621	SF	1.85	17,799
Single user toilet rm	3,660	SF	1.85	6,771
Misc. GWB assemblies	134,173	GSF	1.00	134,173
Load, Distribute and Misc.	134,173	GSF	0.25	33,543
*Partitions include sound attenuation, tape & joint compound finish				
109000 MISCELLANEOUS SPECIALTIES				
Folding Panel partition:				
16' x 10' H Typ classroom (14 EA)	2,240	SF	130.00	291,200
16' x10' H Music classroom (1 EA)	160	SF	130.00	20,800
28' x10' H SPED suite (3 EA)	840	SF	130.00	109,200
*Includes pass dr & white bd finish				

				3,449,918
C1020 INTERIOR DOORS				
081113 HOLLOW METALWORK				
Int. HM Frame 7'H:				
Single Door	124	EA	285.00	35,340
Double Door	10	EA	305.00	3,050

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Int. HM Frame 8' 6"H:				
Single Door	108	EA	320.00	34,560
Barn Door Single	24	EA	400.00	9,600
081416 WOOD AND PLASTIC DOORS				
Birch Full Lite Solid Core Wood Door - Prefinished 36"x8'x6":				
Classroom & Admin- sgl	54	EA	720.00	38,880
Music classroom -sgl	4	EA	720.00	2,880
Interconnecting class / teach prep rm - sgl	39	EA	720.00	28,080
Music Intercon class / teach prep rm - sgl	2	EA	720.00	1,440
Media ctr- sgl	1	EA	720.00	720
Breakout room - sgl	9	EA	720.00	6,480
Teacher planning room - sgl barn dr	24	EA	850.00	20,400
Birch SC Wood Door - Prefinished 7'H:				
Storage Rm- sgl	8	EA	465.00	3,720
Storage Rm - dbl	2	EA	930.00	1,860
Mech/elec. Rm- sgl	9	EA	495.00	4,455
Mech/elec. Rm - dbl	4	EA	930.00	3,720
Stairhall - sgl	6	EA	1,500.00	9,000
Back of house corridor - dbl	1	EA	1,500.00	1,500
Sgl user toilet rm	14	EA	495.00	6,930
Multi user toilet / locker rm	4	EA	495.00	1,980
Kitchen/servery - sgl	3	EA	525.00	1,575
Classroom closet - sgl	34	EA	1,350.00	45,900
Interconnecting Class - sgl	8	EA	465.00	3,720
Interconnecting Sci Prep room - sgl	6	EA	465.00	2,790
Office - sgl	24	EA	675.00	16,200
Gym - dbl	1	EA	1,500.00	1,500
Aud- dbl	2	EA	1,500.00	3,000
Stage - sgl	3	EA	650.00	1,950
Music Practice rm - sgl	2	EA	495.00	990
Media Center - sgl	1	EA	675.00	675
Dressing rm - sgl	2	EA	465.00	930
080002 GLASS AND GLAZING*				
Glass & Glazing @ Interior Door				
*inc. w/ door cost				
087100 DOOR HARDWARE				
Interior Finish Hardware Set @ Birch Full Lite Solid Core Wood Door - Prefinished 36"x102" Door:				
Classroom & Admin- sgl	54	EA	850.00	45,900
Music classroom -sgl	4	EA	1,500.00	6,000
Interconnecting class / teach prep rm - sgl	39	EA	600.00	23,400
Music Intercon class / teach prep rm - sgl	2	EA	600.00	1,200

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Media ctr- sgl	1	EA	850.00	850
Breakout room - sgl	9	EA	850.00	7,650
Teacher planning room - sgl barn dr	24	EA	900.00	21,600
Interior Finish Hardware Set @ Birch SC Wood Door - Prefinished 7'H:				
Storage Rm- sgl	8	EA	450.00	3,600
Storage Rm - dbl	2	EA	650.00	1,300
Mech/elec. Rm- sgl	9	EA	650.00	5,850
Mech/elec. Rm - dbl	4	EA	950.00	3,800
Stairhall - sgl	6	EA	4,000.00	24,000
Back of house corridor - dbl	1	EA	4,000.00	4,000
Sgl user toilet rm	14	EA	950.00	13,300
Multi user toilet / locker rm	4	EA	950.00	3,800
Kitchen/servery - sgl	3	EA	1,200.00	3,600
Classroom closet - sgl	34	EA	450.00	15,300
Interconnecting Class - sgl	8	EA	450.00	3,600
Interconnecting Sci Prep room - sgl	6	EA	450.00	2,700
Office - sgl	24	EA	850.00	20,400
Gym - dbl	1	EA	3,500.00	3,500
Aud- dbl	2	EA	3,500.00	7,000
Stage - sgl	3	EA	1,500.00	4,500
Music Practice rm - sgl	2	EA	1,500.00	3,000
Media Center - sgl	1	EA	850.00	850
Dressing rm - sgl	2	EA	850.00	1,700
080001 METAL WINDOWS*				
8' Aluminum (Frame, Door, Glass, Glazing and Hdw):				
1st Flr Entry Vestibule - dbl	2	PR	8,300.00	16,600
2nd Flr Entry Vestibule- sgl	1	EA	4,200.00	4,200
2nd Flr Entry Vestibule- dbl	1	PR	8,300.00	8,300
083323 SPECIAL DOORS		W/ Partitions		
090007 PAINTING*				
Paint Int HM door frame:				
7' HM door frame - sgl	124	EA	100.00	12,400
7' HM door frame - dbl	10	EA	135.00	1,350
8' 6" HM door frame - sgl	109	EA	120.00	13,080
8' 6" HM pocket door frame - sgl	24	EA	150.00	3,600

				585,755

C1030 FITTINGS

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Auditorium:				
Guard rail @ seating aisle	91	LF	265.00	24,115
Auditorium equip. supports	1	LS	15,000.00	15,000
Stage front access stair & rails		NIC		
Catwalk sys w/access -allow	1	LS	75,000.00	75,000
Catwalk & stage platform frame and grate		Included above		
Catwalk & platform guard rail		Included above		
Access ladder		Included above		
Interior Metals:				
Lobby guard rail	208	LF	400.00	83,200
OT/PT equip support-allow	1	RM	2,500.00	2,500
Gym equip supports	1	LS	10,000.00	10,000
Concealed stl angle @ corr built-in bench		W/ Unit Cost		
Concealed stl angle @ casework ctr		W/ Unit Cost		
Misc. metals	134,173	GSF	0.50	67,087
Exterior Rails:				
Loading dock stair/ramp guardrail	15	LF	265.00	3,975
Loading dock stair/ramp wall rail	15	LF	150.00	2,250
2nd flr entry terrace guardrail	30	LF	500.00	15,000
2nd & 3rd flr Terrace rail	59	LF	500.00	29,500
High roof rails		NIC		
*Interior Rails are also included w/ C2010				
*Exterior Rails are also included w/ G2010				
062000 FINISH CARPENTRY				
Utility & closet shelving	1	LS	10,000.00	10,000
Typ Window sill		nic		
Gym clerestory window sill	87	LF	55.00	4,758
Aud clerestory window sill	79	LF	55.00	4,345
Custom Casework:				
Corridor Locker Enclosure (nic mtl locker) - allow:				
1st flr freestanding	270	LF	620.00	167,400
2nd & 3rd flr freestanding -guardrail	634	LF	620.00	393,080
Main Office 2nd Floor:				
Radial Reception counters	15	LF	650.00	9,750
Allow- Library / Media Center (1 EA):				
Circulation desk	20	LF	1,200.00	24,000
Book shelving sys		NIC		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Allowance:				
Display Cases	1	LS	20,000.00	20,000
Trash/ recycle ctr	1	EA	10,000.00	10,000
*Balance of casework is included w/ E2010				
102113 COMPARTMENTS & CUBICLES				
Solid Plastic Toilet Partitions:				
Std. partition	20	EA	1,220.00	24,400
HC partition	14	EA	1,430.00	20,020
Urinal screen	13	EA	310.00	4,030
102813 TOILET ACCESSORIES				
SGL User Toilet Rm Accessories (14 ea):				
Tilt mirror @ wall hung lav	14	EA	220.00	3,080
Soap dispenser	14	EA	45.00	630
Toilet tissue dispenser	14	EA	48.00	672
San. prod. disposal	14	EA	60.00	840
Toilet grab bars	28	EA	85.00	2,380
Paper towel dispenser-allow	14	EA	135.00	1,890
Waste receptacle - allow	14	EA	150.00	2,100
Elec hand dryer - allow		NIC		
Coat hook -allow	14	EA	25.00	350
Public Fixed diaper changing sta - allow	2	EA	550.00	1,100
ADA SHW accessories -allow	1	EA	550.00	550
Multi User Toilet & Locker Rm Accessories (14 ea):				
3'H mirror lav ctr	750	SF	38.00	28,500
Soap dispenser	54	EA	45.00	2,430
Toilet tissue dispenser	34	EA	48.00	1,632
San. prod. disposal	34	EA	60.00	2,040
Toilet grab bars	28	EA	85.00	2,380
Paper towel dispenser-allow	40	EA	135.00	5,400
Waste receptacle - allow	40	EA	150.00	6,000
Elec hand dryer - allow		NIC		
Coat hook -allow	34	EA	25.00	850
Locker rm accessories	2	EA	1,000.00	2,000
Janitor shelf	7	EA	200.00	1,400
*Excludes classroom and workroom accessories				
101100 MARKERBOARDS & TACKBOARDS				
Allow:				
4'H White Board	30	EA	550.00	16,500

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
4'H Tack Board	30	EA	400.00	12,000
*Dry-erase wall covering is included in C3010				
*Classroom folding panel partition include white bd finish				
109000 MISCELLANEOUS SPECIALTIES				
Allow:				
Building directory	1	EA	5,000.00	5,000
Dedication plaque	1	EA	3,800.00	3,800
Room ID sign	134,173	GSF	0.22	29,518
Misc Int. ADA signage	134,173	GSF	0.12	16,101
Phenolic Locker:				
15" wx12"dx36"H Student corridor (nic enclosure)	723	EA	350.00	253,050
Metal Locker- allow:				
15"wx15"dx30"H PE student 2 tiered (50/RM)	100	EA	215.00	21,500
12" PE staff	4	EA	265.00	1,060
12" Custodian staff	4	EA	265.00	1,060
12" Kitchen staff	4	EA	265.00	1,060
Locker base @ :				
Student corridor		W /Enclosure		
PE student	62.5	LF	36.00	2,250
PE staff	4	LF	36.00	144
Custodian staff	4	LF	36.00	144
Kitchen staff	4	LF	36.00	144
Allow Free Standing Wood Bench:				
PE locker rm (12LF/EA)	24	LF	50.00	1,200
Health office cubicle track w/ curtain	3	EA	1,325.00	3,975
Fire extinguisher and cab	20	EA	475.00	9,500
AED cabinets	4	EA	750.00	3,000
Secure wall panels:				
OT/PT rm (ea)	320	SF	15.00	4,800
Observ. / therapy rm (ea)	320	SF	15.00	4,800
Padded athletic flr tiles:				
OT/PT rm (ea)	100	SF	15.00	1,500
Observ. / therapy rm (ea)	100	SF	15.00	1,500
Misc wall & corner guards - allow	1	LS	7,500.00	7,500
Misc specialties	134,173	GSF	0.25	33,543
				1,520,282

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
TOTAL C10 - INTERIOR CONSTRUCTION				5,555,955
C20 - STAIRS				
C2010 STAIR CONSTRUCTION				
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
5' W Metal Pan Stair @ Learning Commons 1st- 2nd (1 FLT):				
Metal pan stair treads/risers	120	LFR	85.00	10,200
Metal pan landing	30	SF	55.00	1,650
Guardrail	66	LF	400.00	26,400
8' W Metal Pan Stair @ Learning Commons 1st- 2nd (1 FLT):				
Metal pan stair treads/risers	192	LFR	85.00	16,320
Metal pan landing	48	SF	55.00	2,640
Guardrail	66	LF	400.00	26,400
5' W Metal Pan Stair @ Learning Commons 2nd - 3rd(1 FLT):				
Metal pan stair treads/risers	120	LFR	85.00	10,200
Metal pan landing	30	SF	55.00	1,650
Guardrail	66	LF	400.00	26,400
13' 6"W Metal Pan Stair @ Learning Commons 2nd - 3rd(1 FLT):				
Metal pan stair treads/risers	324	LFR	85.00	27,540
Metal pan landing	68	SF	55.00	3,713
Guardrail	66	LF	400.00	26,400
6'6" W Metal Pan Stair Hall (2 loc 1st - 3rd 4 FLT):				
Metal pan stair treads/risers	624	LFR	85.00	53,040
Metal pan landing	352	SF	55.00	19,360
Wall rail	128	LF	165.00	21,120
Guardrail	128	LF	400.00	51,200
Guardrail flr open	12	LF	400.00	4,800
Cane rail	2	EA	1,350.00	2,700
6'6" W Metal Pan Stair @ Penthouse (1 FLT):				
Metal pan stair treads/risers	156	LFR	85.00	13,260
Metal pan landing	88	SF	55.00	4,840
Wall rail	32	LF	165.00	5,280
Guardrail	32	LF	400.00	12,800
Access gate	1	EA	1,800.00	1,800
Aud Rails & Stairs		W/ C1030		
Lobby rails		W/ C1030		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
033000 CAST IN PLACE CONCRETE				
Conc stair pan fill :				
Metal pan stair treads and risers	1,536	LFR	22.00	33,792
Metal pan landing	616	SF	18.00	11,079
				414,584
C2020 STAIR FINISHES				
090005 RESILIENT FLOORING*				
Metal Pan Stair Learning Commons Stair (4 FLT):				
Rubber treads and risers	756	LFR	14.25	10,773
Rubber tile landing	176	SF	12.50	2,194
Metal Pan Stair Hall (5 FLT):				
Rubber treads and risers	780	LFR	14.25	11,115
Rubber tile landing	440	SF	12.50	5,500
Aud Stair Finish		W/ C1030		
090007 PAINTING*				
Paint Metal Pan Stair & Rail:				
5' W @ Learning Commons 1st- 3rd	2	FLTS	2,500.00	5,000
8' W @ Learning Commons 1st- 2nd	1	FLTS	2,750.00	2,750
13' 6"W @ Learning Commons 1st- 2nd - 3rd	1	FLTS	4,500.00	4,500
6'6" W @ Stair Hall	5	FLTS	2,500.00	12,500
				54,332
TOTAL C20 - STAIRS				468,915
C30 - INTERIOR FINISHES				
C3010 WALL FINISHES				
040001 MASONRY*				
Auditorium-28'H:				
GF block veneer 50% wall fin	3,460	SF	33.00	114,180

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Entry Vestibule:				
Ext brick veneer wall fin -allow		NIC		
062000 FINISH CARPENTRY				
Learning Commons/ Corridors Full Ht P Lam Wall Panel & Trim- Allow :				
1st Flr	750	SF	40.00	30,000
2nd Flr	750	SF	40.00	30,000
3rd Flr	750	SF	40.00	30,000
Misc Wood Wall Panel & Trim- Allow :				
Media ctr	500	SF	55.00	27,500
Gym	500	SF	55.00	27,500
Auditorium 50% wall fin	3,460	SF	55.00	190,300
Science Lab Classroom (6 EA):	600	SF	55.00	33,000
Tech-Makerspace (1 EA):	100	SF	55.00	5,500
Fab-lab (1 EA):	100	SF	55.00	5,500
Art Class Room (1 EA):	100	SF	55.00	5,500
Teacher Prep Room (24 EA):	2,400	SF	55.00	132,000
Typ, SPED & ELL Classroom (33 EA):	3,300	SF	55.00	181,500
Music Classroom (2 EA):	200	SF	55.00	11,000
097200 DRY-ERASE WALL COVERING				
Dry Erase Curved wall (sf/loc):				
Typ, SPED & ELL Classroom (33 EA):	1,056	SF	25.00	26,400
Music Classroom (2 EA):	200	SF	25.00	5,000
097600 FIBERGLASS REINF. PLASTIC WALL PANELS				
8' FRP Wall Panel -allow:				
Main Kitchen	1,200	SF	11.00	13,200
Janitor closet	3,080	SF	11.00	33,880
097000 ACOUSTICAL ROOM COMPONENTS				
Tectum Wall Panel- Allow:				
Gymnasium	1,800	SF	19.00	34,200
Allow Fabric Wrapped Acoustical Panels :				
4'H Band Rm (1 ea)	450	SF	36.00	16,200
4' H Chorus Rm (1 ea)	450	SF	36.00	16,200
2'H Music practice rm (2 EA)	224	SF	36.00	8,064
Media center	200	SF	36.00	7,200
Auditorium	500	SF	36.00	18,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Café / Learning commons	250	SF	36.00	9,000
*Includes sections 097112 & 097713				
090002 TILE*				
Tile backer bd prem		w/092116		
Ceramic Wall Tile 98"H :				
Locker rm		NIC		
ADA SHW (3' x 3')		W / Plumbing		
Multi user toilet rm	9,621	SF	18.00	173,178
Single user toilet rm	3,660	SF	18.00	65,880
Porcelain Wall Tile - Allow :				
Learning Commons & corridors		NIC		
Aud & Gym Corridor		NIC		
Servery		NIC		
Stair hall		NIC		
090007 PAINTING*				
Interior painting- walls	134,173	GSF	1.90	254,929
Vinyl wall covering		NIC		
				1,504,811
C3020 FLOOR FINISHES				
033000 CAST IN PLACE CONCRETE				
Sealed Concrete:				
Auditorium seating	2,265	SF	1.30	2,945
Mech & elec rm	1,058	SF	1.30	1,375
Receiving back of house	2,069	SF	1.30	2,690
Custodian Closet(6 EA)	876	SF	1.30	1,139
093000 TILE				
SGL User Toilet Room (14 EA) :				
Porcelain flr tile	968	SF	25.50	24,684
ADA SHW (3' x 3')		W / Plumbing		
Metal wall base	428	LF	15.00	6,420
Threshold	14	EA	95.00	1,330
WPG @ membrane upper lvl	562	SF	8.75	4,918
Multi User Toilet Room(14 EA):				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Porcelain flr tile	3,313	SF	25.50	84,482
Metal wall base	1,147	LF	15.00	17,205
Threshold	14	EA	95.00	1,330
WPG @ membrane upper lvl	1,994	SF	8.75	17,448
Quarry Tile:				
Kitchen / servery	1,940	SF	16.50	32,010
Wall base & transitions		inc.		
090005 RESILIENT FLOORING*				
Moisture mitigation -allow	100,855	SF	4.75	479,061
VCT - typ	100,855	SF	4.50	453,848
Wall base 12" VCT w/ Schluter top edge where ex	28,500	LF	12.00	342,000
*Includes sections 0965000 & 096513				
095000 WOOD & ATHLETIC FLOOR				
Moisture mitigation -allow	8,281	SF	4.75	39,335
Stage Flooring	1,881	SF	14.00	26,334
Stage nosing	63	LF	38.00	2,394
Stage wall base	172	LF	9.85	1,694
Gym Hardwood Flooring	8,281	SF	19.75	163,550
Vented wall base Gym	365	LF	9.85	3,595
096800 CARPET				
Moisture mitigation -allow		N/A		
Media center	1,904	SF	5.00	9,520
Auditorium aisles	1,750	SF	6.00	10,500
Admin suite		N/A		
124813 MATS				
Walk off mat - allow (4 loc)	400	SF	22.00	8,800
Exterior entrance grate		NIC		
				1,738,605
C3030 CEILING FINISHES				
062000 FINISH CARPENTRY				
Typ, Sci, Art, Music, SPED & ELL Classroom:				
P Lam Summer Beam Cladding	42	RM	2,000.00	84,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Light cove (LF/RM)	1	LS	75,000.00	75,000
092116 GYPSUM WALLBOARD				
Soffits @:				
OP partition Typ classroom (14 EA)	224	LF	95.00	21,280
OP partition Music classroom (1 EA)	16	LF	95.00	1,520
OP partition SPED suite (3 EA)	84	LF	95.00	7,980
Folding Grille Café/Learning common (1 EA)	69	LF	125.00	8,625
Class rm angled soffit	42	RM	1,500.00	63,000
Dome Skylight 3'H	171	SF	18.00	3,078
Pyramid Skylight 5'H	2,865	SF	18.00	51,570
Lobby floor opening - 3'H	2,934	SF	18.00	52,812
Corridor locker		NIC		
Casework		NIC		
Misc gyp soffits	134,173	GSF	0.50	67,087
Gyp Ceiling System :				
SGL User Toilet Room	977	SF	10.25	10,014
Multi User Toilet Room	3,313	SF	10.25	33,958
1 HR Mech / elec rm	472	SF	10.25	4,838
2 HR Mech / elec rm	586	SF	10.25	6,007
Stair hall -allow 50%	1,130	SF	10.25	11,583
Monumental Stair		NIC		
090003 ACOUSTICAL TILE*				
ACT Ceiling System @ :				
Kitchen / servery	1,940	SF	5.70	11,058
Receiving back of house	2,069	SF	5.00	10,345
Custodian Closet(6 EA)	876	SF	5.00	4,380
Media center	1,904	SF	15.00	28,560
Admin, workroom & storage	14,616	SF	5.00	73,080
Classroom - 1/3 rm	14,878	SF	5.50	81,829
Breakout rooms	2,808	SF	5.00	14,040
Specialty Ceiling:				
Commons /corr 1st flr -Exp mtl tile	8,943	SF	25.00	223,575
Commons /corr 1st floor -Opt plank	1,667	SF	8.25	13,753
Commons /corr 2nd flr -Exp mtl tile	7,409	SF	25.00	185,225
Commons /corr 2nd floor -Opt plank	1,331	SF	8.25	10,981
Commons /corr 3rd flr -Exp mtl tile	5,127	SF	25.00	128,175
Commons /corr 3rd floor -Opt plank	1,641	SF	8.25	13,538
Music class - metal panel (2 EA)	1,902	SF	45.00	85,590
Music practice rm (2 EA)	408	SF	45.00	18,360
Main gym Tectum plank -50%	4,141	SF	20.00	82,820
Allow -Stage reflector Auditorium	1	LS	75,000.00	75,000
Auditorium Wd panel clg- 50%	2,167	SF	75.00	162,525

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Exterior Soffit panel		W /Ext Wall		
090007 PAINTING*				
Paint gyp ceiling	6,478	SF	1.00	6,478
Paint gyp soffits	1	LS	25,000.00	25,000
Paint exposed structure- 100%:				
Stage	2,108	SF	2.00	4,216
Paint Exposed Structure:				
Classroom - exp deck 2/3 rm	29,756	SF	2.00	59,512
Atrium 3rd flr	4,503	SF	2.00	9,006
Auditorium - 50%	2,167	SF	2.00	4,334
Main gym -50%	4,141	SF	2.00	8,282
				1,842,013
TOTAL C30 - INTERIOR FINISHES				5,085,428
D. SERVICES				
D10 - CONVEYING				
D1010 ELEVATORS & LIFTS				
140001 ELEVATORS & LIFTS*				
Passenger elevator (1 door) *Includes roof level stop	4	STOP	53,000.00	212,000
Stage lift		N/A		
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Elev. framing	1	EA	3,000.00	3,000
Elev. pit ladder	1	EA	1,537.00	1,537
Elev. sump grate	1	EA	1,500.00	1,500
				218,037
TOTAL D10 - CONVEYING				218,037
D20 - PLUMBING				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
D2010 PLUMBING				
220001 PLUMBING*				
Plumbing Fixtures:				
Water closet	20	EA	1,850.00	37,000
ADA water closet	28	EA	1,850.00	51,800
Urinal	20	EA	1,650.00	33,000
Wall hung lavatory	14	EA	1,375.00	19,250
Ctr top lavatory	54	EA	1,100.00	59,400
Corridor drinking fountain	6	EA	3,150.00	18,900
Staff lunch room sink	1	EA	1,550.00	1,550
Music room sink	2	EA	1,550.00	3,100
Art room sink	3	EA	2,100.00	6,300
Health office sink	1	EA	1,550.00	1,550
Typ classroom sink		N/A		
Typ classroom TP sink		N/A		
Media TP sink		N/A		
Tech-Makerspace sink	1	EA	1,550.00	1,550
Fab-lab sink	1	EA	1,550.00	1,550
Aud Dressing room sink (2 EA)	2	EA	1,550.00	3,100
ADA shower	1	EA	2,500.00	2,500
Mop service basin	6	EA	1,400.00	8,400
Kitchen mop service basin	1	EA	1,400.00	1,400
Fix Connection	161	EA	450.00	72,450
Sanitary and Vent Piping	6,200	LF	39.00	241,800
Domestic Piping	8,855	LF	44.50	394,048
FPSC wall hydrant	1	LS	10,000.00	10,000
HB hose bibb	1	LS	10,000.00	10,000
Floor Drains	1	LS	25,000.00	25,000
Science Class Room Equipment(6 EA):				
L-1 Student Lab Sink	18	EA	1,775.00	31,950
L-3 demonstration table (1-faucet)	6	EA	1,775.00	10,650
Emergency eye wash/shower (inc fd)	6	EA	3,100.00	18,600
Prep room sink	3	EA	1,775.00	5,325
Fix Connection	33	EA	350.00	11,550
Sanitary and Vent Piping	1,600	LF	49.00	78,400
Domestic Piping	1,980	LF	41.00	81,180
Acid Neutralization system	1	LS	22,500.00	22,500
Mixing Valve:				
MV-1	1	EA	7,500.00	7,500
MV-2 - science room	6	EA	1,250.00	7,500
Misc. Mix valve	2	EA	450.00	900

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Pumps:				
RP-1 & RP-2	2	EA	15,000.00	30,000
RP-3	1	EA	4,500.00	4,500
RP-4	1	EA	4,500.00	4,500
Science Room Gas Fired Hot Water Heater:				
GWH-1	1	EA	25,000.00	25,000
Gas Fire Hot Water Supply Boiler:				
BLR-1, 2 (Lochinvar - Armor X2 -				
Gas Fired Water Heater	1	LS	55,000.00	55,000
hw Storage Tank	2	EA	18,000.00	36,000
Boiler Valve and Trim	1	LS	30,000.00	30,000
Interior Grease Interceptor:				
GI-1 & GI-2	2	EA	8,500.00	17,000
Exterior Grease Interceptor:				
EGI-1	1	EA	12,500.00	12,500
Auto Sensor (hard wire):				
Flush valve	68	EA	520.00	35,360
Lav Sensor	68	EA	495.00	33,660
Main Kitchen equipment hookup	1	LS	50,000.00	50,000
Roof/Storm Drain System				
Underground D/W/V Pipe:				
5"	510	LF	48.00	24,480
6"	900	LF	61.00	54,900
8"	200	LF	96.00	19,200
10"	50	LF	110.00	5,500
12"	20	LF	132.00	2,640
FCO	15	LF	425.00	6,375
Above Ground D/W/V Pipe:				
4"-10"	2,200	LF	60.00	132,000
CO	25	EA	400.00	10,000
Roof drain	55	EA	1,450.00	79,750
Overflow Nozzle	10	EA	1,650.00	16,500
Insulate leader	1,375	LF	13.00	17,875
Sanitary System				
Underground D/W/V Pipe:				
3"	300	LF	38.00	11,400
4"	1,500	LF	44.00	66,000
8"	500	LF	95.00	47,500
FCO	20	EA	425.00	8,500

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Gas Pipe:				
2" - 6" Main	100	LF	80.00	8,000
1" - 1/2' lab connection		NIC		
Kitchen Piping	1	LS	15,000.00	15,000
Boiler Room Connections	1	LS	15,000.00	15,000
Science room shut off		NIC		
Gas turret		NIC		
Kitchen Master Shut off	1	LS	4,000.00	4,000
Underground Water Service:				
6"	10	LF	150.00	1,500
Meter Install	1	EA	1,200.00	1,200
6" BFP	1	EA	12,500.00	12,500
Test , permit misc gc	1	LS	50,000.00	50,000
General Requirement Temp Gas and Water	1	LS	35,000.00	35,000
				2,258,043
TOTAL D20 - PLUMBING	$16.83	/SF		2,258,043

D30 - HVAC

D3010 HVAC

230001 HVAC*

Prefab Roof top mechanical rm	772	GSF	100.00	77,200
Packaged Rooftop Unit:				
RTU- Classroom (4 total)	88,000	CFM	12.25	1,078,000
RTU- Gym (1 total)	15,000	CFM	12.25	183,750
RTU- Locker Rm. (1 total)	3,500	CFM	14.00	49,000
RTU- Auditorium. (1 total)	12,000	CFM	11.00	132,000
RTU- Admin. (1 total)	6,000	CFM	11.00	66,000
HW System:				
HWB-1 (FBN-2000)	1	EA	35,000.00	35,000
HWB-2 (FBN-2000)	1	EA	35,000.00	35,000
HWB-3 (FBN-2000)	1	EA	35,000.00	35,000
HWB-4 (FBN-2000)	1	EA	35,000.00	35,000
HWP-1,2	4	EA	15,000.00	60,000
BP 1-4	4	EA	2,250.00	9,000
VFD	4	EA	3,200.00	12,800
Chemical feed	1	LS	40,000.00	40,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Air separator	2	EA	2,800.00	5,600
Expansion tank	2	EA	3,200.00	6,400
8" Feed Manifold	50	LF	350.00	17,500
6" Manifold S&R	100	LF	225.00	22,500
Boiler piping trim and valves	1	LS	30,000.00	30,000
12" Flue	240	LF	220.00	52,800
Flue Roof Term and Mast	4	EA	1,500.00	6,000
PH Tank	1	LS	1,500.00	1,500
Intake Louver and Damper	1	LS	6,000.00	6,000
Exhaust Louver and Damper	1	LS	6,000.00	6,000
Elec Room Exhaust fan and Louver	1	LS	3,500.00	3,500
Elec Room Exhaust and Intake louver damper	1	EA	3,500.00	3,500
Air-Cooled Chiller:				
ACC - 1 (175 ton)	1	EA	165,000.00	165,000
Chiller rough in, valve and trim	1	LS	20,000.00	20,000
Glycol	1	LS	18,500.00	18,500
Air separator	2	EA	3,500.00	7,000
100 Gal expansion tank	3	EA	4,000.00	12,000
500 Gal buffer tank	1	EA	7,500.00	7,500
CW Pump	2	EA	8,500.00	17,000
AC Split System:				
ACCU	11	EA	4,200.00	46,200
HP	11	EA	3,850.00	42,350
Line set	11	EA	1,500.00	16,500
Air Distribution:				
Auto Damper	16	EA	1,400.00	22,400
Fire damper	30	EA	550.00	16,500
Galvanized ductwork	150,000	LBS	9.35	1,402,500
1" Duct insul	110,000	SF	3.90	429,000
EPDM wrap	3,000	SF	12.00	36,000
Kitchen hood exhaust duct - welded	1,250	LBS	17.50	21,875
Alum. dishwasher ductwork	500	LBS	12.00	6,000
Fire wrap at duct	400	SF	9.00	3,600
Grills and Registers	134,173	GSF	0.85	114,047
Distraction fan	3	EA	8,500.00	25,500
Terminal box	3	EA	850.00	2,550
Kitchen Exhaust	1	EA	5,500.00	5,500
Melink hood control	1	LS	12,500.00	12,500
Dish Washer Exhaust	1	EA	4,200.00	4,200
Bathroom Exhaust	2	EA	3,500.00	7,000
General Exhaust Fan	4	EA	3,500.00	14,000
MAU - 1	1	LS	30,000.00	30,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Atrium Smoke Exhaust system	1	LS	145,000.00	145,000
Active 4 pipe Chilled Beam:				
Induction Unit	160	EA	1,500.00	240,000
Modulating Valve	360	EA	285.00	102,600
Isolation valve	720	EA	92.00	66,240
Hydraunic Heater:				
Cab heater	9	EA	2,650.00	23,850
Convector	20	EA	1,400.00	28,000
Radiant Ceiling Panel	1,200	LF	155.00	186,000
Modulating Valve	68	EA	285.00	19,380
Isolation valve	136	EA	92.00	12,512
Mechanical Piping:				
AHU Valving	8	EA	3,500.00	28,000
Misc. Control Valve	8	EA	2,500.00	20,000
HVAC Pipe	134,173	GSF	9.00	1,207,557
AC Split System:				
ACCU	4	EA	4,200.00	16,800
HP	4	EA	3,850.00	15,400
Line set	4	EA	1,500.00	6,000
Temperature Control:				
AHU/ERV	8	EA	25,000.00	200,000
Chiller and Cooling Equipment	1	LS	30,000.00	30,000
Boiler and Heating	1	LS	20,000.00	20,000
Pump	6	EA	1,800.00	10,800
Induction Unit	160	EA	1,800.00	288,000
FCU	1	EA	1,500.00	1,500
Hydronic point	40	EA	1,500.00	60,000
Exhaust Fan	8	EA	1,500.00	12,000
CO2 Sensor	45	EA	1,250.00	56,250
Misc. temp control	1	LS	30,000.00	30,000
Seismic & vibrator control	1	LS	35,000.00	35,000
Test and balance	134,173	GSF	0.65	87,212
Commission coordination	1	LS	25,000.00	25,000
GC & misc.	1	LS	25,000.00	25,000
*Fire safing carried w/ fittings				
*excludes temporary heat and ventilation				----------
				7,512,374

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
TOTAL D30 - HVAC	$55.99	/sf		7,512,374
D40 - FIRE PROTECTION				
D4010 SPRINKLERS				
210001 FIRE SUPPRESSION*				
Sprinkler System	134,173	GSF	4.75	637,322
Fire Pump (room shown on archi)	1	EA	95,000.00	95,000
				732,322
TOTAL D40 - FIRE PROTECTION		/sf		732,322
D50 - ELECTRICAL				
D5010 ELECTRICAL SERVICE & DISTRIBUTION				
260001 ELECTRICAL*				
3,000 AMP Service, Panels and Feeders	1	LS	80,000.00	80,000
Panels and Feeders	134,173	SF	4.35	583,653
Transformer	4	EA	8,000.00	32,000
Digital metering	1	LS	35,000.00	35,000
250 kw Emergency Power	1	EA	165,000.00	165,000
General Power Devices	134,173	SF	2.30	308,598
24kw UPS	2	EA	17,500.00	35,000
Mechanical Wiring	134,173	SF	1.75	234,803
PV Rough-in	1	LS	25,000.00	25,000
				1,499,053
D5020 LIGHTING & BRANCH WIRING				
Interior Lighting	134,173	SF	7.50	1,006,298
Lighting Control	134,173	SF	2.00	268,346
				1,274,644

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
D5030 COMMUNICATION & SECURITY				
Division 27:				
Section 271100 - Communications Equipment Rm Fittings:				
Allow for idf/mdf Fitout	1	LS	75,000.00	75,000
Section 271500 - Communications Horizontal Cabling:				
Tele/data wiring, box and data port	134,173	SF	4.75	637,322
Section 272100 - Data Communications Network Equip - LAN/Wi-Fi Equip:				
Equipment total includes:	1	LS	200,000.00	200,000
Server rack				
Phone system rack				
Public address rack				
Video surv. rack				
Media dist. rack				
Telecom rack				
Fiber dist. rack				
Section 273100 - Voice Communication Equipment (Avaya):				
Phone System	1	LS	100,000.00	100,000
Section 274100 - Cafeteria Sound System	1	LS	50,000.00	50,000
Section 274100 - Gym Sound System	1	LS	50,000.00	50,000
Section 274100 - Media Center Sound System	1	LS	50,000.00	50,000
Section 274100 - Band	1	LS	35,000.00	35,000
Section 274110 Media Distribution System (IPTV):		nic		
Section 274120 Speech Reinforcement Systems:				
Classroom Reinforcement		nic		
Section 275116 - Public Address System:				
PA and Clock System	134,173	SF	0.95	127,464
Scoreboard and shot clock	1	LS	25,000.00	25,000
Section 275319 Bi-Directional Amplification System (DAS):				
DAS System	1	LS	110,000.00	110,000
Division 28:				
Section 281300 - Access Control and				
Section 281600 - Intrusion Detection Systems:				
Access Control	134,173	SF	1.35	181,134
Section 282000 - Video Surveillance CCTV System:				
Head end rack w/equip & poe ethernet sw	1	LS	80,000.00	80,000
Interior dome camera	35	EA	1,850.00	64,750

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Ext. WP - exterior bkt mtd	35	EA	2,200.00	77,000
Section 282000 - Door Intercom/Video System (A1 phone):				
Master station - video	1	EA	1,650.00	1,650
Door entrance sta - video UP	2	EA	1,250.00	2,500
PS power supply	1	EA	500.00	500
System cabling	1	LS	10,000.00	10,000
Central controller w/program	1	LS	10,000.00	10,000
				1,887,320
D5090 OTHER ELECTRICAL SYSTEMS				
Fire Alarm	182,125	SF	2.40	437,100
Lightning Protection	1	LS	65,000.00	65,000
				502,100
TOTAL D50 - ELECTRICAL	$38.48	/sf		5,163,116
E. EQUIPMENT & FURNISHINGS				
E10 - EQUIPMENT				
E1010 COMMERCIAL EQUIPMENT				
114000 FOOD SERVICE EQUIPMENT				
Kitchen equipment & casework *Kitchen equipment & casework Quote 8/9/2018	1	LS	398,115.00	398,115
				398,115
E1090 OTHER EQUIPMENT				
113100 APPLIANCES (No Spec)				
Staff Dinning Rm (1 ea):				
Refrigerator -full size	1	EA	1,400.00	1,400
Microwave	1	EA	500.00	500
Dishwasher		N/A		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Teacher Planning Rm		NIC		
Medical Suite :				
Refrigerator -full size	1	EA	1,400.00	1,400
SPED Learning Ctr :		N/A		
Kitchen washer and dryer	W / Kitchen Equipment			
Science rm appliance	W / Science Equipment			
116600 ATHLETIC & SPORTS EQUIPMENT				
Main Gym:				
Basketball backstops - electric	6	EA	9,500.00	57,000
8' 8" H Wall padding -allow	1,176	SF	17.00	19,992
Motor op divider curtain (62'x28')-allow	1,736	SF	16.00	27,776
Volley ball court equip.	2	PR	700.00	1,400
Tennis court equip.	2	PR	700.00	1,400
Scoreboard		W / Electrical		
Wall Mtd Motor op Bleacher	640	SEAT	75.00	48,000
Additional Wall Mtd Motor op Bleacher	120	SEAT	75.00	9,000
Elec. mat hoist		NIC		
Clg Mtd Batting cage	1	LS	8,000.00	8,000
Climbing wall		NIC		
116143 THEATRICAL EQUIPMENT(No Spec)				
Auditorium - Allow:				
Aud. Motorized stage rigging and curtain	1	LS	130,000.00	130,000
Lighting and Dimming System	1	LS	125,000.00	125,000
Aud Audio Visual System	1	LS	125,000.00	125,000
115213 PROJECTION SCREENS				
Projection screen - elec op-Allow:				
Auditorium	1	EA	15,000.00	15,000
Café/Learning commons	1	EA	15,000.00	15,000
Gym	1	EA	10,000.00	10,000
Media center	1	EA	10,000.00	10,000
Interactive short throw projector		w ff&e		
119000 MISC. EQUIPMENT				
Science Lab Classroom Equipment (6 EA):				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Safety glasses monitor case	1	EA	1,000.00	1,000
Glassware pegboards (1/RM)	6	EA	350.00	2,100
Fume hood	6	nic		
First aid kit	6	EA	300.00	1,800
OH track - equip support	6	EA	2,500.00	15,000
Safety SHW		w/ plumbing		
Fire blanket	6	EA	500.00	3,000
Fire ext & cab (1/RM)	6	EA	425.00	2,550
Misc equipment	6	RM	500.00	3,000
Science Shared Prep Room Equipment (3 EA):				
Refrigerator - full size	3	EA	750.00	2,250
Dishwasher - under -counter	3	EA	1,100.00	3,300
Ice maker - under -counter	3	EA	1,100.00	3,300
Glassware pegboards (1/RM)	1	EA	350.00	350
Acid storage cabinets	3	EA	1,000.00	3,000
Flammable material storage cab.	3	EA	2,500.00	7,500
Misc equipment	3	RM	500.00	1,500
Additional Science Lab Equipment - Allow:				
Water distiller		NIC		
Autoclave sterilizer		NIC		
Steam table		NIC		
Robotics equip		NIC		
Allow:				
Loading dock bumpers	1	LS	3,500.00	3,500
Kiln	1	EA	4,000.00	4,000
Metal storage shelving		NIC		
Library equipment		NIC		
Loading dock trash compactor		NIC		
Loading dock dumpster		NIC		
Power op changing table- Hoyer lift		NIC		
Vault main office		NIC		
				663,018
TOTAL E10 - EQUIPMENT				1,061,133
E20 - FURNISHINGS				
E 2010 FIXED FURNISHINGS				
122413 WINDOW TREATMENT				
Allow:				
Exterior Manual op Window Shade	15,166	SF	8.00	121,328

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Exterior Motor Op Shade:				
Aud clerestory	711	SF	28.00	19,908
Gym clerestory		NIC		
Interior Specialty Shade:				
P lam bifold screen @ corr window(7'w x 8' Hx2")	45	EA	2,500.00	112,500
123550 CASEWORK				
Corridor built-in bench 7'w	315	LF	400.00	126,000
Solid surface lav ctr	250	LF	265.00	66,250
5 tier 4'W shelving @ class closet-34 loc	680	LF	28.00	19,040
Science Lab Classroom (6 EA):				
Sink		w/ plumbing		
Epoxy ctr w/ 24" backsplash(no base cab 44 LF/R	264	LF	285.00	75,240
Mobile storage cab (36"wx27"h 6/RM)	36	EA	1,200.00	43,200
P lam Wall cab (44 LF/RM)	264	LF	210.00	55,440
Teachers demo table		NIC		
Student table		NIC		
Science Shared Prep Room (3 EA):				
Sink		w/ plumbing		
Epoxy ctr w/ 24" backsplash(no base cab 10.5 LF/	32	LF	285.00	8,978
P lam Wall cab (10.5 LF/RM)	31.5	LF	210.00	6,615
Tech-Makerspace (1 EA):				
Counter w/ backsplash(no base cab)	20	LF	230.00	4,600
P lam Wall cab	20	LF	210.00	4,200
Fab-lab (1 EA):				
Counter w/ backsplash(no base cab)	68	LF	230.00	15,640
P lam Wall cab	68	LF	210.00	14,280
Art Class Room (1 EA):				
Counter w/ backsplash(no base cab)	25	LF	230.00	5,750
P lam Wall cab	25	LF	210.00	5,250
Teacher Prep Room (24 EA):				
P Lam ctr w/ wd edge (11'/loc)	264	LF	230.00	60,720
12" Shelving (5 tier- 42' 6"/loc)	1020	LF	45.00	45,900
Typ, SPED & ELL Classroom (33 EA):				
Ext wall 30" P Lam ctr w/ wd edge (12' 6"/loc)	412.5	LF	265.00	109,313
Ext wall 30" P Lam flip top ctr w/ wd edge (3'/loc	99	LF	325.00	32,175
Mobile storage cab (36"wx27"h 4/RM)	132	EA	1,200.00	158,400
Ext wall 4 tier shelving unit (10' /loc)	330	LF	400.00	132,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Music Classroom (2 EA):				
Ext wall 30" P Lam ctr w/ wd edge (20'/loc)	40	LF	265.00	10,600
Ext wall 30" P Lam flip top ctr w/ wd edge (3'/loc	6	LF	325.00	1,950
Mobile storage cab (36"wx27"h 4/RM)	8	EA	1,200.00	9,600
Ext wall 4 tier shelving unit (14' /loc)	28	LF	400.00	11,200
Allow-Staff Lunch Room (1 EA):				
Base cab w/ SS ctr	10	LF	425.00	4,250
Wall cab	10	LF	200.00	2,000
Allow-Medical Suite:				
Base cab w/ ctr	6	LF	425.00	2,550
Wall cab	6	LF	200.00	1,200
Aud Dressing room (2 EA):				
Allow- Counter w/ backsplash(no base cab)	26	LF	300.00	7,800
Allow-Main Admin Suite:				
Work ctr	10	LF	245.00	2,450
Base cab w/ ctr	10	LF	350.00	3,500
Wall cab	10	LF	220.00	2,200
Mail box unit w/ base cab	10	LF	850.00	8,500
Reception desk		W / C1030		
Misc. Casework Allowance:				
Media Center (1 EA):		W / C1030		
Cafeteria /Learning Commons		NIC		
Common cohort Area 260		NIC		
Common cohort Area 310		NIC		
Music Practice rooms		NIC		
Music storage		NIC		
Gymnasium		NIC		
Auditorium		NIC		
Kitchen & Serving area		NIC		
Guidance suite (3 loc)		NIC		
SPED suite (3 loc)		NIC		
15'x15' Breakout Room (1 EA)		NIC		
18'x18' Breakout Room (2 EA)		NIC		
26'x14' Breakout Room (1 EA)		NIC		
20' Dia. Breakout Room (5 EA)		NIC		
Mobile Student table		NIC		
Art storage rm (1 EA):				
129000 MISCELLANEOUS FURNISHING				
Auditorium fixed seat	420	EA	295.00	123,900
Choral classroom risers		W/FFE		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Band classroom risers		W/FFE		
Stage risers		W/FFE		
				1,434,426
E2020 MOVABLE FURNISHINGS		NIC		
				0
TOTAL E20 - FURNISHINGS				1,434,426

F. SPECIAL CONSTRUCTION & DEMOLITION

F10 - SPECIAL CONSTRUCTION

F1010 SPECIAL STRUCTURES		N/A		
				0
TOTAL F10 - SPECIAL CONSTRUCTION				0

F20 - SELECTIVE BUILDING DEMOLITION

F2010 BUILDING ELEMENTS DEMOLITION	See Grand Summary			
				0
F2020 HAZARDOUS COMPONENTS ABATEMENT	See Grand Summary			
				0
TOTAL F20 - SELECTIVE BUILDING DEMOLITION				0

G. BUILDING SITEWORK

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
G10 - SITE PREPARATION				
G1010 SITE CLEARING				
311000 SITE PREPARATION & CLEARING				
Construction entrance	1	EA	7,500.00	7,500
Construction fence	4,000	LF	12.00	48,000
Erosion control	3,200	LF	4.50	14,400
Drain inlet protection	25	EA	50.00	1,250
Erosion control maintenance	1	LS	15,000.00	15,000
Strip & stack top soil - 6"	5,900	CY	9.25	54,575
Selective Clear and Grub	1	LS	20,000.00	20,000
Saw cut walk	25	LF	5.00	125
Saw cut drive	25	LF	5.00	125
Protection:				
Temporary Walks and Parking	1	LS	50,000.00	50,000
Plywood Protection Fence at Existing Building	250	LF	225.00	56,250
Site - Remove Existing:				
Cut and Cap	1	LS	5,000.00	5,000
Sanitary and Drain pipe	1,435	LF	35.00	50,225
Water Line	900	LF	31.00	27,900
Utility structures	10	EA	425.00	4,250
Wood guardrail	300	LF	15.00	4,500
Bit walk	201,786	SF	0.85	171,518
Conc. walk	14,967	SF	1.00	14,967
Bit Walkway	8,874	SF	0.90	7,987
Misc. site demolition	1	LS	25,000.00	25,000
				578,572
G1020 SITE DEMOLITION & RELOCATIONS				
Building Removal	SEE GRAND SUMMARY			
				0
G1030 SITE EARTHWORK				
310000 EARTHWORK				
Site Cut and Fill to Rough Grade:				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Site Cut	6,881	CY	10.25	70,530
Site Fill - reuse mat'l	17,626	CY	11.00	193,886
Site Fill - supply	35,894	CY	19.75	708,907
Site Rough Grading	101,781	SY	2.30	234,096
Layout, Mobilization, Supervision	1	LS	300,000.00	300,000
Ledge Removal - Allowance:				
Ledge removal - open	200	CY	65.00	13,000
Ledge removal - trench	200	CY	110.00	22,000
Remove of Unsuitables		N/A		
Temporary Access Road and Phasing Logistics:				
Temporary Construction Road	1	LS	75,000.00	75,000
Dust Control	1	LS	10,000.00	10,000
Street Sweeping	1	LS	10,000.00	10,000
				1,637,419
G1040 HAZARDOUS WASTE REMEDIATION				
		NIC		0
TOTAL G10 - SITE PREPARATION				2,215,991
G20 - SITE IMPROVEMENTS				
G2010 ROADWAYS				
321000 PAVING AND CURBING				
Bituminous Pavement (1 1/2" Wear & 2 1/2" Base):				
Bit Pavement - parking and road	18,983	SY	27.00	512,541
12" Gravel base @ bit drive	6,327	CY	31.50	199,301
Bituminous Pavement (1 1/2" Wear & 2 1/2" Base):				
Bit Pavement - fire lane	1,294	SY	27.00	34,938
12" Gravel base @ bit drive	432	CY	31.50	13,608
Curbing:				
Granite curb - straight	2,898	LF	41.50	120,267
Granite curb - radial	1,267	LF	45.50	57,649
Granite curb - sloped	55	LF	39.75	2,186
Precast Concrete - straight	2,630	LF	29.50	77,585

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Precast Concrete - radial	360	LF	32.00	11,520
Bit Berm Curb	3,398	LF	4.25	14,442
Street Patch at New Curb	1,154	LF	50.00	57,700
Parking striping	1	LS	15,000.00	15,000
Pavement patch @ utilities	1	LS	15,000.00	15,000
				1,131,736

G2020 PARKING LOTS

*Included with G2010

0

G2030 PEDESTRIAN PAVING

321000 PAVING AND CURBING

Bituminous Walks:				
Bituminous pavement - per civil	516	SY	25.45	13,132
Bituminous pavement - per landscape	182	SY	25.45	4,632
8" Gravel @ bit walk	155	CY	33.00	5,115
Concrete Walk:				
5" Concrete Pavement - per civil	17,774	SF	7.35	130,639
5" Concrete Pavement - per landscape	11,082	SF	7.35	81,453
8" Gravel @ conc. walks	714	CY	34.00	24,276
Add for Colored Concrete	1	LS	75,000.00	75,000
Concrete Unit Pavers - Patio (per archi drwgs):				
Unit paver	1,315	SF	20.00	26,300
8" Gravel @ paver	49	CY	34.00	1,666
HC tactile paver	10	EA	365.00	3,650
				365,863

G2040 SITE DEVELOPMENT

323100 SITE IMPROVEMENTS

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Gateway and Bandstand	1	LS	50,000.00	50,000
Front Entry:				
Concrete Stair and Railing	4	LOC	10,000.00	40,000
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Steel Guard Rail:				
Entry Ramp Guard railing	115	LF	350.00	40,250
Bollards:				
6" Galv. Metal bollard @ equip pads	20	EA	950.00	19,000
323100 SITE IMPROVEMENTS				
Allowance:				
Trash/recycle receptacle	10	EA	2,000.00	20,000
Bike loops	20	EA	450.00	9,000
Entry sign	1	LS	30,000.00	30,000
Electronic school zone signals		NIC		
Parking/traffic signage	1	LS	7,500.00	7,500
Bench	10	EA	2,500.00	25,000
Dumpster pad	200	SF	16.00	3,200
Flag pole w/base	1	EA	7,200.00	7,200
				251,150
G2050 LANDSCAPING				
329000 PLANTING				
Trees:				
Tree - 3 1/2" cal	142	EA	900.00	127,800
Evergreen/screen trees (8-10' ht)	1	LS	30,000.00	30,000
Ornamental trees (8-10' ht)	1	LS	30,000.00	30,000
Shrubs & Perennials	1	LS	75,000.00	75,000
Mulch - allowance	200	CY	65.00	13,000
Lawn:				
Sod lawn	15,495	SF	1.00	15,495
Low mow fescue hydroseed lawn	435,679	SF	0.35	152,488
Meadow Mix	180,619	SF	0.35	63,217
12" Soil @ plant bed	438	CY	48.00	21,024
6" Loam - Lawn (inc.'s 8" at sports field)	12,710	CY	48.00	610,080

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Credit to amend existing soil	-5,900	CY	35.00	-206,500
				931,603
TOTAL G20 - SITE IMPROVEMENTS				2,680,352

G30 - SITE MECHANICAL UTILITIES

G3010 WATER SUPPLY

330000 UTILITIES

Site Connection	2	LOC	7,500.00	15,000
4" Domestic	125	LF	69.50	8,688
6" Domestic	125	LF	77.00	9,625
8" Main	1,810	LF	95.00	171,950
6" Fire hydrant service line	30	LF	85.00	2,550
Hydrant	3	EA	2,350.00	7,050
8" Gate valve	4	EA	1,650.00	6,600
6" Gate valve	4	EA	1,400.00	5,600
Temporary Construction Water Service	1	LS	25,000.00	25,000
				252,063

G3020 SANITARY SEWER

330000 UTILITIES

Grease trap W/ BLDG Conn	INC. W/ PLUMBING			
8" PVC	150	LF	85.00	12,750
Sanitary manhole	1	EA	4,100.00	4,100
Exist. sanitary manhole - site conn.	1	EA	7,500.00	7,500
				24,350

G3030 STORM SEWER

330000 UTILITIES

Site Drainage :				
Area drain	1	LS	25,000.00	25,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Catch basin	18	EA	4,500.00	81,000
Drain Manhole	7	EA	4,500.00	31,500
Treatment chamber	4	EA	12,500.00	50,000
Head wall and Outfall	4	EA	10,000.00	40,000
Loading dock trench drain	20	LF	95.00	1,900
Bio retention basin	1	LS	100,000.00	100,000
Underground recharge sys.	1	LS	200,000.00	200,000
Piping and Trenching:				
12" HDPE	2,089	LF	21.00	43,869
24" HDPE	550	LF	33.00	18,150
Sports Field:				
Panel drain - 40' oc	4,500	LF	26.00	117,000
12" CPP	200	LF	33.00	6,600
Clean out	4	EA	1,000.00	4,000
				719,019
G3060 FUEL DISTRIBUTION				
330000 UTILITIES				
Gas Service:				
Gas Pipe		By utility		
Trench excavation & backfill	750	LF	48.00	36,000
Service Meter Pad	1	EA	2,500.00	2,500
				38,500
G3090 OTHER SITE MECHANICAL UTILITIES		N/A		
				0
TOTAL G30 - SITE MECHANICAL UTILITIES				1,033,932
G40 - SITE ELECTRICAL UTILITIES				
G4010 ELECTRICAL DISTRIBUTION				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
330000 UTILITIES				
Generator Pad	200	SF	25.00	5,000
Transformer pad	200	SF	25.00	5,000
Trench, Backfill and Concrete:				
Primary Ductbank	1,000	LF	70.00	70,000
Secondary ductbank	200	LF	85.00	17,000
Entrance Sign Power Feed (no concrete)	1,500	LF	22.00	33,000
Entrance Sign T/D Feed (no concrete)	1,500	LF	22.00	33,000
260001 ELECTRICAL*				
D&R all secondary feeders from xfmr in vault	1	LS	4,970.00	4,970
Co-ord PRI service removal	1	LS	1,704.00	1,704
Co-ord communication serv removal	1	LS	426.00	426
Exist. gen/set D&R complete	1	LS	9,030.00	9,030
Exist. gen/set wiring complete	1	LS	1,420.00	1,420
Co-rod removal of O/H service thru wood pole to modulars	1	LS	1,704.00	1,704
D&R exist. O/H sec service from modulars to pole xfmrs (bucket truck)	1	LS	2,652.00	2,652
Ductbank				
Pole dressing - PRI	1	EA	684.00	684
AA				
PVC-4"C-w/PS	4,000	LF	5.65	22,600
BB				
PVC-4"C-w/PS	800	LF	5.65	4,520
CC				
Site Sign Feed:				
PVC-1"C-single mode fiber	1,500	LF	4.13	6,195
PVC-1"C-3#8 $ 1#10	1,500	LF	4.75	7,125
Xfmr pad grounding	1	EA	859.00	859
Gen/set pad grounding	1	EA	588.00	588
Xfmr pad 90 deg & sleeves	1	EA	608.00	608
Gen/set 90 Deg & sleeves	1	EA	488.00	488
				228,573

G4020 SITE LIGHTING

330000 UTILITIES

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Site light trenching	2,500	LF	18.50	46,250
Light Pole base - 12' Precast	29	EA	1,500.00	43,500
260001 ELECTRICAL*				
Lighting Fixtures:				
ZF - Flag pole light	1	EA	763.00	763
ZT22-20'alum w/twin head	29	EA	3,368.00	97,672
Pedestrian lighting	1	LS	25,000.00	25,000
Pole base anchor bolts setups	29	EA	53.25	1,544
Pole base grounding w/elbow	29	EA	186.50	5,409
Pole base sleeves & nipples	29	EA	181.50	5,264
PVC-1 1/4"C-2#8 & 1#10	2,500	LF	3.33	8,325
				233,726
TOTAL G40 - SITE ELECTRICAL UTILITIES				462,299

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
ALTERNATE NO. 1 - ADD IRRIGATION SYSTEM (82,800 SF)				
Add:				
Irrigation System	82800	SF	1.00	82,800
Irrigation bfp	1	EA	1,600.00	1,600
Meter and Irrigation feed	1	LS	5,000.00	5,000
SUBTOTAL				89,400
DESIGN CONTINGENCY		10 %		8,940
SUBTOTAL				98,340
CM CONTINGENCY		3 %		2,950
SUBTOTAL				101,290
ESCALATION (winter 2019)		6 %		6,077
SUBTOTAL				107,368
GENERAL CONDITIONS		7 %		7,516
SUBTOTAL				114,883
GENERAL REQUIREMENTS		2.5 %		2,872
SUBTOTAL				117,755
BUILDING PERMIT		0 %		0
SUBTOTAL				117,755
P&P BOND		0.85 %		1,001
SUBTOTAL				118,756
GENERAL LIABILITY INSURANCE		1.35 %		1,603
SUBTOTAL				120,360
FEE		2.5 %		3,009
TOTAL ALTERNATE NO. 1				123,369

20. Cash Flow

The Cash Flow has been developed based on the Total Project Budget and Project Schedule. The Cash Flow is appended to the end of this section.

City of Framingham - Fuller Middle School Project
Schematic Submission - Project Cash Flow
September 12, 2018

	Total Project		Feasibility/Schematic		
SMMA - OPM	**$2,532,901**				**$175,000**
JLA - Arch	**$7,556,659**				**$545,000**
CM	**$77,935,429**				**$0**
Other, Altern. & Conting.	**$10,251,889**				**$280,000**
Total	**$98,276,878**				**$1,000,000**

	2019											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SMMA - OPM	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$60,000	$60,000	$60,000	$60,000	$60,000
JLA - Arch	$500,000	$500,000	$500,000	$500,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$50,000
CM	$25,000	$25,000	$25,000	$25,000	$25,000	$200,000	$200,000	$300,000	$1,500,000	$2,000,000	$2,000,000	$2,000,000
Other, Altern. & Conting.	$60,000	$60,000	$60,000	$60,000	$100,000	$100,000	$100,000	$200,000	$200,000	$200,000	$200,000	$200,000
Total Monthly	**$635,000**	**$635,000**	**$635,000**	**$635,000**	**$575,000**	**$750,000**	**$750,000**	**$960,000**	**$2,160,000**	**$2,660,000**	**$2,660,000**	**$2,310,000**

	2020											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SMMA - OPM	$60,000	$60,000	$60,000	$60,000	$60,000	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000
JLA - Arch	$50,000	$50,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
CM	$3,000,000	$3,000,000	$3,000,000	$4,000,000	$4,000,000	$6,000,000	$6,000,000	$6,000,000	$5,000,000	$5,000,000	$3,500,000	$3,000,000
Other, Altern. & Conting.	$200,000	$200,000	$300,000	$300,000	$300,000	$300,000	$300,000	$400,000	$400,000	$400,000	$400,000	$300,000
Total Monthly	**$3,310,000**	**$3,310,000**	**$3,460,000**	**$4,460,000**	**$4,460,000**	**$6,480,000**	**$6,480,000**	**$6,580,000**	**$5,580,000**	**$5,580,000**	**$4,080,000**	**$3,480,000**

	2021											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SMMA - OPM	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000	$60,000	$60,000	$60,000	$60,000	$47,901
JLA - Arch	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$60,000	$60,000	$41,659
CM	$3,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$1,500,000	$1,500,000	$1,000,000	$1,000,000	$1,000,000	$600,000	$510,429
Other, Altern. & Conting.	$300,000	$300,000	$300,000	$300,000	$1,000,000	$1,000,000	$1,000,000	$200,000	$60,000	$60,000	$60,000	$51,889
Total Monthly	**$3,480,000**	**$2,480,000**	**$2,480,000**	**$2,480,000**	**$3,180,000**	**$2,680,000**	**$2,680,000**	**$1,360,000**	**$1,220,000**	**$1,180,000**	**$780,000**	**$651,878**

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PROJECT MANAGEMENT SMMA

21. Project Work Plan

The updated Project Directory, Roles and Responsibilities Matrix and Communications and Control Procedures are attached to the end of this section.

SMMA

Project Management

CITY OF FRAMINGHAM
FULLER MIDDLE SCHOOL FEASIBILITY STUDY
PROJECT DIRECTORY
SMMA NO. 17050
Date: September 12, 2018

	Contact and Address	Cell Number
School Building Committee	**David Miles,** *SBC Co-Chair and Prior Member of the Finance Committee* *dmiles@partners.org*	617-967-2851
	Dr. Edward Gotgart, *SBC Co-Chair and Chief Operating Officer* *egotgart@framingham.k12.ma.us*	508-626-9100
	Heather Connolly, *Prior Member of the School Committee* *hconnolly@framingham.k12.ma.us*	508-259-0431
	Richard Finlay, *Member of School Committee and Convenor* *rfinlay@wellesleyma.gov*	508-788-6234
	Matt Torti, *Director of Buildings and Grounds* *mtorti@framingham.k12.ma.us*	508-626-9111
	Richard Weader, III, *Building Trade Expert* *weaders@aol.com*	508-877-0550
	Michael Grilli, *Building Trade Expert* *mgrilli@beta-inc.com*	508-877-2957
	Adam Freudberg, *School Committee Chair and Representative of Office authorized by law to construct school buildings* *afreudberg@framingham.k12.ma.us*	508-626-9121
	Scott Wadland, *School Committee Member* *swadland@framingham.k12.ma.us*	508-626-9121
	Noval Alexander, *School Committee Member* *nalexander@framingham.k12.ma.us*	508-626-9121
	Donald Taggart, III, *City Resident* *dontaggart134@gmail.com / dtaggart@framingham.k12.ma.us*	508-308-6119
	Charles Sisitsky, *City Councilor, Representative of City Council* *csisitsky@rcn.com*	508-532-5403
	Dr. Robert Tremblay, *Superintendent of Schools, FPS* *rtremblay@framingham.k12.ma.us*	508-626-9117
	Mayor Yvonne M. Spicer, *Local Chief Executive Officer* *mayorspicer@framinghamma.gov*	508-532-5401
	Jennifer Pratt, *Chief Procurement Officer for the City of Framingham* *jap@framinghamma.gov*	508-532-5405

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Project Management

CITY OF FRAMINGHAM
FULLER MIDDLE SCHOOL FEASIBILITY STUDY
PROJECT DIRECTORY
SMMA NO. 17050
Date: September 12, 2018

	Contact and Address	Cell Number
School Building Committee (continued)	**Mary Ellen Kelley,** *CFO and Director of Administration and Finance for City of Framingham* *mek@framinghamma.gov*	508-532-5425
	Jose Duarte, *Principal, Fuller Middle School* *jduarte@framingham.k12.ma.us*	508-626-9180
	Dr. Anne Ludes, *Directory of Secondary Education* *aludes@framingham.k12.ma.us*	508-626-9132
	Caitlin Stempleski, *Fuller Middle School Teacher* *cstempleski@framingham.k12.ma.us*	617-694-3994
	Dr. Jennifer Krusinger Martin *jkrusinger@gmail.com*	617-216-9183
School Committee	**Adam Freudberg**, *Chairperson* *afreudberg@framingham.k12.ma.us*	
	Richard A. Finlay, *Clerk* *rfinlay@wellesleyma.gov*	
	Beverly Hugo	
	Scott Wadland	
	Noval Alexander	
	Geoffrey Epstein	
	Tiffanie Maskell	
	Gloria Pascual	
	Tracey Bryant	
Owner's Project Manager	**Symmes Maini & McKee Associates, Inc. (SMMA)** 1000 Massachusetts Avenue Cambridge, Massachusetts 02138	617-547-5400
	Joel G. Seeley, *Project Manager* *jseeley@smma.com*	x403
	Antone Dias, CS, *Onsite Representative* *adias@smma.com*	x660
	Sarah A. Traniello, *Reports Manager* *straniello@smma.com*	x240
Architecture/Laboratory/Library/ Media	**Jonathan Levi Architects** 266 Beacon Street Boston, Massachusetts 02116	617-437-9458 617-437-1965
	Jonathan Levi, FAIA, MCPPO, *Principal-In-Charge* *jlevi@leviarc.com*	
	Philip Gray, AIA, *Project Manager* *pgray@leviarc.com*	
	Mark Warner, AIA, *Senior Associate* *mwarner@leviarc.com*	
	Alexander Shaw, RA, *Project Architect & Exterior Envelope* *ashaw@leviarc.com*	

SMMA

Project Management

CITY OF FRAMINGHAM
FULLER MIDDLE SCHOOL FEASIBILITY STUDY
PROJECT DIRECTORY
SMMA NO. 17050
Date: September 12, 2018

	Contact and Address	Cell Number
Architecture/Laboratory/ Library/Media *(continued)*	**Carol Harris, AIA,** *Director of Interior Architecture* *charris@leviarc.com* **Elizabeth Bugbee, AIA,** *Associate* *ebugbee@leviarc.com*	
Educational Planner	**New Vista Design** 32 Sheridan Street, Suite #2 Jamaica Plain, Massachusetts **David Stephen, President** *david@newvistadesign.net*	617-733-0847
Specifications	**WIL-SPEC** Lynnfield Medical Office Building 15 Post Office Square Lynnfield, Massachusetts 01940 **Robb Wilkinson, RA** *robbw@wil-spec.com*	781-598-6789 781-598-8765
Landscape Architecture	**Richard Burck Associates** 7 Davis Square Somerville, Massachusetts 02144 **Richard Burck** *Principal* *rburck@richardburck.com*	617-623-2300
Traffic Consultant	**Vanasse & Associates** 35 New England Business Center Drive, Suite 140 Andover, Massachusetts 01810-1071 **Giles Ham, PE,** *Principal* *gham@rdva.com*	978-474-8800 978-688-6508
Structural Engineering	**RSE Associates, Inc.** 63 Pleasant Street, Suite 300 Watertown, Massachusetts 02472 **Richmond So, PE,** *Principal Structural Engineer* *richmond.so@rseassociates.com*	617-926-9300
Fire Protection Engineering/ Plumbing Engineering	**Garcia Galuska & DeSousa** 370 Faunce Corner Road North Dartmouth, Massachusetts 02747 **Christopher Garcia, PE,** *Principal* *christopher_garcia@g-g-d.com*	508-998-5700 508-998-0883
HVAC Engineering **Electrical Engineering/ Lighting** **Data/Communications/Security**	**Dominick B. Puniello, PE, CEM, LEED AP** *Principal, HVAC Engineer* *dominick_puniello@g-g-d.com* **Carlos DeSousa, PE** *Principal, Electrical Engineering and Lighting* *carlos_desousa@g-g-d.com* **David M. Pereira, P.E.** *Principal, Data/Communications and Security* *david_pereira@g-g-d.com*	
FF&E Consultant	**Tavares Design Associates** 8 Winchester Place, Suite 301 Winchester, Massachusetts 01890 **Manuel Tavares** *mtavares@tavaresdesign.com*	781-729-5541

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SMMA

Project Management

CITY OF FRAMINGHAM
FULLER MIDDLE SCHOOL FEASIBILITY STUDY
PROJECT DIRECTORY
SMMA NO. 17050
Date: September 12, 2018

	Contact and Address	Cell Number
Geotechnical Engineering/ GeoEnvironmental Engineering	**McPhail Associates** 2269 Massachusetts Avenue Cambridge, Massachusetts 02140 **Ambrose J. Donovan, PE LSP** *Principal Engineer* *ajd@mcphailgeo.com*	617-868-1420 dw 617-868-1423
Hazardous Materials Consulting **Environmental Permitting** **Civil Engineering** **Site Survey**	**CDW Consultants** 40 Speen Street Framingham, Massachusetts 01701 **Kathleen Campbell, PE, LSP, LEED AP,** *Principal-in-Charge* *kcampbell@cdwconsultants.com* **Susan Cahalan, PG,** *Senior Environmental Specialist* *scahalan@cdwconsultants.com* **Eric Wilhelmsen, PE,** *Associate Principal & Chief Engineer* *ewilhelmsen@cdwconsultants.com* **Bryan Parmenter,** *Professional Land Surveyor* *bparmenter@cdwconsultants.com*	508-875-2657 508-875-6617
Cost Estimating	**Miyakoda Consulting** P.O. Box 47 Raynham, Massachusetts 02767 **Noriko Hall** *noriko@miyakodaconsulting.com*	781-799-5832
Kitchen/Food Service Consultant	**Crabtree McGrath Associates, Inc.** 161 West Main Street Georgetown, Massachusetts 01833 **John Sousa, Jr.,** *President* *jsousa@crabtree-mcgrath.com*	978-352-8500 978-352-8588
Acoustical Consultant/ Technology/Audio Visual Consultant	**Acentech** 33 Moulton Street Cambridge, Massachusetts 02138 **Benjamin Markham** *bmarkham@acentech.com* **Rob Hnasko** *rhnasko@acentech.com*	617-499-8000 617-499-8074
Sustainability/Green Design/Renewable Energy Consultant	**The Green Engineer, LLP** 54 Junction Square Drive Concord, Massachusetts 01742 **Christopher Schaffner, PE, LEED Fellow** *Principal* *info@greenengineer.com*	978-369-8978
Theatrical Consultant	**Theatre Project Consultants** 47 Water Street, South Norwalk, Connecticut 06854 **David Rosenburg,** *Principal* *drosenburg@theatreprojects.com*	203-299-0830 203-299-0835

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Fuller Middle School Project
Project Responsibility Matrix
September 12, 2018

	L=Lead S=Support R=Review/Input	Designer	OPM	Cx	Contractor	Owner	MSBA
MODULE 1: ELIGIBILITY PERIOD							
a	Statement of Interest					L	R
b	Initial Compliance Certification					L	R
c	Form School Building Committee					L	R
d	Existing Maintenance Practices					L	R
e	Certification of Design Enrollment					S	L
f	District Funding Authorization					L	R
g	Feasibility Study Agreement					S	L
MODULE 2: FORMING THE PROJECT TEAM							
a	Prepare OPM Request For Services (RFS)					L	S
b	Review Proposals & Interview OPMs; Select Preferred OPM					L	S
c	MBSA OPM Review Panel Approval					S	L
d	Procure OPM		S			L	R
e	Establish OPM Contract		S			L	R
DESIGNER SELECTION							
a	Prepare Designer Request for Services (RFS)		L			R	R
b	Review Proposals, Check References & Rank		L			S	R
c	MSBA Designer Review Panel Selects Preferred Firm		S			S	L
d	Negotiate Designer Fee & Establish Designer Contract		L			R	R
MODULE 3: FEASIBILITY STUDY							
a	Preliminary Design Program (PDP) Report	L	S			R	S
b	MSBA Review of PDP	S	S			S	L
c	Preferred Schematic Report	L	S			R	S
d	Facilities Assessment Subcommittee Review	S	S			S	L
e	MSBA Board of Directors' Approval of Preferred Schematic						L
MODULE 4: SCHEMATIC DESIGN							
a	Schematic Design (SD) Submission	L	S		S	S	R
b	MSBA Staff Review of SD Submission	S	S			S	L
c	Project Scope & Budget Conference	S	S			S	L
d	MSBA Board of Directors' Approval of Project Scope & Budget						L
MODULE 5: FUNDING THE PROJECT							
a	Project Scope & Budget Agreement		S			R	L
b	Local Funding Authorization	S	S		S	L	R
c	Project Funding Agreement	S	S			R	L
MODULE 6: DETAILED DESIGN							
DESIGN DEVELOPMENT							
a	Establish Final OPM Contract		S			L	R
b	Establish Final Designer Contract	S	L			S	R
c	Assign Commissioning Agent						L
d	Design Development Submission	L	S	S	S	S	
e	MSBA Staff Review		S			S	L
CONSTRUCTION DOCUMENTS							
a	60% Construction Documents Submission	L	S	S	S	S	
b	MSBA Staff Review		S			S	L
c	90% Construction Documents Submission	L	S	S	S	S	
d	MSBA Staff Review		S			S	L
e	100% Construction Documents Submission	L	S	S	S	S	L

	L=Lead S=Support R=Review/Input	Designer	OPM	Cx	Contractor	Owner	MSBA
BIDDING							
a	Bidder Prequalification Process	S	L		S	S	
b	Pre-Bid Meeting & Site Visit	S	L		S	S	
c	Issuance of Addenda	L	R		S	R	
d	Response to Technical Inquiries	L	S	S	S		
e	Bid Tabulation & Evaluation & Recommendation	S	L		S	R	
f	Award Construction Contract	S	S		S	L	R
g	Execution of Construction Contract		L			S	R
MODULE 7: CONSTRUCTION							
Meetings							
a	Pre-Construction Conference	S	L	S	S	S	
b	Progress Meetings (School Building Committee)	S	L			S	
Project Controls							
a	Scheduling/Work Plan/SOV/Coordination	R	R		L	R	R
b	Construction Meetings (weekly)	S	S		L	S	
c	Cost Estimates/Budgeting/Cash flows	R	L		S	R	R
d	Site Observation - Daily Log	R	L			R	R
e	Weekly Progress Reports (Field Reports)	L	R	S		R	
Record Drawings							
a	As-Built Drawings	R	R		L		
b	Record Drawing Approval	L	S			R	
Construction Contract Administration							
a	MBE/WBE Monitoring Compliance	S	L		S	R	R
b	Contractor Payment Requisitions	L	S		S	S	
c	Contractor Evaluations - 50%	S	L		S	S	
d	Change Order Processing	S	S		L	R	
e	Change Order Review and Approval	L	S		S	R	R
f	Claims Processing	S	L		S	R	
Document Interpretation/Submittals							
a	Specification for Submittals	L	S	S	S		
Testing & Commissioning							
a	Procure Testing Agency		L			R	
b	Develop Testing Specifications	L	R	S			
c	Functional Test Performance	R	S	S	L		
d	In-Shop Test Witnessing	L	S	S	S		
e	Operation & Maintenance Manual Review	L	S	R	S	R	
f	Commissioning	S	S	L	S	R	
MODULE 8: COMPLETING THE PROJECT							
a	Punch List Establishment	L	S	S	S	S	
b	Punch List Completion	R	R	S	L		
c	Certificate of Occupancy	R	R		L	R	
d	Contractor Evaluations - Final	S	L		S	S	
e	Warranty Consultation	L	S	S	S	S	
f	Designer Evaluation		L			S	
g	OPM Evaluation					L	S
h	Record Set for Owner	L	S	R	S		

	L=Lead S=Support R=Review/Input	Designer	OPM	Cx	Contractor	Owner	MSBA
OTHER							
a	Project Controls – Total Project Cost		**L**			**R**	**R**
b	Meetings with Owner, MSBA and Community	**S**	**L**		**S**	**R**	**S**
c	OPM Progress Reports (monthly)		**L**			**R**	**R**
d	Document Control	**S**	**L**		**S**	**R**	**R**
e	Review Project Invoices	**S**	**L**			**S**	**R**
f	Review Designer's Contract Compliance		**L**			**S**	**R**
g	Submit ProPay Application		**S**			**L**	**R**

SMMA

Project Management

COMMUNICATION AND CONTROL

This is the project communications and document control procedures for the project. It is meant to be a guideline for all parties to follow throughout the life of the project and will be updated at each phase.

Feasibility Study / Schematic Design Phase

- Parties
  - Massachusetts School Building Authority (MSBA)
  - City: School Building Committee, Mayor, City Council, Superintendent of Schools
  - OPM: Symmes Maini & McKee Associates, Inc. (SMMA)
  - Designer: Jonathan Levi Architects (JLA)

- Correspondence
  - All correspondence shall be by the same medium i.e. mail or email as original correspondence.
  - All correspondence between the MSBA and the City shall be copied to the OPM. All correspondence between the MSBA and the OPM shall be copied to the City.
  - All correspondence between the City and the Designer shall be through the OPM.
  - All correspondence between the MSBA and the Designer shall be through the OPM.
  - All correspondence to the Designer's Consultants shall be through the Designer.
  - All construction correspondence to the Contractor shall be through the Designer with copy to the Owner and OPM.
  - All construction correspondence to the Designer shall be through the Contractor with copy to Owner and OPM.
  - Reports submitted to the MSBA shall be by the OPM with copy to the City and Designer.
- Document Control
  - The OPM will be responsible to ensure all relevant correspondence i.e. MSBA submissions, project schedules, project budgets, SBC meeting minutes, are posted on the City's website.
  - The OPM will be responsible to ensure that the City has a copy of all executed contracts and amendments.
  - The OPM will be responsible to ensure the MSBA has a copy of all executed contracts and amendments.

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22. Project Schedule

The project schedule anticipates MSBA Board of Director's approval of the Project Scope and Budget Agreement at their October 31, 2018 meeting. City Council appropriation voting will occur in November 2018, with the debt exclusion vote occurring on December 11, 2018.

Following the District voting, the Design Documents will be developed, leading to construction commencement in the summer of 2019 with the building being completed in June 2021 and the final sitework and playfields in December 2021.

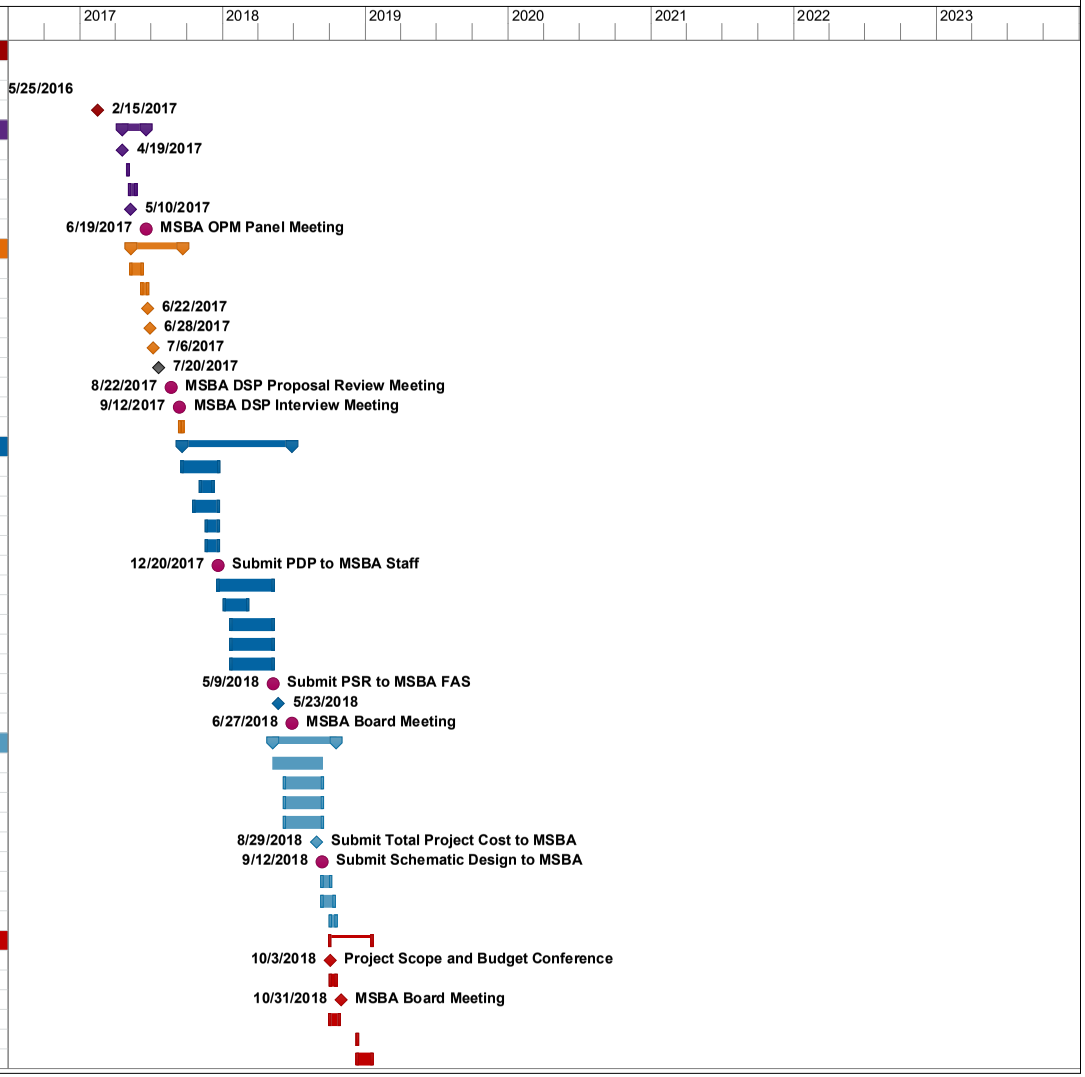
The Project Schedule is appended to the end of this section.

Updated June 29, 2018

City of Framingham
Fuller Middle School Feasibility Study
Preliminary Project Schedule - SD Submission

PROJECT MANAGEMENT SMMA

ID	Task Name	Duration	Start	Finish
1	**MSBA PREREQUISITES**	**496 days**	**3/13/2015**	**2/15/2017**
2	Original Statement of Interest (SOI) Submission	0 days	3/13/2015	3/13/2015
3	MSBA Invite into Eligibility	0 days	5/25/2016	5/25/2016
4	Execute Feasibility Study Agreement (FSA)	0 days	2/15/2017	2/15/2017
5	**RETAIN OPM**	**43 days**	**4/19/2017**	**6/19/2017**
6	Submit OPM Proposals	0 days	4/19/2017	4/19/2017
7	OPM Interview	1 day	5/3/2017	5/3/2017
8	Negotiate OPM Contract	12 days	5/8/2017	5/23/2017
9	Submit Documents to MSBA OPM Panel	0 days	5/10/2017	5/10/2017
10	**MSBA OPM Panel Meeting**	**0 days**	**6/19/2017**	**6/19/2017**
11	**RETAIN DESIGNER**	**93 days**	**5/11/2017**	**9/20/2017**
12	Draft Designer RFS and Submit to MSBA	21 days	5/11/2017	6/8/2017
13	MSBA Approve Draft RFS	11 days	6/8/2017	6/22/2017
14	Submit to Central Register	0 days	6/22/2017	6/22/2017
15	Notice in Central Register	0 days	6/28/2017	6/28/2017
16	Briefing Session	0 days	7/6/2017	7/6/2017
17	Submit Designer Proposals	0 days	7/20/2017	7/20/2017
18	**MSBA DSP Proposal Review Meeting**	**0 days**	**8/22/2017**	**8/22/2017**
19	**MSBA DSP Interview Meeting**	**0 days**	**9/12/2017**	**9/12/2017**
20	Negotiate Designer Contract	6 days	9/13/2017	9/20/2017
21	**FEASIBILITY STUDY (FS)**	**198 days**	**9/19/2017**	**6/27/2018**
22	Develop Preliminary Design Program (PDP)	67 days	9/19/2017	12/21/2017
23	Submit PNF to MHC	23 days	11/5/2017	12/6/2017
24	Community Presentations	44 days	10/19/2017	12/20/2017
25	Town Council Presentations	22 days	11/20/2017	12/20/2017
26	School Committee Presentations	22 days	11/20/2017	12/20/2017
27	**Submit PDP to MSBA Staff**	**0 days**	**12/20/2017**	**12/20/2017**
28	Develop Preferred Schematic Report (PSR)	99 days	12/20/2017	5/9/2018
29	Receive MHC Clearance	42 days	1/5/2018	3/5/2018
30	Community Presentations	78 days	1/22/2018	5/9/2018
31	City Council Presentations	78 days	1/22/2018	5/9/2018
32	School Committee Presentations	78 days	1/22/2018	5/9/2018
33	**Submit PSR to MSBA FAS**	**0 days**	**5/9/2018**	**5/9/2018**
34	**FAS Presentation**	**0 days**	**5/23/2018**	**5/23/2018**
35	**MSBA Board Meeting**	**0 days**	**6/27/2018**	**6/27/2018**
36	**SCHEMATIC DESIGN (SD)**	**114 days**	**5/9/2018**	**10/17/2018**
37	Develop Schematic Design	89 days	5/9/2018	9/12/2018
38	Community Presentations	67 days	6/8/2018	9/12/2018
39	City Council Presentations	67 days	6/8/2018	9/12/2018
40	School Committee Presentations	67 days	6/8/2018	9/12/2018
41	Submit Total Project Cost to MSBA	0 days	8/29/2018	8/29/2018
42	**Submit Schematic Design to MSBA**	**0 days**	**9/12/2018**	**9/12/2018**
43	MSBA Review Schematic Design (SD) Submission	16 days	9/12/2018	10/3/2018
44	DESE Review	23 days	9/12/2018	10/12/2018
45	Respond to MSBA Comments	11 days	10/3/2018	10/17/2018
46	**PROJECT SCOPE AND BUDGET**	**75 days**	**10/2/2018**	**1/17/2019**
47	Project Scope and Budget Conference	0 days	10/3/2018	10/3/2018
48	Execute Scope and Budget Agreement	11 days	10/3/2018	10/17/2018
49	**MSBA Board Meeting**	**0 days**	**10/31/2018**	**10/31/2018**
50	City Council Meeting to Vote Funds for Total Project Budget	18 days	10/2/2018	10/25/2018
51	Proposition 2 1/2 Ballot Vote	1 day	12/11/2018	12/11/2018
52	Execute Project Funding Agreement	26 days	12/11/2018	1/17/2019

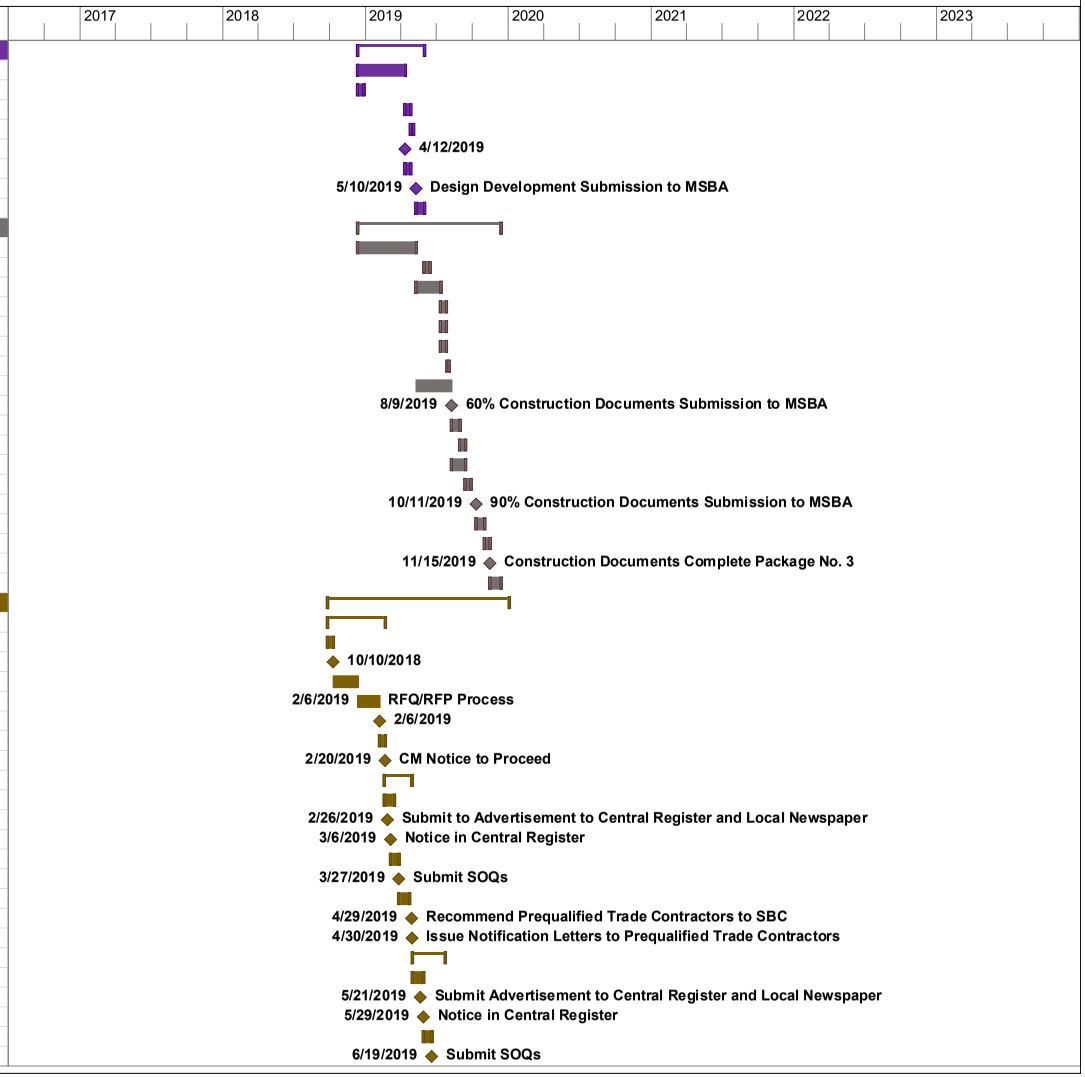


Updated June 29, 2018

City of Framingham
Fuller Middle School Feasibility Study
Preliminary Project Schedule - SD Submission

PROJECT MANAGEMENT SMMA

ID	Task Name	Duration	Start	Finish
53	**DESIGN DEVELOPMENT**	**121 days**	**12/12/2018**	**5/31/2019**
54	Develop Design Development Documents to Estimator	86 days	12/12/2018	4/12/2019
55	LEED-S Registration	11 days	12/12/2018	12/27/2018
56	Design Development Cost Estimate	11 days	4/12/2019	4/26/2019
57	Value Engineering	6 days	4/26/2019	5/3/2019
58	Design Development Submission for OPM and Cx Review	0 days	4/12/2019	4/12/2019
59	OPM and Cx Review	11 days	4/12/2019	4/26/2019
60	**Design Development Submission to MSBA**	**0 days**	**5/10/2019**	**5/10/2019**
61	MSBA Comments	16 days	5/10/2019	5/31/2019
62	**CONSTRUCTION DOCUMENTS**	**258 days**	**12/12/2018**	**12/13/2019**
63	**Early Site Enabling, and Preparation Package No. 1**	**106 days**	**12/12/2018**	**5/10/2019**
64	Incorporate MSBA DD Comments	11 days	5/31/2019	6/14/2019
65	Develop 60% Contract Documents to Estimator	45 days	5/10/2019	7/12/2019
66	OPM and Cx Review	11 days	7/12/2019	7/26/2019
67	Structural Peer Review of Early Foundation and Structural Package	11 days	7/12/2019	7/26/2019
68	60% Construction Documents Cost Estimate	11 days	7/12/2019	7/26/2019
69	Value Engineering	5 days	7/29/2019	8/2/2019
70	**Early Foundation and Structural Package No. 2**	**65 days**	**5/10/2019**	**8/9/2019**
71	**60% Construction Documents Submission to MSBA**	**0 days**	**8/9/2019**	**8/9/2019**
72	MSBA Review of 60% CD Submission	16 days	8/9/2019	8/30/2019
73	Incorporate MSBA 60% CD Comments	10 days	8/30/2019	9/13/2019
74	Develop 90% Contract Documents to Estimator	25 days	8/9/2019	9/13/2019
75	90% Construction Documents Cost Estimate	11 days	9/13/2019	9/27/2019
76	**90% Construction Documents Submission to MSBA**	**0 days**	**10/11/2019**	**10/11/2019**
77	MSBA Review of 90% CD Submission	16 days	10/11/2019	11/1/2019
78	Incorporate MSBA 90% CD Comments	11 days	11/1/2019	11/15/2019
79	**Construction Documents Complete Package No. 3**	**0 days**	**11/15/2019**	**11/15/2019**
80	LEED-S Design Submission	20 days	11/15/2019	12/13/2019
81	**PROCUREMENT**	**325 days**	**9/26/2018**	**1/3/2020**
82	**CM Selection**	**103 days**	**9/26/2018**	**2/20/2019**
83	Develop Application to Inspector General Office	11 days	9/26/2018	10/10/2018
84	**Submit CM Application to IG Office**	**0 days**	**10/10/2018**	**10/10/2018**
85	IG Approval of CM Application	45 days	10/10/2018	12/12/2018
86	RFQ/RFP Process	39 days	12/12/2018	2/6/2019
87	Interview Shortlisted CM Firms	0 days	2/6/2019	2/6/2019
88	Negotiate and Award	11 days	2/6/2019	2/20/2019
89	CM Notice to Proceed	0 days	2/20/2019	2/20/2019
90	**Trade Contractors Prequalification - Package No. 1 (if required)**	**51 days**	**2/18/2019**	**4/30/2019**
91	Draft RFQ	20 days	2/18/2019	3/15/2019
92	Submit to Advertisement to Central Register and Local Newspaper	0 days	2/26/2019	2/26/2019
93	Notice in Central Register	0 days	3/6/2019	3/6/2019
94	Prepare SOQ	16 days	3/6/2019	3/27/2019
95	Submit SOQs	0 days	3/27/2019	3/27/2019
96	Review SOQs	20 days	3/27/2019	4/23/2019
97	Recommend Prequalified Trade Contractors to SBC	0 days	4/29/2019	4/29/2019
98	Issue Notification Letters to Prequalified Trade Contractors	0 days	4/30/2019	4/30/2019
99	**Trade Contractors Prequalification - Package No. 2 (if required)**	**59 days**	**5/1/2019**	**7/23/2019**
100	Develop Draft RFQs	21 days	5/1/2019	5/29/2019
101	Submit Advertisement to Central Register and Local Newspaper	0 days	5/21/2019	5/21/2019
102	Notice in Central Register	0 days	5/29/2019	5/29/2019
103	Prepare SOQ	16 days	5/29/2019	6/19/2019
104	Submit SOQs	0 days	6/19/2019	6/19/2019

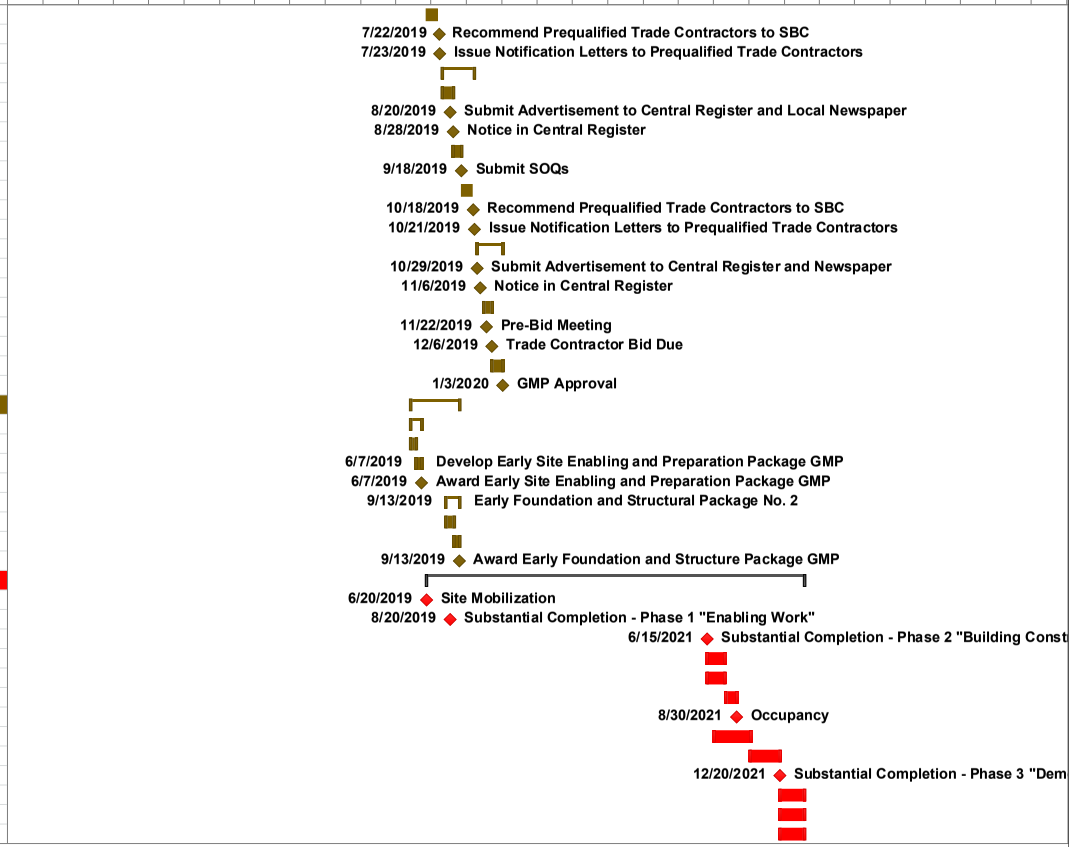


Updated June 29, 2018

City of Framingham
Fuller Middle School Feasibility Study
Preliminary Project Schedule - SD Submission

PROJECT MANAGEMENT SMMA

ID	Task Name	Duration	Start	Finish
105	Review SOQs	20 days	6/19/2019	7/17/2019
106	Recommend Prequalified Trade Contractors to SBC	0 days	7/22/2019	7/22/2019
107	Issue Notification Letters to Prequalified Trade Contractors	0 days	7/23/2019	7/23/2019
108	**Trade Contractors Prequalification - Package No. 3 (if required)**	**58 days**	**7/31/2019**	**10/21/2019**
109	Develop Draft RFQs	21 days	7/31/2019	8/28/2019
110	Submit Advertisement to Central Register and Local Newspaper	0 days	8/20/2019	8/20/2019
111	Notice in Central Register	0 days	8/28/2019	8/28/2019
112	Prepare SOQ	15 days	8/28/2019	9/18/2019
113	Submit SOQs	0 days	9/18/2019	9/18/2019
114	Review SOQs	20 days	9/18/2019	10/15/2019
115	Recommend Prequalified Trade Contractors to SBC	0 days	10/18/2019	10/18/2019
116	Issue Notification Letters to Prequalified Trade Contractors	0 days	10/21/2019	10/21/2019
117	**Bid Package No. 3**	**46 days**	**10/29/2019**	**1/3/2020**
118	Submit Advertisement to Central Register and Newspaper	0 days	10/29/2019	10/29/2019
119	Notice in Central Register	0 days	11/6/2019	11/6/2019
120	Trade Contractor Bid Package	15 days	11/15/2019	12/6/2019
121	Pre-Bid Meeting	0 days	11/22/2019	11/22/2019
122	Trade Contractor Bid Due	0 days	12/6/2019	12/6/2019
123	CM Develop GMP	19 days	12/6/2019	1/3/2020
124	GMP Approval	0 days	1/3/2020	1/3/2020
125	**EARLY PACKAGES PROCUREMENT**	**89 days**	**5/10/2019**	**9/13/2019**
126	**Early Site Package No. 1**	**21 days**	**5/10/2019**	**6/7/2019**
127	CM Bid Early Site Enabling and Preparation Package	11 days	5/10/2019	5/24/2019
128	Develop Early Site Enabling and Preparation Package GMP	11 days	5/24/2019	6/7/2019
129	Award Early Site Enabling and Preparation Package GMP	0 days	6/7/2019	6/7/2019
130	**Early Foundation and Structural Package No. 2**	**25 days**	**8/9/2019**	**9/13/2019**
131	CM Bid Early Foundation and Structure Package	16 days	8/9/2019	8/30/2019
132	Develop Early Foundation and Structure Package GMP	10 days	8/30/2019	9/13/2019
133	Award Early Foundation and Structure Package GMP	0 days	9/13/2019	9/13/2019
134	**CONSTRUCTION**	**687 days**	**6/20/2019**	**2/21/2022**
135	Site Mobilization	0 days	6/20/2019	6/20/2019
136	**Substantial Completion - Phase 1 "Enabling Work"**	**0 days**	**8/20/2019**	**8/20/2019**
137	**Substantial Completion - Phase 2 "Building Construction"**	**0 days**	**6/15/2021**	**6/15/2021**
138	Final Completion, Closeout and Commissioning	34 days	6/15/2021	7/30/2021
139	FFE/Technology Installation	34 days	6/15/2021	7/30/2021
140	Teacher/Staff Move-In	21 days	8/2/2021	8/30/2021
141	**Occupancy**	**0 days**	**8/30/2021**	**8/30/2021**
142	Abate and Demolish Existing School	67 days	7/3/2021	10/5/2021
143	Parking Lot and Playfield Construction	55 days	10/4/2021	12/20/2021
144	**Substantial Completion - Phase 3 "Demolition and Site Work"**	**0 days**	**12/20/2021**	**12/20/2021**
145	Closeout	46 days	12/20/2021	2/21/2022
146	Final Completion	46 days	12/20/2021	2/21/2022
147	LEED-S Construction Submission	46 days	12/20/2021	2/21/2022



23. OPM Design Review

The design documents have been reviewed and evaluated by the OPM and the Committee over the past several months. During this time, the team at SMMA has been contributing comments and observations to the Design Team to keep costs and function in balance. As the design has evolved and detail has been developed, SMMA has been seeking ways to keep the concepts and materials chosen in line with commonly used and applied practices in school construction.

24. Local Actions and Approvals

Throughout this process, the School Building Committee has endeavored to maintain a public, transparent and open process. The Committee has attempted to reach out to as many residents as possible in an effort to gain input and feedback through open public forums, community events, the District's website, flyers, and local cable television.

The Schematic Design has been developed through an open public process. The Committee held seven (7) Public Forums during the Feasibility Study and Schematic Design Phase, all open to the public to review the development of the project.

The Committee's approval to submit this Schematic Design Submission is appended at the end of this section.

SCHEMATIC DESIGN PROJECT MANUAL

1.0 Project Manual

FULLER

Project Manual

Fuller Middle School, Framingham, Massachusetts

Volume 2:

SCHEMATIC DESIGN PROJECT MANUAL

FULLER

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Fuller Middle School, Framingham, Massachusetts

FRAMINGHAM
MASSACHUSETTS

Dr. Yvonne M. Spicer
Mayor

Thatcher W. Kezer III
Chief Operating Officer

OFFICE OF THE MAYOR
Memorial Building, Room 121
150 Concord Street
Framingham, MA 01702

Phone (508) 532-5401
Fax (508) 532-5409

mayor@framinghamma.gov
www.framinghamma.gov

September 12, 2018

Ms. Diane Sullivan
Senior Capital Program Manager
40 Broad Street
Boston, Massachusetts 02109

Dear Ms. Sullivan:

The City of Framingham School Building Committee ("SBC") has completed its review of the Schematic Design Submittal for the Fuller Middle School project (the "Project"), and on September 11, 2018, the SBC voted to approve and authorize the Owner's Project Manager to submit the Schematic Design 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, 2017 the SBC has held twenty-five (25) meetings regarding the proposed project, in compliance with the state Open Meeting Law. These meetings include:

- May 8, 2017, 7:00 PM, @ King Elementary School, Desmarais Room.
- June 5, 2017, 7:00 PM, @ King Elementary School, Desmarais Room.
- July 24, 2017, 7:00 PM, @ King Elementary School, Desmarais Room.
- September 25, 2017, 7:00 PM, @ King Elementary School, Desmarais Room.
- October 10, 2017, 7:00 PM, @ King Elementary School, Desmarais Room.
- October 23, 2017, 7:00 PM, @ King Elementary School, Desmarais Room.
- November 6, 2017, 7:00 PM, @ King Elementary School, Room 103.
- November 20, 2017, 7:00 PM, @ King Elementary School, Desmarais Room.
- December 4, 2017, 7:00 PM, @ King Elementary School, Desmarais Room.
- December 18, 2017, 7:00 PM, @ King Elementary School, Desmarais Room.
- January 8, 2018, 7:00 PM, @ King Elementary School, Desmarais Room.
- January 22, 2018, 7:00 PM, @ King Elementary School, Desmarais Room.
- February 5, 2018, 7:00 PM, @ King Elementary School, Desmarais Room.
- March 5, 2018, 7:00 PM, @ King Elementary School, Desmarais Room.
- March 19, 2018, 7:00 PM, @ King Elementary School, Desmarais Room.
- April 24, 2018, 7:00 PM, @ King Elementary School, Desmarais Room.
- April 30, 2018, 7:00 PM, @ King Elementary School, Desmarais Room.
- May 14, 2018, 7:00 PM, @ King Elementary School, Desmarais Room, see Meeting Minutes attached.
- June 4, 2018, 7:00 PM, @ Fuller Middle School Library, see Meeting Minutes attached.
- June 18, 2018, 7:00 PM, @ Fuller Middle School Library, see Meeting Minutes attached.

- June 28, 2018, 7:00 PM, @ Fuller Middle School Library, see Meeting Minutes attached.
- July 16, 2018, 7:00 PM, @ Fuller Middle School Library, see Meeting Minutes attached.
- August 6, 2018, 7:00 PM, @ Fuller Middle School Library, see Meeting Minutes attached.
- August 27, 2018, 7:00 PM, @ Fuller Middle School Library, see Meeting Minutes attached.
- September 11, 2018, 7:00 PM, @ Fuller Middle School Library, see Meeting Minutes attached.

Note: Meeting minutes for the May 14, 2018 to September 11, 2018 meetings, attached, outline any information shared or votes taken and were posted to the City of Framingham School Building Committee website (http://fullerbuildingproject.com/). The prior ten (10) meetings were included in the Preliminary Design Program (PDP) submission on December 18, 2017 and the seven (7) meetings from January 8, 2018 through April 30, 2018 were included in the Preferred Schematic Report (PSR) submission on May 9, 2018.

In addition to the SBC meetings listed above, the District held seven (7) public meetings, which were posted in compliance with the state Open Meeting Law, at which the Project was discussed. These meetings include:

- November 13, 2017 @ Fuller Middle School Library, the presentation was given by the SBC Members and the project team.
- November 27, 2017 @ Fuller Middle School Library, the presentation was given by the SBC Members and the project team.
- February 12, 2018 @ Fuller Middle School Library, the presentation was given by the SBC Members and the project team.
- April 2, 2018 @ Fuller Middle School Library, the presentation was given by the SBC Members and the project team.
- June 11, 2018 @ Fuller Middle School Library, the presentation was given by the SBC Members and the project team, see PowerPoint presentation attached.
- July 23, 2018 @ Fuller Middle School Library, the presentation was given by the SBC Members and the project team, see PowerPoint presentation attached.
- September 6, 2018 @ Fuller Middle School Library, the presentation was given by the SBC Members and the project team, see PowerPoint presentation attached.

Note: There were notes taken, however no formal meeting minutes or votes resulted from the meetings. Presentation materials were posted to the City of Framingham School Building Committee website (http://fullerbuildingproject.com/). The November 13, 2017 and November 27, 2017 Powerpoint presentations were included in the Preliminary Design Program (PDP) submission on December 18, 2017. The February 12, 2018 and April 2, 2018 Powerpoint presentations were included in the Preferred Schematic Report (PSR) submission on May 9, 2018.

The presentation materials for each meeting, meeting minutes, and summary materials related to the Project are available locally for public review at and were posted to the City of Framingham School Building Committee website (http://fullerbuildingproject.com/).

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 Dr. Robert Tremblay at (508) 626-9117 or email at rtremblay@framingham.k12.ma.us.

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: Yvonne M. Spicer

Title: Chief Executive Officer

Date: September 11, 2018

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: Robert Tremblay

Title: Superintendent of Schools

Date: September 11, 2018

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: Adam Freudberg

Title: Chairperson of the School Committee

Date: September 11, 2018

SMMA

Project Management

Project Minutes

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	5/14/18
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	King Elementary School, Desmarais Room	Meeting No:	18
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
✓	David Miles	Co-Chair, City Resident with Experience in Finance	**Voting Member**
✓	Dr. Edward Gotgart	Co-Chair, FPS Chief Operating Officer	Non-Voting Member
	Mayor Spicer	Mayor, Chief Executive Officer	Non-Voting Member
✓	Thatcher Kezer III	Chief Operating Officer	Non-Voting Member
✓	Richard Finlay	School Committee Member and Convenor	
✓	Adam Freudberg	Chair, School Committee	**Voting Member**
✓	Charlie Sisitsky	City Council Member	**Voting Member**
✓	Richard Weader II	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Michael Grilli	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Caitlin Stempleski	Fuller School Teacher and Co-Chair of the Union Professional Development Committee	**Voting Member**
✓	Dr. Jennifer Krusinger Martin	School Building Committee Member	**Voting Member**
✓	Donald Taggart III	City Resident/Retired Teacher	**Voting Member**
	Jennifer Pratt	Assistant Chief Financial Officer and SBC Member who is MCPPO certified	Non-Voting Member
	Dr. Robert Tremblay	Superintendent of Schools	Non-Voting Member
✓	Matt Torti	Director of Buildings and Grounds	Non-Voting Member
✓	Jose Duarte	Principal, Fuller Middle School	Non-Voting Member
	Anne Ludes	Director of Secondary Education	Non-Voting Member
✓	Mary Ellen Kelley	Chief Financial Officer and Local Budget official or member of Finance Committee	Non-Voting Member
	Michael Tusino	Certified Building Official	Non-Voting Member
	Patrick Johnson	Principal, Walsh Middle School	Non-Voting Member
	John Haidemenos	Principal, Woodrow Wilson Elementary School	Non-Voting Member
✓	David Panich	School Building Committee Member	Non-Voting Member
✓	Thomas Barbieri	School Building Committee Member	Non-Voting Member
✓	Dr. Dale Hamel	School Building Committee Member	Non-Voting Member
✓	Noval Alexander	School Committee Member	Non-Voting Member
	Heather Connolly	Former Chair of the School Committee	Non-Voting Member
✓	Jonathan Levi	JLA, Architect	
✓	Philip Gray	JLA, Architect	
✓	Joel Seeley	SMMA, OPM	

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

Item #	Action	Discussion
18.1	Record	Call to Order, 7:00 PM, meeting opened.
18.2	Record	D. Miles asked that the Committee observe a moment of silence respecting the passing of Representative Chris Walsh.
18.3	Record	A motion was made by R. Finlay and seconded by C. Sisitsky to approve the 4/30/18 School Building Committee meeting minutes. No discussion, motion passed unanimously by those attending.
18.4	Record	J. Seeley distributed and reviewed the Budget Status Report, dated 4/30/18 and attached.
18.5	Record	J. Seeley distributed and reviewed Designer Amendment No. 8 for GeoEnvironmental Engineering Services for assessing the borings at the Fuller School Site in the amount of $8,250.00 to be funded out of the Environmental and Site Budget (MSBA ProPay Code 0003-0000), attached, which has a budget balance of $71,333.00. A motion was made by M. Grilli and seconded by R. Finlay to approve Designer Amendment No. 8, dated 5/14/18 and recommend signature by Mayor Spicer. No discussion, motion passed unanimous.
18.6	J. Levi	J. Seeley distributed and reviewed Warrant No. 6, attached. Committee Discussion: 1. D. Miles indicated future JLA invoices should be addressed to J. Pratt, not R. Halpin. *J. Levi to correct future invoices.* A motion was made by M. Grilli and seconded by R. Finlay to approve Warrant No. 6. No discussion, motion passed unanimous.
18.7	J. Levi	J. Levi to develop a 30 year total cost of ownership comparison between the existing building and the new option.
18.8	J. Seeley	J. Seeley to add the debt exclusion ballot question to the FAQ.
18.9	J. Pratt	The updated School Building Committee membership form has been submitted to the MSBA, attached. J. Pratt to correct the email address of N. Alexander and S. Wadland and the non-voting member status for H. Connolly.
18.10	Record	J. Seeley submitted the memorandum providing an explanation of the project cost increase from the PDP Phase to the current progress PSR phase to the City Council.
18.11	J. Seeley	J. Seeley distributed and reviewed the draft Meetings and Agenda Schedule for the Schematic Design Phase, attached. Committee Discussion: 1. The 6/28/18 and 7/16/18 Committee meetings are confirmed. 2. A Community Forum is to be added on 7/23/18 at the Fuller School Library.

		3. J. Seeley to finalize and send to the Committee and Building and Grounds for posting. 4. J. Seeley to coordinate with Building and Grounds to send a reminder that all future Committee meetings will be held at Fuller School Library.
18.12	Record	J. Levi presented a summary of the Option C costs, a description of the deliverables for the Schematic Design phase, and the timing for Sustainable Design decision making, attached.
18.13	Record	J. Levi presented the Project Goals from the PSR Phase, attached. Committee Discussion: 1. D. Panich recommended changing the Goal "That Fuller is easy to clean, maintain and be an icon in the community" to "That Fuller is easy to clean, maintain, economically operate and be an icon in the community" *J. Levi will update the Goal.* The Committee re-affirms approves the Goals, inclusive of the D. Panich recommended modification.
18.14	P. Gray	M. Grilli requested that further traffic analysis, options development and review be included in the Schematic Design Phase. P. Gray to provide a scope of services listing for the traffic consultant for the next Committee meeting for review.
18.15	P. Gray J. Seeley	P. Gray and J. Seeley to provide a comparison of the project information for the Natick Middle School project, the Marlborough Elementary School project and the Fuller Project and present to the City Council 6/19/18 meeting.
18.16	D. Miles	J. Seeley distributed and reviewed a Voting Timing Scenarios memo for the City Council vote, Ballot vote and MSBA Board of Directors vote, attached. Committee Discussion: 1. C. Sisitsky asked if the Committee will be making a recommendation to the Council? *D. Miles indicated that the Committee will make a recommendation and will discuss with the Council at the 6/19/18 meeting.* 2. T. Kezer III suggested the City Clerk be consulted on any timing limitations and procedures relative to the Ballot Vote. *D. Miles will confirm with the City Clerk.*
18.17	Record	J. Seeley distributed and reviewed a summary from MSBA of the Design-Bid-Build (DBB) and the Construction Manager-at-Risk (CMAR) construction delivery method and alternate construction schedules, attached. Committee Discussion:

		1. M. Grilli indicated he is not in favor of the CMAR construction delivery method. There is no guarantee that there will be no change orders and the City is more familiar with the DBB method. 2. R. Finlay indicated he is familiar with CMAR from his work in another community where it was successful. 3. D. Hamel indicated he is familiar with both DBB and CMAR from his work at FSU and this project would benefit from the CMAR experience. 4. D. Miles indicated there is a higher upfront cost for CMAR but having heard from other communities, there is the potential for savings in the long term. 5. R. Finlay asked if there will be change orders? *J. Levi indicated yes, there will be change orders. If scope is not shown on the drawings or changes are required that are not on the drawings, change orders will be required.* 6. D. Hamel indicated there is a benefit to opening the new school at the beginning of the school year as opposed to the middle of the school year. After discussion, a Motion was made by R. Weader II and seconded by R. Finlay to approve the Construction Manager-at-Risk (CMAR) construction delivery method for the project. No discussion, motion passed 8 in favor and 1 against - with A. Freudberg, C. Sisitsky, R. Weader II, J. Krusinger Martin, D. Miles, C. Stempleski , R. Finlay and D. Taggart III voting for and M. Grilli voting against.
18.18	J. Seeley	J. Seeley provided an overview of the MSBA Facilities Advisory Subcommittee meeting to be held at MSBA offices on either 5/23/18 or 6/6/18. J. Seeley will follow-up with MSBA on the date and coordinate attendees from the City.
18.19	P. Gray	J. Seeley reviewed the work of the Project Information Working Group and distributed and reviewed the Project Information Poster, attached. Committee Discussion: 1. A. Freudberg suggested adding the total project cost and the MSBA grant costs to the poster. 2. M. Kelley suggested refining the poster text to indicate the existing building systems have reached past their useful life. P. Gray to update the poster addressing these comments.
18.20	Record	Old or New Business – none
18.21	Record	Committee Questions - none
18.22	Record	Public Comments - none
18.23	Record	Next **SBC Meeting: June 4, 2018 at 7:00 PM** at Fuller Middle School Library.
18.24	Record	A Motion was made by R. Finlay and seconded by D. Taggart III to adjourn the meeting. No discussion, motion passed unanimous.

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

Attachments: Agenda, Budget Status Report, Designer Amendment No. 8, Warrant No. 6, draft Meetings and Agenda Schedule for the Schematic Design Phase, Voting Timing Scenarios memo, summary of Design-Bid-Build (DBB) and the Construction Manager-at-Risk (CMAR), Project Information Poster, Powerpoint

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes.

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SMMA

Project Management

PROJECT MEETING SIGN-IN SHEET

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	5/14/2018
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	King Elementary School, Desmarais Room 454 Water Street, Framingham, MA	Meeting No:	18
Distribution:	Attendees, (MF)		

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	David Miles	dmiles@partners.org	Co-Chair, School Building Committee, City Resident with experience in Finance
	Dr. Edward Gotgart	egotgart@framingham.k12.ma.us	Co-Chair and FPS Chief Operating Officer
	Yvonne M. Spicer	mayorspicer@framinghamma.gov	Mayor, City of Framingham
	Thatcher Kezer, III	tkezer@framinghamma.gov	Chief Operating Officer, Mayoral Designee
	Richard Finlay	rfinlay@wellesleyma.gov	School Committee Member and Convenor
	Adam Freudberg 8-18	afreudberg@framingham.k12.ma.us	Chair of School Committee
	Charlie Sisitsky	csisitsky@rcn.com	Local Chief Executive Officer
	Richard Weader, II	weaders@aol.com	Member of community with architecture, engineering and/or construction experience
	Michael Grilli	mgrilli@beta-inc.com	Member of community with architecture, engineering and/or construction experience
	Caitlin Stempleski	cstempleski@framingham.kl2.ma.us	Fuller School Teacher and Co-Chair of the Union Professional Development Committee
	Dr. Jennifer Krusinger Martin	jkrusinger@gmail.com	School Building Committee Member
	Donald Taggart III	dontaggart134@gmail.com	City Resident / Retired Teacher
	Jennifer Pratt	jap@framinghamma.gov	Chief Procurement Officer and SBC Member who is MCPPO certified, Town of Framingham
	Dr. Robert Tremblay	rtremblay@framingham.k12.ma.us	Superintendent of Schools
✓	Matt Torti	mtorti@framingham.k12.ma.us	Director of Buildings and Grounds
✓	Jose Duarte	jduarte@framingham.k12.ma.us	Principal, Fuller Middle School
	Anne Ludes	aludes@framingham.k12.ma.us	Director of Secondary Education, Framingham Public Schools
✓	Mary Ellen Kelley, CFO	mek@framinghamma.gov	Chief Financial Officer and Local Budget official
	Michael Tusino	mat@framinghamma.gov	Certified Building Official

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617.547.5400

www.smma.com

Project: Fuller Middle School Feasibility Study
Meeting Date: May 14, 2018
Meeting No.: 18

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	Patrick Johnson	pjohnson@framingham.kl2.ma.us	Principal, Walsh Middle School
	John Haidemenos	jhaidemenos@framingham.k12.ma.us	Principal, Woodrow Wilson Elementary School
	David Panich	david@panicharchitecture.com	School Building Committee Member
	Thomas Barbieri	Thombrbr@aol.com	School Building Committee Member
	Dr. Dale Hamel	dhamel@framingham.edu	School Building Committee Member
	Noval Alexander	n.alexander@framingham.k12.ma.us	School Committee Member
	Heather Connolly	heatheratconnolly@comcast.net	Former Chair of School Committee
	Jonathan Levi	jlevi@leviarc.com	Jonathan Levi Architects (JLA)
	Philip Gray	pgray@leviarc.com	Jonathan Levi Architects (JLA)
	Joel Seeley	jseeley@smma.com	SMMA

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Project Management | SMMA

Agenda

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Re:	School Building Committee Meeting	Meeting Date:	5/14/2018
Meeting Location:	King Elementary School, Desmarais Room	Meeting Time:	7:00 PM
Prepared by:	Joel G. Seeley	Meeting No.	18
Distribution:	Committee Members (MF)		

1. Call to Order
2. Approval of Minutes
3. Approval of Invoices and Commitments
4. Review Schematic Design Phase Schedule and Deliverables
5. Reconfirm Project Goals from PSR Phase
6. Discuss and Vote Construction Delivery Method
7. Discuss Appropriation Vote Timing
8. Discuss MSBA FAS Meeting
9. Project Information Working Group Update
10. Old or New Business
11. Committee Questions
12. Public Comments
13. Next Meeting: June 4, 2018
14. Adjourn

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Fuller Middle School
Framingham Public Schools
Framingham, Massachusetts

PROJECT MANAGEMENT SMMA

SMMA No. 17050

April 30, 2018

Feasibility and Schematic Design Phase	MSBA ProPay Code	FSA Agreement 2/15/2017	Budget Revision 10/10/2017	Current Budget	Vendor	Committed	Balance
OPM	0001-0000	$ 185,000.00	$ (10,000.00)	$ 175,000.00	SMMA	$ 174,200.00	$ 800.00
							$ -
DESIGNER	0002-0000	$ 580,000.00	$ (35,000.00)	$ 545,000.00	JLA	$ 545,000.00	$ -
							$ -
Environmental and Site	0003-0000	$ 100,000.00	$ 45,000.00	$ 145,000.00		$ 81,917.00	$ 63,083.00
							$ -
Other	0004-0000	$ 135,000.00	$ -	$ 135,000.00		$ -	$ 135,000.00
Total Budget		**$ 1,000,000.00**		**$ 1,000,000.00**		**$ 801,117.00**	**$ 198,883.00**

Project Management | SMMA

Warrant No. 6

Project:	Fuller Middle School, Framingham, Massachusetts	Project No.:	17050
Prepared by:	Joel G. Seeley, AIA	Date:	5/14/2017

School Building Committee for the Fuller Middle School hereby authorizes to draw against funds for the obligations incurred for value received in services and for materials shown below:

Vendor	Invoice No.	Invoice Date	Invoice Amount	ProPay Code	Balance After Invoice
SMMA	48860	5/7/2018	$ 28,500.00	0001-0000	$ 65,200.00
Jonathan Levi Architects	1722-00-07	5/1/2018	$ 43,600.00	0002-0000	$ 234,350.00
		Total	**$ 72,100.00**		

_____ David Miles, Chairman

_____ Richard Finlay

_____ Adam Freudberg

_____ Charles Sisitsky

_____ Richard Weader, II

_____ Michael Grilli

_____ Caitlin Stempleski

_____ Dr. Jennifer Krusinger Martin

_____ Donald Taggart, III

Approved on _____

p:\2017\17050\00-info\0.8 warrant\6-14may2018\warrant no. 6.docx

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

Jonathan Levi Architects
266 beacon street boston ma 02116 tel 617.437.9458 fax 617.437.1965 www.leviarc.com

INVOICE

Robert Halpin
Town Manager
Town of Framingham
150 Concord Street
Framingham, MA 01702

DATE: May 1, 2018
CLIENT PROJECT NO:
INVOICE NO: 1722-00-07

PROJECT: Fuller Middle School

In accordance with Owner-Architect Agreement dated September 25, 2017
there is due at this time for architectural services and reimbursable items for the period
4/1/2018 — 4/30/2018 the sum of

Forty Three Thousand Six Hundred Dollars and No Cents **$ 43,600.00**

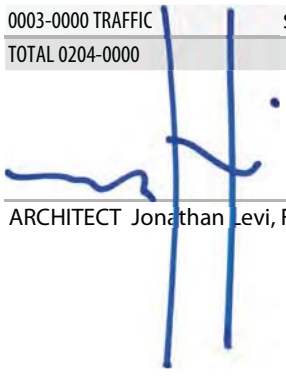
the above amount shall become due and payable within 30 days from the date hereof.

A&E – FEASIBILITY STUDY	CONTRACT AMT (A)	PREVIOUS PERIOD (B)	CURRENT PERIOD (C)	EARNED (D=B+C)	% COMPLETE (D/A)
0002-0000 FEASIBILITY	$ 335,000.00	$ 267,050.00	$ 43,600.00	$ 310,650.00	92.73%
0002-0000 SCHEMATIC DESIGN	$ 210,000.00	$ -	$ -	$ -	
TOTAL 0002-0000	$ 545,000.00	$ 267,050.00	$ 43,600.00	$ 310,650.00	57.00%

A&E – BASIC SERVICES	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
0201-0400 DD					
0201-0500 CD					
0201-0600 BIDDING					
0201-0700 CA					
0201-0800 CLOSEOUT					
TOTAL 0201-0000					

A&E – REIMBURSABLES & OTHER SERVICES	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
TOTAL 0203-0000					

A&E – SUB-CONSULTANTS	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
0003-0000 HAZMAT	$ 12,067.00	$ 12,067.00		$ 12,067.00	100.00%
0003-0000 GEOTECH/GEOENVIRO	$ 4,400.00	$ 4,400.00		$ 4,400.00	100.00%
0003-0000 SITE SURVEY	$ 16,500.00	$ 16,500.00		$ 16,500.00	100.00%
0003-0000 WETLANDS	$ 4,400.00	$ 4,400.00		$ 4,400.00	100.00%
0003-0000 TRAFFIC	$ 13,200.00	$ 13,200.00		$ 13,200.00	100.00%
TOTAL 0204-0000	$ 50,567.00	$ 50,567.00	$ -	$ 50,567.00	100.00%



ARCHITECT Jonathan Levi, FAIA

SMMA

Jennifer Pratt
Chief Procurement Officer
Town of Framingham
150 Concord Street, Room 123
Framingham, MA 01702

May 7, 2018
Project No: 17050.00
Invoice No: 0048860

Project 17050.00 Framingham Fuller MS OPM Services
OPM Services for the Fuller Middle School, Framingham, MA
Professional Services from March 24, 2018 to May 4, 2018
Fee

Billing Phase	Fee	Percent Complete	Earned	Previous Fee Billing	Current Fee Billing
Feasibility Study	90,000.00	100.00	90,000.00	67,500.00	22,500.00
Schematic Design	60,000.00	0.00	0.00	0.00	0.00
Total Fee	150,000.00		90,000.00	67,500.00	22,500.00
		Total Fee			**22,500.00**

Consultants

Consultants

5/7/2018	A.M. Fogarty & Associates, Inc. PO# 3052	6,050.00	
	Total Consultants	**6,050.00**	**6,050.00**
		Total this Invoice	**$28,550.00**

Outstanding Invoices

Number	Date	Balance
0048720	4/5/2018	11,250.00
Total		**11,250.00**

Billings to Date

	Current	Prior	Total
Fee	22,500.00	67,500.00	90,000.00
Consultant	6,050.00	0.00	6,050.00
Totals	**28,550.00**	**67,500.00**	**96,050.00**

Authorized _____
Joel Seeley

INVOICE

A. M. Fogarty & Associates, Inc.
175 Derby Street -Suite 5
Hingham, MA 02043

(781) 749-7272 - FAX: (781) 740-2652

DATE	INVOICE #
3/28/2018	18020

BILL TO:

Symmes Maini & McKee
Atten: Accounts Dept.
1000 Massachusetts Avenue
Cambridge, MA 02138
EMAIL INVOICES: accounting@smma.com

REP
PTT

DESCRIPTION	QTY	RATE	AMOUNT TOTAL
Fuller Middle School, Framingham, PSR Cost Estimate Project Manager: Joel Seeley		5,500.00	5,500.00

TOTAL $5,500.00

Thank you for your business.

Fuller Middle School
Framingham Public Schools
Framingham, Massachusetts

PROJECT MANAGEMENT SMMA
SMMA NO. 17050

Environmental & Site Project Budget Status

Updated: 4/30/2018

Feasibility and Schematic Design Phase	Vendor	Amendment No.	Current Budget	Consultant Fee	Designer Markup	Total Fee	Balance
Environmental and Site							
Site Survey and Wetland Delineation	CDW	**001**		$ 15,000.00	$ 1,500.00	$ 16,500.00	
Traffic Assessment	FS Engineers	**002**		$ 12,000.00	$ 1,200.00	$ 13,200.00	
GeoEnvironmental Services	McPhail Associates	**003**		$ 4,000.00	$ 400.00	$ 4,400.00	
Hazardous Materials	CDW	**004**		$ 12,067.00	$ -	$ 12,067.00	
Wetlands Delineation & Flagging	CDW	**005**		$ 4,000.00	$ 400.00	$ 4,400.00	
Geotechnical Existing Conditions Assessment	McPhail Associates	**006**		$ 17,000.00	$ 1,700.00	$ 18,700.00	
GeoEnvironmental Services	McPhail Associates	**007**		$ 4,000.00	$ 400.00	$ 4,400.00	
GeoEnvironmental Services	McPhail Associates	**008**		$ 7,500.00	$ 750.00	$ 8,250.00	
		TOTAL	**$ 145,000.00**			**$81,917.00**	**$63,083.00**

SMMA

Project Management

Memorandum

To:	Fuller Middle School Building Committee	Date:	5/14/2018
From:	Joel G. Seeley	Project No.:	17050
Project:	Fuller Middle School Feasibility Study		
Re:	Designer Amendment No. 8: Geo-Environmental Site Services		
Distribution:	School Building Committee (MF)		

DESIGNER AMENDMENT NO. 8: GEO-ENVIRONMENTAL SITE SERVICES

FEE: $8,250.00

REASON: Provide Geo-Environmental Site Assessment services for the Fuller Middle School project.

BUDGET AVAILABILITY: This Amendment would be funded out of the Environmental and Site Budget, ProPay Code 0003-0000, which has a current balance of $71,333.00.

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

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ATTACHMENT F

CONTRACT FOR DESIGNER SERVICES

AMENDMENT NO. 8

WHEREAS, the Town of Framingham ("Owner") and Jonathan Levi Architects, LLC, (the "Designer") (collectively, the "Parties") entered into a Contract for Designer Services for the W. Fuller Middle School Project (Project Number 201501000305) at the Fuller Middle School on September 25, 2017 "Contract"; and

WHEREAS, effective as of May 14, 2018, the Parties wish to amend the Contract:

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained in this Amendment, and other good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

1. The Owner hereby authorizes the Designer to perform services for the Design Development Phase, the Construction Phases, and the Final Completion Phase of the Project, pursuant to the terms and conditions set forth in the Contract, as amended.

2. For the performance of services required under the Contract, as amended, the Designer shall be compensated by the Owner in accordance with the following Fee for Basic Services:

Fee for Basic Services:

	Original Contract	**Prior Amendments**	**This Amendment**	**After this Amendment**
Feasibility Study Phase	$335,000.00	$73,667.00	$8,250.00	$416,917.00
Schematic Design Phase	$210,000.00			$210,000.00
Design Development Phase	$			
Construction Document Phase	$			
Bidding Phase	$			
Construction Phase	$			
Completion Phase	$			
Total Fee	**$545,000.00**	**$73,667.00**	**$8,250.00**	**$626,917.00**

This Amendment is a result of: Providing Geo-Environmental Site Services

ProPay Code: 0003-0000

3. The Construction Budget shall be as follows:

Original Budget:	$ NA
Amended Budget	$ NA

4. The Project Schedule shall be as follows:

Original Schedule:	$ NA
Amended Schedule	$ NA

5. This Amendment contains all of the terms and conditions agreed upon by the Parties as amendments to the original Contract. No other understandings or representations, oral or otherwise, regarding amendments to the original Contract shall be deemed to exist or bind the Parties, and all other terms and conditions of the Contract remain in full force and effect.

IN WITNESS WHEREOF, the Owner, with the prior approval of the Authority, and the Designer have caused this Amendment to be executed by their respective authorized officers.

OWNER

Yvonne M. Spicer
(print name)
Mayor, City of Framingham
(print title)
By _____
(signature)
Date _____

DESIGNER
Jonathan Levi
(print name)
Principal In Charge, Jonathan Levi Architects, LLC
(print title)
By _____
(signature)
Date _____

Jonathan Levi Architects
266 beacon street boston ma 02116 tel 617.437.9458 fax 617.437.1965 www.leviarc.com

19 April 2018

Mr. Joel G. Seeley
COO | Executive Vice President
SMMA
1000 Massachusetts Avenue
Cambridge, MA 02138

Re: *Fee Proposal, Geoenvironmental Engineering Services*
Fuller School

Dear Joel,
Attached please find a proposal from McPhail Associates for Geoenvironmental Engineering Services services to be performed as a subconsultant to JLA.

Fee
As described in Article 4.11 of the MSBA Contract for Designer Services, the services associated with this proposal are to be invoiced on a lump sum basis as Extra Services, plus the 10% standard markup specified in Articles 9.1 and 9.1.1.

Geoenvironmental Services	$7,500
10% Markup	$750
Total	***$8,250***

Please do not hesitate to contact me if you would like us to clarify or modify our assumptions, or if there is anything represented here which does not conform to your expectations.

Sincerely,

Philip Gray
Associate Principal
Jonathan Levi Architects

McPHAIL ASSOCIATES, LLC

April 12, 2018

Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

Attention: Mr. Philip Gray

Reference: Fuller Middle School Project; Framingham, Massachusetts
Proposal for Additional Geoenvironmental Engineering Services

Ladies and Gentlemen:

In response to your recent request, we are pleased to present our proposal for providing additional geoenvironmental engineering services for the above-referenced project.

The subject site fronts onto Flagg Drive to the south and is bounded by the Mass Bay Community College to the east, residential properties to the west and a wooded area to the north. Currently, an existing one-story brick school building occupies the central portion of the site, which was built in the late 1950's. The site is occupied by a paved surface parking lot, as well as grassed fields and landscape areas. Existing ground surface across the site varies from about Elevation +163 to Elevation +166.

Based on the information provided to us, the proposed project scope is understood to be in the schematic phase, and currently includes options A, B.2, C.3, and D.1. The proposed construction within each option indicates a 2-story to 3-story structure and associated site work, which is anticipated to occupy within the southern portion of parcel. Except for the area of the proposed auditorium, it is understood that the proposed building will not contain any below grade space.

As part of our scope of preliminary geotechnical services as contained in our proposal dated January 29, 2018, we proposed to perform a subsurface exploration program consisting of nine (9) boring at the site. To date six (6) geotechnical borings had been performed within the parking areas at the site on February 21 and 22, 2018. The three (3) remaining geotechnical borings to be performed within the existing fields were not performed at the site during our drilling program in February due to the saturated subgrades within the athletic fields, therefore, these three (3) borings would be performed at the site in April 2018.

Our proposed scope of additional geoenvironmental engineering services will include collecting fill samples from three (3) soil borings which will be performed as part of our preliminary geotechnical engineering services scope of work at the site. Three (3) fill samples obtained from the borings would be submitted for analysis for the presence of semi-volatile organic compounds (SVOCs) and total RCRA 8 metals. Pending results of the field soil screening, possibly two (2) fill samples obtained from two (2) borings would be submitted for analysis for the presence of volatile organic compounds (VOCs), extractable petroleum hydrocarbons (EPH) including target polynuclear aromatic hydrocarbons (PAHs),

and volatile petroleum hydrocarbons (VPH) with target analytes. The estimated cost of a laboratory to perform the scope of soil sample chemical analysis is approximately $3,700. The soil samples would be collected from the preliminary geotechnical borings.

Our scope of additional geoenvironmental engineering services would consist of the following:

1. Screen soil samples for total volatile organic compounds (TVOC) using a photoionization detector (PID);

2. Submit soil samples for chemical analysis as described above; and

3. Evaluate the results of the testing in comparison with Massachusetts Contingency Plan (MCP) standards for regulatory reporting, and provide a letter containing recommendations.

The estimated fee for the additional geoenvironmental engineering services described above is $7,500.

This work will be conducted in accordance with the terms and conditions of our original proposal dated January 29, 2018 which are incorporated herein by reference.

To authorize us to proceed with the services proposed above, please sign and return a copy of this proposal.

We appreciate the opportunity to submit this proposal and look forward to being of continued service to Jonathan Levi Architects and the design team on this project. Should you have any questions, please do not hesitate to contact us.

Very truly yours,

McPHAIL ASSOCIATES, LLC

Fatima Babic-Konjic, P.E.

Joseph G. Lombardo, Jr. L.S.P.

JONATHAN LEVI ARCHITECTS

BY _____

DATE _____

N:\Working Documents\Proposals\6473 - Fuller School Geoenvironmental 041218.docx

FBK/jgl

SCHOOL BUILDING COMMITTEE
FULLER MIDDLE SCHOOL FEASIBILITY STUDY

All meetings held at the
Fuller Middle School Library at 7:00 PM
unless otherwise noted

MEETINGS SCHEDULE AND AGENDAS
March 28, 2018 ***Updated May 4, 2018***

DATE	AGENDA
Schematic Design Phase (SD)	
May 14, 2018	SCHOOL BUILDING COMMITTEE MEETING *KING ELEMENTARY SCHOOL, DESMARAIS ROOM*
	Review Schematic Design Phase Schedule and Deliverables
	Prepare for MSBA FAS Meeting
June 4, 2018	SCHOOL BUILDING COMMITTEE MEETING - *FULLER MIDDLE SCHOOL LIBRARY*
	Review Updated Site and Floor Plans
	Prepare for Community Forum No. 5
June 11, 2018	COMMUNITY FORUM NO. 5 - 6:00 to 8:00 PM - FULLER MIDDLE SCHOOL LIBRARY
June 18, 2018	SCHOOL BUILDING COMMITTEE MEETING
	Review Updated Site and Floor Plans
	Review Preliminary Exterior Imagery
	Prepare for MSBA Board Meeting
June 19, 2018	CITY COUNCIL MEETING - DATE AND TIME TBD MEMORIAL BUILDING CITY HALL
June 20, 2018	SCHOOL COMMITTEE MEETING - 7:00 PM KING ELEMENTARY SCHOOL
June 27, 2018	*MSBA BOARD MEETING*
June 28, 2018	SCHOOL BUILDING COMMITTEE MEETING - THURSDAY
	Review MSBA Board Meeting
	Review Updated Site Plan and Floor Plans
	Review Preliminary Building Sections
	Review Preliminary Exterior Elevations
	Review Preliminary Mechanical and Electrical Systems
	Review Updated Sustainable Design Features
July 16, 2018	SCHOOL BUILDING COMMITTEE MEETING
	Review Updated Site Plan and Floor Plans
	Review Updated Exterior Elevations
	Review Preliminary Technology Systems
	Review Preliminary FFE Layout
	Prepare for Community Forum No. 6
August 1, 2018	SCHOOL COMMITTEE MEETING - 7:00 PM KING ELEMENTARY SCHOOL

SCHOOL BUILDING COMMITTEE
FULLER MIDDLE SCHOOL FEASIBILITY STUDY

All meetings held at the
Fuller Middle School Library at 7:00 PM
unless otherwise noted

MEETINGS SCHEDULE AND AGENDAS
March 28, 2018 ***Updated May 4, 2018***

DATE	AGENDA
August 6, 2018	SCHOOL BUILDING COMMITTEE MEETING
	Review Updated Site Plan and Floor Plans
	Review Updated Exterior Elevations
	Review Preliminary Structural Systems
	Review Final Mechanical and Electrical Systems
	Review Final Sustainable Design Features
August 21, 2018	CITY COUNCIL MEETING - DATE AND TIME TBD MEMORIAL BUILDING CITY HALL
August 27, 2018	SCHOOL BUILDING COMMITTEE MEETING
	Final Site Plan, Floor Plans and Elevations
	Final Project Cost
	Final Project Schedule
	Vote to submit Schematic Design Cost Estimate to MSBA
August 29, 2018	*SUBMIT SCHEMATIC DESIGN COST ESTIMATE TO MSBA*
September 6, 2018	COMMUNITY FORUM NO. 6 - 6:00 to 8:00 PM - FULLER MIDDLE SCHOOL LIBRARY
September 11, 2018	SCHOOL BUILDING COMMITTEE MEETING
	Vote to submit Schematic Design Package to MSBA
September 12, 2018	*SUBMIT SCHEMATIC DESIGN PACKAGE TO MSBA*
	ADDITIONAL MEETINGS TO BE SCHEDULED

Poll "Fuller Middle School Building Committee"

https://doodle.com/poll/pmwvvfnwz3p5h2kq

	July 2018		
	Mon 16	Mon 23	Tue 24
David Panich	OK	OK	
Bob Tremblay			OK
Ed Gotgart	OK	OK	OK
Dick Weader	OK	OK	OK
Dale Hamel	OK		
Caitlin Stempleski	OK	OK	
Jonathan Levi	OK	OK	OK
Jose P. Duarte	OK	OK	OK
Joel Seeley	OK	OK	OK
Dick Weader	OK	OK	OK
Noval Alexander	OK		
Anne Ludes		OK	OK
Grilli	OK		
Adam Freudberg	OK	OK	OK
Count	12	10	9

Poll "School Building Committee Meeting"

https://doodle.com/poll/9cwxfc5wbnh4nfcn

	June 2018
	Thu 28
Thatcher Kezer	OK
Bob Tremblay	OK
Ed Gotgart	OK
Dick Weader	OK
David Panich	
David Miles	
Dale Hamel	
Caitlin Stempleski	OK
Jonathan Levi	OK
Matt Torti	OK
Jose P. Duarte	OK
Joel Seeley	OK
David Panich	
Noval Alexander	OK
Anne Ludes	OK
Adam Freudberg	OK
M Grilli	OK

DESIGN BID BUILD V. CONSTRUCTION MANAGEMENT AT RISK
CONTRACTING STRUCTURE

DESIGN BID BUILD

1. DBB is a Single Phase "Fixed Price“ Construction Contracting Method.
2. Under DBB, a Public Owner must procure an Owner’s Project Manager to act as its Representative during the Design and Construction of the Project and a Designer to prepare the Project Design.
3. When the Design is complete, the Owner openly solicits Public Bids from every General Contractor that meets a list of statutorily defined public bidding eligibility requirements.
4. The Bid Solicitation requires a single Lump Sum Bid Price to complete all of the Work included in the Design.
5. The Owner must award the Construction Contract to the Lowest Responsible Eligible Bidder.

CONSTRUCTION MANAGEMENT AT RISK

1. CMR is a Two Phase "Cost Plus" Construction Contracting Method.
2. When using a CMR, a Public Owner must procure an Owner’s Project Manager to act as its Representative during the Design and Construction of the Project and a Designer to prepare the Project Design.
3. Before the Design is prepared, the Owner retains a CMR through a systematic Qualifications Based Procurement Process.
4. The CMR provides advice during the Design Phase regarding constructability and budget and then Constructs the Project, as designed.
5. The CMR Contract Price will be the sum of the CMR’s Cost to Construct the Work plus the General Conditions (CMR’s Costs that are not incorporated into the Project) and a negotiated CM Fee, as compensation.
6. When the Design is at least 60% complete, the Owner and the CMR will agree upon a Guaranteed Maximum Price ("GMP") as a cap for the Contract Price. Once the GMP is established, the CMR will be paid the lesser of the Contract Price or the GMP.

Attachment A

ADVANTAGES

DESIGN BID BUILD

1) Competitive Bidding is the hallmark of DBB contracting and, assuming the Project Design is clear and complete and all Prequalified Bidders are capable of effectively completing the work, that competition should produce the best available price.

2) A DBB General Contractor is obligated to construct all of the Work that is delineated in the Project Design for a single, Lump Sum Fixed Price. This places the risk for the cost of completing the Work included in the Design entirely on the General Contractor.

3) The Work and the Schedule to complete that Work are narrowly defined in a DBB General Contract and that simplicity should concomitantly simplify management of the Project, provided the Design is clear and straight forward.

CONSTRUCTION MANAGEMENT AT RISK

1) Qualifications Based Procurement is the hallmark of CMR contracting and that ability allows the Owner to identify CMRs that are the most capable of constructing the Owner's Project and to choose a CMR for the Project from that pool.

2) A CMR is available during the Design Phase to work with the Designer to identify Design conflicts and omissions prior to construction. Any significant Design conflicts and/or omissions that are not identified and corrected prior to construction will adversely impact the Project Schedule and/or lead to claims for additional compensation. The CMR's assistance during the Design Phase should drastically reduce that possibility.

3) The CMR contracting process is flexible and provides an Owner with the ability to creatively progress a Project through methods such as having the CMR begin construction before a Design is completed.

DISADVANTAGES

DESIGN BID BUILD

1. A DBB General Contractor is not available to help identify Design conflicts and omissions prior to construction. Any significant conflicts and/or omissions that are not corrected prior to construction will adversely impact the Project Schedule and/or lead to claims for additional compensation.

2. With DBB, an Owner must solicit Public Bids from every General Contractor that meets the statutorily defined public bidding eligibility requirements and award the construction contract to the "Lowest Responsible Eligible Bidder". However, that bidder may not be the best choice to construct the Project. If a Project is complex, an Owner will likely want to identify Contractors that are the most capable of constructing the Project and choose a Contractor to construct the Project from that pool. DBB does not have a legal mechanism to achieve that objective.

3. With DBB, a Designer prepares the Design, General Contractors Bid on that Design, and the "Lowest Responsible Eligible Bidder" constructs the Project. This "linear" process restricts the Owner's ability to creatively progress the Project through methods such as having the Contractor begin construction before the Design is completed.

CONSTRUCTION MANAGEMENT AT RISK

1. Subject to the GMP, a CMR is reimbursed for the Cost of Work and paid a fee as compensation. This places the risk for the cost of completing the work up to the amount of the GMP upon the Owner.

2. Massachusetts Law requires the Owner of a DBB Public Building Construction Project to solicit separate competitive bids from Subcontractors for work that is included in eighteen (18) key sub-trade categories. The Sub-Bid Solicitation is not issued until the Design of the work is completed and each Sub-Bidder is required to submit a single Lump Sum Bid Price to complete all of the Work that is included in a sub-trade category. A list of those Sub-Bids is provided to General Bidders prior to the date of the General Bid Opening and the General Bidders are required to include separate sub-bid fixed prices for the 18 sub-trade categories in their General Bids. With some differences, the law is also applicable to CMR contracting. Given the significant fixed price cost liability for subcontract work, a GMP for a CMR Contract under GL c. 149A will not typically be set until the entire Design is completed. That delay transfers most of the risk for the cost of completing the work to the Owner, obviating the potential for any cost savings that may have been available through competition.

CONCLUSIONS

DESIGN BID BUILD

1) The process is best suited to projects with straight forward Designs.

CONSTRUCTION MANAGEMENT AT RISK

1. The contracting process is best suited to projects with complicated Designs and/or strict schedule limitations.

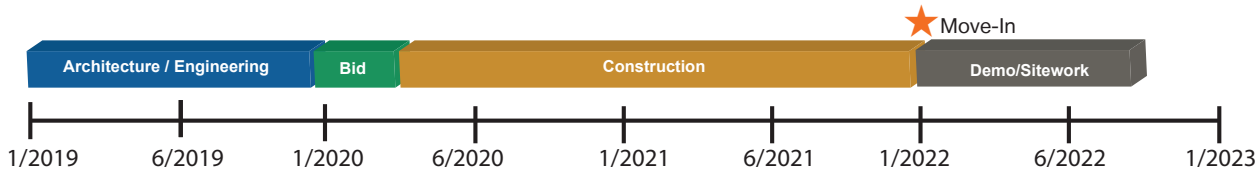
Design Bid Build and Construction Management at Risk COMPARISON

PROJECT MANAGEMENT | SMMA

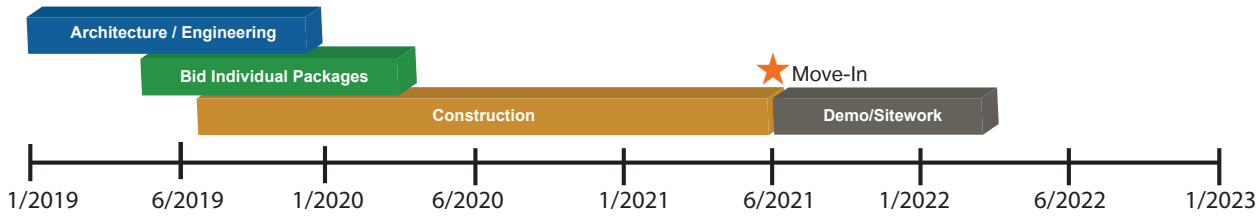
Fuller Middle School Feasibility Study

April 19, 2018

Design Bid Build Preliminary Project Schedule



Construction Management at Risk Preliminary Project Schedule



SMMA

Project Management

Memorandum

To:	School Building Committee Members	Date:	5/10/2018
From:	Joel G. Seeley	Project No.:	17050
Project:	Fuller Middle School		
Re:	Appropriation Vote Timing		
Distribution:	School Building Committee (MF)		

This memorandum provides an overview of the appropriation vote timing. After the MSBA Board of Directors has approved the project at their October 31, 2018 meeting, the City will need to secure local funding within 120 days of the meeting. Assuming the project will require a proposition 2 ½ debt exclusion ballot vote, that would mean the City Council appropriation vote and debt exclusion ballot vote would need to be completed within the 120 days.

There are multiple sequences on the timing of the City Council appropriation vote and the timing of the debt exclusion ballot vote. In reviewing the sequences, there are several factors to consider:

1. Having the debt exclusion ballot vote late enough after the MSBA Board vote to convey the certainty of the grant to the voters.
2. Having the debt exclusion ballot vote early enough after the MSBA Board vote to allow the Architects time to progress the detailed design work inorder to issue early site construction documents in late spring 2019 to commence the early site construction work (if the project were to proceed under the CM at Risk approach) once school is out in summer 2019, followed by the early foundation/steel construction documents issuance in summer 2019.

A few of the possible timing sequences to review are:

1. MSBA Board Vote, followed by City Council appropriation vote, followed by debt exclusion ballot vote, or
2. City Council appropriation vote contingent upon successful MSBA Board vote, followed by MSBA Board vote, followed by debt exclusion ballot vote, or
3. Debt exclusion ballot vote, followed by MSBA Board vote, followed by City Council appropriation vote (not usually done, Somerville did this sequence last year).

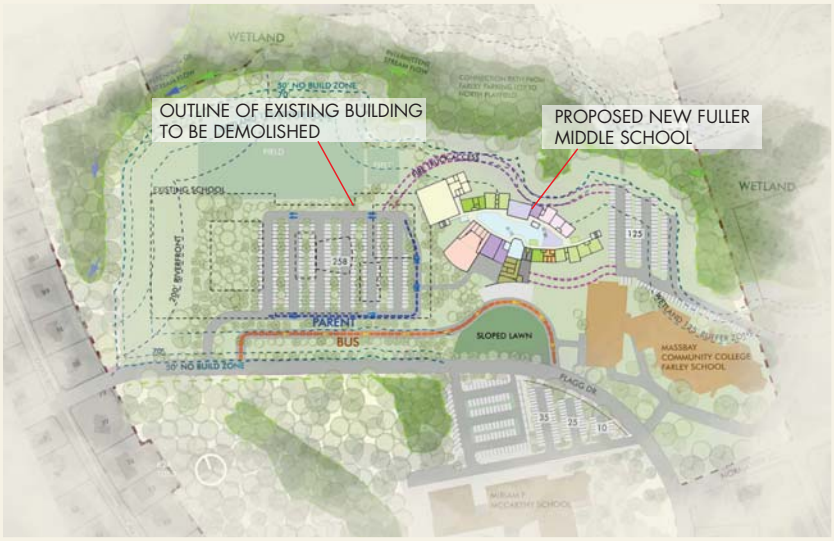
1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

FRAMINGHAM'S NEW FULLER MIDDLE SCHOOL

ARCHITECT'S CONCEPT SKETCHES
- EXTERIOR WITH CAMPUS AMPHITHEATER (ABOVE)
- 'LEARNING COMMONS' ATRIUM (RIGHT)

- AERIAL VIEW OF NEW SCHOOL MASSING

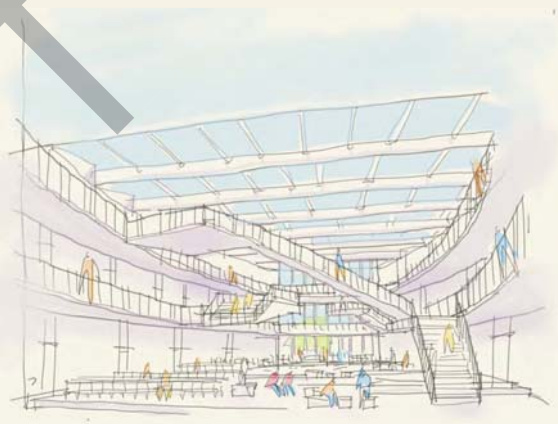


- CONCEPT SITE PLAN & LEVEL1 PLAN DIAGRAM

The Need

The existing Fuller Middle School is currently housed in a building which was repurposed from a 1950's high school. The building has reached the end of its useful life. Its' structural, mechanical and safety systems are deteriorated beyond cost effective repair and will need full replacement. This includes the crumbing floor structure, uninsulated walls and windows, decaying roof structure and all mechanical, electrical and plumbing systems. In addition, the one-story layout, meant for a high school of half a century ago, is ill configured to support the educational programs of today and tomorrow. It is time to stop throwing good money after bad and to create a new structure which is flexibly prepared to service Framingham's next 70 years of student needs and aspirations.

Preliminary Estimated Total Cost to City: $ 66.5 million
Expected Completion Date: Summer 2022



Education for the 21st Century

The preferred solution, selected by the Fuller School Building Committee, builds on the district's visionary educational program by embodying its commitment to a 21st century STEAM (Science, Technology, Engineering, Arts and Mathematics) student centered approach to education (see below). In addition to educationally appropriate sizes and adjacencies of classrooms, there will be highly visible digital fabrication, maker and science 'exploratory' spaces along with a new performance-oriented auditorium and ample gymnasium. An array of shared collaboration spaces will be visually and spatially connected through an exciting multi-story atrium. This will encourage a learning community which inspires and drives one another to excellence. It will be a school that students are thrilled and motivated to come to every day.

A New Community Asset for Framingham

The compact three-story proposal dramatically reduces the building footprint from what we see today - providing increased green space for community use and enjoyment. The reduced building coverage also provides enhancements to nearby conservation areas while at the same time conserving building envelope surface area and increasing lifecycle cost performance for reduced City operating costs. At the same time, the new structure is set back deeply from the street, creating an educational campus connecting the three schools. This open space will become a new civic symbol and destination for the City, capable of hosting gatherings and, with its sloped surfaces, outdoor concerts and events.

FRAMINGHAM
MASSACHUSETTS

Yvonne M. Spicer
Mayor

Thatcher W. Kezer III
Chief Operation Officer

OFFICE OF THE MAYOR
Memorial Building, Room 121
150 Concord Street
Framingham, MA 01702

Phone (508) 532-5401
Fax (508) 532-5409

mayor@framinghamma.gov
www.framinghamma.gov

May 7, 2018

Ms. Allison Jones
MSBA Project Coordinator
Massachusetts School Building Authority
40 Broad Street, Fifth Floor
Boston, MA 02109

Dear Ms. Jones:
In accordance with 963 CMR 2.00, attached for your review and approval is the revised membership of the School Building Committee for Fuller Middle School located in the City of Framingham.

MSBA SCHOOL BUILDING COMMITTEE LIST

Designation	Name and Title	Address	Email Address & Phone Number	Voting Member
Local Chief Executive Officer	Mayor Yvonne M. Spicer	Memorial Building, 150 Concord Street, Framingham, MA. 01702	mayorspicer@framinghamma.gov (508) 532-5401	No
Representative of City Council	Mr. Charles Sisitsky, City Councilor	Memorial Building, 150 Concord Street, Framingham, MA. 01702	csisitsky@framinghamma.gov (508) 532-5403	Yes
SBC member who is MCPPO certified*	Ms. Jennifer Pratt, Chief Procurement Officer for the City of Framingham	Memorial Building, 150 Concord Street, Framingham, MA. 01702	jap@framinghamma.gov (508) 532-5405	No
Representative of Office authorized by law to construct school buildings	Mr. Adam Freudberg, School Committee Chair	Fuller School Committee, 73 Mt. Waye Ave., Suite 5, Framingham, MA 01702	508-626-9121 afreudberg@framingham.k12.ma.us	Yes

School Committee Member (minimum of one)	Mr. Scott Wadland, School Committee Member	Fuller School Committee, 73 Mt. Waye Ave., Suite 5, Framingham, MA 01702	(508) 626-9121 nalexander@framingham.k12.ma.us	Votes ONLY As Alternate SC member
School Committee Member (minimum of one)	Mr. Noval Alexander, School Committee Member	Fuller School Committee, 73 Mt. Waye Ave., Suite 5, Framingham, MA 01702	(508) 626-9121 swadland@framingham.k12.ma.us	Votes ONLY As Alternate SC member
Town Resident (Prior member of School Committee)	Mr. Donald Taggart III	134 Brook Street, Framingham, MA. 01701	508-308-6119, dtaggart@framingham.k12.ma.us	yes
School Committee Member (minimum of one)	Mr. Richard Finlay, Convener	Fuller School Committee, 73 Mt. Wayte Ave., Suite 5, Framingham, MA 01702	508-788-6234, rfinlay@wellesleyma.gov	yes
Superintendent of Schools	Dr. Robert J. Tremblay	Framingham School Department, 73 Mount Wayte Avenue, Suite 5, Framingham, MA. 01702	508-626-9117, rtremblay@framingham.k12.ma.us	No
Local Official responsible for Building Maintenance	Mr. Matt Torti, Director of Buildings and Grounds	31 Flagg Drive, Buildings and Grounds Department, Framingham, MA. 01702	508-626-9111, mtorti@framingham.k12.ma.us	No
Prior member of School Committee	Ms. Heather Connolly	7 Vigue Circle, Framingham, MA. 01701	508-259-0431, hconnolly@framingham.k12.ma.us	yes
School Principal	Mr. Jose Duarte, Fuller Principal	Framingham School Department, 73 Mount Wayte Avenue, Suite 5, Framingham, MA. 01702	508-626-9180, jduarte@framingham.k12.ma.us	No
Member knowledgeable in educational mission and function of facility	Dr. Anne Ludes, Director of Secondary Education	Framingham School Department, 73 Mount Wayte Avenue, Suite 5, Framingham, MA. 01702	508-626-9132, aludes@framingham.k12.ma.us	No
Prior member of local Finance Committee	Mr. David Miles, Prior Finance Comm. Member	18 Woodward Road, Framingham, MA. 01701	617-967-2851, dmiles@partners.org	Yes, Co-Chair
Local Budget official or member of local Finance Committee	Dr. Edward Gotgart, Chief Operating Officer	Framingham School Department, 73 Mount Wayte Avenue, Suite 5, Framingham, MA. 01702	508-626-9100, egotgart@framingham.k12.ma.us	No, Co-Chair

Local Budget official or member of local Finance Committee	Ms. Mary Ellen Kelley, Director of Administration & Finance for City of Framingham	Town of Framingham, Memorial Building, 150 Concord Street, Framingham, MA. 01702	508-532-5425, mek@framinghamma.gov	No
Member of community with architecture, engineering and/or construction experience	Mr. Richard Weader, II (Engineer)	24 Amy Road, Framingham, MA. 01701	508-877-0550, weaders@aol.com	yes
Member of community with architecture, engineering and/or construction experience	Mr. Michael Grilli (Engineer)	660 Grove Street, Framingham, MA. 01701	508-877-2957, mgrilli@beta-inc.com	Yes
Co-Chair of the Union Professional Development Committee	Ms. Caitlyn Stempleski, Fuller School Teacher	2 Cottage Street, Framingham, MA 01702	617-694-3994, cstempleski@framingham.k12.ma.us	yes
Other	Dr. Jennifer Krusinger Martin	17 Warren Road, Framingham, MA. 01702	617-216-9183, jkrusinger@gmail.com	Yes

After approval of this committee by the Authority, the City of Framingham will notify the Authority in writing within 20 calendar days of any changes to the membership or the duties of said committee.

Sincerely,

Mayor Yvonne M. Spicer
City of Framingham

Yvonne M Spicer 5/8/18

Approved by MSBA Date

FULLER MIDDLE SCHOOL FEASIBILITY STUDY

May 14, 2018

Fuller School Building Committee

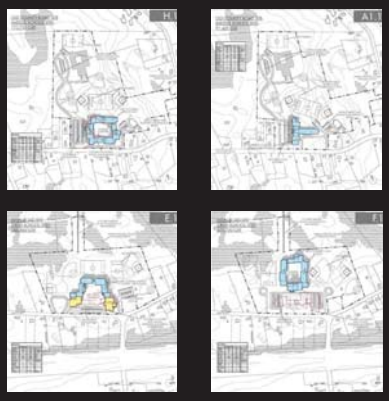
Moving Forward to Schematic Design

Current Budget Summary – Option C

Total Project Cost $110M
MSBA Share $44M
Framingham Share $66M

Estimated Average Cost / Year
Average Residential Taxpayer - $116 / Year

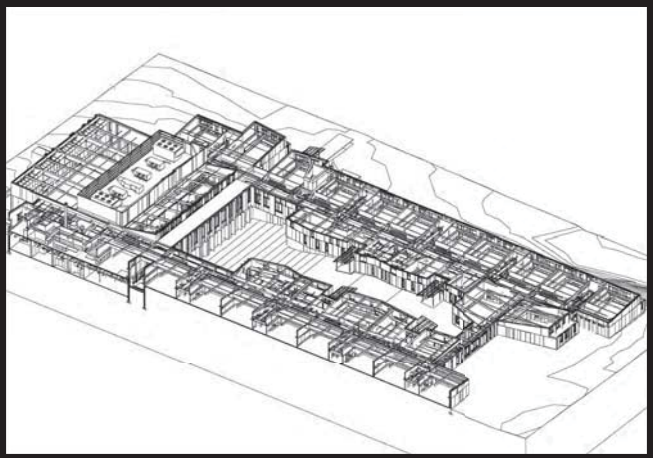
Sample – Preliminary Design Program Design



Sample –
Preferred Schematic Report Design

Sample – Schematic Design

Sample – Design Development



Confirming Project Goals

Opportunities:

What is the single greatest weakness of the existing Middle School and how can we address that challenge with our new project?

- The aged condition of the building
- Lack of a secure building entry
- Security
- The building is dark, gloomy and non-inspiring
- The building layout is restrictive and inflexible
- Traffic
- The building layout has unusable pockets and enclaves

Confirming Project Goals

What is the community's greatest fear or concern as to what might go awry with the outcome of Framingham's new school and what can we do avoid it?

- Budget conformance
  1. Review District Space Requirements
  2. Plan Development for Reduced Net to Gross
  3. Review Comparative Base Building Cost Assumptions
  4. Review/Refine Site Construction Scope
- Not enough community engagement in the planning and design
- That current educational design theories are fad and will be obsolete in a few years
- Too much focus on process and not enough on design and purpose
- Schedule conformance

Confirming Project Goals

Greatest Hopes:

What is the single greatest strength of the existing Middle School and how can the new project build on it?

- The building is very efficient at getting students from point A to B, it is very linear
- The building layout has pockets and enclaves that could be used for student interaction Its diversity
- The “campus” feel of Fuller, Farley and McCarthy due to their close proximity

Confirming Project Goals

Greatest Hopes:

What is our highest hope for the impact of the new Fuller project on the Framingham community? What does project success mean?"

- That the Fuller School be an inspiration to the community That Fuller becomes the flagship for projects done right
- That Fuller is on par and raises the performance levels of the other two middle schools That Fuller is bright, full of light, flexible and expandable
- That Fuller is easy to clean, maintain and be an icon in the community

Sustainability Timeline for Decisions

- May / June 2018 – JLA to develop and document Schematic Design in sufficient detail for Energy Analysis. Initiate discussion on potential systems for analysis
- July 2018 – Initiate SBC decision-making process. JLA to provide Energy Analysis of alternative MEP systems including lifecycle energy costs, maintenance costs, lifecycle savings and duration in years for capital cost payback. This analysis to include ballpark costs for Net Zero geothermal / photovoltaic system

  JLA to provide ballpark capital cost analysis of upgrading LEED certification level to Silver, Gold, or Platinum
- August 2018 - SBC Vote on Schematic Design Scope and Budget, including MEP systems and LEED category.

SMMA

Project Management

Project Minutes

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	6/4/18
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library	Meeting No:	19
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
✓	David Miles	Co-Chair, City Resident with Experience in Finance	**Voting Member**
✓	Dr. Edward Gotgart	Co-Chair, FPS Chief Operating Officer	Non-Voting Member
	Mayor Spicer	Mayor, Chief Executive Officer	Non-Voting Member
	Thatcher Kezer III	Chief Operating Officer	Non-Voting Member
✓	Richard Finlay	School Committee Member and Convenor	**Voting Member**
✓	Adam Freudberg	Chair, School Committee	**Voting Member**
✓	Charlie Sisitsky	City Council Member	**Voting Member**
✓	Richard Weader II	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Michael Grilli	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Caitlin Stempleski	Fuller School Teacher and Co-Chair of the Union Professional Development Committee	**Voting Member**
✓	Dr. Jennifer Krusinger Martin	School Building Committee Member	**Voting Member**
✓	Donald Taggart III	City Resident/Retired Teacher	**Voting Member**
	Jennifer Pratt	Assistant Chief Financial Officer and SBC Member who is MCPPO certified	Non-Voting Member
✓	Dr. Robert Tremblay	Superintendent of Schools	Non-Voting Member
✓	Matt Torti	Director of Buildings and Grounds	Non-Voting Member
✓	Jose Duarte	Principal, Fuller Middle School	Non-Voting Member
✓	Anne Ludes	Director of Secondary Education	Non-Voting Member
	Mary Ellen Kelley	Chief Financial Officer and Local Budget official or member of Finance Committee	Non-Voting Member
✓	Michael Tusino	Certified Building Official	Non-Voting Member
	Patrick Johnson	Principal, Walsh Middle School	Non-Voting Member
	John Haidemenos	Principal, Woodrow Wilson Elementary School	Non-Voting Member
✓	David Panich	School Building Committee Member	Non-Voting Member
✓	Thomas Barbieri	School Building Committee Member	Non-Voting Member
✓	Dr. Dale Hamel	School Building Committee Member	Non-Voting Member
✓	Noval Alexander	School Committee Member	Non-Voting Member
	Heather Connolly	Former Chair of the School Committee	Non-Voting Member
✓	Jonathan Levi	JLA, Architect	
	Philip Gray	JLA, Architect	
✓	Joel Seeley	SMMA, OPM	

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

Item #	Action	Discussion
19.1	Record	Call to Order, 7:00 PM, meeting opened.
19.2	Record	Public Comments - none
19.3	Record	A motion was made by R. Finlay and seconded by R. Weader II to approve the 5/14/18 School Building Committee meeting minutes. No discussion, motion passed unanimously by those attending.
19.4	Record	J. Seeley distributed and reviewed the Budget Status Report, dated 5/31/18 and attached.
19.5	Record	J. Seeley distributed and reviewed Designer Amendment No. 9 for Geotechnical and GeoEnvironmental Engineering Services in the amount of $42,020.00 to be funded out of the Environmental and Site Budget (MSBA ProPay Code 0003-0000), attached, which has a budget balance of $63,083.00. A motion was made by D. Taggart III and seconded by R. Finlay to approve Designer Amendment No. 9, dated 6/4/18 and recommend signature by T. Kezer III. No discussion, motion passed unanimous.
19.6	J. Levi	J. Levi to develop a 30 year total cost of ownership comparison between the existing building and the new option.
19.7	Record	J. Seeley added the debt exclusion ballot question to the FAQ.
19.8	J. Pratt	The updated School Building Committee membership form was reviewed by committee members for contact information edits. J. Pratt to update the form based on the edits.
19.9	Record	J. Seeley presented an overview of the MSBA FAS Meeting, held on 5/23/18 and reviewed Base Repair Option 0.0, including the estimated reimbursement, cost to City, its ability to deliver the educational program, and MSBA Module 3, attached. After discussion, the Committee confirmed that the selection process relative to Base Repair Option 0.0 would not change based on MSBA participating in costs associated with Base Repair Option 0.0 and that this information does not alter the District's selection of Option C as the preferred solution.
19.10	J. Levi J. Seeley	J. Levi and J. Seeley presented a comparison of the Fuller middle school project scope to the Natick JFK middle school and the Marlborough Richer elementary school project scopes, attached. J. Levi and J. Seeley to present the findings to the City Council at their 6/19/18 meeting.
19.11	J. Levi	J. Levi presented and reviewed a Draft Traffic Consultant Scope of Services for review. Committee Discussion: 1. C. Sisitsky asked what is the name of the traffic consultant firm? *J. Levi indicated Vanasse & Associates.* 2. R. Finlay recommended the traffic report findings be reviewed with the Traffic Commission. *E. Gotgart will review the Commission's role with the Commission once they meet.*

		3. M. Grilli indicated the scope of services was appropriate. J. Levi to submit an Amendment for the services at the next Committee meeting.
19.12	J. Levi	J. Levi presented and reviewed the updated Site and Floor Plans for Option C, attached. Committee Discussion: 1. R. Finlay asked if the auditorium balcony was accessible? *J. Levi indicated yes, the elevator will provide access.* 2. R. Finlay asked if the auditorium balcony will be more costly? J. Levi indicated no, the auditorium footprint has been reduced and the balcony fits within the volume established for the auditorium. 3. R. Tremblay asked that J. Levi review the balcony in the Cameron middle school to avoid similar sight line impediments. 4. D. Miles asked if there will be a pre and post function space for the auditorium? *J. Levi indicated yes, that will occur in the section of the Learning Commons, immediately adjacent to the auditorium entrance*. 5. R. Tremblay asked if the Breakout Space designs were finalized? *J. Levi indicated no, these spaces will be refined*. 6. R. Finlay indicated concern with the amount of glass to clean on the Breakout spaces. *J. Levi indicated the amount of glass is not finalized*. 7. R. Finlay indicated concern with the height of the barrier around the Learning Commons on the second and third floors. *J. Levi indicated the barrier is comprised of 36 inch high lockers with a 12 inch glass barrier on top*. 8. J. Krusinger Martin asked that the Nurse Suite location be reviewed for more direct access and not having to traverse thru the administrative offices. *J. Levi will review.* 9. R. Finlay asked what will the flooring material be? *J. Levi indicated primarily vinyl composition tile thru-out with polished concrete in the Learning Commons*. 10. D. Taggart III indicated that transparency and visible learning are a key aspect to the educational program and that glass is important to achieving that goal. 11. N. Alexander asked if the building exterior glass will be ballistic? *J. Levi indicated the glass at the building entrances will be hardened, not ballistic.* 12. C. Sisitsky asked how will the service vehicle and dumpster area be screened for smell and visual appearance? *J. Levi will provide direction at the next Committee meeting*.

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		13. D. Miles asked who is on the Educational Working Group? *J. Levi indicated R. Tremblay, E. Gotgart, A. Ludes, J. Duarte, M. Torti are on the Educational Working Group* 14. M. Grilli asked how much more involvement by the Educational Working Group is needed? *J. Levi indicated the work of the group is needed thru the design phase to vet the educational aspects of the design*. 15. A. Freudberg indicated that the SBC should have the final say on the design issues and that the Educational Working Group should make non-binding recommendations. J. Seeley to include in the agenda any voting that the SBC will need to perform on the design.
19.13	Record	J. Seeley distributed and reviewed Voting Timing Options with Pros and Cons and MSBA Bulletin 08-02 defining Voting language requirements, attached. The Options are: 1. Ballot Vote on November 6, 2018 2. Ballot Vote on December 11, 2018 3. Ballot Vote on Mid-January, 2019 4. Ballot Vote in February, 2019 After discussion, a Motion was made by A. Freudberg and seconded by R. Finlay to recommend to the City Council to schedule the Ballot Vote on December 11, 2018. No discussion, motion passed unanimous.
19.14	Record	Community Forum No. 5 J. Seeley distributed and reviewed the Flyer Advertisement for Community Forum No. 5, attached, to be held on 6/11/18 at 6:00 pm at the Fuller Middle School library. Optional tours of the building will occur at 5:30pm.
19.15	J. Seeley	J. Seeley reviewed the work of the Project Information Working Group and distributed and reviewed the Community Outreach Calendar and Project Information Flyer, attached. J. Seeley to forward the on-line version of the Community Outreach Calendar to the Committee for members to sign up to attend the events. Committee Discussion: 1. C. Stempleski suggested adding the Framingham Farmers Market at Centre Common to the calendar. *J. Seeley to add.*
19.16	Record	Old or New Business – none
19.17	Record	Committee Questions - none
19.18	Record	Next **SBC Meeting: June 18, 2018 at 7:00 PM** at Fuller Middle School Library.
19.19	Record	A Motion was made by D. Taggart III and seconded by M. Grilli to adjourn the meeting. No discussion, motion passed unanimous.

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Attachments: Agenda, Budget Status Report, Designer Amendment No. 9, MSBA Module 3, Voting Timing Options memo, MSBA Bulletin 08-02, Flyer Advertisement for Community Forum No. 5, Community Outreach Calendar, Project Information Flyer, Powerpoint

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes.

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Project Management

PROJECT MEETING SIGN-IN SHEET

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	6/4/2018
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library 31 Flagg Drive, Framingham, MA	Meeting No:	19
Distribution:	Attendees, (MF)		

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	David Miles	dmiles@partners.org	Co-Chair, School Building Committee, City Resident with experience in Finance
	Dr. Edward Gotgart	egotgart@framingham.k12.ma.us	Co-Chair and FPS Chief Operating Officer
	Yvonne M. Spicer	mayorspicer@framinghamma.gov	Mayor, City of Framingham
	Thatcher Kezer, III	tkezer@framinghamma.gov	Chief Operating Officer, Mayoral Designee
	Richard Finlay	rfinlay@wellesleyma.gov	School Committee Member and Convenor
	Adam Freudberg	afreudberg@framingham.k12.ma.us	Chair of School Committee
	Charlie Sisitsky	csisitsky@rcn.com	Local Chief Executive Officer
	Richard Weader, II	weaders@aol.com	Member of community with architecture, engineering and/or construction experience
	Michael Grilli	mgrilli@beta-inc.com	Member of community with architecture, engineering and/or construction experience
	Caitlin Stempleski	cstempleski@framingham.kl2.ma.us	Fuller School Teacher and Co-Chair of the Union Professional Development Committee
	Dr. Jennifer Krusinger Martin	jkrusinger@gmail.com	School Building Committee Member
	Donald Taggart III	dontaggart134@gmail.com	City Resident / Retired Teacher
	Jennifer Pratt	jap@framinghamma.gov	Assistant Chief Financial Officer and SBC Member who is MCPPO certified, City of Framingham
	Dr. Robert Tremblay	rtremblay@framingham.k12.ma.us	Superintendent of Schools
✓	Matt Torti	mtorti@framingham.k12.ma.us	Director of Buildings and Grounds
✓	Jose Duarte	jduarte@framingham.k12.ma.us	Principal, Fuller Middle School
✓	Anne Ludes	aludes@framingham.k12.ma.us	Director of Secondary Education, Framingham Public Schools
	Mary Ellen Kelley, CFO	mek@framinghamma.gov	Chief Financial Officer and Local Budget official
	Michael Tusino	mat@framinghamma.gov	Certified Building Official

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Project: Fuller Middle School Feasibility Study
Meeting Date: June 4, 2018
Meeting No.: 19

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	Patrick Johnson	pjohnson@framingham.k12.ma.us	Principal, Walsh Middle School
	John Haidemenos	jhaidemenos@framingham.k12.ma.us	Principal, Woodrow Wilson Elementary School
	David Panich	david@panicharchitecture.com	School Building Committee Member
	Thomas Barbieri	Thombrbr@aol.com	School Building Committee Member
	Dr. Dale Hamel	dhamel@framingham.edu	School Building Committee Member
	Noval Alexander	n.alexander@framingham.k12.ma.us	School Committee Member
	Heather Connolly	heatheratconnolly@comcast.net	Former Chair of School Committee
	Jonathan Levi	jlevi@leviarc.com	Jonathan Levi Architects (JLA)
	Philip Gray	pgray@leviarc.com	Jonathan Levi Architects (JLA)
	Joel Seeley	jseeley@smma.com	SMMA

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Agenda

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Re:	School Building Committee Meeting	Meeting Date:	6/4/2018
Meeting Location:	Fuller Middle School Library	Meeting Time:	7:00 PM
Prepared by:	Joel G. Seeley	Meeting No.	19
Distribution:	Committee Members (MF)		

1. Call to Order
2. Public Comments
3. Approval of Minutes
4. Approval of Invoices and Commitments
5. MSBA FAS Meeting Update
6. Review Updated Site and Floor Plans
7. Traffic Consultant Scope
8. Discuss and Vote Appropriation Vote Timing
9. Prepare for Community Forum No. 5
10. Project Information Working Group Update
11. Old or New Business
12. Committee Questions
13. Next Meeting: June 18, 2018
14. Adjourn

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Project Minutes

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	5/14/18
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	King Elementary School, Desmarais Room	Meeting No:	18
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
✓	David Miles	Co-Chair, City Resident with Experience in Finance	**Voting Member**
✓	Dr. Edward Gotgart	Co-Chair, FPS Chief Operating Officer	Non-Voting Member
	Mayor Spicer	Mayor, Chief Executive Officer	Non-Voting Member
✓	Thatcher Kezer III	Chief Operating Officer	Non-Voting Member
✓	Richard Finlay	School Committee Member and Convenor	
✓	Adam Freudberg	Chair, School Committee	**Voting Member**
✓	Charlie Sisitsky	City Council Member	**Voting Member**
✓	Richard Weader II	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Michael Grilli	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Caitlin Stempleski	Fuller School Teacher and Co-Chair of the Union Professional Development Committee	**Voting Member**
✓	Dr. Jennifer Krusinger Martin	School Building Committee Member	**Voting Member**
✓	Donald Taggart III	City Resident/Retired Teacher	**Voting Member**
	Jennifer Pratt	Assistant Chief Financial Officer and SBC Member who is MCPPO certified	Non-Voting Member
	Dr. Robert Tremblay	Superintendent of Schools	Non-Voting Member
✓	Matt Torti	Director of Buildings and Grounds	Non-Voting Member
✓	Jose Duarte	Principal, Fuller Middle School	Non-Voting Member
	Anne Ludes	Director of Secondary Education	Non-Voting Member
✓	Mary Ellen Kelley	Chief Financial Officer and Local Budget official or member of Finance Committee	Non-Voting Member
	Michael Tusino	Certified Building Official	Non-Voting Member
	Patrick Johnson	Principal, Walsh Middle School	Non-Voting Member
	John Haidemenos	Principal, Woodrow Wilson Elementary School	Non-Voting Member
✓	David Panich	School Building Committee Member	Non-Voting Member
✓	Thomas Barbieri	School Building Committee Member	Non-Voting Member
✓	Dr. Dale Hamel	School Building Committee Member	Non-Voting Member
✓	Noval Alexander	School Committee Member	Non-Voting Member
	Heather Connolly	Former Chair of the School Committee	Non-Voting Member
✓	Jonathan Levi	JLA, Architect	
✓	Philip Gray	JLA, Architect	
✓	Joel Seeley	SMMA, OPM	

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Item #	Action	Discussion
18.1	Record	Call to Order, 7:00 PM, meeting opened.
18.2	Record	D. Miles asked that the Committee observe a moment of silence respecting the passing of Representative Chris Walsh.
18.3	Record	A motion was made by R. Finlay and seconded by C. Sisitsky to approve the 4/30/18 School Building Committee meeting minutes. No discussion, motion passed unanimously by those attending.
18.4	Record	J. Seeley distributed and reviewed the Budget Status Report, dated 4/30/18 and attached.
18.5	Record	J. Seeley distributed and reviewed Designer Amendment No. 8 for GeoEnvironmental Engineering Services for assessing the borings at the Fuller School Site in the amount of $8,250.00 to be funded out of the Environmental and Site Budget (MSBA ProPay Code 0003-0000), attached, which has a budget balance of $71,333.00. A motion was made by M. Grilli and seconded by R. Finlay to approve Designer Amendment No. 8, dated 5/14/18 and recommend signature by Mayor Spicer. No discussion, motion passed unanimous.
18.6	J. Levi	J. Seeley distributed and reviewed Warrant No. 6, attached. Committee Discussion: 1. D. Miles indicated future JLA invoices should be addressed to J. Pratt, not R. Halpin. *J. Levi to correct future invoices.* A motion was made by M. Grilli and seconded by R. Finlay to approve Warrant No. 6. No discussion, motion passed unanimous.
18.7	J. Levi	J. Levi to develop a 30 year total cost of ownership comparison between the existing building and the new option.
18.8	J. Seeley	J. Seeley to add the debt exclusion ballot question to the FAQ.
18.9	J. Pratt	The updated School Building Committee membership form has been submitted to the MSBA, attached. J. Pratt to correct the email address of N. Alexander and S. Wadland and the non-voting member status for H. Connolly.
18.10	Record	J. Seeley submitted the memorandum providing an explanation of the project cost increase from the PDP Phase to the current progress PSR phase to the City Council.
18.11	J. Seeley	J. Seeley distributed and reviewed the draft Meetings and Agenda Schedule for the Schematic Design Phase, attached. Committee Discussion: 1. The 6/28/18 and 7/16/18 Committee meetings are confirmed. 2. A Community Forum is to be added on 7/23/18 at the Fuller School Library.

		3. J. Seeley to finalize and send to the Committee and Building and Grounds for posting. 4. J. Seeley to coordinate with Building and Grounds to send a reminder that all future Committee meetings will be held at Fuller School Library.
18.12	Record	J. Levi presented a summary of the Option C costs, a description of the deliverables for the Schematic Design phase, and the timing for Sustainable Design decision making, attached.
18.13	Record	J. Levi presented the Project Goals from the PSR Phase, attached. Committee Discussion: 1. D. Panich recommended changing the Goal "That Fuller is easy to clean, maintain and be an icon in the community" to "That Fuller is easy to clean, maintain, economically operate and be an icon in the community" *J. Levi will update the Goal.* The Committee re-affirms approves the Goals, inclusive of the D. Panich recommended modification.
18.14	P. Gray	M. Grilli requested that further traffic analysis, options development and review be included in the Schematic Design Phase. P. Gray to provide a scope of services listing for the traffic consultant for the next Committee meeting for review.
18.15	P. Gray J. Seeley	P. Gray and J. Seeley to provide a comparison of the project information for the Natick Middle School project, the Marlborough Elementary School project and the Fuller Project and present to the City Council 6/19/18 meeting.
18.16	D. Miles	J. Seeley distributed and reviewed a Voting Timing Scenarios memo for the City Council vote, Ballot vote and MSBA Board of Directors vote, attached. Committee Discussion: 1. C. Sisitsky asked if the Committee will be making a recommendation to the Council? *D. Miles indicated that the Committee will make a recommendation and will discuss with the Council at the 6/19/18 meeting.* 2. T. Kezer III suggested the City Clerk be consulted on any timing limitations and procedures relative to the Ballot Vote. *D. Miles will confirm with the City Clerk.*
18.17	Record	J. Seeley distributed and reviewed a summary from MSBA of the Design-Bid-Build (DBB) and the Construction Manager-at-Risk (CMAR) construction delivery method and alternate construction schedules, attached. Committee Discussion:

		1. M. Grilli indicated he is not in favor of the CMAR construction delivery method. There is no guarantee that there will be no change orders and the City is more familiar with the DBB method. 2. R. Finlay indicated he is familiar with CMAR from his work in another community where it was successful. 3. D. Hamel indicated he is familiar with both DBB and CMAR from his work at FSU and this project would benefit from the CMAR experience. 4. D. Miles indicated there is a higher upfront cost for CMAR but having heard from other communities, there is the potential for savings in the long term. 5. R. Finlay asked if there will be change orders? *J. Levi indicated yes, there will be change orders. If scope is not shown on the drawings or changes are required that are not on the drawings, change orders will be required.* 6. D. Hamel indicated there is a benefit to opening the new school at the beginning of the school year as opposed to the middle of the school year. After discussion, a Motion was made by R. Weader II and seconded by R. Finlay to approve the Construction Manager-at-Risk (CMAR) construction delivery method for the project. No discussion, motion passed 8 in favor and 1 against - with A. Freudberg, C. Sisitsky, R. Weader II, J. Krusinger Martin, D. Miles, C. Stempleski , R. Finlay and D. Taggart III voting for and M. Grilli voting against.
18.18	J. Seeley	J. Seeley provided an overview of the MSBA Facilities Advisory Subcommittee meeting to be held at MSBA offices on either 5/23/18 or 6/6/18. J. Seeley will follow-up with MSBA on the date and coordinate attendees from the City.
18.19	P. Gray	J. Seeley reviewed the work of the Project Information Working Group and distributed and reviewed the Project Information Poster, attached. Committee Discussion: 1. A. Freudberg suggested adding the total project cost and the MSBA grant costs to the poster. 2. M. Kelley suggested refining the poster text to indicate the existing building systems have reached past their useful life. P. Gray to update the poster addressing these comments.
18.20	Record	Old or New Business – none
18.21	Record	Committee Questions - none
18.22	Record	Public Comments - none
18.23	Record	Next **SBC Meeting: June 4, 2018 at 7:00 PM** at Fuller Middle School Library.
18.24	Record	A Motion was made by R. Finlay and seconded by D. Taggart III to adjourn the meeting. No discussion, motion passed unanimous.

Attachments: Agenda, Budget Status Report, Designer Amendment No. 8, Warrant No. 6, draft Meetings and Agenda Schedule for the Schematic Design Phase, Voting Timing Scenarios memo, summary of Design-Bid-Build (DBB) and the Construction Manager-at-Risk (CMAR), Project Information Poster, Powerpoint

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes.

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Project Management

Memorandum

To:	Fuller Middle School Building Committee	Date:	6/4/2018
From:	Joel G. Seeley	Project No.:	17050
Project:	Fuller Middle School Feasibility Study		
Re:	Designer Amendment No. 9: Geotechnical and Geo-Environmental Engineering Services		
Distribution:	School Building Committee (MF)		

DESIGNER AMENDMENT NO. 9: GEOTECHNICAL AND GEO-ENVIRONMENTAL ENGINEERING SERVICES

FEE: $42,020.00

REASON: Provide Geotechnical and Geo-Environmental Engineering Services for the Fuller Middle School building located at 31 Flagg Drive, Framingham, Massachusetts.

BUDGET AVAILABILITY: This Amendment would be funded out of the Environmental and Site Budget, ProPay Code 0003-0000, which has a current balance of $63,083.00.

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Feasibility and Schematic Design Phase	MSBA ProPay Code	FSA Agreement 2/15/2017	Budget Revision 10/10/2017	Current Budget	Vendor	Committed	Balance
OPM	0001-0000	$ 185,000.00	$ (10,000.00)	$ 175,000.00	SMMA	$ 174,200.00	$ 800.00
							$ -
DESIGNER	0002-0000	$ 580,000.00	$ (35,000.00)	$ 545,000.00	JLA	$ 545,000.00	$ -
							$ -
Environmental and Site	0003-0000	$ 100,000.00	$ 45,000.00	$ 145,000.00		$ 81,917.00	$ 63,083.00
							$ -
Other	0004-0000	$ 135,000.00	$ -	$ 135,000.00		$ -	$ 135,000.00
Total Budget		**$ 1,000,000.00**		**$ 1,000,000.00**		**$ 801,117.00**	**$ 198,883.00**

ATTACHMENT F

CONTRACT FOR DESIGNER SERVICES

AMENDMENT NO. 9

WHEREAS, the Town of Framingham ("Owner") and Jonathan Levi Architects, LLC, (the "Designer") (collectively, the "Parties") entered into a Contract for Designer Services for the W. Fuller Middle School Project (Project Number 201501000305) at the Fuller Middle School on September 25, 2017 "Contract"; and

WHEREAS, effective as of June 4, 2018, the Parties wish to amend the Contract:

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained in this Amendment, and other good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

1. The Owner hereby authorizes the Designer to perform services for the Design Development Phase, the Construction Phases, and the Final Completion Phase of the Project, pursuant to the terms and conditions set forth in the Contract, as amended.

2. For the performance of services required under the Contract, as amended, the Designer shall be compensated by the Owner in accordance with the following Fee for Basic Services:

Fee for Basic Services:

	Original Contract	**Prior Amendments**	**This Amendment**	**After this Amendment**
Feasibility Study Phase	$335,000.00	$81,917.00	$42,020.00	$458,937.00
Schematic Design Phase	$210,000.00			$210,000.00
Design Development Phase	$			
Construction Document Phase	$			
Bidding Phase	$			
Construction Phase	$			
Completion Phase	$			
Total Fee	**$545,000.00**	**$81,917.00**	**$42,020.00**	**$668,937.00**

This Amendment is a result of: Providing Geotechnical and Geo-Environmental Engineering Services

ProPay Code: 0003-0000

3. The Construction Budget shall be as follows:

Original Budget:	$ NA
Amended Budget	$ NA

4. The Project Schedule shall be as follows:

Original Schedule:	$ NA
Amended Schedule	$ NA

5. This Amendment contains all of the terms and conditions agreed upon by the Parties as amendments to the original Contract. No other understandings or representations, oral or otherwise, regarding amendments to the original Contract shall be deemed to exist or bind the Parties, and all other terms and conditions of the Contract remain in full force and effect.

IN WITNESS WHEREOF, the Owner, with the prior approval of the Authority, and the Designer have caused this Amendment to be executed by their respective authorized officers.

OWNER

Thatcher W. Kezer, III
(print name)
Chief Operating Officer, City of Framingham
(print title)
By _____
(signature)
Date _____

DESIGNER

Jonathan Levi
(print name)
Principal In Charge, Jonathan Levi Architects, LLC
(print title)
By _____
(signature)
Date _____

Jonathan Levi Architects
266 beacon street boston ma 02116 tel 617.437.9458 fax 617.437.1965 www.leviarc.com

May 29, 2018

Mr. Joel G. Seeley
COO | Executive Vice President
SMMA
1000 Massachusetts Avenue
Cambridge, MA 02138

Re: *Fee Proposal, Geotechnical Existing Conditions Assessment*
Fuller Middle School, Framingham MA

Dear Joel,
Attached please find a proposal from McPhail Associates to perform services for Geotechnical and Geoenvironmental Engineering services to be performed as a subconsultant to JLA.

Fee
As described in Article 4.11 of the MSBA Contract for Designer Services, the services associated with this proposal are to be invoiced on a lump sum basis as Extra Services, plus the 10% standard markup specified in Articles 9.1 and 9.1.1.

Geotechnical and Geoenvironmental Services	$38,200
10% Markup	$3,820
Total	***$42,020***

Please do not hesitate to contact me if you would like us to clarify or modify our assumptions, or if there is anything represented here which does not conform to your expectations.

Sincerely,

Philip Gray
Associate Principal
Jonathan Levi Architects

May 25, 2018

Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

Attention: Mr. Philip Gray

Reference: Fuller Middle School; Framingham; Massachusetts
Proposal for Pre-Construction Geoenvironmental and Geotechnical Engineering Services

Ladies and Gentlemen:

In response to your recent request, we are pleased to submit our proposal for providing pre-construction geotechnical and geoenvironmental engineering services for the proposed Fuller Middle School building to be located in Framingham, Massachusetts.

The subject site fronts onto Flagg Drive to the south and is bounded by the Mass Bay Community College to the east, residential properties to the west and a wooded area to the north. Currently, an existing one-story brick school building occupies the central portion of the site, which was built in the late 1950's. The site is occupied by a paved surface parking lot, as well as grassed and landscape areas. Existing ground surface across the site varies from about Elevation +163 to Elevation +166.

The proposed development involves the demolition of the existing school and the construction of a new school building to the southeast of the existing school. Based on the information provided to us, the proposed construction will consist of a 2-story to 3-story structure and associated site work. Except for the area of the proposed auditorium, it is understood that the proposed building will not contain any below grade space.

A subsurface exploration program consisting of ten (10) borings was conducted at the site on February 21, 22 and April 19, 2018 for the purpose of obtaining subsurface information in order to provide preliminary foundation design recommendations. The site of the proposed building is underlain by a variable thickness of uncontrolled fill and loose alluvial/organic deposits which are unsuitable for support of the proposed building foundations. Generally, the unsuitable deposits were observed extending to depths of 4 to 9 feet below the existing ground surface. Underneath the fill and/or alluvial organic deposits, a natural glacial outwash or lacustrine deposit was encountered at depths ranging from 4 to 9 feet below ground surface. Groundwater was encountered 3 to 6 feet below the existing ground surface.

Task 1 - Proposed Geotechnical Engineering Services

Based upon a schematic untitled and undated drawing prepared by Jonathan Levi Architects (JLA) provide to McPhail via email on May 10, 2018, it is understood that the approximate configuration of the proposed school building has been established. Therefore, in

accordance with the final scope of the project, we propose to perform a supplemental subsurface exploration program at the site that would consist of eight (8) soil borings.

The soil borings, which would be located within the proposed building footprints and would generally be advanced to depths of 15 feet below the existing ground surface. We estimate that two (2) rig days of drilling will be required and the estimated cost of a drilling subcontractor to complete the scope of soil boring work to be $6,000. The drilling contractor will be paid prevailing wages on this project.

Our proposed scope of geotechnical engineering services consists of the following:

1. Contract with a qualified drilling subcontractor to perform the subsurface exploration program at the site for the purposes described above;

2. Provide a qualified field geologist or geotechnical engineering technician to: perform the exploration layout, determine the existing ground surface elevation at each exploration location, monitor the exploration procedures, prepare detailed field logs, and make modifications to the subsurface exploration program depending upon actual conditions encountered;

3. Perform laboratory index testing of soil samples;

4. Prepare a subsurface exploration plan and results of field and laboratory testing;

5. Perform geotechnical engineering analyses to evaluate the integrity of the previously placed fill soils and to develop foundation design criteria for the planned structures; and

6. Prepare and submit a detailed final foundation engineering report with engineering evaluations, specific recommendations and design criteria for safe and economical foundation design and construction.

The lump sum fee for the above scope of foundation engineering services would be about $17,500 including an $6,000 allowance for the drilling subcontractor.

Task 2 - Pre-Construction Geoenvironmental Engineering Services – Preliminary Soil Characterization

Construction of the proposed building will generate excess soil which may need to be removed off-site. Based on the information provided to us, it is understood proposed building footprint will consist of 49,500 square feet, and that the proposed lowest level slab of the new school building will be roughly at the existing grade and the lowest level slab, respectively. Assuming an average excavation depth of 2 feet across the proposed building footprint, it is anticipated that about 3,800 cubic yards of soil will be generated during development of the subject site.

Therefore, for the preliminary soil characterization, it is assumed that 3,800 cubic yards of soil will be generated, however, the final soil characterization should be performed in accordance with the final design of the proposed development. In the event that there is more than 3,800 cubic yards of soil generated for the new development, we recommend that the additional soil characterization be performed at the site after the final cut and fill analyses are performed for the project.

Pre-characterizing site soils for off-site removal will allow for the direct loading of soil onto trucks for off-site transport, as opposed to having to stockpile excavated soils on-site and then sample and test site soils during construction which in our experience with similar construction projects of this size, would result in adverse impacts to the project schedule. In Massachusetts, off-site disposal of regulated material is currently governed by the following DEP Policies: "Interim Remediation Waste Management Policy for Petroleum Contaminated Soils", Policy #WSC-94-400, dated April 21, 1994; #COMM-97-001 entitled "Reuse and Disposal of Contaminated Soils at Massachusetts Landfills", dated August 15, 1997; “Similar Soils Provision Guidance” dated September 4, 2014, WSC#-13-500; and “Interim Policy on the Re-Use of Soil for Large Reclamation Projects,” Policy#COMM-15-01, dated August 28, 2015 as well as the provisions of the MCP.

These policies and guidance require that a “suite” of analytical testing be performed on soils subject to off-site removal. Different types of disposal facilities have varying analytical requirements for acceptance of soil. However, a typical starting point, or “base-line” for the analysis is to test the existing fill soil based on a frequency of one analytical suite per 500 cubic yards, which is the requirement for Massachusetts Landfills and typical soil reclamation project sites.

The parameters for laboratory testing that are required by Massachusetts landfills include total petroleum hydrocarbons, (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), RCRA-8 metals, polychlorinated biphenyls (PCBs), pH, conductivity, reactive cyanide and sulfide, and flashpoint/ignitability. In addition to these parameters, Less Than RCS-1 facilities require MCP-14 metal testing which includes antimony, nickel, beryllium, copper, thallium and vanadium in addition to the RCRA-8 metals.

Further, the results of the testing, particularly related to the existing fill material, may indicate that out-of-state disposal is necessary for a portion of the soil. Out-of-state facilities typically require significantly higher frequency of analysis, for which we would provide a separate scope and fee to complete.

Some additional testing is also anticipated to be required during the course of our investigation to assess for the presence of Toxicity Characteristic Leaching Procedure (TCLP) metals, which is a measure of a contaminants leachability potential in a landfill environment, the results of which determine if the soil is considered to be a characteristically hazardous waste). The requirement for TCLP testing is based upon the level of each total metal detected being 20 times or greater than the applicable TCLP

hazardous waste threshold value). For budgeting purposes, based on our experience, we have assumed testing for the presence of TCLP lead may be required for all of the fill samples. Therefore, the budget for laboratory analysis described herein includes allowances for this additional testing.

Based on our previous experience on similar projects in the Framingham area, it is anticipated that the fill material will require off-site reuse or disposal at a Like Site (Less than RCS-1 facility) or a Regulated receiving facility, such as an in-state unlined landfill, lined landfill, or asphalt batch plant. Like Site and Regulated receiving facilities require that disposal characterization be performed at a frequency of 1 sample for every 500 cubic yards of soil. Therefore, the fill material will be tested at a typical frequency of 1 sample for every 500 cubic yards of soil to be excavated and disposed off-site. Accordingly, we propose to perform chemical analysis on eight (8) soil samples which are obtained from the borings performed above as part of Task 1.

Our proposed scope of geoenvironmental engineering services will include the following:

1. Prepare and submit eight (8) soil samples obtained from the explorations to be performed in Task 1 to a Massachusetts DEP-certified chemical testing laboratory for analyses for off-site disposal parameters as follows:

2. Total RCRA-8 or MCP-14 metals, TPH, VOCs, SVOCs, PCBs, pH, reactivity, flashpoint, conductivity, and TCLP lead.

3. Review the soil chemical test results with respect to the applicable reporting thresholds contained in the MCP; and

4. Prepare a Soil Management Plan (SMP) report based on the results of the soil characterization. The SMP will classify the soil across the site to the proposed depth of excavation. In addition, the SMP will contain appropriate figures indicating where different soil classifications exist and relevant summary tables. Finally, the SMP will identify the appropriate types of receiving facilities for the excess soil.

The estimated cost to complete Task 2 is $16,000 which includes an estimated $11,200 for the chemical testing proposed in Item 1.

The cost of laboratory analysis is predicated on a standard 5 business day turnaround by the laboratory. An expedited turnaround time of 48-hours may be arranged for a premium of 75% charged by the laboratory.

Excluded from the above referenced scope of work are the following:

- Notification to the DEP of any release conditions as defined under the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000 that may encountered during performance of the above referenced scope of work;

- Compliance reporting required pursuant to the provisions of 310 CMR 40.0000 the MCP; and

- The costs of any additional laboratory testing beyond the above scope, or based on the results of the above laboratory testing;

Should you wish to add any of these tasks, we will be happy to provide an addendum to this proposal.

Task 3 - Pre-Construction Geotechnical Engineering Services – Design Phase Services

It is recommended that McPhail be retained to provide design assistance to the design team during the design phase.

During the design phase, our services would include the following:

1. Review or prepare the earthwork section of the specifications and other sections of the Specifications as applicable;

2. Review geotechnical-related drawings prepared by others as a check that our recommendations are properly incorporated into the Contract Documents for construction; and

3. Attend two (2) meetings with the design team. Our presence at meetings is based on a 2-hour duration per meeting.

The total estimated fee to perform the Design Phase Services is $4,700. We would not exceed this fee without prior authorization from the Client.

Summary of Costs

Task 1 – Pre-Construction Geotechnical Engineering Services	$17,500
Task 2 – Pre-Construction Geoenvironmental Engineering Services	$16,000
Task 3 – Pre-Construction Geotechnical Engineering Services	$4,700
Total	$38,200

Terms and Conditions

The fee for foundation engineering services would be based on a multiple of 2.5 times salary cost for technical personnel directly attributable to the project plus any direct expenses (e.g. the drilling subcontractor and report reproduction) at cost plus 15 percent.

The Client agrees to provide right of entry to the site in order that the subsurface explorations can be performed. While the engineer will take all reasonable precautions to avoid damage to property, subterranean structures or utilities, the Owner agrees to hold the engineer harmless for any damages to subterranean structures or utilities not as shown on the plans furnished or evident in the field. Utilities are required to be cleared by the drilling subcontractor with Dig-Safe.

Since the Client agrees that McPhail Associates, LLC has neither created or contributed to the creation of any hazardous materials, oil, or other environmental pollutants that is now or may be introduced or discovered on the project site in the future, the Client agrees to defend, indemnify, and hold harmless McPhail Associates, LLC, its subcontractors, agents, officers, and employees from and against any and all claims for damages and all associated expenses incurred as a result of claims sustained or alleged by any person or entity other than the client, based upon a release of environmental contaminants or pollutants, any governmental fines or penalties related to environmental contaminants or pollutants, or any bodily injury or property damage caused by the release, removal, assessment, or investigation of hazardous materials associated with the subject project.

The engineer's liability for damages due to professional negligence in performing geotechnical and geoenvironmental services will be limited to an amount not to exceed $50,000. McPhail Associates, LLC will increase the limitation of liability for geotechnical and geoenvironmental activities to $1,000,000 in accordance with the terms and conditions of our policy upon written notice from the Client within ten days hereof that he agrees to pay in consideration of this increase in limitation an additional charge of $1,000.

In addition to the Client named herein, it is understood that the following entities (if listed below) and such other persons designated by the Client from time to time (including lenders, equity providers, and property owners) and agreed to by McPhail Associates LLC may be named as additional insureds on McPhail Associates LLC's General Liability, Automobile, and/or Umbrella insurance policies with respect to this project and the scope of work defined herein. The Client shall provide McPhail with a complete list of those persons to be named as additional insureds on our GLI policy along with each person's professional relationship to the Client on this project."

Invoices for services would be submitted monthly and payment would be due within 30 days. The Client agrees to pay interest at the rate of 1.5 percent per month on monies outstanding in excess of 30 days and collection costs on monies outstanding in excess of 90 days.

To authorize us to proceed with the services proposed above, please sign and return a copy of this letter. We are prepared to commence work within two weeks of notification to proceed. Should you have any questions, please do not hesitate to contact us.

Very truly yours,

McPHAIL ASSOCIATES, LLC

Fatima Babic-Konjic, P.E.

Chris M. Erikson, P.E.

JONATHAN LEVI ARCHITECTS

BY

DATE

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FBK/jgl/cme

CITY OF FRAMINGHAM

Valerie Mulvey, City Clerk
Lisa Ferguson, Assistant City Clerk

Dedicated to Excellence in Public Service

MDSX. SO. DIST. DEEDS
BOOK 28114 PAGE 260
DATE: 6-1-2018
TIME: 2:06 PM

Date: May 15, 2018

Address: 31 Flagg Dr.

Name: Framingham Public Schools

According to the records of the Framingham City Clerk's Office, on March 16, 2018 an application was filed with the City Clerk's office for a Petition for a Variance for height.

A decision was made by the Zoning Board of Appeals on April 10, 2018 and the decision was filed in the City Clerk's Office on April 24, 2018.

Twenty days have elapsed and no appeal has been filed with the office of the City Clerk.

Valerie Mulvey

Valerie Mulvey
City Clerk

CITY OF FRAMINGHAM

Valerie Mulvey, City Clerk
Lisa Ferguson, Assistant City Clerk

Dedicated to Excellence in Public Service

Date: May 15, 2018

Address: 31 Flagg Dr.

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City Clerk

CITY OF FRAMINGHAM
ZONING BOARD OF APPEALS
150 Concord Street B2
Framingham, MA 01702

BOARD OF APPEALS CASE NO. 18-05

PETITION OF FRAMINGHAM PUBLIC SCHOOLS

DATE OF DECISION: APRIL 10, 2018

1. **Application**
   This document is the DECISION of the Framingham Zoning Board of Appeals (hereinafter the Board) on the Application of FRAMINGHAM PUBLIC SCHOOLS (hereinafter the Applicant), for property located at 31 FLAGG DRIVE. This Decision is in response to a Petition for a Variance for height (hereinafter the Application).

2. **Property Owner and Applicant**
   Framingham Public Schools
   73 Mt. Wayte Avenue, Suite 5
   Framingham, MA 01702

3. **Location**
   Property is located at 31 Flagg Drive and identified by Assessors' Parcel IDs 102-82-8137-000, 102-82-4579-000, 102-82-2420-000, and 102-92-2532-000 (hereinafter the Site).

4. **Board Action**
   After due consideration of the Application, the record of proceedings, and based upon the findings set forth below, on April 10, 2018 the Board voted to GRANT the requested VARIANCE by a unanimous vote in favor of the petition of three (3) members sitting on the Application. The record of the vote is stated as follows:

PHILIP R. OTTAVIANI, JR.	YES
SUSAN S. CRAIGHEAD	YES
STEPHEN MELTZER	YES

5. **Proceedings**
   The Application was received by the Board on March 15, 2018 pursuant to MGL, Ch. 40A, §10, and the Framingham Zoning By-Law. The Application was considered by the Board at a duly noticed public hearing of the Board on April 10, 2018 at 7:15 P.M. in the Ablondi Room of the Memorial Building. Board Members Philip R. Ottaviani, Jr., Susan S. Craighead, Stephen Meltzer, and alternate Edward Cosgrove, were present throughout the proceedings. The minutes of the public hearing and submissions on which this Decision is based, which together with this Decision constitute the record of the proceedings, may be referred to in the Office of the Zoning Board of Appeals at the Memorial Building.

   Matthew Torti, Director of Building and Grounds for the Framingham Public Schools, introduced himself, Joel Seeley of Symmes Maini & McKee Associates, Inc. (SMMA), and Philip Gray of Jonathan Levi Architects. Mr. Seeley explained the Framingham Public Schools and

Fuller Middle School Building Committee were undertaking a feasibility study in collaboration with the Massachusetts School Building Association (MSBA). As part of the feasibility study, the School Committee began investigating options for the renovation, renovation construction, and new construction of the Fuller Middle School, which will lead to selection of a single preferred option to be submitted to the MSBA. The applicant is seeking a height Variance to be able to build up to 55 feet.

Mr. Gray continued to explain the project proposes replacing an existing 196,000 gross square feet (gsf) single story school originally built in the 1950s to accommodate 1,200 high school students with a new school building either 2 or 3 stories to comprise between 145,000 and 160,000 gsf, to serve 630 students in grades 6-8. He proceeded to explain the site is unique in that it has three existing adjacent schools and is effectively ringed by wetlands, which separate it from any adjacent residential property. He explained the four alternatives reflect site restrictions and urban design improvements. Renovation of the existing building would be substantially more expensive than new construction and would require costly and disruptive use of swing space for existing students. He explained that the proposed urban design improvements will attempt to improve campus identity between the Fuller, Farley, and McCarthy Schools. New construction proposals, with large setbacks, will have smaller apparent height than the neighboring Farley School which sits adjacent to Flagg Drive.

Mr. Gray proceeded to explain the four schematics, including the preferred Scheme C, which was 55 feet and 3 stories, the tallest of the four. He stated that a scheme had not yet been decided on and that they were still required to receive approval by the School Committee, City Council, and the MSBA. Receiving relief from the height would remove height concerns from the state and potentially avoid delays.

Mr. Cosgrove questioned the proposed available open space and its use. Mr. McKenna voiced concern regarding the removal of the softball field. Mr. Gray clarified that open space use would be determined when one of the four schemes has been decided on, but more space would be available as opposed to what currently exists.

Mr. Gerald Bloomfield (1347 Edgell Road) voiced concern regarding the City's responsibilities in regards to due diligence because this is a Dover project. He questioned if abutters were notified. Mr. Ottaviani clarified that all abutters within 300 feet were notified as required by MGL Chapter 40A.

6. Exhibits

Submitted for the Board's deliberation were the following exhibits:

6.1. Application filed with the Building Official to construct a three-story structure, dated March 1, 2018.

6.2. Application for Hearing before the Zoning Board of Appeals filed with the City Clerk on March 16, 2018.

6.3. Planning Board comments, dated April 6, 2018.

6.4.' Board of Health comments, dated April 6, 2018.

6.5. Plan set entitled "Fuller Middle School – ZBA Variance Application Drawings" dated March 9, 2018 and including Existing Conditions Plan (C-1.0), Existing Conditions Plan (C-1.1), Existing Conditions Plan (C-1.2), Existing Conditions Plan (C-1.3), Site Plan Alternative – Scheme A, Site Plan Alternative – Scheme B, Site Plan Alternative – Scheme C, Site Plan Alternative – Scheme D, and Elevation Diagrams, prepared by Jonathan Levi Architects, 266 Beacon Street, Boston, MA 02116.

Exhibit 6.5 shall be hereinafter referred to as the "Plans".

7. Findings and Conclusions

Based upon its review of the Application, exhibits, and the public hearing thereon, the Board makes the following findings and conclusions:

7.1. The property is located within the Single Family Residence (R-1) zoning district.

7.2. On March 1, 2018, the Building Official denied the Application for the construction of a three-story structure exceeding height requirements under Section IV.E.2 of the Zoning By-Law.

7.3. On March 16, 2018 the Applicant filed with the City Clerk an Application for Hearing before the Zoning Board of Appeals for the purpose of obtaining a Variance from the Zoning By-Law.

7.4. Notice of the public hearing was duly published in "THE METROWEST DAILY NEWS" on March 26 and April 2, 2018 and mailed to all parties-in-interest, as defined by G.L. c. 40A, §11.

7.5. The maximum height in the R-1 zoning district is three stories and 35 feet. Variances are needed to allow additional height. The Petitioner proposes a 55-foot-tall school building comprised of three stories. Although the proposed project is subject to the Dover Amendment, MGL Chapter 40A, Section 3, states that educational uses cannot be unduly burdened by zoning, and the City can impose reasonable regulations concerning the bulk and height of structures and determining yard sizes, lot area, setbacks, open space, parking and building coverage requirements.

7.6. The Variance standard established by the G.L. c. 40A §10 and the Framingham Zoning By-Law is a demanding criterion. The Board must find that owing to circumstances relating to the soil conditions, shape, or topography of such land or structures, which especially affect such land or structures but do not affect generally the zoning district in which it is located, a literal enforcement of the provisions of the ordinance or by-law would involve substantial hardship, financial or otherwise, to the petitioner or appellant, and that desirable relief may be granted without substantial detriment to the public good and without nullifying or substantially derogating from the intent or purpose of such ordinance or by-law. Also, the circumstances under which a Variance may be granted are not unlimited.

7.7. There are circumstances relating to the soil conditions, shape, or topography of the land or structures for which the Variance is being sought. *The Board finds that this parcel is unique, in that the site is adjacent to three existing schools and ringed by wetlands.*

7.8. Owing to such circumstances, a literal enforcement of the provisions of this By-law would involve substantial hardship, financial or otherwise, to the petitioner. *The alternative of building on the existing footprint would be more costly and impose a financial hardship. Students would have to be moved during demolition and construction; the preferred alternative would allow the current school to remain in operation during construction.*

7.9. The desired relief may be granted without substantial detriment to the public good and without nullifying or substantially derogating from the intent and purpose of the By-Law or from the intent of the district in which the Variance is being sought. *Visually, the proposed building has the same impact as the Farley School which sits adjacent to Flagg Drive. The grant of a Variance for three stories/55 feet would not be detrimental to the public good, nor would the additional story derogate from the intent and purpose of the Bylaw.*

7.10. The Board grants these Variances with the following condition:

7.10.1. The proposed building shall be located and constructed as shown on the Plans. All of the proposed schemes are approved.

7.10.2. The maximum height shall be 55 feet.

7.11. This Decision applies only to the requested Variances. Other approvals or permits required by the By-Law, other governmental boards, agencies or bodies having jurisdiction, shall not be assumed or implied by this Decision.

7.12. If the rights authorized by these Variances are not exercised within one year of the date of grant of such Variances, such rights shall lapse. The Applicant may request an extension to the one-year period by submitting a written Application for extension prior to expiration of the one-year period. However, it is solely within the discretion of the Board to grant such an extension. An extension shall be for a period not to exceed six (6) months. If the Board fails to act on the request for extension within thirty days of the date of the requested extension, all rights authorized by these Variances shall lapse at the expiration of the one-year period. If the Variance lapses, such rights pertaining to the Variances may only be reestablished after notice and a new hearing pursuant to G.L. c. 40A, §10.

7.13. This Decision shall be recorded at (as appropriate) the Middlesex South District Registry of Deeds or District of the Land Court prior to the issuance of a Building Permit. A copy of the recorded or filed Decision certified by the Registry, and notification by the owner of the recording, including recording information, shall be furnished to the Board and the Building Official

7.14. The terms, conditions and provisions of this Decision shall run with the land and shall be binding upon the Applicant, its successors in interest and assigns, and shall be enforceable by the City of Framingham.

8. Appeals

Appeals, if any, shall be made pursuant to MGL, Ch. 40A, §17 and shall be filed within twenty (20) days after the date of filing this Decision with the City Clerk.

ZONING BOARD OF APPEALS

By: _____
Philip R. Ottaviani, Jr., Chairman

A TRUE COPY ATTEST
Valerie Mulvey
VALERIE MULVEY
CITY CLERK, FRAMINGHAM

Massachusetts School Building Authority

Funding Affordable, Sustainable, and Efficient Schools in Partnership with Local Communities

Module 3

Feasibility Study

January 2015

3.1.5 Site Development Requirements

In narrative form, the Designer shall describe in general terms project requirements related to site development to be considered during the preliminary and final evaluation of alternatives and submit an existing site plan(s) including, but not limited to:

- Structures and fences;
- Site access and circulation;
- Parking and paving;
- Code requirements;
- Zoning setbacks and limitations;
- Accessibility requirements;
- Easements;
- Wetlands and/or flood restrictions;
- Emergency vehicle access;
- Safety and security requirements;
- Utilities;
- Athletic fields and outdoor educational spaces; and
- Site orientation and other location considerations and issues.

3.1.6 Preliminary Evaluation of Alternatives

Based upon the Educational Program, Initial Space Summary, evaluation of existing conditions, and site development requirements, the District, working with its Designer, shall perform a preliminary evaluation of alternatives. To ensure that the Feasibility Study determines the most cost effective and educationally appropriate solution that can be supported by the community and the MSBA Board of Directors, it is imperative that the preliminary evaluation of alternatives is sufficiently comprehensive in scope to initially consider all possible solutions. Each alternative should satisfy significant components of the Educational Program, Standards, Policies and Guidelines of the MSBA to the extent feasible, unless specifically authorized in writing by the MSBA.

The Preliminary Evaluation of Alternatives should include at least the following:

- Analysis of school district student school assignment practices and available space in other schools in the district;
- Tuition agreements with adjacent school districts (per MGL c.70B §8);
- Rental or acquisition of existing buildings that could be made available for school use (per MGL c.70B §8);
- Code Upgrade Option that includes repair of systems and/or scope required for purposes of code compliance; with no modification of existing spaces or their function (Please note that the MSBA would support a Code Upgrade Option that fulfilled the significant components identified by the district in its Statement of Interest and was reported to support delivery of the district's educational program);
- Renovation(s) and/or addition(s) of varying degrees to the existing building(s); and
- Construction of new building and the evaluation of potential locations.

DRAFT

	Option 0.0 Repairs Only	Option A No Adult ESL Renovation/ Addition	Option B No Adult ESL New Construction - Tree Branch Larger Gym Full AC	Option C No Adult ESL New Construction - Folded Hands Larger Gym Full AC	Option D No Adult ESL New Construction - Butterfly Larger Gym Full AC
Total Project Cost	$130,856,319	$117,065,481	$110,646,204	$110,556,454	$111,403,682
Approximate MSBA Reimbursement	$35,326,539 - $41,265,971*	$48,625,786	$43,965,659	$43,971,508	$44,023,564
Approximate Cost to the City	**$95,529,780 - $89,590,348***	**$68,439,695**	**$66,680,545**	**$66,584,946**	**$67,380,118**

* Note: MSBA reimbursement limited to repair or replacement of Systems for code compliance up to overall square foot areas included in the MSBA's space guidelines

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Option 1 - November 6 Ballot Vote

June	City Solicitor drafts ballot question and submits to MSBA
June	MSBA approves ballot question
July	City Council votes to approve ballot question and submission to Secretary of State
August 1	Deadline for receipt of ballot question by Secretary of State
August 27	SBC votes to approve total project cost
August 29	SBC submits total project cost to MSBA
September 11	SBC votes to approve Schematic Design submission to MSBA
September 12	SBC submits Schematic Design submission to MSBA
September	City Council votes to appropriate total project cost and schedule ballot vote
October 31	MSBA Board votes to approve grant
November 6	Ballot vote to exclude debt

Pros:

- Ballot vote on established date
- City does not have to fund a special election
- Detail design work can commence in order to meet summer 2019 construction start and summer 2021 building completion

Cons:

- City Council vote for appropriation is before MSBA Board vote
- City Council vote for ballot language is before project cost finalized
- Short time between MSBA Board vote and ballot vote date to educate public

DRAFT

Option 2 - December 11 Ballot Vote

August 27	SBC votes to approve total project cost
August 29	SBC submits total project cost to MSBA
September	City Solicitor drafts ballot question and submits to MSBA
September	MSBA approves ballot question
September 11	SBC votes to approve Schematic Design submission to MSBA
September 12	SBC submits Schematic Design submission to MSBA
October	City Council votes to appropriate total project cost, approve ballot question and schedule ballot vote
October 31	MSBA Board votes to approve grant
December 11	Ballot vote to exclude debt

Pros:

- Ballot vote only for project
- City Council vote for ballot language is after project cost finalized
- Longer period of time between MSBA Board vote and ballot vote to educate public
- Detail design work can commence in order to meet summer 2019 construction start and summer 2021 building completion

Cons:

- City Council vote for appropriation is before MSBA Board vote
- City has to fund a special election

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Option 3 - Mid-January Ballot Vote

August 27	SBC votes to approve total project cost
August 29	SBC submits total project cost to MSBA
September 11	SBC votes to approve Schematic Design submission to MSBA
September 12	SBC submits Schematic Design submission to MSBA
October	City Solicitor drafts ballot question and submits to MSBA
October	MSBA approves ballot question
October 31	MSBA Board votes to approve grant
November	City Council votes to appropriate total project cost, approve ballot question and schedule ballot vote
Mid-January	Ballot vote to exclude debt

Pros:

- Ballot vote only for project
- City Council vote for appropriation is after MSBA Board vote
- City Council vote for ballot language is after project cost finalized
- Longer period of time between MSBA Board vote and ballot vote to educate public

Cons:

- City has to fund a special election
- Reduced time to complete detail design work may impact summer 2019 construction start and summer 2021 building completion

DRAFT

Option 4 – February Ballot Vote

August 27	SBC votes to approve total project cost
August 29	SBC submits total project cost to MSBA
September 11	SBC votes to approve Schematic Design submission to MSBA
September 12	SBC submits Schematic Design submission to MSBA
October	City Solicitor drafts ballot question and submits to MSBA
October	MSBA approves ballot question
October 31	MSBA Board votes to approve grant
November	City Council votes to appropriate total project cost, approve ballot question and schedule ballot vote
February	Ballot vote to exclude debt

Pros:

- Ballot vote only for project
- City Council vote for appropriation is after MSBA Board vote
- City Council vote for ballot language is after project cost finalized
- Longer period of time between MSBA Board vote and ballot vote to educate public

Cons:

- City has to fund a special election
- Not enough time for detail design work to meet summer 2019 construction start and summer 2021 building completion

Bulletin 08-02
Local Votes by communities who have been invited to enter into a Project Scope and Budget Agreement with the Massachusetts School Building Authority

Requirements for Warrant Articles, Motions, Orders and Votes

Pursuant to G.L. c. 70B and 963 CMR 2.10, the Massachusetts School Building Authority ("MSBA") issues this Bulletin to inform cities, towns, and regional school districts that have been invited to enter into a Project Scope and Budget Agreement with the MSBA of the requirements for warrant articles, motions, orders, and votes related to any potential projects that may be eligible for MSBA funding (collectively, "Projects")..

**** Please note that only those communities who have been invited by the MSBA to enter into a project scope and budget agreement with the MSBA should vote to authorize a project, and such vote should not occur until after the project scope and budget have been approved by the MSBA. Communities are urged to contact the MSBA before finalizing an article, motion, resolution, ballot question or other vote because there may be additional requirements depending on the particulars of your project. If a city, town or regional school district already has voted to authorize a project, please contact the MSBA immediately. The MSBA may require clarification of the vote or a new vote that meets the MSBA's requirements. Communities who have not been invited by the MSBA to enter into a project scope and budget agreement should not be voting to authorize a construction or renovation project at this time.**

Cities, towns and regional school districts that proceed with studying, planning, designing, renovating or constructing a school facility without the collaboration and approval of the MSBA will not be eligible for MSBA funding.

****Communities should consult with their local counsel and bond counsel to ensure that all warrant articles, motions, orders, and votes otherwise comply with municipal finance law and all other applicable laws, regulations, local bylaws, and ordinances.**

All articles, motions, resolutions, orders, Proposition two and one-half ballot questions, and any other votes of a city, town or regional school district related to the approval, funding, and/or debt authorization for a Project shall be a **separate, stand-alone vote, solely for purposes of the one Project**. The article, motion, resolution, order, vote and/or ballot question related to the Project must not pertain to or be bundled with any other school or municipal project. The article, motion, resolution, order, vote must be project specific and must include specific information about the project location and scope.

A city, town or regional school district must vote to appropriate and authorize the **full amount** of a Project's cost, including both the local share and the MSBA's share, if any. The total project budget amount must be authorized and approved.

All warrant articles, motions, resolutions, orders and votes, with the exception of a Proposition two and one-half ballot question (see below), must include the following provisions:

- A description of the site of the project, including the address of the school building and a description of the parcel.

- If a proposed renovation, addition, or new construction project, "the school facility shall have an anticipated useful life as an educational facility for the instruction of school children for at least 50 years, and for which the Town may be eligible for a school construction grant from the Massachusetts School Building Authority."

- If a proposed repair project, "The proposed repair project would materially extend the useful life of the school and preserve an asset that otherwise is capable of supporting the required educational program."

- "The MSBA's grant program is a non-entitlement, discretionary program based on need, as determined by the MSBA, and any project costs that the [City/Town/Regional School District] incurs in excess of any grant that may be received from the MSBA shall be the sole responsibility of the [City/Town/Regional School District]."

- For the debt authorization provision, the following language must be included: "the amount of borrowing authorized pursuant to the vote shall be reduced by any amounts received or expected to be received from the MSBA prior to the issuance of any bonds or notes under this vote."

A form of article, motion, order, vote is attached as "Attachment A," and a city, town or regional school district must use this form to qualify for MSBA funding.

Proposition Two and One-Half Ballot Questions

- All ballot questions for a Project must be solely related to that Project. One Project per vote. The ballot question related to the Project must not pertain to or be bundled with any other school or municipal projects.

A form of ballot question is attached as "Attachment B," and a city or town must use this form to qualify for MSBA funding.

Attachment A

ARTICLE

To see if the Town will vote to appropriate, borrow or transfer from available funds, a sum of money to be expended under the direction of the School Building Committee for [*Insert description of Project, including name of school, description of location, address*], which school facility shall have an anticipated useful life as an educational facility for the instruction of school children of at least 50 years, and for which the Town may be eligible for a school construction grant from the Massachusetts School Building Authority ("MSBA"). [*Alternatively, if a repair project*: The proposed repair project would materially extend the useful life of the school and preserve an asset that otherwise is capable of supporting the required educational program.] The MSBA's grant program is a non-entitlement, discretionary program based on need, as determined by the MSBA, and any project costs the Town incurs in excess of any grant approved by and received from the MSBA shall be the sole responsibility of the Town. Any grant that [*City/Town/Regional School District*] may receive from the MSBA for the Project shall not exceed the lesser of (1) _____ percent (%) of eligible, approved project costs, as determined by the MSBA, or (2) the total maximum grant amount determined by the MSBA.

MOTION/VOTE/ORDER

That the [*City/Town/Regional School District*] appropriate the sum of _____ ($_____) Dollars for [*Insert a description of the Project, including school name and location, scope of project*], which school facility shall have an anticipated useful life as an educational facility for the instruction of school children for at least 50 years [*Alternatively, if a repair project*: which proposed repair project would materially extend the useful life of the school and preserve an asset that otherwise is capable of supporting the required educational program.], said sum to be expended under the direction of the School Building Committee, and to meet said appropriation the [*Insert the appropriate local official or Board*], is authorized to borrow said sum under M.G.L. Chapter 44, or any other enabling authority; that the [*City/Town/Regional School District*] acknowledges that the Massachusetts School Building Authority's ("MSBA") grant program is a non-entitlement, discretionary program based on need, as determined by the MSBA, and any project costs the [*City/Town/Regional School District*] incurs in excess of any grant approved by and received from the MSBA shall be the sole responsibility of the [*City/Town/Regional School District*]; provided further that any grant that [*City/Town/Regional School District*] may receive from the MSBA for the Project shall not exceed the lesser of (1) _____ percent (%) of eligible, approved project costs, as determined by the MSBA, or (2) the total maximum grant amount determined by the MSBA; [provided that any appropriation hereunder shall be subject to and contingent upon an affirmative vote of the Town to exempt the amounts required for the payment of interest and principal on said borrowing from the limitations on taxes imposed by M.G.L. 59, Section 21C (Proposition 2½)]; and that the amount of borrowing authorized pursuant to this vote shall be reduced by any grant amount set forth in the Project Funding Agreement that may be executed between the [*City/Town/Regional School District*] and the MSBA.

Attachment B

BALLOT QUESTION

Shall the (City/Town) of _____ be allowed to exempt from the provisions of Proposition two-and-one-half, so called, the amounts required to pay for the bonds issued in order to [*Insert description of the Project*]?

Fuller Middle School - Community Forum #5

Please join us for a Community Meeting on Monday June 11th

TRANSLATORS WILL BE PROVIDED

Introduction

by Thatcher Kezer, COO, City of Framingham and Superintendent Dr. Robert Tremblay

Quick Recap

Catch up on what you might have missed:

- Project Schedule and Process
- Educational Needs & Vision
- Decision Process for Preferred Option

Review our Progress

The Preferred Design Option:

- Site Planning Update
- Building Design Update

Share Your Thoughts

If you cannot attend the Community Forum, submit your questions in advance to rsantos@framingham.k12.ma.us by June 8, 2018. The community forum will be broadcasted on Facebook Live at https://www.facebook.com/FraminghamPS.

Location:

Fuller Middle School Library

Date / Time:

Monday June 11th 6:00 - 8:00 PM,
Optional Fuller School Tour 5:30 PM

FOOD AND CHILD CARE WILL BE PROVIDED AT THE SCHOOL

FRAMINGHAM MASSACHUSETTS

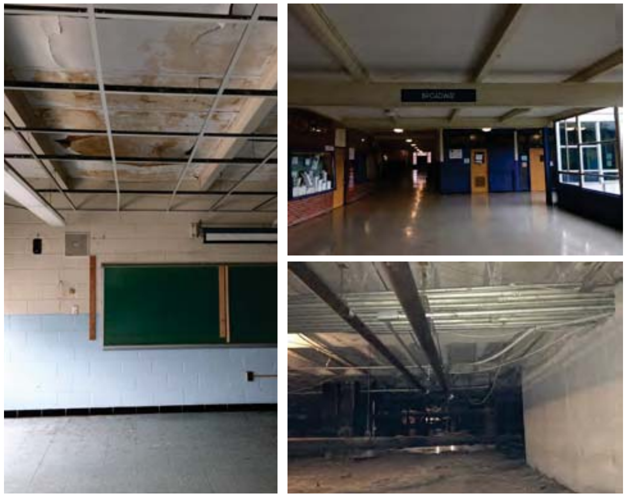
Framingham Public Schools

SMMA

Fuller Middle School
Framingham, Massachusetts

Community Outreach Engagement Schedule and Representation Signup

Date	Time	Location	Event	Volunteer	Notes
May 31	5 - 8pm	Dunning	Art Show	Donna	I can be there 5:15- 6:30
May 31	6:30 - 8pm	McCarthy	Band / Jazz Concert		
June 1	6 - 8pm	Stapleton	Talent Show		
June 3	1 - 3pm	Bowditch	FHS Graduation	Donna	Where do I park? Where will the table be?
June 4	5:30 - 7pm	Potter Road	School Picnic		
June 6	6:30 - 8pm	Wilson	5th Grade Exhibition		
June 7	6:30 - 8:30pm	Hemenway	Pride Night		
June 7	6:30 - 8pm	Walsh	Chorus Concert		
June 8	10am - 1:45pm	Walsh	Two-Way Graduation	Rochelle	
June 9	10am - 2pm	King	Fun Day and Jungle Run	Donna	(Rochelle attending, but not likely able to man the table)
June 13	9:45-10:45 AM	Wilson	Grade 5 Band Concert for Grades 3 and 4	Rochelle (If parents attend?)	
June 16	1-5 PM	Wilson	Spring Fest		
June 18	6-8 PM	Brophy	Family Fun Night		
June 21	TBD	Hemenway	Awards Night		
June 21	6-7 PM	Potter Road	Grade 5 Move Up Celebration		
June 21	TBD	Stapleton	5th Grade Graduation and End of Year Celebration		
June 21	6:30-8 PM	Brophy	5th Grade Completion Ceremony		
June 21	6:30 – 9 PM	Walsh	Cookout in Walsh Courtyard		
June 22	10 AM – 1:45 PM	Walsh	8th Grade Promotion Ceremony	Rochelle	
Google Docs:	https://docs.google.com/spreadsheets/d/1SAvAdhGkaqvs3HC43DJrUrSebX65NwgBTwWEr6_OUis/edit#gid=0				
	https://docs.google.com/spreadsheets/d/1SAvAdhGkaqvs3HC43DJrUrSebX65NwgBTwWEr6_OUis/edit?usp=sharing				



Current Building Condition

Introduction

Fuller Middle School is nearly 60 years old and has served the community well, but it no longer meets today's building codes. The building has structural □□□□□□□□□□□□□□□□□□□□□□□□□□ truly does not adequately support our educational curriculum. The Feasibility Study investigates the □□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□ appropriate solution.

Massachusetts School Building Authority (MSBA)

The MSBA is the state authority that administers and funds a program of grants for Massachusetts school projects. The MSBA mandates a multi-step rigorous approval process encompassed within the Feasibility Study and will provide Framingham a grant of up to 61.53% of the eligible design and construction costs plus incentives.

The School Building Committee (SBC)

The School Building Committee (SBC) was established in August 2016 and meets approximately every two weeks. The committee is made up of 25 members who discuss and vote on a series of topics aligned with the MSBA process. All committee members have a valuable skill set to aide with the project, a vested interest in the schools and community impact, and the best interest of our students.

What will the Project cost?

The approximate total project cost is $110.5 Million with the City's share after the grant from the MSBA estimated to be $66.5 Million.

The approximate average cost per year for the average residential tax payer is estimated to be $116 per year.

Next Steps

School Building Committee (SBC) meetings are every two weeks. Meetings and agendas are posted on the project website.

- June 11, 2018 - Community Forum #5 at Fuller Middle School Library.
- September 12, 2018 - Submit Schematic Design (SD) documents to MSBA.
- October 31, 2018 - MSBA Board meeting to approve project and bring to the City Council and voters.

Folded Hands Design Option

For information visit: www.fullerbuildingproject.com.

THE FULLER MIDDLE SCHOOL BUILDING PROJECT

May 2018

www.fullerbuildingproject.com

@framinghamps

The MSBA Process & Feasibility Study

The initial application for acceptance into the MSBA process commenced in November 2013 with the submission of the Statement of Interest (SOI) for the Fuller Middle School to the MSBA by the Selectmen and School Committee. After receiving a deferral from MSBA in 2015, which the MSBA reviewed and approved in May 2016 agreeing that a Feasibility Study should be undertaken on the Fuller Middle School. The Feasibility Study commenced in February 2017 and is a detailed report outlining the existing conditions, educational needs, community interest, options for building, and the cost outline, amongst other required information.

Is the current Fuller Middle School safe?

Fuller building so that it remains safe for student occupancy until a new building is constructed under the proposed multi-year schedule. While the Fuller building has reached the end of its useful life, the District is closely monitoring the structure and indoor air quality to ensure it is satisfactory at all times. Furthermore, the District engaged a structural engineer to determine the integrity of the building's foundation As a result, the district installed temporary in the maintenance services garage where vehicles are stored.

Why is now the right time to build?

Due to a slowly improving economy and competitive building climate, borrowing and construction costs are still at historic lows. These costs, however, are on the rise and a delay will increase project costs. <u>While we do have a commitment from MSBA for 61.53% reimbursement of eligible costs for this project, there is no guarantee of any level of State grant should the project not pass</u>. Additionally, simply repairing the existing building is more costly to the City than new construction and does not include any educational improvements which are required as part of the MSBA process.

The Chosen Design – Folded Hands Plan

The School Building Committee selected the Folded Hands design option as the preferred alternative. learning commons/cafeteria at the core surrounded by collaboration balconies fronting a perimeter of classrooms, an 8,300-square-foot gymnasium, 750-seat auditorium, and full-building air conditioning. Additionally, there will be space for Science, Technology, Engineering, Art, and Mathematics (STEAM) instructional areas.

Folded Hands Design Option

What happens if the project is approved by the voters?

The project is moved into the design development phase during which the design is further re ned. This is followed by the construction documents phase when the construction bid documents are prepared by the Architect. Construction would start in early 2020 with the new school completed for December break 2021 and then the demolition and parking lot work complete Summer 2022.

When will the City be voting to approve the project?

A City Council vote is anticipated in late Fall 2018 to approve the funding for the project. If required, a ballot vote to approve the exclusion of the costs from the so-called Proposition 2 ½ cap, would follow.

For answers to other questions regarding the impact during construction, academic focus, and more, please visit <u>www.fullerbuildingproject.com.</u>

What if the project is <u>not</u> approved by the voters?

- The City would risk the opportunity to receive millions of dollars in state grant funding to resolve the deteriorating conditions of the 60 year old Fuller Middle School.
- Voters would still have to spend over $131 million up to code. Doing this does not address educational programming. At that point, 100% of these costs would need to be paid by the voters.
- If the project is not approved, the City will need to submit a new SOI to the MSBA and await an invitation from the MSBA to enter the Eligibility Period phase of the MSBA's process. This would take years and in the meantime, we would need to use our own funds to repair the Fuller building - further delaying all other school projects.

What is a debt exclusion and why is a debt exclusion ballot vote required for the project?

Unlike an operating override which raises taxes over the 2 ½ levy limit forever, a debt exclusion has a time limit. Also a debt exclusion "override" can only be used to fund the cost of the debt for the project for which it is voted; in this case the Fuller School replacement. In this case a debt exclusion would be limited to twenty years – then this tax charge would be complete. The money raised in taxes could not continue; nor could it be used for any other project.

Why do we need to go outside the tax levy to fund this project?

If the City of Framingham was to pay for its share of the project, approximately $66.5 million, from the tax existing levy, there would be no other funding available to pay the debt for other City improvement and maintenance projects. This includes projects to repair and maintain other school buildings, repairing and paving roads and sidewalks. Additionally, the end period, the duration of the bond, in this case 20 years.

FAS Meeting

Educational Program Components Not Delivered in Option 0.0

- Classrooms remain undersized
- Outdated science rooms remain
- Dysfunctional teaching space relationships remain
- Inflexible teaching spaces remain
- Extreme distances between related spaces remain
- Security issues remain
- Outdated technology remains
- Unadaptable and inflexible classroom furnishings remain

FAS Meeting

Educational Program

- Diversity is our strength
- STEAM Education
- Guiding Principles

Building Design

- Compact Plan
- Secure Entrances
- Visible Learning
- Collaboration
- Neighborhood Cohorts

Cost

- Assess Reimbursement for Option 0.0 Repair Only

FULLER MIDDLE SCHOOL FEASIBILITY STUDY

June 4, 2018

Fuller School Building Committee

FAS Meeting

Educational Program Components Not Delivered in Option 0.0

- Visible Learning exists but is challenged by the layout
- Collaboration exists but is challenged by the layout
- Visual and functional connectedness not achieved
- Central Learning Commons not achieved
- Neighborhood Cohorts with integrated grade specific classes not achieved
- Cohort commons, breakout and seminar spaces not achieved
- Cohort distributed administration not achieved
- STEAM adjacencies not achieved
- Teacher prep spaces independent of classrooms not provided
- No Fabrication Lab provided

Preliminary Cost Analysis

	Option 0.0 Repairs Only	Option A No Adult ESL Renovation/ Addition	Option B No Adult ESL New Construction - Tree Branch Larger Gym Full AC	Option C No Adult ESL New Construction - Folded Hands Larger Gym Full AC	Option D No Adult ESL New Construction - Butterfly Larger Gym Full AC
Total Project Cost	$130,856,319	$117,065,481	$110,646,204	$110,556,454	$111,403,682
Approximate MSBA Reimbursement	$35,326,539 - $41,265,971*	$48,625,786	$43,965,659	$43,971,508	$44,023,564
Approximate Cost to the City	$95,529,780 - $89,590,348*	$68,439,695	$66,680,545	$66,584,946	$67,380,118

* Note: MSBA reimbursement limited to repair or replacement of Systems for code compliance up to overall square foot areas included in the MSBA's space guidelines

MSBA Facilities Assessment Subcommittee (FAS) Meeting Update

Comparison to Natick JFK Middle School

Demolition and Asbestos Abatement

Fuller existing building is 195,400 square feet, which is 70% larger than JFK

Fuller demolition and abatement cost is $4.2 million, 61% more than JFK

Escalation

Fuller is 10 months behind JFK

Comparison to Natick JFK Middle School and Marlborough Richer Elementary School

FAS Meeting

Educational Program Components Delivered in Option 0.0

- Auditorium remains, but smaller and adjacencies not ideal
- Large Gymnasium space remains
- Large Music Rooms remain, but adjacencies not ideal
- Maker Space remains, but mostly former woodshop and adjacencies not ideal

Comparison to Marlborough Richer Elementary School

Building

Fuller is a Middle School, Richer is an Elementary School

Fuller is 42,468 square feet larger than Richer

- 27% more Core Academic Space
- 53% more Physical Education Space
- Cohort Collaboration Spaces
- Fabrication and Maker Space Labs
- A 750 seat Auditorium

Site

Fuller site development area is 20.3 acres, which is 170% larger than Richer

Fuller site cost is $10.8 million, 140% more than Richer

Comparison to Natick JFK Middle School

Building

Fuller has 33% more square feet per student than JFK

- 39% more Core Academic Space
- 20% more Arts and Music Space
- 36% more Physical Education Space
- An Auditorium seating 750 versus 400

Site

Fuller site development area is 20.3 acres, which is 38% larger than JFK

Fuller site cost is $10.8 million, 25% more than JFK

FAS Meeting

Would MSBA reimbursement in the Repair-Only Option change its preference?

Would the SBC still select Option C as the Preferred Solution?

FIRST FLOOR PROGRESS PLAN

Comparison to Marlborough Richer Elementary School

Demolition and Asbestos Abatement

Fuller existing building is 195,400 square feet, Richer has no demolition

Fuller demolition and abatement cost is $4.2 million, Richer has no demolition or abatement cost

Escalation

Fuller is 7 months behind Richer

SECOND FLOOR PROGRESS PLAN

Upcoming Traffic Scope

Traffic Engineer to review and advise on:

- Construction Vehicle Routes
- Temporary Parking Layout at Fuller, Farley, and McCarthy
- Permanent Parking Layout at Fuller, Farley, and McCarthy
- Potential of alternative to restrict Flagg Drive Traffic

THIRD FLOOR PROGRESS PLAN

PROJECT MANAGEMENT SMMA

Fuller Middle School Feasibility Study
School Building Committee
June 4, 2018

SMMA

Project Management

Project Minutes

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	6/18/18
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library	Meeting No:	20
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
✓	David Miles	Co-Chair, City Resident with Experience in Finance	**Voting Member**
✓	Dr. Edward Gotgart	Co-Chair, FPS Chief Operating Officer	Non-Voting Member
	Mayor Spicer	Mayor, Chief Executive Officer	Non-Voting Member
	Thatcher Kezer III	Chief Operating Officer	Non-Voting Member
✓	Richard Finlay	School Committee Member and Convenor	**Voting Member**
✓	Adam Freudberg	Chair, School Committee	**Voting Member**
✓	Charlie Sisitsky	City Council Member	**Voting Member**
✓	Richard Weader II	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Michael Grilli	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Caitlin Stempleski	Fuller School Teacher and Co-Chair of the Union Professional Development Committee	**Voting Member**
✓	Dr. Jennifer Krusinger Martin	School Building Committee Member	**Voting Member**
✓	Donald Taggart III	City Resident/Retired Teacher	**Voting Member**
✓	Jennifer Pratt	Assistant Chief Financial Officer and SBC Member who is MCPPO certified	Non-Voting Member
✓	Dr. Robert Tremblay	Superintendent of Schools	Non-Voting Member
✓	Matt Torti	Director of Buildings and Grounds	Non-Voting Member
	Jose Duarte	Principal, Fuller Middle School	Non-Voting Member
✓	Anne Ludes	Director of Secondary Education	Non-Voting Member
✓	Mary Ellen Kelley	Chief Financial Officer and Local Budget official or member of Finance Committee	Non-Voting Member
✓	Michael Tusino	Certified Building Official	Non-Voting Member
	Patrick Johnson	Principal, Walsh Middle School	Non-Voting Member
	John Haidemenos	Principal, Woodrow Wilson Elementary School	Non-Voting Member
✓	David Panich	School Building Committee Member	Non-Voting Member
	Thomas Barbieri	School Building Committee Member	Non-Voting Member
✓	Dr. Dale Hamel	School Building Committee Member	Non-Voting Member
✓	Noval Alexander	School Committee Member	Non-Voting Member
	Heather Connolly	Former Chair of the School Committee	Non-Voting Member
✓	Jonathan Levi	JLA, Architect	
✓	Philip Gray	JLA, Architect	
✓	Lorraine Finnegan	SMMA, OPM	
✓	Joel Seeley	SMMA, OPM	

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Item #	Action	Discussion
20.1	Record	Call to Order, 7:00 PM, meeting opened.
20.2	Record	Public Comments - none
20.3	Record	A motion was made by A. Freudberg and seconded by R. Finlay to approve the 6/4/18 School Building Committee meeting minutes. No discussion, motion passed unanimously by those attending.
20.4	Record	J. Seeley distributed and reviewed Designer Amendment No. 10, dated 6/18/18 for Traffic Consulting Services in the amount of $10,835.00 to be funded out of the Environmental and Site Budget (MSBA ProPay Code 0003-0000), attached, which has a budget balance of $21,283.00. A motion was made by R. Finlay and seconded by C. Sisitsky to approve Designer Amendment No. 10, dated 6/18/18 and recommend signature by T. Kezer III. No discussion, motion passed unanimous.
20.5	Record	J. Seeley distributed and reviewed Warrant No. 7, attached. Committee Discussion: 1. C. Sisitsky asked if the City had charged a fee for the height variance process? *J. Seeley indicated no, the only charge was to record the approved variance at the Registry of Deeds.* A motion was made by R. Finlay and seconded by C. Sisitsky to approve Warrant No. 7. No discussion, motion passed unanimous.
20.6	J. Levi	J. Levi to develop a 30-year total cost of ownership comparison between the existing building and the new option.
20.7	J. Pratt	J. Pratt to update the contact information on the MSBA School Building Committee membership form and submit to MSBA.
20.8	J. Levi	J. Levi to review the Nurse Suite for more direct access and not having to traverse thru the administrative offices.
20.9	J. Levi	J. Levi to define how the service vehicle and dumpster area will be screened for smell and visual appearance.
20.10	P. Gray	P. Gray distributed and reviewed the Temporary Parking Counts meeting minutes, dated 5/31/18 and presented the updated nighttime and daytime Temporary Parking Count Needs and Layout for construction phases 1, 2 and 3, attached. The temporary parking count need is 500 spaces for both day and night, based on the Adult ESL program parking 100 cars off-site at the National Guard Armory and MassBay parking needs reducing to 150 spaces by the start of summer 2019. Committee Discussion: 1. C. Stempleski asked what is the pathway that the teachers would need to take from the parking lots to the Fuller school during each of the construction phases? *P. Gray will provide direction on the pathways at the next Committee meeting.*

		2. N. Alexander asked how will vehicles access the new permanent parking lot behind Farley during each of the construction phases? *P. Gray will review with the Traffic Consultant and provide direction at the July Committee meeting*. 3. J. Krusinger Martin asked if the Traffic Consultant will also review pedestrian and student walking routes for access and safety? *P. Gray indicated yes and he will review with the Traffic Consultant and provide direction at the July Committee meeting*. 4. D. Miles asked when will Massbay confirm that they can reduce their parking needs to 150 spaces by the start of summer 2019? *E. Gotgart indicated discussions with MassBay have commenced*. 5. D. Taggart III recommended a parking sticker program be enacted during construction for the Fuller, Farley and McCarthy parking lots to avoid confusion and potential disagreements. 6. A. Freudberg asked if the off site partner offering spots was the Massachusetts National Guard, and if so, we should think of the appropriate way to thank them for this partnership. *E. Gotgart indicated that yes it is the Massachusetts National Guard's Armory around the corner which will support this project by allowing the use of some of their parking spaces.*
20.11	Record	P. Gray distributed and reviewed the Geotechnical and Geo-environmental reports, attached, for the borings undertaken during the PSR phase.
20.12	Record	P. Gray distributed and reviewed the Educational Working Group meeting minutes, dated 5/31/18 attached.
20.13	P. Gray J. Seeley A. Ludes J. Duarte	J. Seeley distributed and reviewed the MSBA Review Comments on the PSR Submission, dated 6/7/18 and attached. P. Gray, J. Seeley, A. Ludes and J. Duarte are developing a response to the comments to be submitted to MSBA by 7/21/18. Committee Comments: 1. D. Miles encouraged Committee members to review the comments. 2. J. Seeley to include a review of the comments on the agenda for the next Committee meeting.
20.14	Record	J. Seeley distributed and reviewed a draft Scope Reductions Comparison, attached, that reflects the reduced project cost and cost to City for reducing 3 ELL classrooms and science rooms, consolidating the technology classroom with the fabrication lab and reducing the seminar rooms to comply with the MSBA utilization comments. Additionally, reducing the auditorium to 420 seats and the gymnasium to 6,500 net square feet are also included as options for the committee to review and potentially vote on at a future meeting. Committee Discussion:

1. B. Tremblay described the scope reductions and the importance of developing as cost effective project as possible. The gymnasium reduction could present a complication for a whole school gathering if the auditorium were likewise reduced.
2. R. Finlay asked if the auditorium and gymnasium could be positioned side-by-side, separated by an operable wall to allow for a whole school gathering utilizing both spaces?
   J. Levi will review and provide direction at the next Committee meeting.
3. D. Taggart III would like to have the tax impact calculated for these reductions.
   J. Seeley will review with M. Kelley.
4. D. Miles asked if reducing the 3 ELL classrooms and science rooms, consolidating the technology classroom with the fabrication lab and reducing the seminar rooms address all the space related comments in the MSBA review?
   P. Gray indicated yes these changes address all the space related comments.
5. D. Miles asked will DESE have an issue with providing less special education space than MSBA guidelines?
   P. Gray indicated there is a typographic error in the comment, the project includes more special education space than the MSBA guidelines.
6. C. Stempleski asked if some of the distributed cohort administrative space could be used for classrooms?
   A. Ludes indicated no, the intent of the distributed administrative spaces integrated within the student cohorts is to provide greater connection and oversight to the students.
7. R. Finlay asked if a general classroom could be used by ELL if needed?
   A. Ludes indicated yes, all the classrooms are of the same size and makeup.
8. R. Finlay asked if the MSBA related reduction was approved, would the education program still be met?
   A.Ludes indicated yes.
9. A. Freudberg stated that in his experience this type of back and forth with the MSBA is part of the natural progression of how projects are developed. He stated support for the realignment because FPS leadership is ok with the change having no impact to the educational vision planned, and asked specifically what is the staff recommendation for what we need to do in order to continue our strong, positive relationship with the MSBA?
   J. Seeley indicated that his recommendation is for the committee to vote tonight to support the proposed classroom reductions, resulting in $6 million in project savings, and delivering news of this change to the MSBA before next week's June 27th MSBA Board meeting.

A Motion was made by R. Weader II and seconded by M. Grilli to approve the MSBA related reductions. No discussion, motion passed 8 in favor and 1 against - with A.

		Freudberg, C. Sisitsky, R. Weader II, J. Krusinger Martin, D. Miles, M. Grilli, R. Finlay and D. Taggart III voting for and C. Stempleski voting against.
20.15	J. Seeley	J. Seeley reviewed the work of the Project Information Working Group and distributed and reviewed the Community Outreach Calendar. J. Seeley to forward the on-line version of the Community Outreach Calendar to the Committee for members to sign up to attend the events.
20.16	Record	Old or New Business – none
20.17	Record	Committee Questions - none
20.18	Record	Next **SBC Meeting: June 28, 2018 at 7:00 PM** at Fuller Middle School Library.
20.19	Record	A Motion was made by R. Finlay and seconded by M. Grilli to adjourn the meeting. No discussion, motion passed unanimous.

Attachments: Agenda, Designer Amendment No. 10, Warrant No. 7, Temporary Parking Counts meeting minutes, Geotechnical and Geo-environmental reports, Educational Working Group meeting minutes, MSBA Review Comments on the PSR Submission, draft Scope Reductions Comparison, Community Outreach Calendar, Powerpoint

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes.

1000 Massachusetts Avenue
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617.547.5400

www.smma.com

SMMA

Project Management

PROJECT MEETING SIGN-IN SHEET

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	6/18/2018
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library 31 Flagg Drive, Framingham, MA	Meeting No:	20
Distribution:	Attendees, (MF)		

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
✓	David Miles	dmiles@partners.org	Co-Chair, School Building Committee, City Resident with experience in Finance
	Dr. Edward Gotgart	egotgart@framingham.k12.ma.us	Co-Chair and FPS Chief Operating Officer
	Yvonne M. Spicer	mayorspicer@framinghamma.gov	Mayor, City of Framingham
	Thatcher Kezer, III	tkezer@framinghamma.gov	Chief Operating Officer, Mayoral Designee
	Richard Finlay	rfinlay@wellesleyma.gov	School Committee Member and Convenor
	Adam Freudberg	afreudberg@framingham.k12.ma.us	Chair of School Committee
	Charlie Sisitsky	csisitsky@rcn.com	Local Chief Executive Officer
	Richard Weader, II	weaders@aol.com	Member of community with architecture, engineering and/or construction experience
	Michael Grilli	mgrilli@beta-inc.com	Member of community with architecture, engineering and/or construction experience
	Caitlin Stempleski	cstempleski@framingham.kl2.ma.us	Fuller School Teacher and Co-Chair of the Union Professional Development Committee
	Dr. Jennifer Krusinger Martin	jkrusinger@gmail.com	School Building Committee Member
	Donald Taggart III	dontaggart134@gmail.com	City Resident / Retired Teacher
	Jennifer Pratt	jap@framinghamma.gov	Assistant Chief Financial Officer and SBC Member who is MCPPO certified, City of Framingham
	Dr. Robert Tremblay	rtremblay@framingham.k12.ma.us	Superintendent of Schools
✓	Matt Torti	mtorti@framingham.k12.ma.us	Director of Buildings and Grounds
	Jose Duarte	jduarte@framingham.k12.ma.us	Principal, Fuller Middle School
	Anne Ludes	aludes@framingham.k12.ma.us	Director of Secondary Education, Framingham Public Schools
	Mary Ellen Kelley, CFO	mek@framinghamma.gov	Chief Financial Officer and Local Budget official
	Michael Tusino	mat@framinghamma.gov	Certified Building Official

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

Project: Fuller Middle School Feasibility Study
Meeting Date: June 18, 2018
Meeting No.: 20

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	Patrick Johnson	pjohnson@framingham.kl2.ma.us	Principal, Walsh Middle School
	John Haidemenos	jhaidemenos@framingham.k12.ma.us	Principal, Woodrow Wilson Elementary School
	David Panich	david@panicharchitecture.com	School Building Committee Member
	Thomas Barbieri	Thombrbr@aol.com	School Building Committee Member
	Dr. Dale Hamel	dhamel@framingham.edu	School Building Committee Member
	Noval Alexander	n.alexander@framingham.k12.ma.us	School Committee Member
	Heather Connolly	heatheratconnolly@comcast.net	Former Chair of School Committee
✓	Jonathan Levi	jlevi@leviarc.com	Jonathan Levi Architects (JLA)
✓	Philip Gray	pgray@leviarc.com	Jonathan Levi Architects (JLA)
	Joel Seeley	jseeley@smma.com	SMMA

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Agenda

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Re:	School Building Committee Meeting	Meeting Date:	6/18/2018
Meeting Location:	Fuller Middle School Library	Meeting Time:	7:00 PM
Prepared by:	Joel G. Seeley	Meeting No.	20
Distribution:	Committee Members (MF)		

1. Call to Order
2. Public Comments
3. Approval of Minutes
4. Approval of Invoices and Commitments
5. Review Updated Parking Plan
6. Review MSBA Comments on PSR Submission
7. Review Project Cost
8. Project Information Working Group Update
9. Old or New Business
10. Committee Questions
11. Next Meeting: June 28, 2018
12. Adjourn

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DRAFT

	Option C	Less 3 ELL CR and Science Rooms, Tech CR and Seminar Rooms	Less 3 ELL CR and Science Rooms, Tech CR and Seminar Rooms and Reduce Auditorium to 420 seats	Less 3 ELL CR and Science Rooms, Tech CR and Seminar Rooms, Reduce Auditorium to 420 seats and Reduce Gymnasium to 6,500 NSF
	153,905 SF	141,740 SF	136,790 SF	134,090 SF
Total Project Cost	$110,556,454	$104,546,335	$101,265,723	$99,483,619
Approximate MSBA Reimbursement	$43,971,508	$40,904,374	$39,885,414	$39,331,245
Approximate Cost to the City	**$66,584,946**	**$63,641,961**	**$61,380,309**	**$60,152,374**
Approximate Cost to City Incremental Decrease		-$2,942,985	-$2,261,652	-$1,227,935
Approximate Cost to City Cumulative Decrease				**-$6,432,572**

Massachusetts School Building Authority

Deborah B. Goldberg
Chairman, State Treasurer

James A. MacDonald
Chief Executive Officer

John K. McCarthy
Executive Director / Deputy CEO

June 7, 2018

The Honorable Dr. Yvonne M. Spicer, Mayor
City of Framingham
150 Concord Street, Room 121
Framingham, MA 01702

Re: City of Framingham, Fuller Middle School

Dear Mayor Spicer:

The Massachusetts School Building Authority (the "MSBA") is forwarding review comments for the Module 3 Feasibility Study Preferred Schematic Report submission for the Fuller Middle School project, received by the MSBA on May 9, 2018.

Responses to the attached comments shall be forwarded to the assigned Project Coordinator, Allison Jones (Allison.Jones@MassSchoolBuildings.org), through the Owner's Project Manager. Please review and return responses within 14 days of receipt of this letter.

If you have any questions or comments, please do not hesitate to contact Fenton Bradley (Fenton.Bradley@MassSchoolBuildings.org).

Sincerely,

Mary Pichetti
Director of Capital Planning

Attachments:
Attachment 'A' Preferred Schematic Report Review Comments
Attachment 'B' Preferred Schematic Report Space Summary Review Comments

Cc: Legislative Delegation
Dennis L. Giombetti, Chair, City Councilor
Jennifer A. Pratt, Assistant Chief Financial Officer, City of Framingham
Adam Freudberg, Chair, Framingham School Committee

Dr. Robert A. Tremblay, Superintendent, Framingham Public Schools
Dr. Frank Tiano, Assistant Superintendent for Community Development and Engagement, Framingham Public Schools
Nancy Piasecki, Executive Director of the Office of the Superintendent, Framingham Public Schools
Matthew Torti, Director of Buildings and Grounds, Framingham Public Schools
Carol Brodeur, Executive Assistant, Office of Building and Grounds, Framingham Public Schools
Joel G. Seeley, Owner's Project Manager, Symmes Maini & McKee Associates
Jonathan Levi, Jonathan Levi Architects, LLC
File: 10.2 Letters (Region 4)

ATTACHMENT A
MODULE 3 – PREFERRED SCHEMATIC REPORT REVIEW COMMENTS

District: City of Framingham
School: Fuller Middle School
Owner's Project Manager: Symmes Maini & McKee Associates, Inc.
Designer Firm: Jonathan Levi Architects, LLC
Submittal Due Date: May 9, 2018
Submittal Received Date: May 9, 2018
Review Date: May 9- June 5, 2018
Reviewed by: F. Bradley, C. Alles, J. Jumpe

MSBA REVIEW COMMENTS

The following comments[1] on the Preferred Schematic Report submittal are issued pursuant to a review of the project submittal document for the proposed project presented as a part of the Feasibility Study submission in accordance with the MSBA Module 3 Guidelines.

3.3 PREFERRED SCHEMATIC REPORT

Overview of Preferred Schematic Submittal	Complete	Provided; *Refer to comments following each section*	Not Provided; *Refer to comments following each section*	Receipt of District's Response; *To be filled out by MSBA Staff*
OPM Certification of Completeness and Conformity	☒	☐	☐	☐
Table of Contents	☒	☐	☐	☐
3.3.1 Introduction	☐	☒	☐	☐
3.3.2 Evaluation of Existing Conditions	☒	☐	☐	☐
3.3.3 Final Evaluation of Alternatives	☒	☐	☐	☐
3.3.4 Preferred Solution	☐	☒	☐	☐
3.3.5 Local Actions and Approval Certification	☒	☐	☐	☐

[1] The written comments provided by the MSBA are solely for purposes of determining whether the submittal documents, analysis process, proposed planning concept and any other design documents submitted for MSBA review appear consistent with the MSBA's guidelines and requirements, and are not for the purpose of determining whether the proposed design and its process may meet any legal requirements imposed by federal, state or local law, including, but not limited to, zoning ordinances and by-laws, environmental regulations, building codes, sanitary codes, safety codes and public procurement laws or for the purpose of determining whether the proposed design and process meet any applicable professional standard of care or any other standard of care. Project designers are obligated to implement detailed planning and technical review procedures to effect coordination of design criteria, buildability, and technical adequacy of project concepts. Each city, town and regional school district shall be solely responsible for ensuring that its project development concepts comply with all applicable provisions of federal, state, and local law. The MSBA recommends that each city, town and regional school district have its legal counsel review its development process and subsequent bid documents to ensure that it is in compliance with all provisions of federal, state and local law, prior to bidding. The MSBA shall not be responsible for any legal fees or costs of any kind that may be incurred by a city, town or regional school district in relation to MSBA requirements or the preparation and review of the project's planning process or plans and specifications.

3.3.1 INTRODUCTION

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Overview of the process undertaken since submittal of the Preliminary Design Program that concludes with submittal of the Preferred Schematic Report, including any new information and changes to previously submitted information	☒	☐	☐	☐
2	Summary of updated project schedule, including				
	a) Projected MSBA Board of Directors Meeting for approval of Project Scope and Budget Agreement	☒	☐	☐	☐
	b) Projected Town/City vote for Project Scope and Budget Agreement	☒	☐	☐	☐
	c) Anticipated start of construction	☒	☐	☐	☐
	d) Target move in date	☒	☐	☐	☐
3	Summary of the final evaluation of existing conditions	☒	☐	☐	☐
4	Summary of final evaluation of alternatives	☐	☒	☐	☐
5	Summary of District's preferred solution	☒	☐	☐	☐
6	A copy of the MSBA Preliminary Design Program project review and corresponding District response	☒	☐	☐	☐

MSBA Review Comments:

4) Although a detailed "Concept Options Evaluation Matrix" was included, it is noted that subsequent to receiving this submittal, the MSBA requested additional information that further describes and summarizes the Final Evaluation of Options. Information was requested for each option identified in the preferred schematic phase including a detailed narrative that clearly documents the reason(s) why each option was eliminated from further consideration. Please acknowledge.

No further review comments for this section.

3.3.2 EVALUATION OF EXISTING CONDITIONS

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	A narrative of any changes resulting from new information that informs the conclusions of the evaluation of the existing conditions and its impact on the final evaluation of alternatives	☒	☐	☐	☐

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
2	If changes are substantive, provide an updated Evaluation of Existing Conditions and identify as final. Identify additional testing that is recommended during future phases of the proposed project and indicate when the investigations and analysis will be completed	☒	☐	☐	☐

MSBA Review Comments:

No review comments for this section.

3.3.3 FINAL EVALUATION OF ALTERNATIVES

Include at least three potential alternatives, with at least one renovation and/or addition option. Include the following for each alternative where appropriate:

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	An analysis of each prospective site including:				
	a) Natural site limitations	☒	☐	☐	☐
	b) Building footprint(s)	☒	☐	☐	☐
	c) Athletic fields	☒	☐	☐	☐
	d) Parking areas and drives	☒	☐	☐	☐
	e) Bus and parent drop-off areas	☒	☐	☐	☐
	f) Site access and surrounding site features.	☒	☐	☐	☐
2	Evaluation of the potential impact that construction of each option will have on students and measures recommended to mitigate impact	☒	☐	☐	☐
3	Conceptual architectural and site drawings that satisfy the requirements of the education program	☒	☐	☐	☐
4	An outline of the major building structural systems	☒	☐	☐	☐
5	The source, capacities, and method of obtaining all utilities	☒	☐	☐	☐
6	A narrative of the major building systems	☒	☐	☐	☐
7	A proposed total project budget and a construction cost estimate using the Uniformat II Elemental Classification format (to as much detail as the drawings and descriptions permit, but no less than Level 2)	☒	☐	☐	☐
8	Permitting requirements and associated approval	☒	☐	☐	☐

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
	schedule				
9	Proposed project design and construction schedule including consideration of phasing	☒	☐	☐	☐
10	Completed Table 1 – MSBA Summary of Preliminary Design Pricing spreadsheet	☒	☐	☐	☐

MSBA Review Comments:

No further review comments for this section.

3.3.4 PREFERRED SOLUTION

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Educational Program				
	a) Summary of key components and how the preferred solution fulfills the educational program	☐	☒	☐	☐
	b) Design responses including desired features and/or layout considerations	☒	☐	☐	☐
	c) Proposed variances to, and benefits of, any changes to the current grade configuration (if any) and a related transition plan	☐	☐	☐	☐
2	Preferred Solution Space Summary				
	a) Updated MSBA Space Summary spreadsheet	☐	☒	☐	☐
	b) Itemization and explanation of variations from the initial space summary (and MSBA review) included in the Preliminary Design Program	☒	☐	☐	☐
3	Preliminary NE-CHPS or LEED-S scorecard	☐	☒	☐	☐
4	Conceptual floor plans of the preferred solution, in color that are clearly labeled to identify educational spaces	☒	☐	☐	☐
5	Clearly labeled site plans of the preferred solution including, but not limited to:				
	a) Structures and boundaries	☒	☐	☐	☐
	b) Site access and circulation	☒	☐	☐	☐
	c) Parking and paving	☒	☐	☐	☐
	d) Zoning setbacks and limitations	☒	☐	☐	☐

Provide the following Items		Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
	e) Easements and environmental buffers	☐	☒	☐	☐
	f) Emergency vehicle access	☒	☐	☐	☐
	g) Safety and security features	☒	☐	☐	☐
	h) Utilities	☐	☐	☒	☐
	i) Athletic fields and outdoor educational spaces (existing and proposed)	☐	☒	☐	☐
	j) Site orientation	☒	☐	☐	☐
6	An overview of the Total Project Budget and local funding including the following:				
	a) Estimated total construction cost	☐	☒	☐	☐
	b) Estimated total project cost	☐	☒	☐	☐
	c) Estimated funding capacity	☒	☐	☐	☐
	d) List of other municipal projects currently planned or in progress	☒	☐	☐	☐
	e) District's not-to-exceed Total Project Budget	☒	☐	☐	☐
	f) Brief description of the local process for authorization and funding of the proposed project	☒	☐	☐	☐
	g) Estimated impact to local property tax, if applicable	☒	☐	☐	☐
	h) Completed MSBA Budget Statement	☐	☒	☐	☐
7	Updated Project Schedule including the following projected dates:				
	a) Massachusetts Historical Commission Project Notification Form	☒	☐	☐	☐
	b) MSBA Board of Directors meeting for approval to proceed into Schematic Design	☒	☐	☐	☐
	c) MSBA Board of Directors meeting for approval of project scope and budget agreement and project funding agreement	☒	☐	☐	☐
	d) Town/City vote for project scope and budget agreement	☒	☐	☐	☐
	e) Design Development submittal date	☒	☐	☐	☐
	f) MSBA Design Development Submittal Review (include required 21-day duration)	☒	☐	☐	☐
	g) 60% Construction Documents submittal date	☒	☐	☐	☐
	h) MSBA 60% Construction Documents Submittal Review (include required 21-day duration)	☒	☐	☐	☐
	i) 90% Construction Documents submittal date	☒	☐	☐	☐

Provide the following Items		Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
	j) MSBA 90% Construction Documents Submittal Review (include required 21-day duration)	☒	☐	☐	☐
	k) Anticipated bid date/GMP execution date	☒	☐	☐	☐
	l) Construction start	☒	☐	☐	☐
	m) Move-in date	☐	☐	☒	☐
	n) Substantial completion	☒	☐	☐	☐

MSBA Review Comments:

1a) The submittal indicates the District may develop a new school scheduling method as the school transitions to a S.T.E.A.M. model. Please note that modifying the school scheduling method may change the building's utilization rate. In response to these review comments, please list alternative scheduling methods that may be proposed as the school transitions to a S.T.E.A.M. model.

The information provided also indicates that the nine ELL classrooms and nine science classrooms proposed by the District will be occupied for classroom instruction four out of the six scheduling blocks. It appears that based on the information provided, this may result in a utilization rate of 66% for these spaces. The MSBA notes that the overall utilization associated with the proposed program is approximately 64% inclusive of academic classrooms, art room, and the three vocations and technology spaces. Further, if one of two gym stations and one of the two music rooms is in use, and a class is conducting research in the media center, then the overall utilization drops below 60%. Please note the MSBA targets an overall utilization rate of 85%. Please seek additional opportunities to increase efficiencies by reducing the overall number of classrooms; and increase flexibility and utilization by furnishing 'Maker Space' features into the science classrooms and reducing project areas in the common areas by providing larger science classrooms; in addition, indicate the average class sizes that will be anticipated for the English Second Language and Transitional Bilingual Education classes.

2a) Please refer to detailed comments in "Attachment B". Additionally, MSBA staff has updated its space summary template to include a new section titled Non-Programmed Spaces, which includes the following categories:

- *Other occupied rooms;*
- *Unoccupied MEP spaces;*
- *Unoccupied closets, supply rooms, and storage rooms;*
- *Toilet rooms;*
- *Circulation, which includes: corridors, stairs, ramps, and elevators; and*
- *Remaining areas, which includes exterior walls, interior partitions, chases, and other areas not listed above.*

Areas associated with the 'non-programmed spaces' are required for schematic design and all subsequent submittals that include a space summary. Please see Project Advisory 52 for additional information. Please acknowledge.

3) The submittal indicates a total goal of 43 credits using USGBC LEED-V4, including 6 credits in the Energy & Atmosphere "Optimize Energy Performance" category. Note that 43 points in LEED-V4

reaches the minimum required for all MSBA core projects. The proposed credits in 'Optimize Energy' are below the apparent threshold to achieve the minimum requirements (exceeding code by 20%) required applying additional (provisional) incentives to the District's reimbursement rate, additional information is required. If the District intends that MSBA provide a grant that includes the 2% additional reimbursement in the following project Scope and Budget phase of the study, please provide detailed information that illustrates how the minimum thresholds intend to be achieved.
Refer to MSBA Project Advisory #41"Update to the MSBA's Sustainable Building Design Policy" for more information. Acknowledge and confirm the District's intent and that the proposed project will be designed to meet or exceed the criteria set forth in project Advisory #41.
5e) In response to these review comments, please confirm whether or not easements exist on the site that may impact further site development for a potential project.
5h) Not provided. Please submit.
5i) Provide information associated with the proposed outdoor education spaces in subsequent submissions. Please acknowledge.
6a, b) Subsequent to receiving this submittal, the MSBA requested additional information associated with the increased estimated project costs from the Preliminary Design Program (PDP) phase to the Preferred Schematic Report (PSR) phase, including, but not limited to a high level description and summary of any changes in project scope, square footage, and site development. It is noted MSBA received the requested information on May 18, 2018 by email. Please incorporate this information as part of the response to these review comments.
6h) A budget statement was included with this submittal; however the post-construction budget column has not been completed. Please complete and submit to MSBA.
7m) Not provided. Please submit.

No further review comments for this section.

3.3.5 LOCAL ACTIONS AND APPROVALS

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Certified copies of the School Building Committee meeting notes showing specific submittal approval vote language and voting results, and a list of associated School Building Committee meeting dates, agenda, attendees and description of the presentation materials.	☒	☐	☐	☐
2	Signed Local Actions and Approvals Certification(s):				
	a) Submittal approval certificate	☒	☐	☐	☐
	b) Grade reconfiguration and/or redistricting approval certificate (if applicable)	☐	☐	☐	☐
3	Provide the following to document approval and public notification of school configuration changes associated with the proposed project:				

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
	a) A description of the local process required to authorize a change to the existing grade configuration or redistricting in the district	☐	☐	☐	☐
	b) A list of associated public meeting dates, agenda, attendees and description of the presentation materials	☐	☐	☐	☐
	c) Certified copies of the governing body (e.g. School Building Committee) meeting notes showing specific grade reconfiguration and/or redistricting, vote language, and voting results if required locally	☐	☐	☐	☐
	d) A certification from the Superintendent stating the District's intent to implement a grade configuration or consolidate schools, as applicable. The certification must be signed by the Chief Executive Officer, Superintendent of Schools, and Chair of the School Committee.	☐	☐	☐	☐

MSBA Review Comments:

No review comments for this section.

- *The MSBA offers the following information to assist the District and its Owner's Project Manager in completing the total project budget template that is required as part of its Schematic Design submittal.*

    - *The MSBA issues project advisories from time to time, as informational updates for Districts, Owner's Project Managers ("OPM"), and Designers in an effort to facilitate the efficient and effective administration of proposed projects currently pending review by the MSBA. The advisories can be found on the MSBA's website. In response to these review comments, please confirm that the District's consultants have reviewed all project advisories and they have been incorporated into the proposed project as applicable.*
    - *The PSR indicates District is targeting MSBA approval of its proposed project scope and budget at the October board meeting. The District's reimbursement rate before incentives for calendar year 2018 is 57.83%. Please note that the MSBA updates District reimbursement rates annually and applies the reimbursement in effect at the time the MSBA Board of Directors approves a District's proposed project scope and budget. The reimbursement rate is established based on statutory requirements and information provided by the Department of Revenue and the Department of Elementary and Secondary Education and is non-negotiable.*

- *Maintenance (0-2) – 1.48% This value is based on MSBA review of district provided materials regarding routine and capital maintenance programs during Eligibility Period at which time the value is finalized.*
- *CM@Risk (0 or 1) – 1.00%. Because the District was invited to the MSBA Capital Pipeline before January 2, 2017 it would be eligible to conditionally receive one incentive point subject to the approval of the Office of the Inspector General for the District's use of the Construction Manager at Risk construction delivery method for the Proposed Project and that the District actually used that construction delivery method for the Proposed Project.*
- *Newly Formed Regional School District (0-6) – The District is not a newly formed or expanded regional school district as a result of working with the MSBA, therefore these incentive points do not apply.*
- *Major Reconstruction or Reno/Reuse (0-5) – The District's preferred solution is for new construction therefore these incentive points do not apply.*
- *Overlay Zoning 40R & 40S (0 or 1) – Refer to Module 4, appendix 4E to review documentation requirements and to determine if this incentive point may be applicable. Please note that required authorizations must be documented prior to MSBA approval of the District's proposed project scope and budget to be eligible to receive this incentive point.*
- *Overlay Zoning 100 units or 50% of units for 1, 2 or 3 family structures (0 or 0.5) – Refer to Module 4, appendix 4E to review documentation requirements and to determine if this incentive point may be applicable. Please note that required authorizations must be documented prior to MSBA approval of the District's proposed project scope and budget to be eligible to receive this incentive point.*
- *Energy Efficiency – "Green Schools" (0 or 2) – The PSR indicates the District's intent to achieve the 2% additional reimbursement through the MSBA Green School Program. Please note, subject to the District's intention to meet certain energy efficiency sustainability requirements for the Proposed Project, the MSBA will provisionally include two (2) incentive points, however if the District does not ultimately qualify for some or all of these incentive points the MSBA will adjust the District's reimbursement rate, accordingly.*
- *The District must include negotiated costs for OPM and Designer fees for the remainder of the project as part of their Total Project Budget. In response to these review comments, please confirm that the District and its consultants will negotiate fees for the remainder of the project that are to be included in the District's Schematic Design documents to the MSBA.*

- *Please refer to MSBA's email dated June 1, 2018 regarding discussion at the Facilities Assessment Subcommittee meeting on May 23, 2018.*

End

MEMORANDUM

TO:	Board of Directors, Massachusetts School Building Authority
FROM:	Maureen G. Valente, Chief Executive Officer John K. McCarthy, Executive Director, Deputy Chief Executive Officer
SUBJECT:	Staff Recommendation for policy revisions to allow for auditorium and gymnasium spaces in excess of the MSBA Space Summary Guidelines at the district's sole expense
DATE:	November 2, 2016

Based upon review of project data and discussions with the Board of Directors, staff is recommending a policy revision to the Massachusetts School Building Authority (the "MSBA") space guidelines specifically for Auditorium and Gymnasium related spaces that are in excess of those included in the MSBA space summary guidelines.

Background

Based on project reviews in late fall 2015, the Board of Directors requested that staff provide information regarding the potential to revise the policies for space guidelines to allow for requests by districts for spaces in excess of the MSBA's guidelines at the district's sole expense. Staff presented an overview of current policies and practices at the March 16, 2016 Board of Directors meeting and followed with additional information regarding potential revisions at the March 30, 2016 Board of Directors meeting.

Based on the discussions and input received from the Board members, staff has prepared a Potential Revised Policy, included as Attachment A, which will allow districts to include spaces in excess of the MSBA's space summary guidelines at the district's sole expense for two program areas: auditorium and gymnasium. Staff has received favorable feedback regarding this proposed revision to the MSBA's policies, and as noted at the September 29, 2016 Board of Directors meeting and further reviewed at the October 19, 2016 Facilities Assessment Subcommittee meeting, staff have prepared this recommendation to revise the MSBA's policy for the Board of Directors approval.

Recommendation

Specific details are set forth in Attachment A: Potential Revised Policy – Auditorium and Gymnasium spaces above guidelines requested to support community use at district's sole expense.

Key features of the policy revision include:

- Areas in excess of the MSBA guidelines will be at the sole expense of the district;
- Community support must be demonstrated prior to MSBA approval of a district's proposed project scope and budget;
- The MSBA will exclude from its grant the cost of the total gross square foot ("gsf") above guidelines for these areas as shown below in the sample calculation. This amount will not change over the term of the grant even if the bids come in at a lower amount.

- High Schools:
    - Upper limits on allowable nsf in excess of guidelines include:
        - The district may choose to build an auditorium in excess of MSBA guidelines, but no more than 13,300 net square foot ("nsf") (based upon an upper limit of 1,000 seats). The MSBA funding limit will vary depending on the agreed-upon design enrollment but will not exceed 10,400 nsf; and
        - The district may choose to build a gymnasium and related spaces in excess of MSBA guidelines, but in no event shall the gymnasium exceed 18,000 nsf. The MSBA will participate in a gymnasium of up to 12,000 nsf unless adjusted by the MSBA to increase teaching stations for enrollment and/or the educational plan.

- Middle Schools/Elementary Schools:
    - Upper limits on allowable nsf in excess of guidelines include:
        - The district may choose to build an auditorium even though the MSBA space guidelines do not include an auditorium and no portion of the design and construction of an auditorium will be reimbursed, including the stage, regardless of whether the district chooses not to include a stage in its cafetorium or gymnasium. If the district chooses to build an auditorium, the auditorium cannot be larger than 13,300 nsf; and
        - The district may choose to build a gymnasium and related spaces in excess of MSBA guidelines, but in no event shall the gymnasium itself exceed 12,000 nsf. The MSBA will participate in a gymnasium up to no more than 6,000 nsf, unless adjusted by the MSBA to increase teaching stations for enrollment and/or the education plan.

- Sample Calculation for Auditorium space in a high school in excess of guidelines at the district's sole expense:

Total net square footage (nsf) requested by the District	13,300 nsf
Total nsf for Auditorium Category allowed as eligible by MSBA space guidelines	10,400 nsf
Excess net square footage equals District request minus net	2,900 nsf

square footage allowable by MSBA space guidelines	
Gross square foot (gsf) exclusion = Excess net square feet times the project's grossing factor. For illustration purposes, project's sample grossing factor is 1.5	2,900 nsf x 1.5 = 4,350 gsf
Total cost of exclusion = Gross square foot times the project's total construction cost/square foot. For illustration purposes, project's total construction cost/square foot is $375 per square foot.	4,350 gsf x $375/gsf = $1,631,250
Total cost of exclusion	$1,631,250

Recommendation

MSBA staff is recommending a policy revision to the MSBA space guidelines specifically for Auditorium and Gymnasium related spaces that are in excess of those included in the MSBA space summary guidelines. This recommendation would be effective for districts that are approved to proceed into schematic design on or after January 1, 2017.

ATTACHMENT B
MODULE 3 – PREFERRED SCHEMATIC SPACE SUMMARY REVIEW

District: City of Framingham
School: Fuller Middle School
Owner's Project Manager: Symmes Maini & McKee Associates, Inc.
Designer Firm: Jonathan Levi Architects, LLC
Submittal Due Date: May 9, 2018
Submittal Received Date: May 9, 2018
Review Date: May 9- June 5, 2018
Reviewed by: F. Bradley, C. Alles, J. Jumpe

The Massachusetts School Building Authority (the "MSBA") has completed its review of the proposed space summary of the preferred alternative as produced by Jonathan Levi Architects and its consultants. This review involved evaluating the extent to which the Fuller Middle School's proposed space summary conforms to the MSBA guidelines and regulations.

The MSBA considers it critical that the Districts and their Designers aggressively pursue design strategies to achieve compliance with the MSBA guidelines for all proposed projects in the new program and strive to meet the gross square footage allowed per student and the core classroom space standards, as outlined in the guidelines. The MSBA also considers its stance on core classroom space critical to its mission of supporting the construction of successful school projects throughout the Commonwealth that meet current and future educational demands. The MSBA does not want to see this critical component of education suffer at the expense of larger or grander spaces that are not directly involved in the education of students.

MSBA recognizes the benefits and the challenges associated with saving or renovating existing spaces, and may consider variations in the guidelines for renovation projects beyond those included below. Please note that any spaces in new construction or substantially renovated spaces must be compliant with MSBA space standards for both allotted area and room quantity unless otherwise approved in writing by the MSBA.

The following review is based on the submitted District's "Preferred Option" with an agreed upon design enrollment of 630 students in grades 6-8.

The MSBA review comments are as follows:

- **Core Academic** – The District is proposing to provide a total of 45,170 net square feet (nsf) which exceeds the MSBA guidelines by 13,590 nsf. The proposed area in this category decreased by 2,400 nsf since the Preliminary Design Program submittal.

The MSBA offers the following comments regarding the proposed program:

  - (21) 900 nsf general classrooms, and (9) 900 nsf ELL classrooms which exceeds the MSBA guidelines by (8) classrooms and 6,100 nsf.

- (9) Science classrooms which is 3,150 nsf and (3) classrooms in excess of the guidelines.

Based on the information provided along with the District's reported high percentage of non-English speaking students, the MSBA understands the need to provide educational spaces to support delivery of this curriculum and student support services; however, the proposed program includes (39) academic classrooms, (11) beyond the (28) include in the guidelines. This significantly contributes to the 13,590 nsf overage proposed for this category, and to an overall program with a utilization rate below 65% (refer to Attachment A Section 3.3.4 for more information). Please review the proposed program and seek opportunities to increase the efficiency of the proposed program.

- (9) Science Prep rooms which is 240 nsf and (3) rooms in excess of the guidelines.
- (5) Science Teacher Planning rooms which is 450 nsf and (5) rooms in excess of the guidelines.

The MSBA looks to the district and its Designer to continue to explore opportunities to provide shared spaces that can support delivery of the science curriculum in a more efficient program.

- (7) Classroom Breakout spaces which is 2,100 nsf in excess of the guidelines. Based on the information provided the MSBA accepts this variation to the guidelines.
- (15) 90 nsf Teacher Planning rooms which is 1,350 nsf in excess of the guidelines. Based on the information provided the MSBA accepts this variation to the guidelines. (For clarification, please indicate where larger 'Teacher Workstations' are located on the conceptual plans and further describe how theses spaces differ from the proposed Teacher Planning rooms).
- (3) Small Group Seminar/Resource spaces which is (1) space and 200 nsf beyond that included in the guidelines. Prior to the MSBA accepting this variation to the guidelines please provide additional information that demonstrates why purpose of these spaces could not be met in the media center, conference room, one of the three teacher workrooms, a classroom or one of the student cohorts when not in use by the students.

If the District and its consultants need additional time to address the items above provide a date by when the items could be addressed in the response to these review comments.

- **Special Education** – The District is proposing to provide a total of 8,820 nsf which is 1,270 nsf below the MSBA guidelines. The proposed area in this category has decreased by 270 nsf since the Preliminary Design Program submittal. Please note that the Special Education program is subject to approval by the Department of Elementary and Secondary Education (DESE). The District

should provide this information for this submittal with the Schematic Design Submittal. Formal approval of the District's proposed Special Education program by the DESE is a prerequisite for executing a Project Funding Agreement with the MSBA.

- **Art and Music** – The District is proposing to provide a total of 3,650 nsf which exceeds the MSBA guidelines by 400 nsf. Based on the information provided, which documents and supports a high student participation in the music program, and the future combining of the concert band and orchestra, the MSBA accepts this variation to the guidelines. The District should continue to seek ways to reduce overall area to align with guidelines. Please note that in subsequent submissions the MSBA will consider area beyond 400 nsf in excess of guidelines as ineligible for reimbursement. Please acknowledge.

- **Vocations &Technology** – The District is proposing to provide a total of 4,150 nsf which is below the MSBA guidelines by 2,250 nsf. The proposed area in this category has not changed since the Preliminary Design Program submittal. Based on the information provided the District's intent is to include (3) Cohort Commons spaces totaling 4,353 nsf in the Media Center category, and reducing the square footage in this category by 2,250 nsf. The MSBA accepts this variation to the guidelines. Please note that MSBA will consider area beyond 4,150 nsf in this category as ineligible for reimbursement. Please acknowledge.

- Health and Physical Education – The District is proposing to provide a total of 9,985 nsf which exceeds the MSBA guidelines by 1,585 nsf. The proposed area in this category has increased by 1,800 nsf since the Preliminary Design Program submittal. This submittal indicates that on April 14, 2018 the School Building Committee voted to increase the gymnasium size to 8,300 nsf. Although the MSBA does not object to including this additional square footage in the proposed project, please note all square footage in excess of MSBA guidelines will be considered ineligible for reimbursement. Refer to the attached memorandum which outlines MSBA's policy regarding auditorium and gym spaces beyond those included in the guidelines.

Based on the estimated preliminary costs submitted as part of the Preferred Schematic Report, the MSBA is providing the following calculation that will be reevaluated again at schematic design that gives a preliminary estimated cost associated with the ineligible spaces:

Total net square footage (nsf) requested by the District	19,985 nsf
Total nsf for Health and Physical Education Category allowed as eligible by MSBA space guidelines	8,400 nsf
Excess net square footage equals District request minus net square footage allowable by MSBA space guidelines	11,585 nsf

Gross square foot (gsf) exclusion = Excess net square feet times the project's grossing factor	11,585 nsf x 1.50 = 17,378 gsf
Total cost of exclusion = Gross square foot times the project's total construction cost/square foot	17,378 gsf x $565/gsf = $9,818,570
Total cost of exclusion from the Estimated Basis of Grant	$9,818,570

- **Media Center** – The District is proposing to provide a total of 6,250 nsf which exceeds the MSBA guidelines by 2,247 nsf. The proposed area in this category has increased by 4,350 nsf since the Preliminary Design Program submittal. This increase is due to the District moving (3) Cohort Commons spaces from the core academic category. The MSBA does not object to the District combining the 2,250 not used under the vocations and technology category with area allocated to this category to allow for the proposed cohort common spaces. Square footage in excess of the 6,250 nsf will be considered ineligible for reimbursement. Refer to vocations and technology above for additional information. Do not adjust MSBA guidelines in future space summary submittals just indicate the District's intent. Please acknowledge.

- **Dining and Food Service** – The District is proposing to provide a total of 8,923 nsf which meets the MSBA guidelines. The proposed area in this category has not changed since the Preliminary Design Program submittal. No further action required.

- **Medical** – The District is proposing to provide a total of 610 nsf which meets the MSBA guidelines. The proposed area in this category has not changed since the Preliminary Design Program submittal. No further action required.

- **Administration and Guidance** – The District is proposing to provide a total of 4,940 nsf which exceeds the MSBA guidelines by 1,510 nsf. The proposed area in this category has not changed since the Preliminary Design Program submittal. As previously noted and acknowledged by the District and Design Team, based on the information provided, the MSBA does not object to the District including these spaces however square footage in excess of guidelines will be ineligible for reimbursement. No further action required.

- **Custodial and Maintenance** – The District is proposing to provide a total of 2,105 nsf which meets the MSBA guidelines. The proposed area in this category has not changed since the Preliminary Design Program submittal. No further action required.

- **Other** - The District is proposing to provide 10,000 nsf of auditorium and support spaces. The proposed area in this category has increased by 7,000 nsf since the Preliminary Design Program submittal. This increase is primarily due to the inclusion of the auditorium, partially offset by eliminating 3,000 nsf of existing Adult ESL offices from the scope of the project. As previously noted and acknowledged by the District and Design Team, the District may choose to build

an auditorium even though the MSBA space guidelines do not include an auditorium for middle schools and no portion of the design and construction of an auditorium will be considered eligible for reimbursement, including the stage, regardless of whether the District chooses not to include a stage in its cafetorium. If the District chooses to build an auditorium, the auditorium must not exceed 13,300 nsf. No further action required. Please see the attached memorandum for additional information.

- **Total Building Net Floor Area** –The District is proposing to provide a total of 102,603 nsf which exceeds the MSBA guidelines by 28,353 nsf. The proposed area has increased by 5,980 nsf since the Preliminary Design Program submittal. Based on the comments provided above, the MSBA will continue to work with the District and its consultants to establish an acceptable square footage that will be used to determine the limits of MSBA's participation.

- **Total Building Gross Floor Area** – The District is proposing to provide a total of 153,905 gsf which exceeds the MSBA guidelines by 46,625 gsf. The proposed area has increased by 8,970 gsf since the Preliminary Design Program submittal. Based on the comments provided above, the MSBA will continue to work with the District and its consultants to establish and acceptable square footage that will be used to determine the limits of MSBA's participation.

Please note the MSBA released an updated space summary template Project Advisory #52. This new template will be required to be used for the Schematic Design submittal. Please acknowledge.

Please note that upon moving forward into subsequent phases of the proposed project, the Designer will be required to provide, with each submission, a signed, updated space summary that reflects the design and demonstrates that the design remains, except as agreed to in writing by the MSBA, in accordance with the guidelines, rules, regulations and policies of the MSBA. Should the updated space summary demonstrate changes to the previous space summary include a narrative description of the change(s) and the reason for the proposed changes to the project.

Jonathan Levi Architects

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NOTES OF MEETING

project	Fuller Middle School Feasibility Study	project no.	1722
date	5/31/18, 8:00 am	location	Fuller School
re	**Pre-Concept Alternatives, Community Workshop 3, Auditorium, Meetings – schedule and agendas**		
present	Jose Duarte (FPS), Edward Gotgart (FPS), Matt Torti (FPS), Anne Ludes (FPS), Joel Seeley (SMMA), Jonathan Levi (JLA), Philip Gray (JLA), Carol Harris (JLA)		
distribution	attendees; project file		

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1) Jonathan Levi presented a “fly through” of the current plans of the building, illustrating the room layouts, adjacencies, and distribution throughout the building. See attached. General layout and distribution appear to fully support the educational program objectives.
2) It was recommended that the student bathrooms have more separated entries from the hallways for boys and girls. JLA will make this adjustment.
3) As requested by the MSBA in the FAS meeting on 5/23/18, JLA and Anne will explore the implications of increasing size of science classrooms to reduce size of common areas.
4) As requested by the MSBA in the FAS meeting on 5/23/18, Joel will develop a presentation for SBC vote at the 6/4/18 meeting regarding MSBA financial contribution to “Option 0” base repair alternative.
5) JLA will solicit a proposal from the traffic engineer based on the current site plan with the following scope of work:
    - Construction Truck routes
    - Review new parking/ vehicle access / egress for each of the 3 schools temporary and permanent
    - Possibility and consequences of restricting Flagg Drive to through traffic

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END OF MEETING NOTES

Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

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by Philip Gray

1st Floor Plan Perspective

1st Floor Plan

2nd Floor Plan

2nd Floor Plan Perspective

3rd Floor Plan

3rd Floor Plan Perspective

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NOTES OF MEETING

project	Fuller Middle School Feasibility Study	project no.	1722
date	5/31/18, 12:00 pm	location	Fuller School
re	**Parking counts**		
present	Edward Gotgart (FPS), Matt Torti (FPS), Joel Seeley (SMMA), Philip Gray (JLA)		
distribution	attendees; project file		

1. Day and evening parking requirements were recommended as follows:

	Day	Night
Adult ESL	5	425
Fuller	100	-
Farley	150	150
McCarthy	85	-
PIC	15	-
Building and Grounds	20	5
Early Childhood	3	-
Truant	1	1
Board of Health	20	15
Subtotal	***399***	***596***

Contractor	100	-
Adult ESL off site parking	-	-100
Total	***499***	***496***

2. JLA to develop diagrams to indicate how these counts can be established and maintained during and after construction.
3. If additional parking is added at the McCarthy school, JLA will need to get a survey proposal for the area.

END OF MEETING NOTES
Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

by Philip Gray

PRELIMINARY FOUNDATION ENGINEERING REPORT

FULLER MIDDLE SCHOOL

FRAMINGHAM, MASSACHUSETTS

JUNE 4, 2018

Prepared For:

Jonathan Levi Architects
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(617) 868-1420

PROJECT NO. 6473.2.01

June 4, 2018

Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

Attention: Mr. Philip Gray

Reference: Fuller Middle School; Framingham, Massachusetts
Preliminary Foundation Engineering Report

Ladies and Gentlemen:

This letter documents the results of our subsurface exploration program and preliminary foundation design study for the proposed redevelopment of the Fuller Middle School (FMS) located in Framingham, Massachusetts.

This letter was prepared in accordance with our proposal dated January 29, 2018, and the subsequent authorization of Jonathan Levi Architects (JLA). These services are subject to the limitations contained in **Appendix A**.

Purpose and Scope

The purpose of our preliminary foundation design study was to review the existing subsurface information, conduct supplemental subsurface explorations and to identify preliminary foundation design considerations associated with the proposed building. We previously prepared a letter entitled "Preliminary Geotechnical Engineering Recommendations" dated November 29, 2018.

Available Information

Information provided to McPhail Associates, LLC (McPhail) by JLA included a 40-scale drawing entitled "Existing Condition Plan" dated November 20, 2017 prepared for JLA and a schematic untitled and undated drawing prepared by (JLA) provided to McPhail via email on May 10, 2018, which indicates an approximate location of the proposed building. In addition, information previously provided to McPhail by JLA included a set of architectural and structural drawings for the existing FMS prepared by Samuel Glaser Associates (SGA) dated May 25, 1956. McPhail was also provided the logs of thirty-four (34) borings performed during the original school design in 1956. Two plans were included in the set of plans prepared by SGA: a sheet entitled "Existing Topography Map" dated May 25, 1956 and a sheet entitled "Site Improvement Plan – Boring Location Plan" dated May 25, 1956 (Elevations as noted on the location plan are in feet and referenced to the Framingham Town Base, and a conversion of 3.3 feet from Framingham Town Base to the NAVD88 was utilized for the preparation of this report). The boring logs and location plan are attached in **Appendix B**.

Existing and Proposed Conditions

The subject site fronts onto Flagg Drive to the south and is bounded by the Mass Bay Community College to the east, residential properties to the west and a wooded area to the north. Currently, an existing one-story brick Fuller Middle school building occupies the central portion of the site, which was built in the late 1950's. The site is occupied by a paved surface parking lot, as well as grassed and landscape areas. Existing ground surface across the site varies from about Elevation +160.5 to Elevation +166.

Based on the information provided to us, the proposed development includes a 2 to 3-story structure and associated site work. It is understood that the proposed construction is anticipated to be located within the southern portion of parcel. Except for the area of the proposed auditorium, it is understood that the proposed building will not contain any below grade space. Based on the information provided to us, the proposed building will generally be located within an existing bituminous concrete parking area or the existing field grassed areas.

Elevations cited herein are in feet and are referenced to the North American Vertical Datum of 1988 (NAVD88).

Subsurface Explorations

A subsurface exploration program consisting of ten (10) borings was conducted at the site on February 21, 22 and April 19, 2018 by Northern Drill Services, Inc. under contract to McPhail. The borings were performed utilizing track or truck-mounted drilling equipment. Boring logs prepared by McPhail are contained in **Appendix C**. Approximate plan locations of the borings are as indicated on the enclosed Subsurface Exploration Plan, **Figure 2**.

The borings were performed utilizing NW casing. Standard 2-inch O.D. split-spoon samples and standard penetration tests (SPT) were obtained continuously or at 5-foot intervals of depth, in general accordance with the standard procedures described in ASTM D1586.

The borings were performed within the existing parking lot south and southeast of the existing building and with the existing walkway north of the existing school building. Borings B-101 through B-109 were terminated at depths ranging from 8 to 31 feet below existing ground surface.

The borings were observed by representatives of McPhail who performed field layout, prepared field logs, obtained and visually classified soil samples, monitored groundwater conditions in the open boreholes, and determined the required boring depths based upon the actual subsurface conditions encountered.

Field locations of the borings were determined by taping from existing site features indicated on the existing conditions plan provided to us. The existing ground surface

elevation at each boring location was determined by a level survey performed by our field staff utilizing vertical control information indicated on the plan.

Laboratory Testing

At the completion of the subsurface exploration program, soil samples were returned to our laboratory for more detailed classification, analysis, and testing. The laboratory testing consisted of sieve analyses to determine the grain size distribution and confirm the visual classifications of the fill material, lacustrine deposit and the glacial outwash deposit. Laboratory test procedures were in general accordance with applicable ASTM Standards. Results of the gradation testing appear on **Figure 3**, **Figure 4** and **Figure 5** following the text of this report.

Previous Subsurface Information

As part of the original construction, thirty-four (34) boring logs were performed within or near the footprint of the existing school building, in the area of the existing parking lot and in the field southeast of the existing building. The borings indicate that directly below the former ground surface the explorations encountered either soft peat/organic soil or loamy sand deposits. The peat/organic soil was encountered within thirteen (13) of the previous borings and it was observed to extend to depths from about 1.7 to 6.6 feet below ground surface. The loamy sand deposit was observed to extend to depths from about 0.5 to 4 feet below ground surface. Below the soft peat/organic soil and loamy sand deposits, the borings encountered a loose to very dense sand and gravel deposit with occasional boulders. Groundwater was encountered in the borings at a depth of 0 to 8 feet below ground surface. The boring logs and location plan are attached as **Appendix B**. Approximate plan locations of the borings are as indicated on the enclosed Subsurface Exploration Plan, **Figure 2**.

Recent Subsurface Conditions

A detailed description of the subsurface conditions encountered within the recent borings are documented on the boring logs contained in **Appendix C**. Based on these explorations, the following is a description of the generalized subsurface conditions encountered across the site from ground surface downward.

Fill material of about 2.2- to 6.5-foot in thickness was encountered in the borings at ground surface or below the surface treatments, which consisted of a 3-inch thickness of asphalt or a 6-inch thickness of topsoil. The fill material was observed to generally range from a very loose to dense gray/brown sand and gravel with trace silt to sand with some gravel and silt. Grain size distributions of samples of the fill material are shown on **Figure 4**.

Due to obstructions within the fill deposit, boring B-106 was terminated at a depth of 4.5 feet below the existing ground surface. Therefore, boring B-106A was drilled next to the abandoned boring B-106 and standard sampling started at a depth of 4 feet below the existing ground surface.

Underlying the fill deposit, five (5) borings B-101, B-102, B-103, B-104 and B-107 encountered an alluvial/organic silt deposit, which ranged in consistency from a very loose to compact, dark brown to fine to medium sand trace to some organic silt and peat fibers to peaty sand trace gravel. Generally, the alluvial/organic silt deposit where encountered, ranged from about 2 to 5.5 feet in thickness.

Below the fill and/or alluvial/organic silt deposits, a natural lacustrine deposit was encountered within borings B-102 and B-107 at a depth of 8 feet below ground surface corresponding to Elevation +156.9 and Elevation +154.9, respectively. The lacustrine deposit was observed to vary from a compact, light gray, silt with trace sand to silty sand with trace gravel and clay. A typical grain size distribution of the lacustrine deposit is presented on **Figure 5**.

Below the fill, alluvial/organic silt and lacustrine deposits, a natural glacial outwash deposit was encountered at depths ranging from 4 to 9 feet below ground surface corresponding to Elevation +159.4 to Elevation +155.6. The glacial outwash was observed to vary from a compact to very dense, brown/gray, sand with trace silt to sand and gravel with some silt. Grain size distributions of samples of the glacial outwash deposit are shown on **Figure 6**.

A contour plan indicating the elevation of the top of natural soil deposits (glacial outwash, and lacustrine deposits) across the site is presented on the enclosed **Figure 3**.

At the time of the 2018 borings, groundwater levels where measured within the completed boreholes performed within the project site were reported to vary from about 3 to approximately 6 feet below the existing ground surface corresponding to about Elevation +160.9 to Elevation +158.6. It is anticipated that future groundwater levels across the site may vary from those reported herein due to factors such as normal seasonal changes, periods of heavy precipitation, and alterations of existing drainage patterns or may become perched on the relatively impervious organic deposit.

Preliminary Foundation Design Recommendations

Due to the very loose relative density of the surficial fill and the alluvial/organic silt deposit, it is recommended that support of the proposed building will require the building loads to be transferred to the surface of the underlying lacustrine and glacial outwash deposits. Therefore, based on the anticipated structural loads from the proposed structure and the subsurface conditions encountered at the site, for preliminary design purposes it is recommended that foundation support of the proposed structure may be provided by conventional spread footing foundation and a soil supported slab-on-grade. It is recommended that spread footings located within the isolated areas where unsuitable

material is located up to a depth of 3 feet below the proposed bottom of footing be overexcavated and that the proposed footings bear directly on glacial outwash or lacustrine deposits or on compacted structural fill placed directly over glacial outwash or lacustrine deposit. Where the unsuitable material extends to a depth of 3 feet and greater below the bottom of the proposed footings, it is recommended that the proposed spread footings and conventional slab-on-grade within these areas of the proposed building footprint be improved by Aggregate Pier (AP) installed through the existing fill and alluvial/organic siltdeposit. Based on the results of the preliminary explorations, the APs would extend to the top of the glacial outwash/lacustrine deposit and range up to about 9 feet in length.

It is recommended that the footings be proportioned utilizing a maximum allowable design bearing pressure of two (2) tons per square-foot (tsf). Recommended minimum footing widths for continuous and isolated spread footings are 24 and 30 inches, respectively.

Ground Improvement

In general, an AP cavity is created by either augering open-hole or driving an approximately 12 to 16-inch closed-end diameter casing to the surface of the lacustrine or glacial outwash deposit. Aggregate is then introduced either through a top-feed or bottom-feed system and the subsequent dynamic compaction of aggregate layers introduced into the cavity. The use of a closed-ended temporary casing with bottom-feed capability eliminates spoils as all penetrated soils are displaced laterally. After creating the AP cavity to the design depth, aggregate is placed inside the void. The aggregate is compacted into layers of about 1-foot in thickness and the process is repeated to the top of the cavity, forming the AP. The compaction densifies the aggregate and increases the lateral stress in the soil matrix beneath the proposed buildings.

Additionally, the aggregate may be grouted to increase the stiffness of the AP in very loose granular deposits or in organic materials. Potential for larger settlements is reduced by improving the unsuitable soils to a stiffer composite soil matrix with the installation of the AP.

Since ground improvement techniques are provided by a design-build consultant, detailed design calculations should be submitted to the Architect for review prior to the beginning of construction. A detailed explanation of the design parameters for capacity and settlement calculations should be included in the design submittal. The design submittal should also include a testing program to demonstrate the design capacity of the aggregate pier elements is being achieved. All calculations and drawings should be prepared and sealed by a Professional Engineer licensed in the Commonwealth of Massachusetts and retained by the Contractor who is to perform the work.

The following general criteria should be utilized in the design of aggregate piers:

1. Aggregate piers should extend at least to the surface of the lacustrine or glacial outwash deposit;

2. The maximum allowable bearing pressure supported on a reinforced ground surface which extends to the lacustrine or glacial outwash deposit should be equal to or less than 2 tons per square-foot (TSF);
3. Estimated long-term settlement for footings should be less than 1-inch;
4. Estimated long-term differential settlement of adjacent footings should be less than 1/2-inch; and
5. A modulus load test should be performed on at least one aggregate pier to 150 percent of the maximum design stress.

To control potential cosmetic cracking of the lowest-level slab within areas where the fill and alluvial/organic silt deposits remain below the slab-on-grade, APs can be installed in a grid pattern for support of the slab. Typically, the APs are installed on an approximately 10-foot square grid which would be designed by the AP Contractor. Alternatively, depending of the amount of unsuitable material encountered, the slab-on-grade may be directly on the glacial outwash or lacustrine deposits or on compacted structural fill as previously discussed.

Additional subsurface explorations will be necessary to further delineate the areas of the proposed building which will require ground improvement.

General Foundation Recommendations

The lowest-level slab within the conventional footing foundation portion of the building should consist of a conventional slab-on-grade.

Underslab and perimeter drainage should be provided where the lowest-level slab is greater than 12 inches below the finished exterior grade. Furthermore, the proposed grading plan should be provided to McPhail for review to determine if foundation and underslab drainage is required. Recommendations for foundation drainage, if required, would be contained in the Final Foundation Engineering Report.

Perimeter foundations and interior foundations located adjacent to unheated areas should be provided with a minimum 4-foot thickness of soil cover as frost protection. Interior footings below heated areas should be located such that the top of the foundation concrete is at least 6 inches below the underside of the lowest level slab. All foundations should be located such that they bear below a theoretical line drawn upward and outward at 2 to 1 (horizontal to vertical) from the bottom exterior edge of all existing adjacent footings, structures and utilities

All localized depressions in the lowest level slab (such as elevator pits, etc.) should be provided with properly tied continuous waterstops in all construction joints and cementitious waterproofing to protect against groundwater intrusion. Furthermore, the perimeter below-grade foundation walls should receive a trowelled-on bitumastic damproofing.

Below-grade foundation walls receiving lateral support at the top and bottom (i.e. restrained walls) should be designed for a lateral earth pressure corresponding to an equivalent fluid density of 60 pounds per cubic-foot. Similarly, drained cantilevered retaining walls, (i.e.

receiving no lateral support at the top) should be designed for a lateral earth pressure corresponding to an equivalent fluid density of 40 pounds per cubic-foot. To these values must be added the pressures attributable to earthquake forces per Section 1610.2 of the Code.

Lateral forces can be considered to be transmitted from the structure to the soil by passive pressure against the foundation walls utilizing an equivalent fluid density of 120 pounds per cubic-foot providing that the walls are designed to resist these pressures. Lateral force can also be considered to be transmitted from the structure to the soil by friction on the base of footings using a coefficient of 0.35, to which a safety factor of 1.5 should be applied.

Seismic Design Considerations

For the purposes of determining parameters for structural seismic design, this site is considered to be a Site Class D as defined in Chapter 20 of American Society of Civil Engineers (ASCE) Standard 7-10 “Minimum Design Loads for Buildings and Other Structures”. Further, the bearing stratum on the proposed site is not considered to be subject to liquefaction during an earthquake based on the criterion of Section 1806.4 of the Code.

Preliminary Foundation Construction Considerations

The primary foundation construction considerations that are anticipated to have an impact on the design of the structure include removal of potential obstructions to AP installation, impact AP installation on surrounding structures, the preparation of the foundation bearing surfaces, construction dewatering, and off-site disposal of excess excavated material. Additional foundation construction considerations, such as preparation of foundation bearing surfaces, construction dewatering, and off-site disposal of excess excavated material, will be discussed in the final foundation engineering report.

It is recommended to remove potential obstructions located within the fill deposit at the proposed APs locations prior to their installation.

The installation of the aggregate piers will likely result in some ground vibrations and noise which may be disruptive to the building occupants and could potentially cause cosmetic damage to existing structures. Therefore, it is recommended that ground vibration monitoring be performed with the use of seismographs during the installation of the aggregate piers.

For spread footing foundation system to be utilized within the isolated areas where unsuitable material is located up to a depth of 3 feet below the proposed bottom of footing, the bearing surfaces should be excavated utilizing equipment which is fitted with a smooth-edged bucket. Also, preparation of the footing bearing surfaces within these isolated areas should include the removal of existing site improvements, fill material and alluvial/organic

silt deposit to the surface of the natural lacustrine or glacial outwash deposit followed by backfilling the excavation with compacted structural fill up to the design bottom of the footing. It is recommended that bearing surfaces be immediately covered with a 3-inch thickness of 3/4-inch crushed stone to minimize disturbance of the subgrade during forming operations.

It is anticipated that the excavated fill or glacial outwash soil may be re-used on-site as structural fill for support of footings and the slab-on-grade and ordinary fill outside of the proposed building footprint provided it is maintained in a dry condition and can be properly compacted. Stockpiled excavated material designated for reuse should be covered at all times with 6-mil polyethylene for protection from precipitation and also as a dust mitigation measure. If, due to any of the above conditions the excavated material becomes unsuitable for reuse as structural fill, an off-site gravel fill should be used.

In consideration of the observed depth of the groundwater level below the existing ground surface, it is anticipated that localized sumping in conjunction with on-site recharage will suffice for dewatering during foundation construction operations to locally control the groundwater or to control surface run-off.

Final Comments

Based on our current understanding of the project scope, it is recommended that McPhail Associates, LLC be retained to prepare a final foundation engineering report once the details of the proposed school are finalized. The final report would provide final foundation recommendations based on the specific project design requirements. Additional subsurface explorations are recommended to further delineate the subsurface conditions across the proposed building footprint.

It is also recommended that McPhail Associates, LLC be retained to provide design assistance to the design team during the final design phase of this project. The purpose of this involvement would be to review the structural foundation drawings and foundation notes for conformance with the recommendations herein, and to generate or review the earthwork specification section for inclusion into the Contract Documents for construction.

We trust that the above is sufficient for your present requirements. Should you have any questions concerning the recommendations presented herein, please do not hesitate to call us.

Very truly yours,

McPHAIL ASSOCIATES, LLC

Fatima Babic-Konjic, P.E.

Chris M. Erikson, P.E.

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FBK/cme

PRELIMINARY ENVIRONMENTAL DATA REPORT

FULLER MIDDLE SCHOOL

FRAMINGHAM, MASSACHUSETTS

JUNE 13, 2018

Prepared For:

JONATHON LEVI ARCHITECTS
266 BEACON STREET
BOSTON, MA 02116

PROJECT NO. 6473.9.01

McPHAIL ASSOCIATES, LLC
2269 Massachusetts Avenue
Cambridge, MA 02140
www.mcphailgeo.com
(617) 868-1420

June 13, 2018

Jonathon Levi Architects
266 Beacon Street
Boston, MA 02116

Attention: Mr. Philip Gray

Reference: Fuller Middle School; Framingham, Massachusetts
Preliminary Environmental Data Report

Ladies and Gentlemen:

We are pleased to present this Preliminary Environmental Data Report associated with the proposed redevelopment of the Fuller Middle School (FMS) located in Framingham, Massachusetts. Refer to the Project Location Plan (**Figure 1**) for the general site locus.

Purpose and Scope

The purpose of this letter report by McPhail Associates, LLC (McPhail) is to present the results of the preliminary environmental testing of the soil at the subject site as identified above.

These services were performed and this report was prepared in accordance with our proposal dated April 12, 2018, and the subsequent authorization of Jonathon Levi Architects (JLA). These services are subject to the limitations in **Appendix A**.

Our scope of services was performed concurrently with our geotechnical engineering investigation and consisted of the following tasks: (i) screen soil samples for total volatile organic compounds (TVOC) using a photoionization detector (PID); (ii) submit soil samples for chemical analyses: three (3) fill samples obtained from the borings were submitted for analysis for the presence of semi-volatile organic compounds (SVOCs) and total RCRA-8 metals, one (1) fill sample was submitted for analysis for the presence of volatile organic compounds (VOCs) and extractable petroleum hydrocarbons (EPH); and (iii) evaluate the results of the testing in comparison with Massachusetts Contingency Plan (MCP) standards for regulatory reporting, and provide a letter containing recommendations.

Existing Conditions and Proposed Construction

The subject site fronts onto Flagg Drive to the south and is bounded by the Mass Bay Community College to the east, residential properties to the west and a wooded area to the north. Currently, the existing one-story brick Fuller Middle school building occupies the central portion of the site, which was built in the late 1950's. The site is occupied by a paved surface parking lot, as well as grassed and landscape areas. Existing ground surface across the site varies from about Elevation +160.5 to Elevation +166.

Based on the information provided to us, the proposed development includes a 2 to 3-story structure and associated site work. It is understood that the proposed construction is

anticipated to be located within the southern portion of parcel. Except for the area of the proposed auditorium, it is understood that the proposed building will not contain any below grade space. Based on the information provided to us, the proposed building will generally be located within an existing bituminous concrete parking area or the existing field grassed areas.

Elevations cited herein are in feet and are referenced to the North American Vertical Datum of 1988 (NAVD88).

Subsurface Exploration Program

A subsurface exploration program consisting of ten (10) borings was conducted at the site on February 21, 22 and April 19, 2018 for geotechnical purposes. In accordance with our proposed scope of additional geoenvironmental engineering services, a total of three (3) of the ten (10) borings were performed for environmental testing and are discussed further below.

The borings were performed utilizing NW casing. Standard 2-inch O.D. split-spoon samples and standard penetration tests (SPT) were obtained continuously or at 5-foot intervals of depth, in accordance with the standard procedures described in ASTM D1586.

The borings were performed within the existing parking lot to the south and southeast of the existing building and within the existing walkway north of the existing school building. Borings were terminated at depths ranging from 26 to 31 feet below existing ground surface. The locations of the borings are indicated on the enclosed Subsurface Exploration Plan, **Figure 2**.

The borings were observed by representatives of McPhail who performed field layout, prepared field logs, obtained and visually classified soil samples, performed headspace screening of soil samples, and determined the depths of the explorations based upon actual subsurface conditions encountered. Boring logs prepared by McPhail are contained in **Appendix B**.

Subsurface Conditions

A detailed description of the subsurface conditions encountered within the three (3) geoenvironmental borings are documented on the boring logs contained in **Appendix B**. The “Preliminary Foundation Engineering Report” prepared by McPhail Associates, LLC dated June 4, 2018 further details these explorations and the other explorations completed in 2018, however the following is a description of the generalized subsurface conditions encountered across the site from ground surface downward.

Fill material of about 2.2- to 6.5-foot in thickness was encountered in the borings at ground surface or below the surface treatments, which consisted of a 3-inch thickness of asphalt or a 6-inch thickness of topsoil. Underlying the fill deposit at five boring locations, an

alluvial/organic silt deposit, ranged from about 2 to 5.5 feet in thickness. Below the fill and/or alluvial/organic silt deposits, a natural lacustrine deposit was encountered at a depth of 8 feet below ground surface. A natural glacial outwash deposit was encountered at depths ranging from 4 to 9 feet below ground surface.

At the time of the 2018 borings, groundwater levels where measured within the completed boreholes performed within the project site were reported to vary from about 3 to approximately 6 feet below the existing ground surface corresponding to about Elevation +160.9 to Elevation +158.6. It is anticipated that future groundwater levels across the site may vary from those reported herein due to factors such as normal seasonal changes, periods of heavy precipitation, and alterations of existing drainage patterns or may become perched on the relatively impervious organic deposit.

MCP Reporting Provisions

The Massachusetts Contingency Plan, 310 CMR 40.0000 (MCP) established "...requirements and procedures for notifying the Department of releases and threats of release of oil and/or hazardous material." The MCP defined categories for soil and groundwater at sites under investigation. The MCP also established Reportable Concentrations for oil and hazardous materials in soil and groundwater for the defined categories. The soils at the site under investigation are classified as RCS-1 since the site is located within 500 feet of a school.

Soil Screening Results

Soil samples obtained from the borings were screened for the presence of Total Volatile Organic Compounds (TVOCs). The TVOCs screening results are summarized in **Table 1**. The headspace screening was performed in general accordance with DEP's "Jar Headspace Analytical Screening Procedure," Attachment II to the Interim Remediation Waste Management Policy for Petroleum Contaminated Soils, #WSC-94-400. The screening was performed with a MiniRAE 3000 Photoionization Detector calibrated to laboratory grade 100 parts per million (ppm) isobutylene.

A total of 25 discrete soil samples obtained from the subsurface geoenvironmental exploration program were screened. TVOC levels were detected at or below 0.2 parts per million (ppm) in each of the samples screened. In the absence of visual or olfactory indications of the presence of oil and/or hazardous material (OHM), TVOC results below 10 ppm are generally not considered likely to indicate the presence of a release of OHM.

Soil Chemical Test Results

The soil chemical analysis results are included in **Appendix C** and are summarized in **Table 2**. The results of jar headspace screening, visual and olfactory evidence of contamination, together with our environmental concerns documented above, were used to support the selection of soil samples that were submitted to the laboratory for chemical testing.

Based on our visual observations and TVOC screening results, three (3) composite soil samples of the fill deposit obtained from borings B-101, B-102 and B-105 ranging from depths of 0 to 6 feet below ground surface were submitted for laboratory testing for the presence of SVOCs, total RCRA 8 metals, and EPH. The discrete sample with the highest headspace result was submitted for VOC analysis.

None of the compounds analyzed for were detected at concentrations in excess of the applicable RCS-1 reportable concentrations as defined in the MCP. The majority of which were generally consistent with DEP background levels for natural soils.

Summary of MCP Notification Requirements

As detailed above, results of the analysis of soil samples collected from the subject site did not identify the presence of a release condition, pursuant to the provisions of the MCP.

Summary and Conclusions

McPhail completed a subsurface exploration including advancement of soil borings, visual and olfactory observations of soil samples obtained from the borings and headspace screening of the soil samples for the presence of TVOC, and chemical analysis of soil.

In summary, based on the result of analysis of soil samples collected at the subject site, we found no evidence to suggest the presence of a release condition.

We trust this sufficient for your present requirements. If you have any questions concerning the enclosed, please do not hesitate to call us.

Very truly yours,

McPHAIL ASSOCIATES, LLC

Kathryn E. Hanrahan

Joseph G. Lombardo, L.S.P.

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KEH/jgl

Fuller Middle School
Framingham Public Schools
Framingham, Massachusetts

PROJECT MANAGEMENT SMMA

SMMA No. 17050

Updated: May 31, 2018

Feasibility and Schematic Design Phase	MSBA ProPay Code	FSA Agreement 2/15/2017	Budget Revision 10/10/2017	Current Budget	Vendor	Committed	Balance
OPM	0001-0000	$ 185,000.00	$ (10,000.00)	$ 175,000.00	SMMA	$ 174,200.00	$ 800.00
DESIGNER	0002-0000	$ 580,000.00	$ (35,000.00)	$ 545,000.00	JLA	$ 545,000.00	$ -
Environmental and Site	0003-0000	$ 100,000.00	$ 45,000.00	$ 145,000.00		$ 123,717.00	$ 21,283.00
Other	0004-0000	$ 135,000.00	$ -	$ 135,000.00		$ -	$ 135,000.00
Total Budget		**$ 1,000,000.00**		**$ 1,000,000.00**		**$ 842,917.00**	**$ 157,083.00**

SMMA

Project Management

Memorandum

To:	Fuller Middle School Building Committee	Date:	6/18/2018
From:	Joel G. Seeley	Project No.:	17050
Project:	Fuller Middle School Feasibility Study		
Re:	Designer Amendment No. 10: Traffic Consulting Services		
Distribution:	School Building Committee (MF)		

DESIGNER AMENDMENT NO. 10: TRAFFIC CONSULTING SERVICES

FEE: $10,835.00

REASON: Provide Traffic Engineering and Planning Services for the Fuller Middle School building located at 31 Flagg Drive, Framingham, Massachusetts.

BUDGET AVAILABILITY: This Amendment would be funded out of the Environmental and Site Budget, ProPay Code 0003-0000, which has a current balance of $21,283.00.

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

ATTACHMENT F

CONTRACT FOR DESIGNER SERVICES

AMENDMENT NO. 10

WHEREAS, the Town of Framingham ("Owner") and Jonathan Levi Architects, LLC, (the "Designer") (collectively, the "Parties") entered into a Contract for Designer Services for the W. Fuller Middle School Project (Project Number 201501000305) at the Fuller Middle School on September 25, 2017 "Contract"; and

WHEREAS, effective as of June 18, 2018, the Parties wish to amend the Contract:

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained in this Amendment, and other good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

1. The Owner hereby authorizes the Designer to perform services for the Design Development Phase, the Construction Phases, and the Final Completion Phase of the Project, pursuant to the terms and conditions set forth in the Contract, as amended.

2. For the performance of services required under the Contract, as amended, the Designer shall be compensated by the Owner in accordance with the following Fee for Basic Services:

Fee for Basic Services:

	Original Contract	**Prior Amendments**	**This Amendment**	**After this Amendment**
Feasibility Study Phase	$335,000.00	$123,937.00	$10,835.00	$469,772.00
Schematic Design Phase	$210,000.00			$210,000.00
Design Development Phase	$			
Construction Document Phase	$			
Bidding Phase	$			
Construction Phase	$			
Completion Phase	$			
Total Fee	**$545,000.00**	**$123,937.00**	**$10,835.00**	**$679,772.00**

This Amendment is a result of: Providing Traffic Consulting Services

ProPay Code: 0003-0000

3. The Construction Budget shall be as follows:

Original Budget:	$ NA
Amended Budget	$ NA

4. The Project Schedule shall be as follows:

Original Schedule:	$ NA
Amended Schedule	$ NA

5. This Amendment contains all of the terms and conditions agreed upon by the Parties as amendments to the original Contract. No other understandings or representations, oral or otherwise, regarding amendments to the original Contract shall be deemed to exist or bind the Parties, and all other terms and conditions of the Contract remain in full force and effect.

IN WITNESS WHEREOF, the Owner, with the prior approval of the Authority, and the Designer have caused this Amendment to be executed by their respective authorized officers.

OWNER

Thatcher W. Kezer, III
(print name)
Chief Operating Officer, City of Framingham
(print title)
By _____
(signature)
Date _____

DESIGNER
Jonathan Levi
(print name)
Principal In Charge, Jonathan Levi Architects, LLC
(print title)
By _____
(signature)
Date _____

Jonathan Levi Architects
266 beacon street boston ma 02116 tel 617.437.9458 fax 617.437.1965 www.leviarc.com

11 June 2018

Mr. Joel G. Seeley
COO | Executive Vice President
SMMA
1000 Massachusetts Avenue
Cambridge, MA 02138

Re: *Fee Proposal, Additional Traffic Engineering and Planning Services*
Fuller Middle School, Framingham MA

Dear Joel,
Attached please find a proposal from Vanasse and Associates for Additional Traffic Engineering and Planning Services to be performed as a subconsultant to JLA. Please note that these services are in addition to the services already approved per VAI's 10/5/17 proposal.

Fee
As described in Article 4.11 of the MSBA Contract for Designer Services, the services associated with this proposal are to be invoiced on a lump sum basis as Extra Services, plus the 10% standard markup specified in Articles 9.1 and 9.1.1.

Concept Review and Coordination	$2,000
Traffic Study	$6,250
Meetings	$1,600
Subtotal	$9,850
10% Markup	$985
Total	**$10,835**

Please do not hesitate to contact me if you would like us to clarify or modify our assumptions, or if there is anything represented here which does not conform to your expectations.

Sincerely,

Philip Gray
Associate Principal
Jonathan Levi Architects

Vanasse & Associates, Inc.
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810-1071
Office 978-474-8800
Fax 978-688-6508

CONTRACT AMENDMENT

Amendment No.: 1

Project: Fuller Middle School Feasibility Study
Framingham, Massachusetts

Date: June 8, 2018

Project No.: 7704

Page No. 1 of 2

To: Mr. Philip Gray
Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

As Requested By:

Date:

AMENDMENT COST ESTIMATE

Fee: $9,850
Expenses: Included
Total: $9,850

☐ Fixed Fee
☐ T&E
☐ CPFF
☐ Other

REVISED CONTRACT COST ESTIMATE

Fee: $17,250
Expenses: 4,600
Total: $21,850

Estimated Date of Completion

Scope of Services

Element 1.1 Final Concept Review and Coordination **$2,000**

VAI will coordinate with team members as necessary to finalize the conceptual plan with respect to circulation, drop-off areas and pedestrian access.

Element 1.2 Traffic Study **$6,250**

VAI will finalize the traffic study based upon the final plan and student and teacher projections. The traffic study will review traffic and pedestrian conditions and provide recommendations to insure safe conditions for the students and staff. VAI will also provide:

- Construction truck routes
- Review of new parking and vehicle access/egress for each of the 3 schools (temporary and permanent)
- Possibility of and consequences of restricting Flagg Drive to thru traffic

Element 3.0 Meetings **$1,600**

VAI will attend project meetings as requested by the client.

Vanasse & Associates, Inc.
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810-1071
Office 978-474-8800
Fax 978-688-6508

CONTRACT AMENDMENT

Project: Fuller Middle School Feasibility Study
Framingham, Massachusetts

Amendment No.: 1
Date: June 8, 2018
Project No.: 7704
Page No. 2 of 2

The following summarizes this Contract Amendment:

Element	Phase I – Tasks	Original Contract	CA No. 1	Total
1.0	Fuller Middle School Feasibility Study – Existing Conditions	$5,000	--	$5,000
1.1	Final Concept Review and Coordination	--	$2,000	2,000
1.2	Traffic Study	--	6,250	6,250
3.0	Project and Public Meetings (3 Meetings)	2,400	1,600	4,000
	Subtotal	$7,400	$9,850	$17,250
	Data Collection – Traffic Counts and Field Measurements	$4,000	--	$4,000
	Direct Expenses (Estimated)	600	--	600
	Subtotal	$4,600	--	$4,600
	TOTAL	$12,000	$9,850	$21,850

Prepared By: F. Giles Ham, P.E.

Please execute this Amendment to our existing Contract Agreement authorizing us to proceed with the above scope of services at the stated estimated cost. No work will be performed under this Amendment until it is signed and returned to VAI. Upon execution by both parties, this Amendment becomes part of our original Contract Agreement dated October 5, 2017 and is subject to all term and conditions and provisions therein.

VAI Authorization

By: _____
Title: Managing Principal
Date: June 8, 2018

Client Authorization *(Please sign original and return)*

By: _____
Title: _____
Date: _____

Project Management | SMMA

Warrant No. 7

Project:	Fuller Middle School, Framingham, Massachusetts	Project No.:	17050
Prepared by:	Joel G. Seeley, AIA	Date:	6/18/2017

School Building Committee for the Fuller Middle School hereby authorizes to draw against funds for the obligations incurred for value received in services and for materials shown below:

Vendor	Invoice No.	Invoice Date	Invoice Amount	ProPay Code	Balance After Invoice
SMMA	49020	6/7/2018	$ 7,200.00	0001-0000	$ 70,950.00
SMMA	49020	6/7/2018	$ 82.50	0004-0000	$ 134,917.50
Jonathan Levi Architects	1722-00-08r1	6/4/2018	$ 43,600.00	0002-0000	$ 190,750.00
Jonathan Levi Architects	1722-00-08r1	6/4/2018	$ 13,090.00	0003-0000	$ 60,060.00
		Total	**$ 63,972.50**		

_____ David Miles, Chairman

_____ Richard Finlay

_____ Adam Freudberg

_____ Charles Sisitsky

_____ Richard Weader, II

_____ Michael Grilli

_____ Caitlin Stempleski

_____ Dr. Jennifer Krusinger Martin

_____ Donald Taggart, III

Approved on _____

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

Jonathan Levi Architects
266 beacon street boston ma 02116 tel 617.437.9458 fax 617.437.1965 www.leviarc.com

INVOICE

Jennifer Pratt
Chief Procurement Officer
City of Framingham
150 Concord Street
Framingham, MA 01702

DATE: June 4, 2018
CLIENT PROJECT NO:
INVOICE NO: 1722-00-08r1

PROJECT: Fuller Middle School

In accordance with Owner-Architect Agreement dated September 25, 2017
there is due at this time for architectural services and reimbursable items for the period
5/1/2018 — 5/31/2018 the sum of

#NAME? **$ 56,690.00**

the above amount shall become due and payable within 30 days from the date hereof.

A&E – FEASIBILITY STUDY	CONTRACT AMT (A)	PREVIOUS PERIOD (B)	CURRENT PERIOD (C)	EARNED (D=B+C)	% COMPLETE (D/A)
0002-0000 FEASIBILITY	$ 335,000.00	$ 310,650.00	$ 24,350.00	$ 335,000.00	100.00%
0002-0000 SCHEMATIC DESIGN	$ 210,000.00	$ -	$ 19,250.00	$ 19,250.00	9.17%
TOTAL 0002-0000	$ 545,000.00	$ 310,650.00	$ 43,600.00	$ 354,250.00	65.00%

A&E – BASIC SERVICES	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
0201-0400 DD					
0201-0500 CD					
0201-0600 BIDDING					
0201-0700 CA					
0201-0800 CLOSEOUT					
TOTAL 0201-0000					

A&E – REIMBURSABLES & OTHER SERVICES	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
TOTAL 0203-0000					

A&E – SUB-CONSULTANTS	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
0003-0000 HAZMAT	$ 12,067.00	$ 12,067.00		$ 12,067.00	100.00%
0003-0000 GEOTECH/GEOENVIRO	$ 35,750.00	$ 4,400.00	$ 13,090.00	$ 17,490.00	48.92%
0003-0000 SITE SURVEY	$ 16,500.00	$ 16,500.00		$ 16,500.00	100.00%
0003-0000 WETLANDS	$ 4,400.00	$ 4,400.00		$ 4,400.00	100.00%
0003-0000 TRAFFIC	$ 13,200.00	$ 13,200.00		$ 13,200.00	100.00%
TOTAL 0204-0000	$ 81,917.00	$ 50,567.00	$ 13,090.00	$ 63,657.00	77.71%

ARCHITECT Jonathan Levi, FAIA

McPHAIL ASSOCIATES, LLC

March 23, 2018
Project No: 6473.2.01
Invoice No: 0058850

Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

Attention: Mr. Philip Gray

Fuller Middle School; Framingham, Massachusetts
Geotechnical Engineering Services
Proposal dated 1/29/18 - Budget $17,000

Professional Services from February 1, 2018 to February 28, 2018

Fee

Total Fee	17,000.00			
Percent Complete	65.00	Total Earned	11,050.00	
		Previous Fee Billing	0.00	
		Current Fee Billing	11,050.00	
		Total Fee		**11,050.00**
			Total this Invoice	**$11,050.00**

Billings to Date

	Current	Prior	Total
Fee	11,050.00	0.00	11,050.00
Totals	**11,050.00**	**0.00**	**11,050.00**

Replaces Invoice 0058542

McPhail Associates, LLC
GEOTECHNICAL AND GEOENVIRONMENTAL ENGINEERS
2269 Massachusetts Avenue
Cambridge, Massachusetts 02140
617 / 868-1420

McPHAIL ASSOCIATES, LLC

April 23, 2018
Project No: 6473.2.01
Invoice No: 0058851

Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

Attention: Mr. Philip Gray

Fuller Middle School; Framingham, Massachusetts
Geotechnical Engineering Services
Proposal dated 1/29/18 - Budget $17,000

Professional Services from March 1, 2018 to March 31, 2018

Fee

Total Fee	17,000.00			
Percent Complete	70.00	Total Earned	11,900.00	
		Previous Fee Billing	11,050.00	
		Current Fee Billing	850.00	
		Total Fee		**850.00**
			Total this Invoice	**$850.00**

Outstanding Invoices

Number	Date	Balance
0058850	3/23/2018	11,050.00
Total		**11,050.00**

Billings to Date

	Current	Prior	Total
Fee	850.00	11,050.00	11,900.00
Totals	**850.00**	**11,050.00**	**11,900.00**

SMMA

Jennifer Pratt
Chief Procurement Officer
Town of Framingham
150 Concord Street, Room 123
Framingham, MA 01702

June 7, 2018
Project No: 17050.00
Invoice No: 0049020

Project 17050.00 Framingham Fuller MS OPM Services
OPM Services for the Fuller Middle School, Framingham, MA
Professional Services from May 5, 2018 to June 1, 2018
Fee

Billing Phase	Fee	Percent Complete	Earned	Previous Fee Billing	Current Fee Billing
Feasibility Study	90,000.00	100.00	90,000.00	90,000.00	0.00
Schematic Design	60,000.00	12.00	7,200.00	0.00	7,200.00
Total Fee	150,000.00		97,200.00	90,000.00	7,200.00
		Total Fee			**7,200.00**

Reimbursable Expenses

Permits/Fees/Regist		82.50	
Total Reimbursables		**82.50**	**82.50**
	Total this Invoice		**$7,282.50**

Outstanding Invoices

Number	Date	Balance
0048860	5/7/2018	28,550.00
Total		**28,550.00**

Billings to Date

	Current	Prior	Total
Fee	7,200.00	90,000.00	97,200.00
Consultant	0.00	6,050.00	6,050.00
Expense	82.50	0.00	82.50
Totals	**7,282.50**	**96,050.00**	**103,332.50**

Authorized _____
Joel Seeley

Date	Account Number	Serial Number	Amount
06/05/2018	564826525	000060772	$75.00

SMMA | SYMMES MAINI & McKEE ASSOCIATES

Cambridge Savings Bank
53-7112/2113

60772

CHECK DATE
May 23, 2018

PAY Seventy Five and 00/100 Dollars

AMOUNT
75.00

TO Middlesex South Registry of Deeds
208 Cambridge Street, 2nd Floor Documents
Cambridge, MA 02141

Security features. Details on back.

⑈060772⑈ ⑆211371120⑆ 564826525⑈

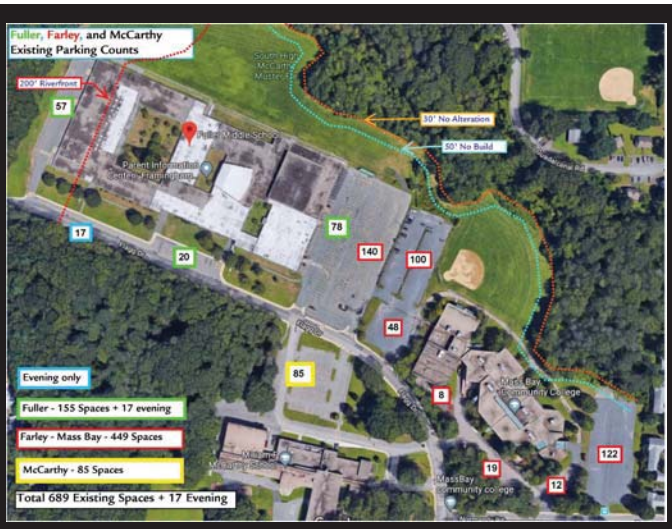
FULLER MIDDLE SCHOOL FEASIBILITY STUDY

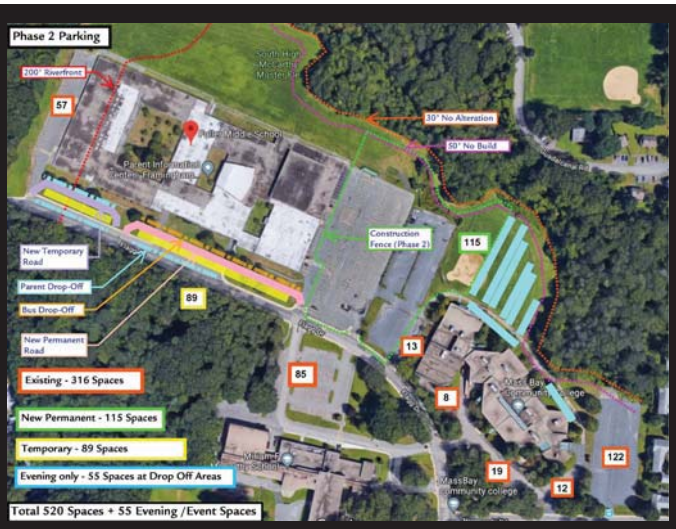
School Building Committee Meeting
June 18, 2018

Parking Needs

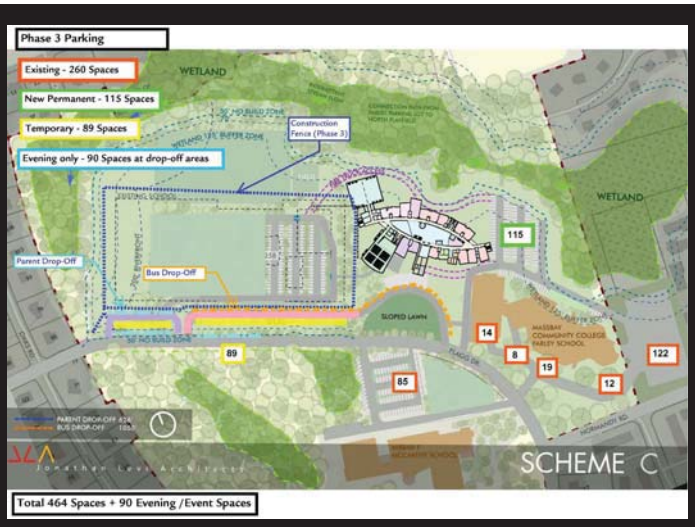
	Day	Night
Adult ESL	5	425
Fuller	100	-
Farley	150	150
McCarthy	85	-
PIC	15	-
Building and Grounds	20	5
Early Childhood	3	-
Truant	1	1
Board of Health	20	15
Subtotal	*399*	*596*
Contractor	100	-
Adult ESL off site parking	-	-100
Total	*499*	*496*

Phasing

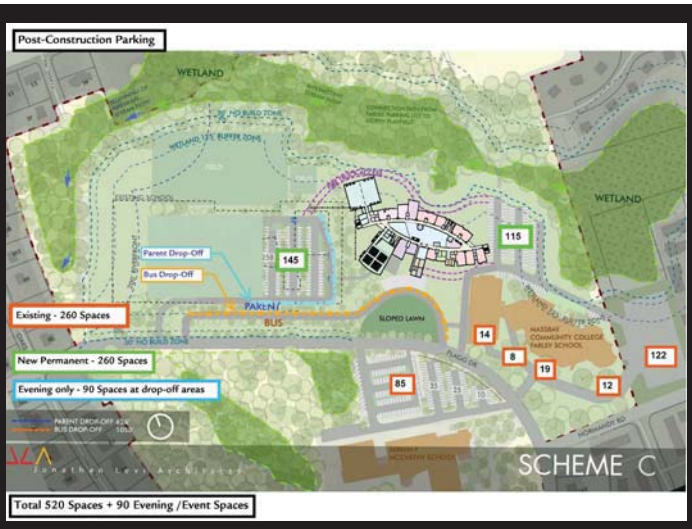




PROJECT MANAGEMENT SMMA



PROJECT MANAGEMENT SMMA



PROJECT MANAGEMENT SMMA

Cost Reduction Strategy

PROJECT MANAGEMENT SMMA

Cost Reduction Strategy

• Reduce ELL and Tech Classrooms	(-$6 M)
• Reduce Auditorium seating from 750 seats to 420 seats (MSBA High School Standard)	(-$3.3M)
• Reduce Gym size to MSBA fully reimbursable figure	(-$1.7M)
Total Potential Reduction	(-$11 M)
Previous Total Project Cost	$110.5M
Potential Adjusted Total Project Cost	$99.5M

PROJECT MANAGEMENT SMMA

SMMA

Project Management

Project Minutes

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	7/16/18
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library	Meeting No:	22
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
	David Miles	Co-Chair, City Resident with Experience in Finance	**Voting Member**
✓	Dr. Edward Gotgart	Co-Chair, FPS Chief Operating Officer	Non-Voting Member
	Mayor Spicer	Mayor, Chief Executive Officer	Non-Voting Member
✓	Thatcher Kezer III	Chief Operating Officer	Non-Voting Member
	Richard Finlay	School Committee Member and Convenor	**Voting Member**
✓	Adam Freudberg	Chair, School Committee	**Voting Member**
✓	Charlie Sisitsky	City Council Member	**Voting Member**
✓	Richard Weader II	Member of community with arch., eng., and/or construction experience	**Voting Member**
	Michael Grilli	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Caitlin Stempleski	Fuller School Teacher and Co-Chair of the Union Professional Development Committee	**Voting Member**
✓	Dr. Jennifer Krusinger Martin	School Building Committee Member	**Voting Member**
✓	Donald Taggart III	City Resident/Retired Teacher	**Voting Member**
	Jennifer Pratt	Assistant Chief Financial Officer and SBC Member who is MCPPO certified	Non-Voting Member
	Dr. Robert Tremblay	Superintendent of Schools	Non-Voting Member
✓	Matt Torti	Director of Buildings and Grounds	Non-Voting Member
	Jose Duarte	Principal, Fuller Middle School	Non-Voting Member
	Anne Ludes	Director of Secondary Education	Non-Voting Member
	Mary Ellen Kelley	Chief Financial Officer and Local Budget official or member of Finance Committee	Non-Voting Member
✓	Michael Tusino	Certified Building Official	Non-Voting Member
	Patrick Johnson	Principal, Walsh Middle School	Non-Voting Member
	John Haidemenos	Principal, Woodrow Wilson Elementary School	Non-Voting Member
✓	David Panich	School Building Committee Member	Non-Voting Member
	Thomas Barbieri	School Building Committee Member	Non-Voting Member
✓	Dr. Dale Hamel	School Building Committee Member	Non-Voting Member
✓	Noval Alexander	School Committee Member **(Voting for R. Finlay)**	Non-Voting Member
	Heather Connolly	Former Chair of the School Committee	Non-Voting Member
✓	Scott Wadland	School Committee Member	
✓	Donna Wresinski	FPS, Director of Fine and Performing Arts	
✓	Jonathan Levi	JLA, Architect	
✓	Philip Gray	JLA, Architect	
✓	Giles Ham	Vanasse & Associates	
✓	Joel Seeley	SMMA, OPM	

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Item #	Action	Discussion
22.1	Record	Call to Order, 7:00 PM, meeting opened.
22.2	Record	Public Comments – the following comments were made: 1. The new school may be too small when it is opened. 2. Has MassBay agreed to the reduced parking spaces starting summer 2019? 3. There have been no published results of the traffic study and geotechnical investigation. 4. There are deed restrictions on the Farley property limiting its use. 5. The Millis elementary school is behind schedule.
22.3	Record	A motion was made by A. Freudberg and seconded by N. Alexander to approve the 6/28/18 School Building Committee meeting minutes. No discussion, motion passed unanimously by those attending.
22.4	Record	J. Seeley distributed and reviewed Warrant No. 8, attached. A motion was made by N. Alexander and seconded by D. Taggart III to approve Warrant No. 8. No discussion, motion passed unanimous.
22.5	Record	P. Gray distributed the 6/25/18 and 7/9/18 Educational Working Group meeting minutes, attached.
22.6	Record	P. Gray distributed the 7/10/18 Auditorium Design meeting minutes, attached. J. Levi presented and reviewed the 420 seat auditorium and 8,300 square feet gymnasium design, attached. The gymnasium can accommodate 640 bleacher seating plus an additional 110 seating in portable bleachers. An operable wall between the gymnasium and auditorium is no longer recommended. J. Seeley distributed and reviewed the Total Project Cost and Cost to the City for the 420 seat auditorium, attached. Committee Discussion: 1. E. Gotgart asked D. Wresinski to provide her insight from the theater and music perspective on a 420 seat auditorium. *D. Wresinski indicated that a 420 seat auditorium is an appropriate size for middle school students from a theater and music perspective. A 750 seat auditorium with a balcony could be difficult for voice projection and could feel so cavernous as to not connect the audience and student performers*. 2. D. Taggart III indicated community use of the auditorium may support a need for 750 seats and he would not be in support of reducing the seat counts for cost savings purposes only. 3. S. Wadland asked if the total project cost savings of $3.3 million and the cost to City savings of $2.3 million is correct for the reduction to a 420 seat auditorium? *J. Seeley indicated yes both figures are correct. The MSBA factors in the auditorium construction cost as ineligible and not the contingencies and soft costs associated with the auditorium, that is why there is a difference*.

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		4. D. Wresinski asked what was the reasoning for a 750 seat auditorium. *P. Gray indicated the 750 seats was based on an all school event for all 630 students plus the teachers*. 5. C. Sisitsky asked if the auditorium floor was sloped down to the stage? *J. Levi indicated yes, the seating area is sloped down to the stage and the aisles to the left, right and rear are flat, at the same level as the stage*. 6. D. Taggart III asked what would the tax impact be reduced by with a 420 seat auditorium? 7. C. Stempleski asked what if an all school event at the same time the gymnasium is needed for another use? *D. Wresinski indicated that could be addressed thru scheduling.* 8. A. Freudberg indicated the 420 seat auditorium balances affordability with educational needs and community use. A Motion was made by C. Sisitsky and seconded by R. Weader II to approve reducing the auditorium size to 420 seats. No discussion, motion passed 5 in favor and 2 against - with A. Freudberg, C. Sisitsky, R. Weader II, J. Krusinger Martin, and N. Alexander (for R. Finlay) voting for and C. Stempleski and D. Taggart III voting against. D. Taggart III indicated that he supported changing to a 420 seat auditorium, but vote against since he did not have the tax impact information.
22.7	Record	J. Levi presented and reviewed the difference between a full air conditioning system and a displacement ventilation system, attached. J. Seeley distributed and reviewed the Total Project Cost and Cost to the City for deleting the full air conditioning, attached. E. Gotgart distributed and reviewed the 2018 Summer Use Schedule for FPS schools, reflecting 2,271 students and 307 staff use, attached. Committee Discussion: 1. E. Gotgart indicated that the current fully air conditioned schools are heavily used during the summer and that fully air conditioning Fuller will provide additional needed capacity, especially factoring in the downtime for the maintenance and cleaning rotation. 2. J. Krusinger Martin indicated she will not be attendance at the 8/6/18 SBC meeting and does not support deleting the full air conditioning. 3. D. Taggart III indicated he will not be attendance at the 8/6/18 SBC meeting and does not support deleting the full air conditioning. 4. D. Panich indicated he would like to see the long term cost increase for fully air conditioning versus dehumidification. *M. Torti indicated the HVAC engineers just submitted the 30 year cost to operate report on the HVAC options, but it has not been reviewed*.

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		5. C. Sisitsky questioned how practical it is to fully air condition the Learning Commons space, but not the classrooms that open onto it. 6. A. Freudberg spoke favorably about keeping Air Conditioning in the project scope and quoted stats from a recent Harvard University study on the health and educational benefits on student learning without the impacts of high heat. Citation if needed: http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002605 A Motion was made by D. Taggart III and seconded by A. Freudberg to keep the full air conditioning. No discussion, motion passed unanimously.
22.8	P. Gray	G. Ham presented and reviewed the traffic study findings and recommendations from the PDP submission and the traffic patterns for the Phases 1, 2 and 3 of the construction, attached. Committee Comments: 1. C. Sisitsky indicated concern that in Phase 2 and 3, students that are being dropped off by parents will have to cross bus traffic. *G. Ham indicated that the amount of parent drop-offs was low and that staff might be able to manage. P. Gray indicated they will review this condition further.* 2. J. Krusinger Martin asked what are the traffic impacts, both during construction and in the final state, along Oaks and Warren? *P. Gray indicated they will review and provide direction*. 3. J. Krusinger Martin asked what will happen to the McCarthy parents that use the Fuller parking lot to drop-off and pick-up and walk across the street? *P. Gray indicated they will review and provide direction. S. Wadland indicated since McCarthy is a feeder school to Fuller, parents that are using the Fuller lot may have children at both schools.* 4. J. Krusinger Martin asked what will the construction traffic route be? *P. Gray indicated they will review and provide direction.* 5. S. Wadland asked if the bus exit drive and parent entry dirve are too close in the final state? *G. Ham indicated that the level of traffic along Flagg Drive is low and this should not be an issue.* 6. J. Krusinger Martin indicated that speeding is an issue along Flagg Drive. *G. Ham indicated this was observed and that they will review options for controlling the speed.* 7. C. Stempleski asked in which lot will teachers and staff park during each of the construction phases? *P. Gray indicated that has not been decided yet and they will review with the school administration*.

22.9	Record	J. Levi presented and reviewed the updated floor plans, roof plan and interior glazing, attached. Committee Comments: 1. D. Taggart III asked if there were enough toilet rooms? *J. Levi indicated the quantity is per the building code.* 2. D. Taggart III asked if there are gender neutral toilet rooms? *P. Gray indicated yes, there are single toilet rooms at each core toilet bank.* 3. C. Sisitsky asked if there will be shades on the interior glazing for security purposes? *J. Levi indicated yes, either shades or the hinged marker board will cover the interior glazing*.
22.10	Record	J. Levi presented and reviewed the interior and exterior building materials, attached. Committee Comments: 1. M. Torti indicated that Building and Grounds reviewed many of these same materials at the Dearborn school and supports their use on Fuller.
22.11	Record	J. Seeley reviewed Community Forum No. 6, scheduled for Monday, 7/23/18 at 6:00pm at the Fuller Library. Committee Comments: 1. D. Taggart III asked that the auditorium, gymnasium and air conditioning decisions be presented at the forum.
22.12	J. Seeley	J. Seeley provided an update on the Project Information Working Group and encouraged members to go to the on-line version of the Community Outreach Calendar to sign up to attend the events. J. Seeley to email the Calendar to the committee.
22.13	Record	J. Seeley distributed and reviewed the MSBA letter approving the PSR Submission, dated 6/27/18 attached.
22.14	Record	J. Seeley distributed and reviewed the Preliminary Project Schedule for the Schematic Design Submission, attached.
22.15	Record	Old or New Business – none
22.16	J. Seeley	Committee Questions 1. A. Freudberg requested J. Seeley to email a confirmation to the Committee for the August meetings. *J. Seeley will email the Committee.* 2. A. Freudberg requested the status of the geotechnical borings? P. Gray to provide direction at the next Committee meeting.
22.17	Record	Next **SBC Meeting: August 6, 2018 at 7:00 PM** at Fuller Middle School Library.
22.18	Record	A Motion was made by D. Taggart III and seconded by C. Sisitsky to adjourn the meeting. No discussion, motion passed unanimous.

Attachments: Agenda, Warrant No. 8, 6/25/18 and 7/9/18 Educational Working Group meeting minutes, 7/10/18 Auditorium Design meeting minutes, Total Project Cost and Cost to the City for the 420 seat Auditorium, 2018 Summer Use Schedule for FPS schools, MSBA letter approving the PSR Submission, Preliminary Project Schedule for the Schematic Design Submission, Powerpoint

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes.

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Project Management

PROJECT MEETING SIGN-IN SHEET

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	7/16/2018
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library 31 Flagg Drive, Framingham, MA	Meeting No:	22
Distribution:	Attendees, (MF)		

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	David Miles	dmiles@partners.org	Co-Chair, School Building Committee, City Resident with experience in Finance
	Dr. Edward Gotgart	egotgart@framingham.k12.ma.us	Co-Chair and FPS Chief Operating Officer
	Yvonne M. Spicer	mayorspicer@framinghamma.gov	Mayor, City of Framingham
	Thatcher Kezer, III	tkezer@framinghamma.gov	Chief Operating Officer, Mayoral Designee
	Richard Finlay	rfinlay@wellesleyma.gov	School Committee Member and Convenor
	Adam Freudberg	afreudberg@framingham.k12.ma.us	Chair of School Committee
	Charlie Sisitsky	csisitsky@rcn.com	Local Chief Executive Officer
	Richard Weader, II	weaders@aol.com	Member of community with architecture, engineering and/or construction experience
	Michael Grilli	mgrilli@beta-inc.com	Member of community with architecture, engineering and/or construction experience
	Caitlin Stempleski	cstempleski@framingham.kl2.ma.us	Fuller School Teacher and Co-Chair of the Union Professional Development Committee
	Dr. Jennifer Krusinger Martin	jkrusinger@gmail.com	School Building Committee Member
	Donald Taggart III	dontaggart134@gmail.com	City Resident / Retired Teacher
	Jennifer Pratt	jap@framinghamma.gov	Assistant Chief Financial Officer and SBC Member who is MCPPO certified, City of Framingham
	Dr. Robert Tremblay	rtremblay@framingham.k12.ma.us	Superintendent of Schools
	Matt Torti	mtorti@framingham.k12.ma.us	Director of Buildings and Grounds
	Jose Duarte	jduarte@framingham.k12.ma.us	Principal, Fuller Middle School
	Anne Ludes	aludes@framingham.k12.ma.us	Director of Secondary Education, Framingham Public Schools
	Mary Ellen Kelley, CFO	mek@framinghamma.gov	Chief Financial Officer and Local Budget official
	Michael Tusino	mat@framinghamma.gov	Certified Building Official

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Project: Fuller Middle School Feasibility Study
Meeting Date: July 16, 2018
Meeting No.: 22

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	Patrick Johnson	pjohnson@framingham.k12.ma.us	Principal, Walsh Middle School
	John Haidemenos	jhaidemenos@framingham.k12.ma.us	Principal, Woodrow Wilson Elementary School
	David Panich	david@panicharchitecture.com	School Building Committee Member
	Thomas Barbieri	Thombrbr@aol.com	School Building Committee Member
	Dr. Dale Hamel	dhamel@framingham.edu	School Building Committee Member
	Noval Alexander	n.alexander@framingham.k12.ma.us	School Committee Member
	Heather Connolly	heatheratconnolly@comcast.net	Former Chair of School Committee
	Jonathan Levi	jlevi@leviarc.com	Jonathan Levi Architects (JLA)
	Philip Gray	pgray@leviarc.com	Jonathan Levi Architects (JLA)
	Joel Seeley	jseeley@smma.com	SMMA
	Giles Ham	GHam@RDVA.com	Vanasse Assoc.
	J.		
	Scott Wallace		School Comm

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Agenda

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Re:	School Building Committee Meeting	Meeting Date:	7/16/2018
Meeting Location:	Fuller Middle School Library	Meeting Time:	7:00 PM
Prepared by:	Joel G. Seeley	Meeting No.	22
Distribution:	Committee Members (MF)		

1. Call to Order
2. Public Comments
3. Approval of Minutes
4. Approval of Invoices and Commitments
5. Review Project Cost Reductions – Auditorium Vote
6. Review Traffic Report
7. Review Updated Design – Interior and Exterior
8. Review Interior and Exterior Materials
9. Prepare for Community Forum No. 6
10. Project Information Working Group Update
11. Old or New Business
12. Committee Questions
13. Next Meeting: August 6, 2018
14. Adjourn

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Jonathan Levi Architects

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NOTES OF MEETING

project	Fuller Middle School Feasibility Study	project no.	1722
date	6/25/18, 8:00 am	location	Fuller School
re	**Budget, Design update**		
present	David Miles (SBC), Anne Ludes (FPS),) Joel Seeley (SMMA, by phone), Jonathan Levi (JLA), Philip Gray (JLA), Carol Harris (JLA)		
distribution	attendees; Robert Tremblay (FPS), Jose Duarte (FPS), Matt Torti (FPS), Edward Gotgart (FPS) project file		

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1) In response to the City Council's stated concerns, the design team should continue with ongoing budget reduction efforts. The design team should review the reduction auditorium size from 750 seats to 420 seats for SBC consideration. 420 seats would accommodate 2/3 of the design enrollment, and represents the standard size that the MSBA would consider appropriate for a 630 student high school. JLA to present concept of movable partition between auditorium and gym.
2) JLA to review dehumidified vs air conditioned classrooms with MEP consultant for SBC review of potential savings. A site visit to the Field School will be scheduled to review a school without full A/C
3) Meetings should be set up with Food Service, theater, and athletic departments for input on the use and design.
4) Jonathan Levi presented current design of interior and exterior for presentation to the SBC (see attached). Presentation included detailed discussion on classroom design, room locations and adjacencies, and exterior materials.

END OF MEETING NOTES

Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

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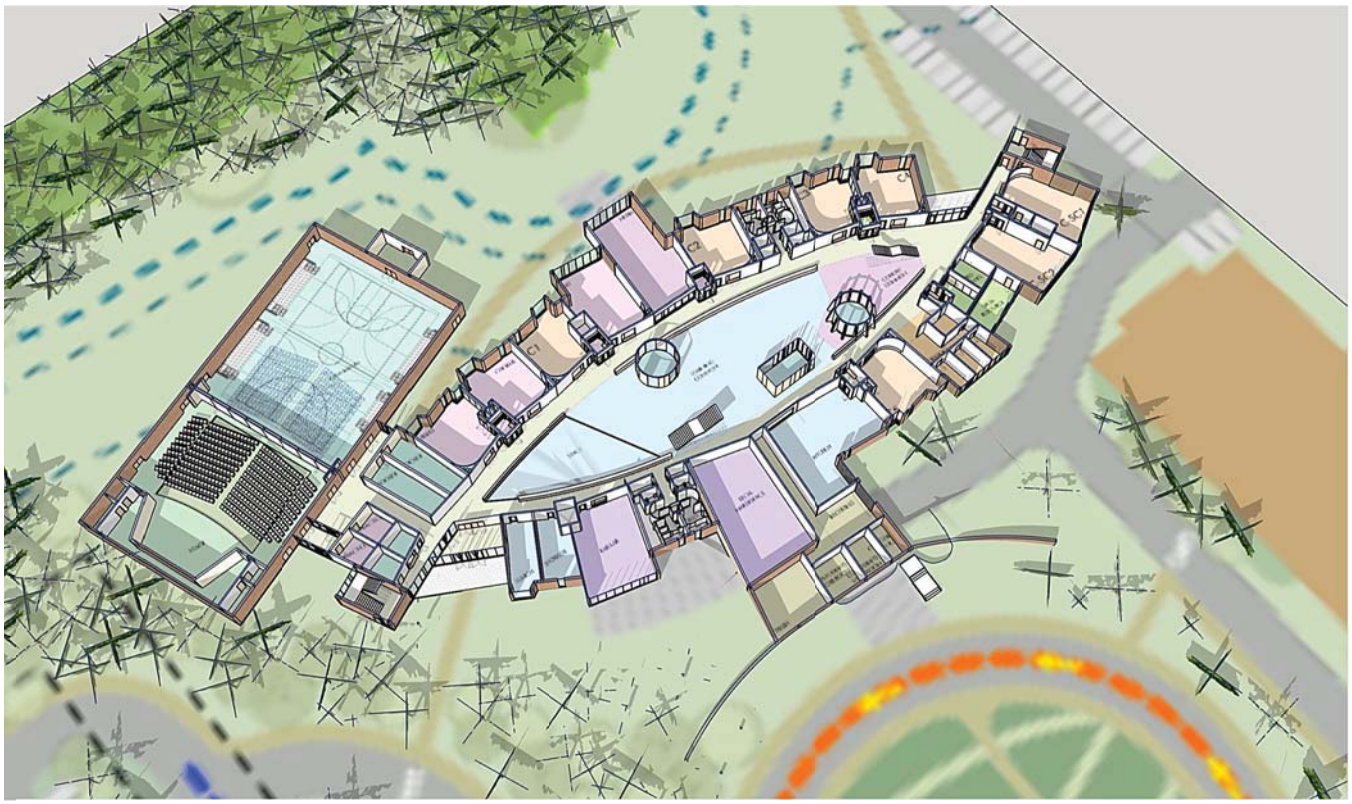
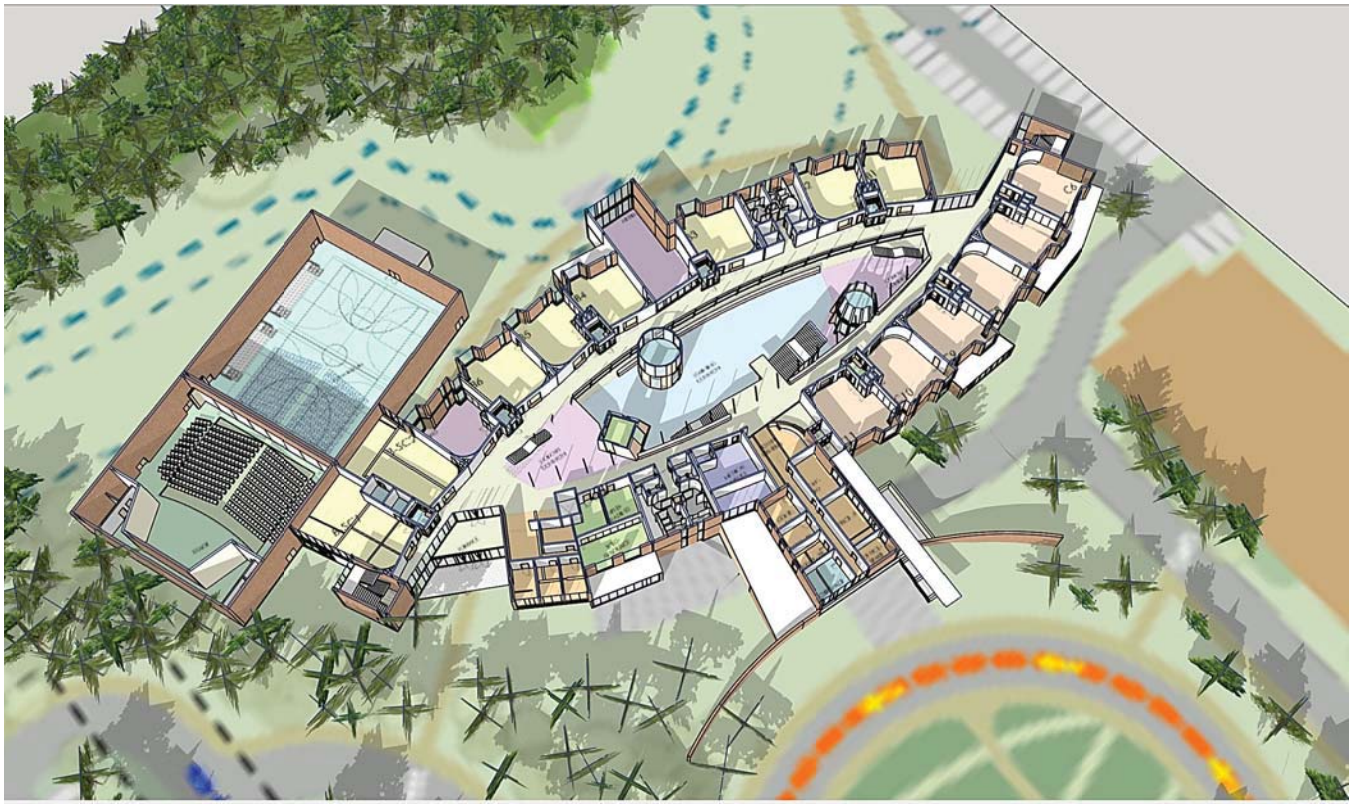
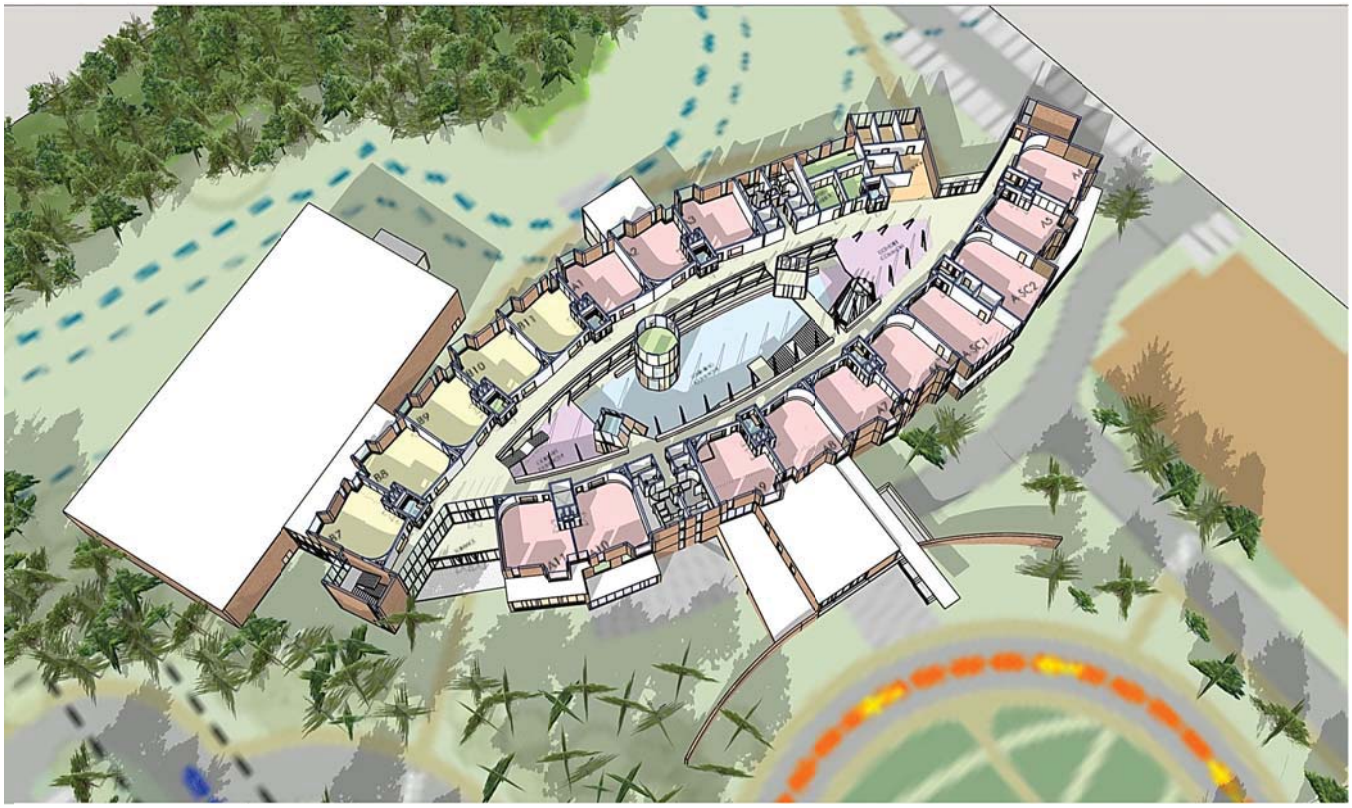
by Philip Gray



First Floor



Second Floor



Third Floor

South Facade

North Facade

South Entry

Typical Classroom and Teacher Planning

Typical Classroom and Teacher Planning

Jonathan Levi Architects

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NOTES OF MEETING

project	Fuller Middle School Feasibility Study	project no.	1722
date	7/9/18, 8:00 am	location	Fuller School
re	**Budget, maintenance, inter**		
present	Jose Duarte (FPS), Lincoln Lynch IV (FPS), Matt Torti (FPS), Anne Ludes (FPS), Joel Seeley (SMMA), Jonathan Levi (JLA), Philip Gray (JLA), Carol Harris (JLA)		
distribution	attendees; Robert Tremblay (FPS), Edward Gotgart (FPS), project file		

1. To simplify maintenance and reduce costs, several of the exterior “bump-outs” on the ground floor have been eliminated.
2. Maintenance issues discussed included rain screen openings and insects. JLA has used this exterior cladding system in several schools with no significant issues. JLA recommends this be discussed with the custodial staff of the Field School at the upcoming site visit.
3. The design will proceed with the understanding that bird nesting opportunities should be minimized.
4. The alternative of moving the footprint of the building east to avoid additional phasing costs was discussed. MT and JD expressed concern that the new school not be too close to the existing Farley school. JLA to keep the footprint with part of the new building over the footprint of the existing school, and keep phasing costs in the project budget as per the preferred schematic design.
5. The loading dock has been moved to the east side for better proximity to the relocated central maintenance facility in Farley
6. Exterior finish materials were reviewed, including 8” x 8” brick and Trespa laminate feature panels. JLA to provide Matt with physical samples of Trespa panels.
7. Interior finish materials were reviewed including VCT, magnetic writable surface, PLAM panels in hallways, and glass. Matt to review similar installation at the Dearborn school site visit on 7/12.
8. It was agreed that the movable partitions between classrooms do not require an independent door in the movable partition.

9. JLA to provide dates for geotechnical test borings (Since scheduled for 7/26 and 7/27)
10. The design locates lockers along the hallways to serve “double-duty” as guardrails. JLA will explore options to allow the top of the lockers to serve as display areas for student work without providing a possible locations for items to sit on top.
11. JLA’s traffic consultant has been coordinating with JLA on phasing, and will present at the next SBC meeting.
12. JLA to provide earthwork cut and fill analysis
13. A meeting should be set up with Framingham Park and Rec to review the exterior open area which will be freed up after the existing building is demolished.

END OF MEETING NOTES

Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

---

by Philip Gray

Jonathan Levi Architects

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NOTES OF MEETING

project	Fuller Middle School Feasibility Study	project no.	1722
date	7/10/18, 2:00 pm	location	Fuller School
re	**Auditorium Design**		
present	Donna Wresinski (FPS), Terri Shea (FPS), Joel Seeley (SMMA), Philip Gray (JLA), Carol Harris (JLA)		
distribution	attendees; project file		

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1) The group toured the existing Fuller auditorium. Like the existing, the new auditorium will not have a fly space over the stage.
2) There is not a need for a 750 seat auditorium for the drama program. 420 seats is preferred so performances can play to a full house, avoid bad behavior issues associated with a balcony, and to allow the students on stage to project their voices to the audience. There is no need to connect to the auditorium to the gym with a movable partition. The high school auditorium has 700 seats, so any very large production could be held there.
3) Good sound isolation between the auditorium and the gym and lobby as a must. JLA will coordinate with acoustical engineer and provide sound and light locks and partitions with appropriate sound transmission coefficients.
4) Request that drama classroom be located nearby, ideally to use as a “green room” with direct access to stage. Students need a path to the stage without being seen.
5) Changing rooms should accommodate 25 students each.
6) Current design to MSBA high school standards has 1,600 sf stage, including wings. JLA to review size comparison with existing, which seem appropriately sized. It is anticipated that a maximum of 100 students could be on stage.
7) The first 2 or 3 rows of seats near the stage should be removable to allow a pit area for 78 student chorus to stand on risers.
8) Lockable sound board / light control panels should be located in the back seating area, with a closet behind, rather than a separate control booth.
9) An exterior door behind the stage would be very useful.

10) Request that the band and chorus rooms be moved closer to the stage and also the practice rooms
11) The lobby should have room for ticket sales and concessions
12) Back of stage can have a curtain rather than fixed partition to allow concealed circulation from stage left and stage right
13) Provide easy path to move sets from maker space to stage.
14) Stage floor to be Masonite, not solid wood for set assembly.

END OF MEETING NOTES

Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

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by Philip Gray

Feasibility and Schematic Design Phase	MSBA ProPay Code	FSA Agreement 2/15/2017	Budget Revision 10/10/2017	Current Budget	Vendor	Committed	Balance
OPM	0001-0000	$ 185,000.00	$ (10,000.00)	$ 175,000.00	SMMA	$ 174,200.00	$ 800.00
DESIGNER	0002-0000	$ 580,000.00	$ (35,000.00)	$ 545,000.00	JLA	$ 545,000.00	$ -
Environmental and Site	0003-0000	$ 100,000.00	$ 45,000.00	$ 145,000.00		$ 134,772.00	$ 10,228.00
Other	0004-0000	$ 135,000.00	$ -	$ 135,000.00		$ 82.50	$ 134,917.50
Total Budget		**$ 1,000,000.00**		**$ 1,000,000.00**		**$ 854,054.50**	**$ 145,945.50**

Project Management | SMMA

Warrant No. 8

Project:	Fuller Middle School, Framingham, Massachusetts	Project No.:	17050
Prepared by:	Joel G. Seeley, AIA	Date:	7/16/2018

School Building Committee for the Fuller Middle School hereby authorizes to draw against funds for the obligations incurred for value received in services and for materials shown below:

Vendor	Invoice No.	Invoice Date	Invoice Amount	ProPay Code	Balance After Invoice
SMMA	49160	7/3/2018	$ 9,600.00	0001-0000	$ 43,200.00
Jonathan Levi Architects	1722-00-09	7/2/2018	$ 54,500.00	0002-0000	$ 136,250.00
		Total	**$ 64,100.00**		

_____ David Miles, Chairman

_____ Richard Finlay

_____ Adam Freudberg

_____ Charles Sisitsky

_____ Richard Weader, II

_____ Michael Grilli

_____ Caitlin Stempleski

_____ Dr. Jennifer Krusinger Martin

_____ Donald Taggart, III

Approved on _____

1000 Massachusetts Avenue
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Jonathan Levi Architects
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INVOICE

Jennifer Pratt
Chief Procurement Officer
City of Framingham
150 Concord Street
Framingham, MA 01702

DATE: July 2, 2018
CLIENT PROJECT NO:
INVOICE NO: 1722-00-09

PROJECT: Fuller Middle School

In accordance with Owner-Architect Agreement dated September 25, 2017
there is due at this time for architectural services and reimbursable items for the period
6/1/2018 — 6/30/2018 the sum of

Fifty Four Thousand Five Hundred Dollars and No Cents **$ 54,500.00**

the above amount shall become due and payable within 30 days from the date hereof.

A&E – FEASIBILITY STUDY	CONTRACT AMT (A)	PREVIOUS PERIOD (B)	CURRENT PERIOD (C)	EARNED (D=B+C)	% COMPLETE (D/A)
0002-0000 FEASIBILITY	$ 335,000.00	$ 335,000.00	$ -	$ 335,000.00	100.00%
0002-0000 SCHEMATIC DESIGN	$ 210,000.00	$ 19,250.00	$ 54,500.00	$ 73,750.00	35.12%
TOTAL 0002-0000	$ 545,000.00	$ 354,250.00	$ 54,500.00	$ 408,750.00	75.00%

A&E – BASIC SERVICES	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
0201-0400 DD					
0201-0500 CD					
0201-0600 BIDDING					
0201-0700 CA					
0201-0800 CLOSEOUT					
TOTAL 0201-0000					

A&E – REIMBURSABLES & OTHER SERVICES	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
TOTAL 0203-0000					

A&E – SUB-CONSULTANTS	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
0003-0000 HAZMAT	$ 12,067.00	$ 12,067.00		$ 12,067.00	100.00%
0003-0000 GEOTECH/GEOENVIRO	$ 35,750.00	$ 35,750.00		$ 35,750.00	100.00%
0003-0000 SITE SURVEY	$ 16,500.00	$ 16,500.00		$ 16,500.00	100.00%
0003-0000 WETLANDS	$ 4,400.00	$ 4,400.00		$ 4,400.00	100.00%
0003-0000 TRAFFIC	$ 13,200.00	$ 13,200.00		$ 13,200.00	100.00%
TOTAL 0204-0000	$ 81,917.00	$ 81,917.00	$ -	$ 81,917.00	100.00%

ARCHITECT Jonathan Levi, FAIA

SMMA

Jennifer Pratt
Chief Procurement Officer
Town of Framingham
150 Concord Street, Room 123
Framingham, MA 01702

July 3, 2018
Project No: 17050.00
Invoice No: 0049160

Project 17050.00 Framingham Fuller MS OPM Services
OPM Services for the Fuller Middle School, Framingham, MA
Professional Services from June 2, 2018 to June 29, 2018
Fee

Billing Phase	Fee	Percent Complete	Earned	Previous Fee Billing	Current Fee Billing
Feasibility Study	90,000.00	100.00	90,000.00	90,000.00	0.00
Schematic Design	60,000.00	28.00	16,800.00	7,200.00	9,600.00
Total Fee	150,000.00		106,800.00	97,200.00	9,600.00
		Total Fee			**9,600.00**
				Total this Invoice	**$9,600.00**

Outstanding Invoices

Number	Date	Balance
0049020	6/7/2018	7,282.50
Total		**7,282.50**

Billings to Date

	Current	Prior	Total
Fee	9,600.00	97,200.00	106,800.00
Consultant	0.00	6,050.00	6,050.00
Expense	0.00	82.50	82.50
Totals	**9,600.00**	**103,332.50**	**112,932.50**

Authorized _____
Joel Seeley

Massachusetts School Building Authority

June 27, 2018

The Honorable Dr. Yvonne M. Spicer
Mayor, City of Framingham
150 Concord Street, Room 121
Framingham, MA 01702

Re: City of Framingham, Fuller Middle School

Dear Mayor Spicer:

I am pleased to report that the Board of the Massachusetts School Building Authority (the "MSBA") has voted to approve the City of Framingham (the "City") as part of its invitation for Feasibility Study, to proceed into schematic design to replace the existing Fuller Middle School with a new facility serving grades 6-8 on the existing site (the "proposed project").

It is my understanding that the City anticipates seeking community approval for this proposed project in November, 2018. Therefore, it is critical that the City, in conjunction with its Owner's Project Manager and Designer, submit a schedule to the MSBA as soon as possible, which should include: the work plan to complete all of the required documentation for presentation to the MSBA's Board of Directors at a future Board meeting; the date of the City Council meeting(s) at which the proposed project will be considered; and the anticipated design and construction schedule.

We will be contacting you soon to discuss these next steps in more detail, but in the meantime, I wanted to share with you the Board's vote to approve the City of Framingham to proceed into schematic design to replace the existing Fuller Middle School with a new facility serving grades 6-8 on the existing site.

I look forward to continuing to work with you as the MSBA's grant program progresses. As always, feel free to contact me or my staff at (617) 720-4466 should you have any questions.

Sincerely,

John K. McCarthy
Executive Director

Cc: Legislative Delegation
Dennis L. Giombetti, Chair, Framingham City Council
Jennifer A. Pratt, Framingham Assistant Chief Financial Officer
Adam Freudberg, Chair, Framingham School Committee
Dr. Robert A. Tremblay, Superintendent, Framingham Public Schools
Dr. Frank Tiano, Assistant Superintendent for Community Development and Engagement, Framingham Public Schools
Nancy Piasecki, Executive Director of the Office of the Superintendent, Framingham Public Schools
Matthew Torti, Director of Buildings and Grounds, Framingham Public Schools
Carol Brodeur, Executive Assistant, Office of Building and Grounds, Framingham Public Schools
Joel G. Seeley, Owner's Project Manager, Symmes Maini & McKee Associates
Jonathan Levi, Jonathan Levi Architects, LLC
File: 10.2 Letters (Region 4)

DRAFT

	Option C Per 6/18/18 SBC Vote	Reduce Auditorium to 420 seats	Reduce Auditorium to 420 seats and Delete Full Air Conditioning
	141,740 SF	136,790 SF	136,790 SF
Total Project Cost	$104,546,335	$101,265,723	$100,186,043
Approximate MSBA Reimbursement	$40,904,374	$39,885,414	$39,811,716
Approximate Cost to the City	**$63,641,961**	**$61,380,309**	**$60,374,327**
Approximate Cost to City Incremental Decrease		-$2,261,652	-$1,005,982
Approximate Cost to City Cumulative Decrease			**-$3,267,634**

Dated: July 16, 2018

Framingham Public Schools
Summer Use - 2018

School	Program Name	Start Date	End Date	# students	# Staff	M	T	W	T	F
Cameron	Soar (sped)	7/2/2018	7/27/2018	450	80	x	x	x	x	x
Cameron	Flyers (sped)	7/2/2018	8/3/2018	25	10	x	x	x	x	x
Cameron	Connections (sped)	7/2/2018	7/27/2018	50	20	x	x	x	x	x
Cameron	BEST (sped)	7/2/2018	8/3/2018	8	5	x	x	x	x	x
Cameron	Adventures (sped)	7/2/2018	8/3/2018	25	10	x	x	x	x	x
558 students 125 staff										
FHS	21st Summer Access (2, 2 weeks)	7/2/2018	7/27/2018	60	10	x	x	x	x	x
FHS	21st Summer McAuliffe/FSU	7/2/2018	7/13/2018	60	10	x	x	x	x	x
FHS	FSU Dual Enrollment Courses	6/25/2018	7/12/2018	40	2	x	x	x	x	
FHS	Football conditioning	6/25/2018	8/15/2018	40	4	X		X		X
FHS	Girls Basketball	7/23/2018	8/3/2018	25	1		x	x	x	x
FHS	Secondary Summer School	7/2/2018	7/31/2018	200	25	x	x	x	x	x
FHS	Basketball Clinic	6/26/2018	6/29/2018	100	15	x	x	x	x	x
FHS	Resiliency for Life Summer Program	7/16/2018	7/26/2018	20	4	X	X	X	X	X
FHS	Youth Summer Jobs Workshops	7/11/2018	8/2/2018	15	1			X	X	
FHS	Flyer Boys Basketball	7/9/2018	7/19/2018	99	4	X	X	X	X	X
FHS	Druker Basketball Camp	7/9/2018	7/19/2018	99	4	X	X	X	X	X
659 students 55 staff										
Fuller	Summer Scene	7/2/2018	7/27/2018	150	6	x	x	x	x	x
Fuller	Bilingual	7/9/2018	7/13/2018	25	2	x	x	x	x	x
Fuller	PIC	8/24/2018	8/24/2018	25	4	x				
200 students										
Juniper Hill	Blocks half day (sped)	7/2/2018	7/26/2018	75	20	x	x	x	x	
Juniper Hill	Blocks full day (sped)	7/2/2018	8/2/2018	20	10	x	x	x	x	
Juniper Hill	ESL PreK Summer Program	7/2/2018	8/2/2018	70	6	x	x	x	x	
Juniper Hill	ED Director	7/9/18 7/23/18	7/13/18 7/27/18	15	1		x	x	x	x

Dated: July 16, 2018

Framingham Public Schools
Summer Use - 2018

School	Program Name	Start Date	End Date	# students	# Staff	M	T	W	T	F
180 students 36 staff										
McCarthy	Summer Scene (includes Theatre Company)	7/2/2018	7/27/2018	150	8	x	x	x	x	x
McCarthy	Park and Rec-MCarthy Day CAre-Special Needs program	7/5/2018	8/10/2018	40	10	x	x	x	x	x
McCarthy	Camp Invention	7/23/2018	7/27/2018	100	10	x	x	x	x	x
McCarthy	McCarthy program	7/9/2018	8/10/2018	30	10	x	x	x	x	x
320 students 20 staff										
Walsh	Band Camp (FHS)	8/13/2018	8/24/2018	50	2		x	x	x	x
Wilson	RISE Summer Reading Program	7/2/2018	7/27/2018	80	8	x	x	x	x	x
Wilson	ESL Summer R.I.S.E	7/2/2018	7/27/2018	100	4	x	x	x	x	x
Wilson	Bilingual	7/9/2018	7/13/2018	25	1	x	x	x	x	x
205 students 12 staff										
				2,271	307					

SMMA

Project Management

Project Minutes

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Lorraine Finnegan and Sarah Traniello	Meeting Date:	6/28/18
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library	Meeting No:	21
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
✓	David Miles	Co-Chair, City Resident with Experience in Finance	**Voting Member**
✓	Dr. Edward Gotgart	Co-Chair, FPS Chief Operating Officer	Non-Voting Member
	Mayor Spicer	Mayor, Chief Executive Officer	Non-Voting Member
	Thatcher Kezer III	Chief Operating Officer	Non-Voting Member
✓	Richard Finlay	School Committee Member and Convenor	**Voting Member**
✓	Adam Freudberg	Chair, School Committee	**Voting Member**
	Charlie Sisitsky	City Council Member	**Voting Member**
✓	Richard Weader II	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Michael Grilli	Member of community with arch., eng., and/or construction experience	**Voting Member**
	Caitlin Stempleski	Fuller School Teacher and Co-Chair of the Union Professional Development Committee	**Voting Member**
✓	Dr. Jennifer Krusinger Martin	School Building Committee Member	**Voting Member**
	Donald Taggart III	City Resident/Retired Teacher	**Voting Member**
✓	Jennifer Pratt	Assistant Chief Financial Officer and SBC Member who is MCPPO certified	Non-Voting Member
✓	Dr. Robert Tremblay	Superintendent of Schools	Non-Voting Member
✓	Matt Torti	Director of Buildings and Grounds	Non-Voting Member
✓	Jose Duarte	Principal, Fuller Middle School	Non-Voting Member
✓	Anne Ludes	Director of Secondary Education	Non-Voting Member
✓	Mary Ellen Kelley	Chief Financial Officer and Local Budget official or member of Finance Committee	Non-Voting Member
	Michael Tusino	Certified Building Official	Non-Voting Member
	Patrick Johnson	Principal, Walsh Middle School	Non-Voting Member
	John Haidemenos	Principal, Woodrow Wilson Elementary School	Non-Voting Member
✓	David Panich	School Building Committee Member	Non-Voting Member
	Thomas Barbieri	School Building Committee Member	Non-Voting Member
✓	Dr. Dale Hamel	School Building Committee Member	Non-Voting Member
✓	Noval Alexander	School Committee Member	Non-Voting Member
	Heather Connolly	Former Chair of the School Committee	Non-Voting Member
✓	Jonathan Levi	JLA, Architect	
✓	Philip Gray	JLA, Architect	
✓	Sarah Traniello	SMMA, OPM	
✓	Lorraine Finnegan	SMMA, OPM	
	Joel Seeley	SMMA, OPM	

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Item #	Action	Discussion
21.1	Record	Call to Order, 7:00 PM, meeting opened.
21.2	Record	Public Comments - none
21.3	Record	A motion was made by R. Finlay and seconded by M. Grilli to approve the 6/18/18 School Building Committee meeting minutes. No discussion, motion passed unanimously by those attending.
21.4	P. Gray	L. Finnegan provided an overview of the MSBA Board Meeting held on 6/27/18 and distributed and reviewed the response to the MSBA Comments on the PSR Submission, attached. Committee Discussion: 1. D. Miles asked what did the MSBA Board actually approve? *L. Finnegan explained the three submissions to the MSBA: the PDP, the PSR and the Schematic Design Submission. The MSBA Board votes on the PSR Submission and the Schematic Design Submission. At the 6/27/18 MSBA Board Meeting, the MSBA agreed with the Preferred Option C in the PSR and approved the project to commence into the Schematic Design phase.* 2. D. Hamel indicated the USGBC scorecard included in the response to Item #5 needs to be updated with totals, as the fields appear to be missing. *P. Gray will provide the corrected form.* 3. D. Miles asked where are the outdoor education spaces referred to in Item #8. *J. Levi indicated the outdoor educational spaces are located on the sloping lawn amphitheater and the second floor outdoor teaching deck.* 4. D. Miles asked why did the MSBA ask for the Utility Connection and Location plan. *L. Finnegan indicated the MSBA asked for the utility connection and location plan to verify that the utility services to support the project are available*. 5. D. Miles asked are the costs on the Budget Statement from 2014? *L. Finnegan no, 2014 is the date of the MSBA's template. E. Gotgart indicated the post-construction costs are for 2021 when the new school opens. E. Gotgart also indicated that MSBA asked why were the post-construction costs higher than the 2017 costs and that he explained that is due to there being 100 more students in the new building than in the current building.*
21.5	Record	P. Gray distributed the 6/11/18 Educational Working Group meeting minutes, attached.
21.6	Record	P. Gray distributed the 6/13/18 Building and Grounds MEP Systems meeting minutes, attached.
21.7	J. Levi	J. Levi presented and reviewed the updated interior and exterior building design, attached. The update incorporates the reduction of 3 ELL classrooms, 3 science labs and combining the technology classroom into the Fabrication Lab. Committee Discussion:

		1. D. Miles asked J. Levi to explain the HVAC system in each classroom. *J. Levi explained that in the corner of each classroom there is chase space for the displacement air ducts and variable volume boxes to supply the HVAC.* 2. R. Finlay asked how will custodians clean the area between the circular breakout spaces and the adjacent wall? *J. Levi explained that his team is aware of this concern and will use benches or other built-in items to eliminate these areas.* 3. R. Finlay asked if the operable wall between the auditorium and gymnasium will be a sufficient sound barrier? *J. Levi indicated the STC rating of the operable wall system is as high as the surrounding wall and believes a basketball game can occur while an event is ongoing in the auditorium. J. Levi indicated it may take 2 back to back operable walls, JLA will study and provide direction.* 4. D. Miles asked if the auditorium floor sloped down to the stage, allowing the audience in the gymnasium to see the stage? *J. Levi indicated yes, the auditorium seating area slopes down and the gymnasium floor and stage are at the same elevation, allowing the audience in the gymnasium to see the stage.* 5. D. Miles asked what is the cafeteria seating capacity? *P. Gray indicated the cafeteria is sized for 210 seats. JLA will show the cafeteria tables at the next meeting.* 6. N. Alexander asked if the large amount of skylight glass is a problem in severe weather. *J. Levi indicated no, the skylights should not be a safety item, also the students could shelter in the classrooms if severe weather does occur.* 7. *R. Finlay asked if Buildings and Grounds will provide their recommendation on the proposed interior finish materials.* *M. Torti indicated yes, Building and Grounds will review and provide their recommendation.* 8. *M. Grilli asked if an SBC member can attend the Educational Working Group meetings.* *D. Miles indicated he attended the most recent meeting and that others are welcome.*
21.8	J. Seeley P. Gray	J. Levi presented and reviewed the cost impact to reduce the auditorium size to 420 seats and delete the full air conditioning and reviewed the difference between a full air conditioning system and a displacement ventilation system, attached. D. Miles indicated that the message he took away from the 6/19/18 City Council Meeting was the council would be interested in further reducing the project cost. Committee Discussion:

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		1. A. Freudberg indicated several City Councilors have expressed interest in reducing the project cost and several City Councilors have endorsed the auditorium and air conditioning. 2. A. Freudberg asked why is the cost savings for the auditorium reduction shown as $3.3 million when last meeting it was $2.2 million. *L. Finnegan indicated that is the total project cost savings and the cost to City savings, J. Seeley will review with the Committee at the next Committee meeting.* 3. R. Finlay suggested the SBC visit the Field School in Weston to see a displacement ventilation system in action before deciding to delete the full air conditioning. *P. Gray will coordinate dates for a site visit by the Committee*. 4. M. Torti indicated he visited the Field School but did not review the displacement ventilation system. He will have his MEP team tour the school also. 5. A. Freudberg indicated he is open to learning more about the displacement ventilation system in order to understand if this is a viable option and is looking forward to the tour. 6. R. Finlay asked if a listing of other schools that have the displacement ventilation system, including contact information, can be provided to the Committee. *P. Gray will provide for the next Committee meeting.* 7. D. Miles asked if fully air conditioning the cafeteria will benefit the classrooms, if they only have the displacement ventilation system? *P. Gray will review and provide direction.* 8. M. Torti asked when will the Committee need to decide on the auditorium and air conditioning. *J. Levi indicated the auditorium decision should be made at the 7/16/18 Committee meeting. The air conditioning can wait until the 8/6/18 Committee meeting.*
21.9	P. Gray	P. Gray presented and reviewed an overview of the LEED goals and geothermal and photovoltaic systems under review, attached. Committee Comments: 1. D. Miles asked what does solar ready mean? *P. Gray indicated that the building rooves will be designed to support photovoltaic panels if they were to be installed in the future.* 2. A. Freudberg asked if there are third party vendors that can assist in providing the photovoltaic panels.

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		P. Gray indicated yes, there are third party vendors that can assist in providing the panels in the future. 3. D. Miles asked if the City currently has contracts with photovoltaic vendors to buy electricity at discounted rates? *M. Kelley indicated yes, the City has two active agreements from which the City receives energy credits. The credits are applied to the high school, library and part of the arena energy costs.*
21.10	Record	L. Finnegan provided an update on the Project Information Working Group and distributed and reviewed the Community Outreach Calendar. L. Finnegan encouraged members to go to the on-line version of the Community Outreach Calendar to sign up to attend the events.
21.11	Record	Old or New Business – none
21.12	Record	Committee Questions - none
21.13	Record	Next **SBC Meeting: July 16, 2018 at 7:00 PM** at Fuller Middle School Library.
21.14	Record	A Motion was made by R. Finlay and seconded by R. Weader II to adjourn the meeting. No discussion, motion passed unanimous.

Attachments: Agenda, District's Response to MSBA Review Comments on the PSR Submission, 6/11/18 Educational Working Group meeting minutes; 6/13/18 Building and Grounds MEP Systems meeting minutes, Community Outreach Calendar, Powerpoint

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes.

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Project Management

PROJECT MEETING SIGN-IN SHEET

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	6/28/2018
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library 31 Flagg Drive, Framingham, MA	Meeting No:	21
Distribution:	Attendees, (MF)		

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	David Miles	dmiles@partners.org	Co-Chair, School Building Committee, City Resident with experience in Finance
	Dr. Edward Gotgart	egotgart@framingham.k12.ma.us	Co-Chair and FPS Chief Operating Officer
	Yvonne M. Spicer	mayorspicer@framinghamma.gov	Mayor, City of Framingham
	Thatcher Kezer, III	tkezer@framinghamma.gov	Chief Operating Officer, Mayoral Designee
	Richard Finlay	rfinlay@wellesleyma.gov	School Committee Member and Convenor
	Adam Freudberg	afreudberg@framingham.k12.ma.us	Chair of School Committee
	Charlie Sisitsky	csisitsky@rcn.com	Local Chief Executive Officer
	Richard Weader, II	weaders@aol.com	Member of community with architecture, engineering and/or construction experience
	Michael Grilli	mgrilli@beta-inc.com	Member of community with architecture, engineering and/or construction experience
	Caitlin Stempleski	cstempleski@framingham.kl2.ma.us	Fuller School Teacher and Co-Chair of the Union Professional Development Committee
	Dr. Jennifer Krusinger Martin	jkrusinger@gmail.com	School Building Committee Member
	Donald Taggart III	dontaggart134@gmail.com	City Resident / Retired Teacher
	Jennifer Pratt	jap@framinghamma.gov	Assistant Chief Financial Officer and SBC Member who is MCPPO certified, City of Framingham
	Dr. Robert Tremblay	rtremblay@framingham.k12.ma.us	Superintendent of Schools
	Matt Torti	mtorti@framingham.k12.ma.us	Director of Buildings and Grounds
	Jose Duarte	jduarte@framingham.k12.ma.us	Principal, Fuller Middle School
	Anne Ludes	aludes@framingham.k12.ma.us	Director of Secondary Education, Framingham Public Schools
	Mary Ellen Kelley, CFO	mek@framinghamma.gov	Chief Financial Officer and Local Budget official
	Michael Tusino	mat@framinghamma.gov	Certified Building Official

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Project: Fuller Middle School Feasibility Study
Meeting Date: June 28, 2018
Meeting No.: 21

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	Patrick Johnson	pjohnson@framingham.kl2.ma.us	Principal, Walsh Middle School
	John Haidemenos	jhaidemenos@framingham.k12.ma.us	Principal, Woodrow Wilson Elementary School
	David Panich	david@panicharchitecture.com	School Building Committee Member
	Thomas Barbieri	Thombrbr@aol.com	School Building Committee Member
	Dr. Dale Hamel	dhamel@framingham.edu	School Building Committee Member
	Noval Alexander	n.alexander@framingham.k12.ma.us	School Committee Member
	Heather Connolly	heatheratconnolly@comcast.net	Former Chair of School Committee
	Jonathan Levi	jlevi@leviarc.com	Jonathan Levi Architects (JLA)
	Philip Gray	pgray@leviarc.com	Jonathan Levi Architects (JLA)
	Sarah Traniello	straniello@smma.com	SMMA
	Lorraine Finnegan	lfinnegan@smma.com	SMMA
	Joel Seeley	jseeley@smma.com	SMMA

p:\2017\17050\04-meetings\4.3 mtg_notes\4-school building committee\21-2018_28junesbcmeeting\schoolbuildingcommitteemeetingsign-in sheet_28june2018.docx

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Project Management | SMMA

Agenda

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Re:	School Building Committee Meeting	Meeting Date:	6/28/2018
Meeting Location:	Fuller Middle School Library	Meeting Time:	7:00 PM
Prepared by:	Joel G. Seeley	Meeting No.	21
Distribution:	Committee Members (MF)		

1. Call to Order
2. Public Comments
3. Approval of Minutes - *P1: Pgs 2-15*
4. Approval of Invoices and Commitments
5. Review MSBA Comments and Board Meeting - *P2: Pgs 1-26*
6. Review Updated Design – Interior and Exterior
7. Review Project Cost
8. Review Potential Sustainable Design Features
9. Project Information Working Group Update - *P1: Pg 15*
10. Old or New Business
11. Committee Questions
12. Next Meeting: July 16, 2018
13. Adjourn

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Jonathan Levi Architects

266 beacon street boston ma 02116 tel 617.437.9458 www.leviarc.com

NOTES OF MEETING

project	Fuller Middle School Feasibility Study	project no.	1722
date	6/11/18, 8:00 am	location	Fuller School
re	**MSBA PSR Review Comment Response, Cost Savings, Temporary Parking**		
present	Edward Gotgart (FPS), Matt Torti (FPS), Anne Ludes (FPS), Joel Seeley (SMMA), Jonathan Levi (JLA), Philip Gray (JLA),		
distribution	attendees; project file Robert Tremblay (FPS), Jose Duarte (FPS), Carol Harris (JLA)		

---

1) MSBA PSR review comments were reviewed. It appears that all comments can be accommodated. Reductions include 3 ELL classrooms, 3 ELL science classrooms, associated teacher planning rooms, and 2 seminar spaces. Anne will confirm, and revise the ed plan to incorporate review comments. To be presented to SBC for formal approval of changes.
2) Ongoing cost reduction discussion. JLA to provide construction cost reductions for MSBA review comment program reductions and 420 seat auditorium. Joel will translate construction costs to total project costs for SBC review.
3) JLA will develop alternative gym / auditorium configurations for review.
4) Traffic engineer proposal will be presented for SBC approval. Proposal includes construction traffic.
5) Elevator access to r=mechanical spaces was requested by Matt Torti
6) JLA presented draft temporary parking phasing diagrams for conceptual review (see attached). PG to add an additional diagram describing period of existing Fuller building demo, and present to SBC.

END OF MEETING NOTES

Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

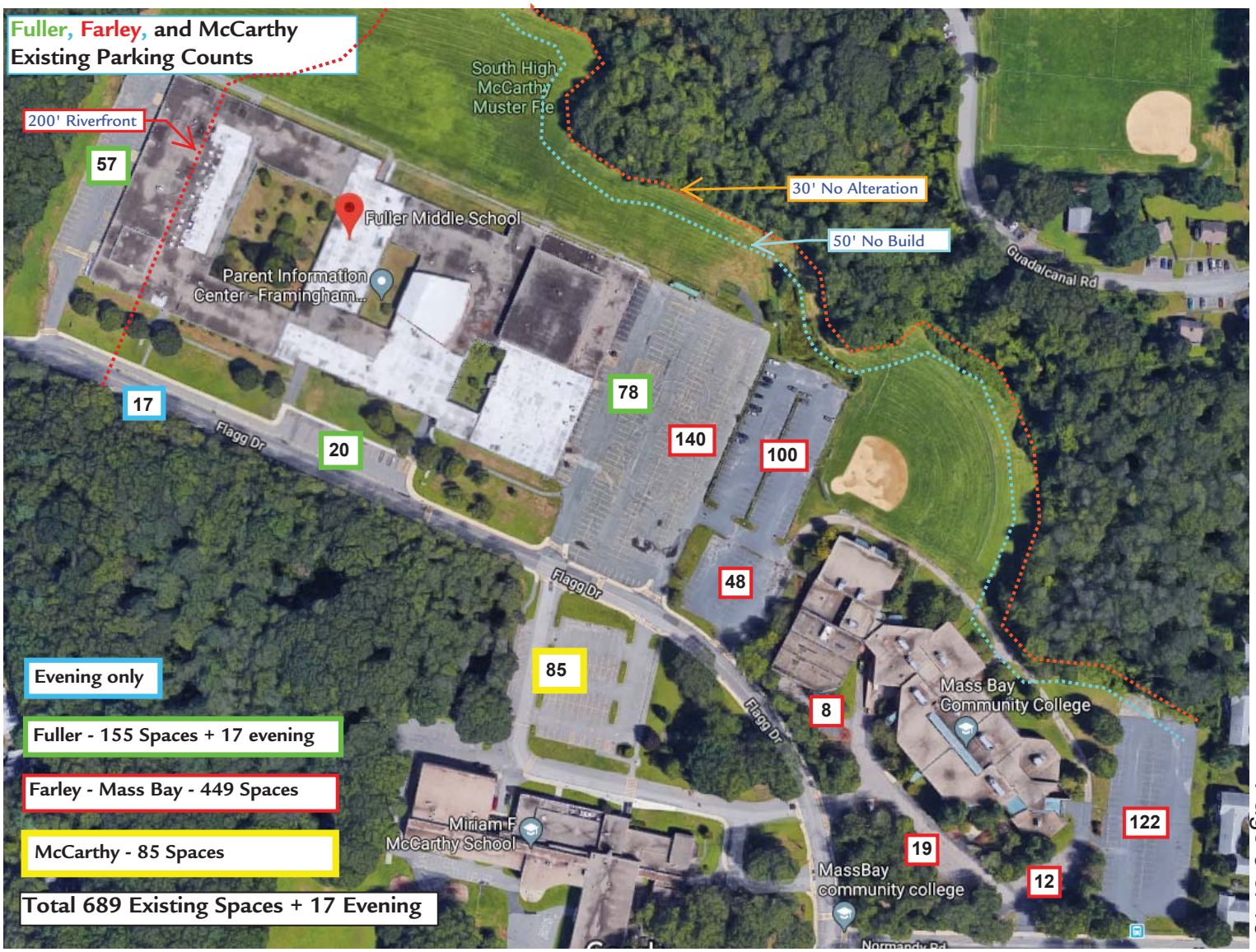
---

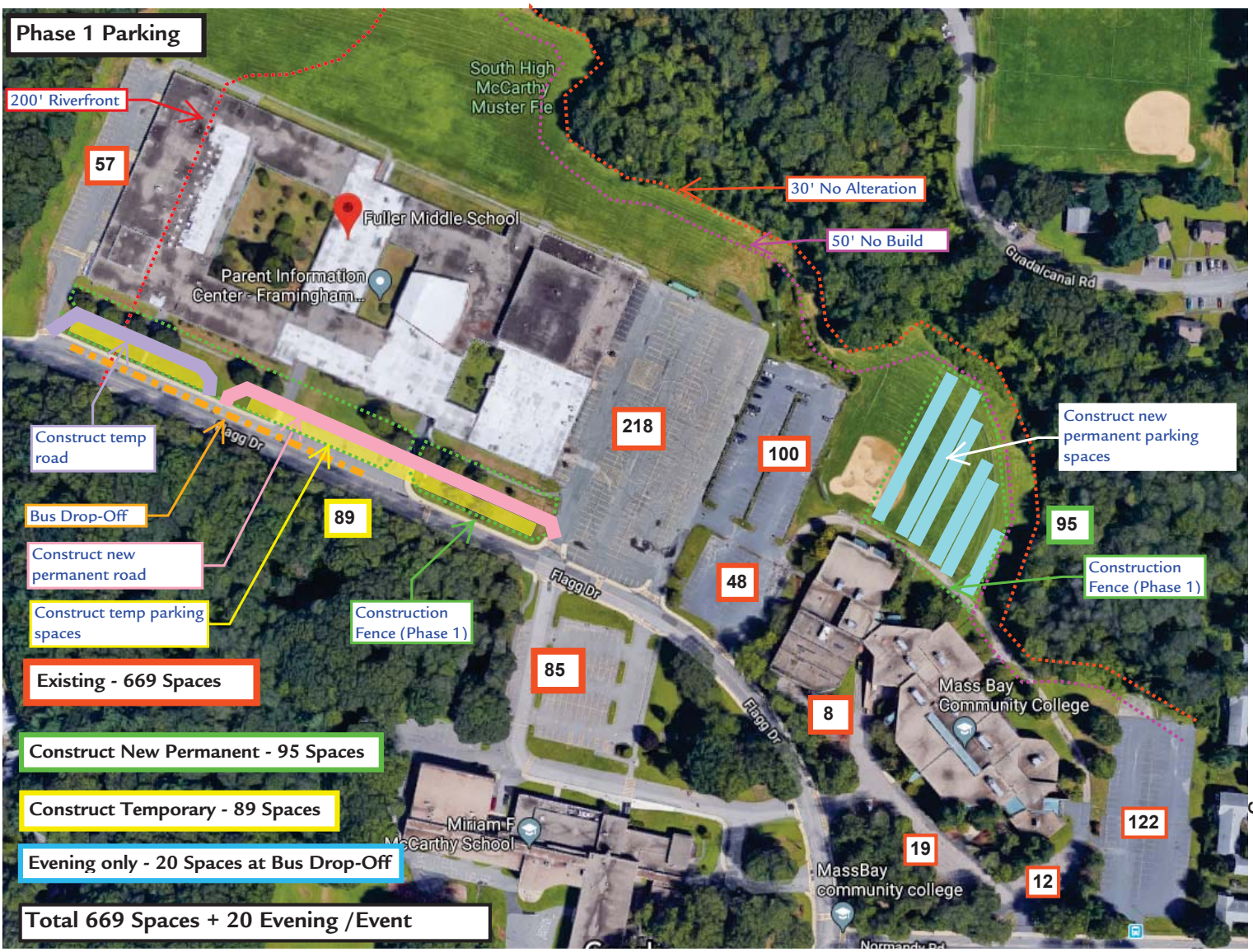
by Philip Gray

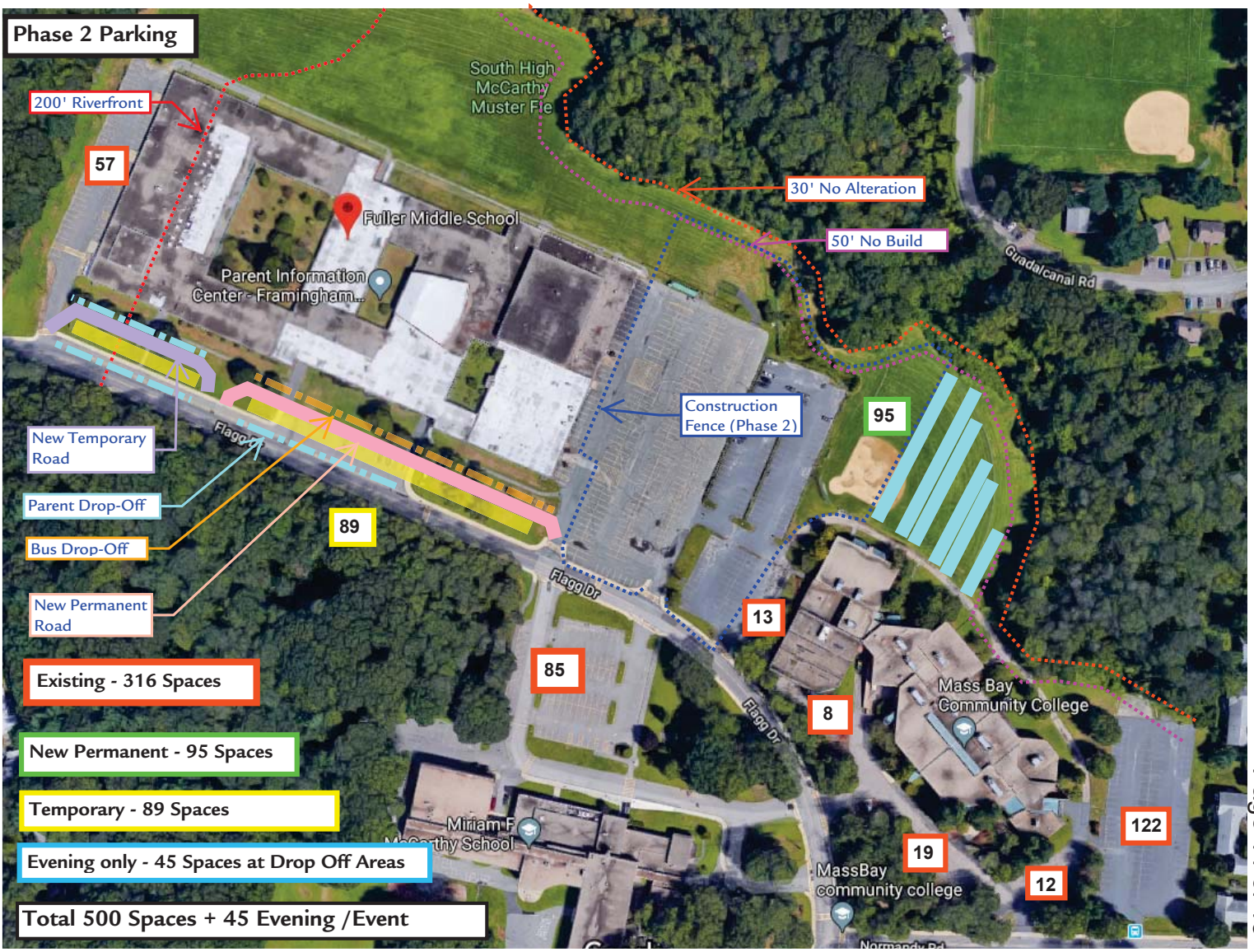
Fuller Parking Needs - During and After Construction

	Day	Night
Adult ESL	5	425
Fuller	100	-
Farley	150	150
McCarthy	85	-
PIC	15	-
Building and Grounds	20	5
Early Childhood	3	-
Truant	1	1
Board of Health	20	15
Subtotal	***399***	***596***

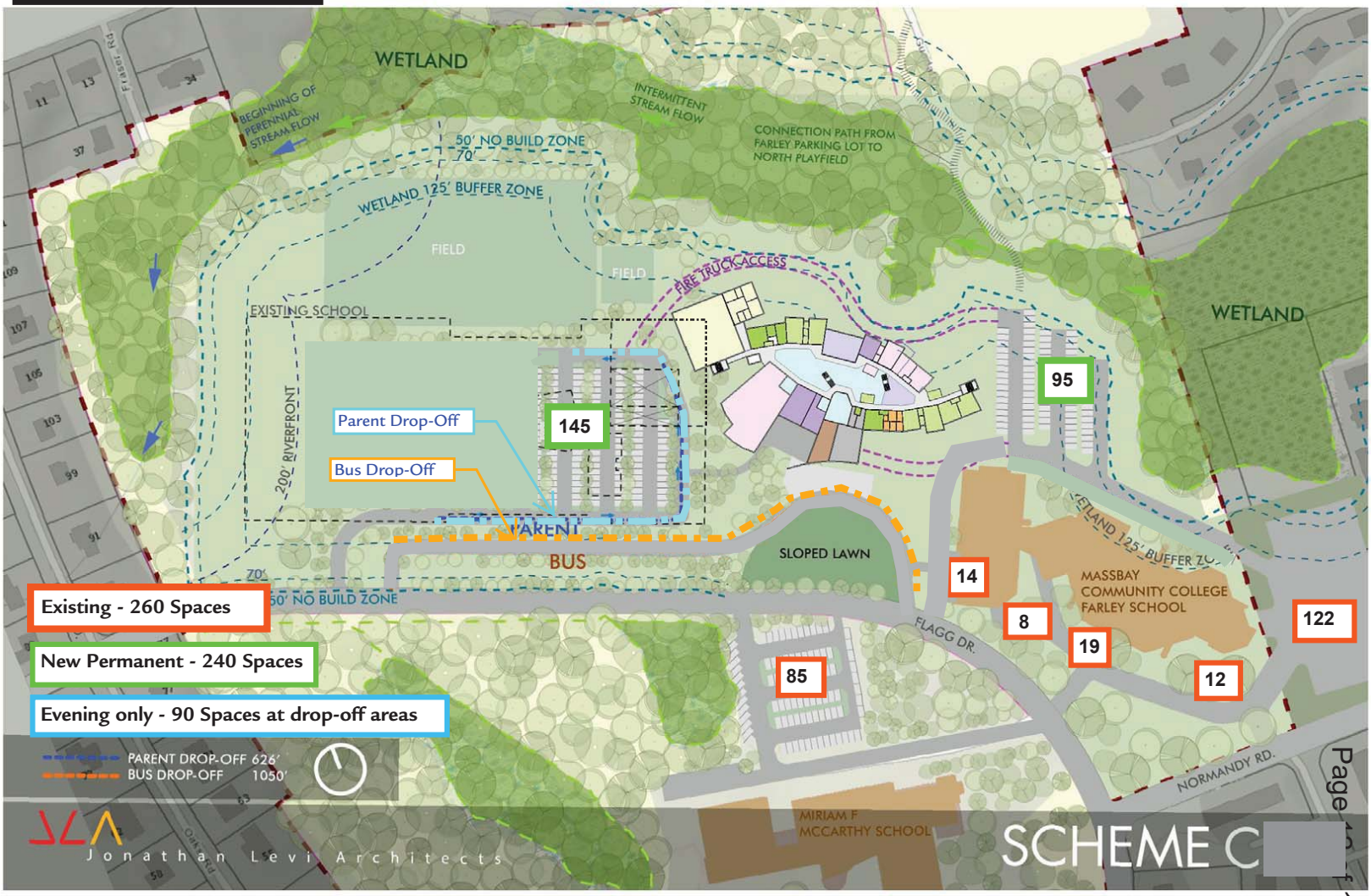
Contractor	100	-
Adult ESL off site parking	-	-100
Total	***499***	***496***


Fuller, Farley, and McCarthy
Existing Parking Counts
South High
McCarthy
Muster Fie
200' Riverfront
57
Fuller Middle School
Parent Information
Center - Framingham...
30' No Alteration
50' No Build
Guadalcanal Rd
17
Flagg Dr
20
78
140
100
48
Flagg Dr
85
Flagg Dr
8
Mass Bay
Community College
122
19
12
Miriam F
McCarthy School
MassBay
community college
Evening only
Fuller - 155 Spaces + 17 evening
Farley - Mass Bay - 449 Spaces
McCarthy - 85 Spaces
Total 689 Existing Spaces + 17 Evening


Phase 1 Parking
200' Riverfront
57
South High McCarthy Muster Fie
30' No Alteration
50' No Build
Fuller Middle School
Parent Information Center - Framingham...
Guadalcanal Rd
Construct temp road
Bus Drop-Off
Construct new permanent road
Construct temp parking spaces
89
218
100
Construct new permanent parking spaces
95
Construction Fence (Phase 1)
48
Flagg Dr
Construction Fence (Phase 1)
85
8
Mass Bay Community College
Existing - 669 Spaces
Construct New Permanent - 95 Spaces
Construct Temporary - 89 Spaces
Evening only - 20 Spaces at Bus Drop-Off
Miriam F McCarthy School
19
MassBay community college
12
122
Total 669 Spaces + 20 Evening /Event


Phase 2 Parking
200' Riverfront
57
South High McCarthy Muster Fie
30' No Alteration
50' No Build
Fuller Middle School
Parent Information Center - Framingham...
Guadalcanal Rd
Construction Fence (Phase 2)
95
New Temporary Road
Parent Drop-Off
Bus Drop-Off
New Permanent Road
89
Flagg Dr
13
85
8
Mass Bay Community College
Existing - 316 Spaces
New Permanent - 95 Spaces
Temporary - 89 Spaces
Evening only - 45 Spaces at Drop Off Areas
Miriam F
thy School
19
122
MassBay community college
12
Total 500 Spaces + 45 Evening /Event

Post-Construction Parking



Total 500 Spaces + 90 Evening /Event Spaces

Jonathan Levi Architects

266 beacon street boston ma 02116 tel 617.437.9458 www.leviarc.com

NOTES OF MEETING

project	Fuller Middle School Feasibility Study	project no.	1722
date	6/13/18, 8:00 am	location	Fuller School
re	**Mechanical systems and energy model**		
present	Matt Torti (FPS), Tim Rivers (FPS) Joel Seeley (SMMA), Philip Gray (JLA), Dom Puniello, (GGD)		
distribution	attendees; project file		

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1) Schedule for energy model was agreed as follows:

- 6/26 at 1:30 - Dearborn School tour - PG to confirm with Boston Public Schools
- 7/23 - GGD to email preliminary energy analysis on HVAC distribution systems
- 7/25 Matt to respond with e-mail on preferred direction for GGD to complete energy analysis
- 7/27 GGD to email full draft energy analysis
- 7/30 at 11:00 meet with MEP group to review energy analysis
- 8/6 at 7 pm - presentation to SBC

2) Energy model will include the following options at a minimum:

- Baseline – VAV
- VAV with high efficiency perimeter
- Displacement ventilation
- Displacement ventilation with perimeter
- Chilled beam

3) Geothermal systems were discussed as follows:

<u>Closed-Well Geothermal System:</u>

- Typical Well Depth 500 ft.
- Approximately 120 wells at 20 ft on-center for cooling loads
- Approximately 145 wells at 20 ft on-center for heating load (would eliminate boiler plant)
- Comparatively minimal DEP process
- Comparatively little maintenance

Open-Well Geothermal System:

- Typical Depth 1500 ft.
- Approximately 13 wells at 75 ft o.c. for Cooling loads
- Approximately 16 wells at 75 ft o.c. for heating load (would eliminate boiler plant)
- More involved DEP process (wells must be sanitized)
- Requires substantially more maintenance

Closed -loop recommended over open loop for reliability and predictability of DEP process.

4) The building is to have full air conditioning
5) Photovoltaic systems were discussed as follows:
   - Funding: The MSBA does not reimburse for PV panels, as electricity use is considered an operational expense.
   - Solar Ready: The building will be designed to accept the gravity loads of PV panels, and will have conduit from the roof to the electrical room so that PV can be easily installed at the district's discretion. This work is eligible for MSBA reimbursement
   - Location: Panels can be Rooftop, Ground Mounted and / or Car Port.
   - Net-Zero: To be Energy Neutral or Carbon Neutral, there will need to be more PV panels than would fit on the roof. The precise quantity will be dependent on the HVAC system chosen later this summer.
6) Elevator access to roof / penthouse requested
7) Rooftop units are currently anticipated be needed for auditorium, gym, lockers (small), kitchen, and 4 for classrooms / offices.

END OF MEETING NOTES

Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

---

by Philip Gray

Updated: June 28, 2018

City of Framingham | Framingham Public Schools
Fuller Middle School
Building Project Promotion Opportunities

Date	Time	Location	Event	Volunteer	Notes
June 29	6:30-8:30 PM	Village Green at Framingham Center, 2 Oak Street	Concerts on the Green		
July 4	5-8 PM	Depot 417	XChange Depot Public Market Series		
July 5	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
July 6	6:30-8:30 PM	Village Green at Framingham Center, 2 Oak Street	Concerts on the Green		
July 12	10:30-11:30 AM	Framingham Centre Common	Big Joe the Storyteller		
July 12	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
July 13	6-9 PM	Saxonsonville Mills	Gallery Reception and Open Studios The Mill Contemporary Art		
July 13	6:30-8:30 PM	Village Green at Framingham Center, 2 Oak Street	Concerts on the Green		
July 18	5-8 PM	Depot 417	XChange Depot Public Market Series		
July 19	10:30-11:30 AM	Framingham Centre Common	Jojo the Magician		
July 19	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
July 20	6:30-8:30 PM	Village Green at Framingham Center, 2 Oak Street	Concerts on the Green		
July 26	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
July 27	6:30-8:30 PM	Village Green at Framingham Center, 2 Oak Street	Concerts on the Green		
August 1	5-8 PM	Depot 417	XChange Depot Public Market Series		
August 2	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
August 3	6-8 PM	Village Green at Framingham Center, 2 Oak Street	Concerts on the Green		
August 9	10:30-11:30 AM	Framingham Centre Common	Stacey Peasley		
August 9	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
August 10	6-8 PM	Village Green at Framingham Center, 2 Oak Street	Concerts on the Green		
August 10	6-9 PM	Saxonsonville Mills	Gallery Reception and Open Studios The Mill Contemporary Art		
August 15	5-8 PM	Depot 417	XChange Depot Public Market Series		
August 16	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
August 17	6-8 PM	Village Green at Framingham Center, 2 Oak Street	Concerts on the Green		
August 23	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
August 29	5-8 PM	Depot 417	XChange Depot Public Market Series		
August 30	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
September 6	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
September 12	5-8 PM	Depot 417	XChange Depot Public Market Series		
September 13	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
September 14	6-9 PM	Saxonsonville Mills	Gallery Reception and Open Studios The Mill Contemporary Art		
September 20	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
September 26	5-8 PM	Depot 417	XChange Depot Public Market Series		
September 27	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		

SMMA

Project Management

June 21, 2018

Fenton Bradley
Project Manager
Massachusetts School Building Authority
40 Broad Street, Fifth Floor
Boston, Massachusetts 02109

Re: Fuller Middle School Feasibility Study **Framingham, Massachusetts**

District's Response to the Preferred Schematic Report Review Comments *SMMA No. 17050*

Dear Fenton:

Please find the District's Response to the MSBA's Preferred Schematic Report Review Comments of June 7, 2018.

Very truly yours,

SMMA

Joel G. Seeley
Principal

cc: School Building Committee, Jonathan Levi, JLA (MF)

enclosures: District's Response to the Preferred Schematic Report Review Comments of June 7, 2018

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

City of Framingham
Fuller Middle School
Preferred Schematic Report
MSBA Review Comment Responses
6/20/18

ATTACHMENT A
MODULE 3 – PREFERRED SCHEMATIC REPORT REVIEW COMMENTS

District: City of Framingham
School: Fuller Middle School
Owner's Project Manager: Symmes Maini & McKee Associates, Inc.
Designer Firm: Jonathan Levi Architects, LLC
Submittal Due Date: May 9, 2018
Submittal Received Date: May 9, 2018
Review Date: May 9- June 5, 2018
Reviewed by: F. Bradley, C. Alles, J. Jumpe

MSBA REVIEW COMMENTS

The following comments[1] on the Preferred Schematic Report submittal are issued pursuant to a review of the project submittal document for the proposed project presented as a part of the Feasibility Study submission in accordance with the MSBA Module 3 Guidelines.

3.3.1 INTRODUCTION

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Overview of the process undertaken since submittal of the Preliminary Design Program that concludes with submittal of the Preferred Schematic Report, including any new information and changes to previously submitted information	☒	☐	☐	☐
2	Summary of updated project schedule, including				
	a) Projected MSBA Board of Directors Meeting for approval of Project Scope and Budget Agreement	☒	☐	☐	☐

	b) Projected Town/City vote for Project Scope and Budget Agreement	☒	☐	☐	☐
	c) Anticipated start of construction	☒	☐	☐	☐
	d) Target move in date	☒	☐	☐	☐
3	Summary of the final evaluation of existing conditions	☒	☐	☐	☐
4	Summary of final evaluation of alternatives	☐	☒	☐	☐
5	Summary of District's preferred solution	☒	☐	☐	☐
6	A copy of the MSBA Preliminary Design Program project review and corresponding District response	☒	☐	☐	☐

MSBA Review Comments:

4) Although a detailed "Concept Options Evaluation Matrix" was included, it is noted that subsequent to receiving this submittal, the MSBA requested additional information that further describes and summarizes the Final Evaluation of Options. Information was requested for each option identified in the preferred schematic phase including a detailed narrative that clearly documents the reason(s) why each option was eliminated from further consideration. Please acknowledge.

1

Response: Please see attached Options Evaluation Memo

3.3.4 PREFERRED SOLUTION

Provide the following Items		Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
1	Educational Program				
	a) Summary of key components and how the preferred solution fulfills the educational program	☐	☒	☐	☐
	b) Design responses including desired features and/or layout considerations	☒	☐	☐	☐
	c) Proposed variances to, and benefits of, any changes to the current grade configuration (if any) and a related transition plan	☐	☐	☐	☐
2	Preferred Solution Space Summary				
	a) Updated MSBA Space Summary spreadsheet	☐	☒	☐	☐
	b) Itemization and explanation of variations from the initial space summary (and MSBA review) included in the Preliminary Design Program	☒	☐	☐	☐
3	Preliminary NE-CHPS or LEED-S scorecard	☐	☒	☐	☐

	Provide the following Items	Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
4	Conceptual floor plans of the preferred solution, in color that are clearly labeled to identify educational spaces	☒	☐	☐	☐
5	Clearly labeled site plans of the preferred solution including, but not limited to:				
	a) Structures and boundaries	☒	☐	☐	☐
	b) Site access and circulation	☒	☐	☐	☐
	c) Parking and paving	☒	☐	☐	☐
	d) Zoning setbacks and limitations	☒	☐	☐	☐
	e) Easements and environmental buffers	☐	☒	☐	☐
	f) Emergency vehicle access	☒	☐	☐	☐
	g) Safety and security features	☒	☐	☐	☐
	h) Utilities	☐	☐	☒	☐
	i) Athletic fields and outdoor educational spaces (existing and proposed)	☐	☒	☐	☐
	j) Site orientation	☒	☐	☐	☐
6	An overview of the Total Project Budget and local funding including the following:				
	a) Estimated total construction cost	☐	☒	☐	☐
	b) Estimated total project cost	☐	☒	☐	☐
	c) Estimated funding capacity	☒	☐	☐	☐
	d) List of other municipal projects currently planned or in progress	☒	☐	☐	☐
	e) District's not-to-exceed Total Project Budget	☒	☐	☐	☐
	f) Brief description of the local process for authorization and funding of the proposed project	☒	☐	☐	☐
	g) Estimated impact to local property tax, if applicable	☒	☐	☐	☐
	h) Completed MSBA Budget Statement	☐	☒	☐	☐
7	Updated Project Schedule including the following projected dates:				
	a) Massachusetts Historical Commission Project Notification Form	☒	☐	☐	☐
	b) MSBA Board of Directors meeting for approval to proceed into Schematic Design	☒	☐	☐	☐

Provide the following Items		Complete; *No response required*	Provided; *District's response required*	Not Provided; *District's response required*	Receipt of District's Response; *To be filled out by MSBA Staff*
c)	MSBA Board of Directors meeting for approval of project scope and budget agreement and project funding agreement	☒	☐	☐	☐
d)	Town/City vote for project scope and budget agreement	☒	☐	☐	☐
e)	Design Development submittal date	☒	☐	☐	☐
f)	MSBA Design Development Submittal Review (include required 21-day duration)	☒	☐	☐	☐
g)	60% Construction Documents submittal date	☒	☐	☐	☐
h)	MSBA 60% Construction Documents Submittal Review (include required 21-day duration)	☒	☐	☐	☐
i)	90% Construction Documents submittal date	☒	☐	☐	☐
j)	MSBA 90% Construction Documents Submittal Review (include required 21-day duration)	☒	☐	☐	☐
k)	Anticipated bid date/GMP execution date	☒	☐	☐	☐
l)	Construction start	☒	☐	☐	☐
m)	Move-in date	☐	☐	☒	☐
n)	Substantial completion	☒	☐	☐	☐

MSBA Review Comments:

1a) The submittal indicates the District may develop a new school scheduling method as the school transitions to a S.T.E.A.M. model. Please note that modifying the school scheduling method may change the building's utilization rate. In response to these review comments, please list alternative scheduling methods that may be proposed as the school transitions to a S.T.E.A.M. model.

2

Response: As the school transitions to a STEAM model, the Fuller administration will consider modified block and block schedules as ways to provide longer periods of time for student learning experiences. Alternatively, the administration will consider providing teacher teams with the flexibility to determine the use of instructional time to cater to the needs of individual projects. With that said, there is no predicted net change to the utilization of space under any of these scheduling methods.

The information provided also indicates that the nine ELL classrooms and nine science classrooms proposed by the District will be occupied for classroom instruction four out of the six scheduling blocks. It appears that based on the information provided, this may result in a utilization rate of 66% for these spaces. The MSBA notes that the overall utilization associated with the proposed program is approximately 64% inclusive of academic classrooms, art room, and the three vocations and

technology spaces. Further, if one of two gym stations and one of the two music rooms is in use, and a class is conducting research in the media center, then the overall utilization drops below 60%. Please note the MSBA targets an overall utilization rate of 85%. Please seek additional opportunities to increase efficiencies by reducing the overall number of classrooms; and increase flexibility and utilization by furnishing 'Maker Space' features into the science classrooms and reducing project areas in the common areas by providing larger science classrooms; in addition, indicate the average class sizes that will be anticipated for the English Second Language and Transitional Bilingual Education classes.

3

Response: The Educational Program has been revised to reduce the number of Science Rooms to 6 rather than the originally proposed 9 Science Rooms. Under this new configuration, every Science Room will be at 100% utilization. If the Maker Space equipment is added to the Science Rooms, it becomes virtually inaccessible to anyone other than the Science teachers during the day. This would contradict the Educational Program since the expectation is that all staff--not just Science teachers--should be providing students with the appropriate tools for their projects. Furthermore, the Technology Education teacher would also need this equipment for various units of instruction but would need to displace Science teachers in order to conduct these lessons. This creates an inequity of access for staff and students. To ensure proper use and maintenance of the equipment, the district has invested in a STEAM coach to support staff in the use of the Maker Space. The average class size for Transitional Bilingual Education Classes is 20 and for English Second Language classes is 22.

Please see attached revised Educational Program (2 versions: one indicating revisions from PSR submission and one "clean copy").

2a) Please refer to detailed comments in "Attachment B". Additionally, MSBA staff has updated its space summary template to include a new section titled Non-Programmed Spaces, which includes the following categories:

- *Other occupied rooms;*
- *Unoccupied MEP spaces;*
- *Unoccupied closets, supply rooms, and storage rooms;*
- *Toilet rooms;*
- *Circulation, which includes: corridors, stairs, ramps, and elevators; and*
- *Remaining areas, which includes exterior walls, interior partitions, chases, and other areas not listed above.*

Areas associated with the 'non-programmed spaces' are required for schematic design and all subsequent submittals that include a space summary. Please see Project Advisory 52 for additional information. Please acknowledge.

4

Response: Acknowledged. Non-programmed areas will be documented for Schematic Design and subsequent submittals per Project Advisory 52.

3) The submittal indicates a total goal of 43 credits using USGBC LEED-V4, including 6 credits in the Energy & Atmosphere "Optimize Energy Performance" category. Note that 43 points in LEED-V4

reaches the minimum required for all MSBA core projects. The proposed credits in 'Optimize Energy' are below the apparent threshold to achieve the minimum requirements (exceeding code by 20%) required applying additional (provisional) incentives to the District's reimbursement rate, additional information is required. If the District intends that MSBA provide a grant that includes the 2% additional reimbursement in the following project Scope and Budget phase of the study, please provide detailed information that illustrates how the minimum thresholds intend to be achieved.
Refer to MSBA Project Advisory #41"Update to the MSBA's Sustainable Building Design Policy" for more information. Acknowledge and confirm the District's intent and that the proposed project will be designed to meet or exceed the criteria set forth in project Advisory #41.

5 Response: Acknowledged. The proposed project will be designed to meet or exceed the criteria set forth in project Advisory #41 to qualify for the 2% additional reimbursement. Please see attached revised LEED scorecard.

5e) In response to these review comments, please confirm whether or not easements exist on the site that may impact further site development for a potential project.

6 Response: no easements have been located on record that may impact further site development for a potential project.

5h) Not provided. Please submit.

7 Response: Please see attached Utility Location Plan

5i) Provide information associated with the proposed outdoor education spaces in subsequent submissions. Please acknowledge.

8 Response: acknowledged. Information associated with the proposed outdoor education spaces shall be provided in subsequent submissions.

6a, b) Subsequent to receiving this submittal, the MSBA requested additional information associated with the increased estimated project costs from the Preliminary Design Program (PDP) phase to the Preferred Schematic Report (PSR) phase, including, but not limited to a high level description and summary of any changes in project scope, square footage, and site development. It is noted MSBA received the requested information on May 18, 2018 by email. Please incorporate this information as part of the response to these review comments.

9 Response: Please see attached Supplemental Information on Project Costs

6h) A budget statement was included with this submittal; however the post-construction budget column has not been completed. Please complete and submit to MSBA.

10 Response: Please see attached Budget Statement

7m) Not provided. Please submit.

11 Response: Please see attached Project Schedule

- *The MSBA offers the following information to assist the District and its Owner's Project Manager in completing the total project budget template that is required as part of its Schematic Design submittal.*

    - *The MSBA issues project advisories from time to time, as informational updates for Districts, Owner's Project Managers ("OPM"), and Designers in an effort to facilitate the efficient and effective administration of proposed projects currently pending review by the MSBA. The advisories can be found on the MSBA's website. In response to these review comments, please confirm that the District's consultants have reviewed all project advisories and they have been incorporated into the proposed project as applicable.*

12 Response: Confirmed

    - *The District must include negotiated costs for OPM and Designer fees for the remainder of the project as part of their Total Project Budget. In response to these review comments, please confirm that the District and its consultants will negotiate fees for the remainder of the project that are to be included in the District's Schematic Design documents to the MSBA.*

13 Response: Confirmed. The District and its consultants will negotiate fees for the remainder of the project that are to be included in the District's Schematic Design documents to the MSBA.

End

ATTACHMENT B
MODULE 3 – PREFERRED SCHEMATIC SPACE SUMMARY REVIEW

District: City of Framingham
School: Fuller Middle School
Owner's Project Manager: Symmes Maini & McKee Associates, Inc.
Designer Firm: Jonathan Levi Architects, LLC
Submittal Due Date: May 9, 2018
Submittal Received Date: May 9, 2018
Review Date: May 9- June 5, 2018
Reviewed by: F. Bradley, C. Alles, J. Jumpe

The MSBA review comments are as follows:

- **Core Academic** – The District is proposing to provide a total of 45,170 net square feet (nsf) which exceeds the MSBA guidelines by 13,590 nsf. The proposed area in this category decreased by 2,400 nsf since the Preliminary Design Program submittal.

The MSBA offers the following comments regarding the proposed program:

- (21) 900 nsf general classrooms, and (9) 900 nsf ELL classrooms which exceeds the MSBA guidelines by (8) classrooms and 6,100 nsf.
- (9) Science classrooms which is 3,150 nsf and (3) classrooms in excess of the guidelines.

Based on the information provided along with the District's reported high percentage of non-English speaking students, the MSBA understands the need to provide educational spaces to support delivery of this curriculum and student support services; however, the proposed program includes (39) academic classrooms, (11) beyond the (28) include in the guidelines. This significantly contributes to the 13,590 nsf overage proposed for this category, and to an overall program with a utilization rate below 65% (refer to Attachment A Section 3.3.4 for more information). Please review the proposed program and seek opportunities to increase the efficiency of the proposed program.

- (9) Science Prep rooms which is 240 nsf and (3) rooms in excess of the guidelines.
- (5) Science Teacher Planning rooms which is 450 nsf and (5) rooms in excess of the guidelines.

The MSBA looks to the district and its Designer to continue to explore opportunities to provide shared spaces that can support delivery of the science curriculum in a more efficient program.

14 Response: Please see attached revised Space Summary Template. In order to increase the efficiency of the program and overall utilization rate of the proposed Fuller School, the district proposes to reduce the number of ELL classrooms from (9) to (6) and the number of Science Classrooms from (9) to (6), along with corresponding reductions in Teacher Planning and Science Prep rooms. These changes will be incorporated in the Schematic Design Submittal.

- (15) 90 nsf Teacher Planning rooms which is 1,350 nsf in excess of the guidelines. Based on the information provided the MSBA accepts this variation to the guidelines. (For clarification, please indicate where larger 'Teacher Workstations' are located on the conceptual plans and further describe how theses spaces differ from the proposed Teacher Planning rooms).

15 Response: Understood and agreed. The larger "Teacher Work Rooms" are centralized within each cohort and are shared by all staff serving that cohort. They support small conferences for professional development, itinerant teachers, and large workspace for teacher printing and assembly. The small teacher planning spaces adjoin and support individual classrooms and take the place of the traditional fixed "Teacher's Desk" area in the classroom. This gives the classroom itself much greater flexibility to accommodate several alternative furniture configurations. Additionally, the teacher planning spaces are shared by 2 or more teachers using the

adjacent classrooms, facilitating coordination and joint projects between the classrooms, which are designed with movable walls to be opened up to each other when desired.

- (3) Small Group Seminar/Resource spaces which is (1) space and 200 nsf beyond that included in the guidelines. Prior to the MSBA accepting this variation to the guidelines please provide additional information that demonstrates why purpose of these spaces could not be met in the media center, conference room, one of the three teacher workrooms, a classroom or one of the student cohorts when not in use by the students.

16 Response: Please see revised Space Summary Template. In order to increase efficiency, (2) of the (3) Small Group Seminar/Resource spaces have been deleted, with those functions now proposed to be served in the remaining Small Group Seminar/Resource Room, centralized to be shared by all staff, and the (3) Teachers' Work Rooms (enlarged from 200 sf to 300 sf each)

- **Art and Music** – The District is proposing to provide a total of 3,650 nsf which exceeds the MSBA guidelines by 400 nsf. Based on the information provided, which documents and supports a high student participation in the music program, and the future combining of the concert band and orchestra, the MSBA accepts this variation to the guidelines. The District should continue to seek ways to reduce overall area to align with guidelines. Please note that in subsequent submissions the MSBA will consider area beyond 400 nsf in excess of guidelines as ineligible for reimbursement. Please acknowledge.

17 Response: Acknowledged

- **Vocations &Technology** – The District is proposing to provide a total of 4,150 nsf which is below the MSBA guidelines by 2,250 nsf. The proposed area in this category has not changed since the Preliminary Design Program submittal. Based on the information provided the District's intent is to include (3) Cohort Commons spaces totaling 4,353 nsf in the Media Center category, and reducing the square footage in this category by 2,250 nsf. The MSBA accepts this variation to the guidelines. Please note that MSBA will consider area beyond 4,150 nsf in this category as ineligible for reimbursement. Please acknowledge.

18 Response: Understood and agreed. Please see attached revised Space Summary Template. In order to increase the efficiency of the program and overall utilization rate of the proposed Fuller School, the district proposes to delete (1) Tech Classroom and design the Fab Lab to be able to accommodate the Tech Classroom functions as well as Fabrication functions.

- **Media Center** – The District is proposing to provide a total of 6,250 nsf which exceeds the MSBA guidelines by 2,247 nsf. The proposed area in this category has increased by 4,350 nsf since the Preliminary Design Program submittal. This increase is due to the District moving (3) Cohort Commons spaces from the core academic category. The MSBA does not object to the District combining the 2,250 not used under the vocations and technology category with area allocated to this category to allow for the proposed cohort common spaces. Square footage in

excess of the 6,250 nsf will be considered ineligible for reimbursement. Refer to vocations and technology above for additional information. Do not adjust MSBA guidelines in future space summary submittals just indicate the District's intent. Please acknowledge.

19 Response: Understood and agreed.

Please note the MSBA released an updated space summary template Project Advisory #52. This new template will be required to be used for the Schematic Design submittal. Please acknowledge.

20 Response: Acknowledged. Updated template will be used for Schematic Design per Project Advisory 52.

Attachments

1. MSBA response memo - Options Evaluation
2. Updated LEED Scorecard
3. Site Utility Plan
4. Supplemental Information on Project Costs
5. Budget Statement
6. Project Schedule
7. Updated Space Summary Template
8. Updated Education Program (showing revisions)
9. Updated Education Program (clean copy)

Jonathan Levi Architects, LLC
266 beacon street boston ma 02116 tel 617.437.9458 fax 617.437.1965 www.leviarc.com

Memorandum

1

18 May 2018

To: Mr. Fenton Bradley
Project Manager
Massachusetts School Building Authority
40 Broad Street
Boston, MA 02109

From: Jonathan Levi

Re: Feasibility Study for Fuller Middle School
Description of Option Rejection Rationale

The Fuller School Building Committee's process for evaluation of alternatives and, specifically, its rationale for the rejection of alternatives is best summarized in the 'Concept Options Evaluation Matrix' document (attached) which, in addition to the evaluation narratives, accompanies this section of the full PSR submission. The submitted matrix is a record of a 'live' document which was prepared in draft form by the design team and then discerned, deliberated and updated in real time by committee members during the decisive April 30, 2018 meeting which concluded the PSR phase.

Highlights of the evaluations recorded in the matrix which resulted in the rejection of alternatives are as follows:

<u>Option 0 - 'Full Renovation'</u>

Disadvantages:

- Radical cost premium
- Extended schedule due to phasing and swing space
- Negative impact to education in modular classroom school during construction
- Poor fit to educational program
- Inferior long term maintenance and operating costs
- Sub-optimal sustainability potential

<u>Option A - 'Addition/Renovation'</u>

Disadvantages:

- Cost premium
- Extended schedule due to phasing
- High negative impact to education due to occupied construction

- Sub-optimal fit to educational program
- Sub-optimal long term maintenance and operating costs
- Increased risk due to potential hidden conditions
- Reduced design scope flexibility
- Reduced future cohort grouping flexibility
- Poor campus relationships due to remote parking and lack of shared open space

Option B -' Tree Branches'

Disadvantages:

- Increased construction impact to neighbors due to closeness to street
- Lack of campus open space connecting district facilities
- Poor future cohort grouping flexibility due to isolated wings
- Sub-optimal visible learning environment due to isolated wings
- Sub-optimal STEAM configuration due to separate wing STEAM areas
- Comparatively large footprint resulting in diminished open space
- Less optimal solar orientation

Option D – Butterfly

Disadvantages:

- Increased construction impact to neighbors due to closeness to street
- Lack of campus open space connecting district facilities
- Poor future cohort grouping flexibility due to isolated wings
- Sub-optimal visible learning environment due to isolated wings
- Sub-optimal STEAM configuration due to separate wing STEAM areas
- Comparatively large footprint resulting in diminished open space
- Less optimal solar orientation
- Reduced design scope flexibility due to embedded auditorium

FULLER MIDDLE SCHOOL

Concept Options Evaluation Matrix

RATINGS:

+	Advantageous
-o-	Neutral
-	Disadvantageous
- -	Very Disadvantageous

	Option 0 Repair to Code Baseline	Option A Add / Reno	Option B Tree Branch New Constr.	Option C Folded Hands New Constr.	Option D Butterfly New Constr.	Comments
PROJECT EVALUATION CRITERIA						
1 Total Project Cost	- -	-	+	+	+	See costs below
2 Schedule	- -	-	+	+	+	Renovation options will require phasing and additional construction time. Swing space requires additional time
3 Construction Impact to Education	- -	-	+	-o-	+	Swing space will be disruptive and smaller than current Fuller use
4 Construction Impact to Campus and Neighbors	-o-	-	-	+	-	Swing space / trailers will be disruptive to neighbors. Options A, B and D close to Flagg Drive so potentially disruptive
5 Educational Program Accommodation	- -	-o-	+	+	+	Options vary on ability to provide 3 appropriate cohort locations and identity
6 Flexibility-Fixed Classroom Count per Cohort	-o-	-	-	+	-	Option C allows each cohort to increase or decrease the number of SPED and general classrooms because they are not aggregated in a defined wing or floor.
7 STEM Enhancement-Visible learning	- -	-	-o-	+	-o-	Open atrium has greatest visibility within and between cohorts. All options to facilitate project based learning.
8 Flexibility-Building Systems	- -	-	+	+	+	New construction would be designed for flexible use and improved MEP accessibility
9 Open Space /Building Massing / Footprint	- -	-	-o-	+	-o-	3 story Option C has smallest footprint, resulting in largest open area.
10 Security	- -	-o-	+	+	+	All options A-D would be substantially more secure than existing
11 Community Use	-o-	-	+	+	+	All alternatives allow community use. New Construction options allow increased access to playfields.
12 Academic Campus	-	-	-o-	+	-o-	Locating Fuller closer to Farley and McCarthy improves ability to create identifiable campus. Option C most successful.
13 Outdoor Theater	-o-	-o-	-o-	+	-o-	South-facing sloped outdoor space inherent in Option C design
14 Natural Light and Views	- -	-o-	+	+	+	one-story "Pancake" massing creates interior rooms with limited access to windows
15 LEED / Sustainability	-	-o-	-o-	+	-o-	Option C has best solar orientation
16 Risk	- -	- -	+	+	+	Options requiring renovation and/or swing space have more inherent risk due to unforeseen conditions
17 Long Term Maintenance and Repair Costs	-	-o-	+	+	+	3 story Option C has smallest roof area.
18 Operating Costs	-	-o-	+	+	+	Solar orientation and ext skin quantity impact energy loads
19 Design Scope Flexibility	- -	- -	+	+	-	Options B and C would most readily allow a modification to the Auditorium and/or Gym size in upcoming Schematic Design phase
Total GSF	196,000	167,000	154,000	154,000	154,000	
Swing Space Cost ($Million)	$6	$2	-	-	-	Option 0 would require swing space at Farley. Option A could have swing space in Fuller. Other options require no swing space.
Order of Magnitude Project Cost ($Million)	$131	$117	$111	$110	$111	This existing building is particularly expensive to renovate due to its construction assembly and degree of deterioration
MSBA Share		$49	$44	$44	$44	
Framingham Share	$131	$68	$67	$66	$67	

LEED for Schools v4
Project Scorecard

5

Project Name: Fuller Middle School
Project Addres: 31 Flagg Dr, Framingham MA
Date Updated: June 19, 2018

Phase	Yes	?	No			
	1	0	0		**Integrative Process**	1
D	1			Credit 1	**Integrative Process**	1

	Yes	?	No			
	1	6	8		**Location & Transportation**	15
D			N/A	Credit 1	**LEED for Neighborhood Development Location**	15
D	1			Credit 2	**Sensitive Land Protection**	1
D			2	Credit 3	**High Priority Site**	2
D		2	3	Credit 4	**Surrounding Density and Diverse Uses**	5
D		1	3	Credit 5	**Access to Quality Transit**	4
D		1		Credit 6	**Bicycle Facilities**	1
D		1		Credit 7	**Reduced Parking Footprint**	1
D		1		Credit 8	**Green Vehicles**	1

	Yes	?	No			
	4	7	1		**Sustainable Sites**	12
C	Y			Prereq 1	**Construction Activity Pollution Prevention**	Required
D	Y			Prereq 2	**Environmental Site Assessment**	Required
D	1			Credit 1	**Site Assessment**	1
D		2		Credit 2	**Site Development - Protect or Restore Habitat**	2
D		1		Credit 3	**Open Space**	1
D		3		Credit 4	**Rainwater Management**	3
D	1	1		Credit 5	**Heat Island Reduction**	2
D	1			Credit 6	**Light Pollution Reduction**	1
D			1	Credit 7	**Site Master Plan**	1
D	1			Credit 8	**Joint Use of Facilities**	1

	Yes	?	No			
	5	5	2		**Water Efficiency**	12
D	Y			Prereq 1	**Outdoor Water Use Reduction**	Required
D	Y			Prereq 2	**Indoor Water Use Reduction**	Required
D	Y			Prereq 3	**Building-level Water Metering**	Required
D	2			Credit 1	**Outdoor Water Use Reduction**	2
D	2	5		Credit 2	**Indoor Water Use Reduction**	7
D			2	Credit 3	**Cooling Tower Water Use**	2
D	1			Credit 4	**Water Metering**	1

	Yes	?	No			
	#	#	2		**Energy & Atmosphere**	31
C	Y			Prereq 1	**Fundamental Commissioning and Verification**	Required
D	Y			Prereq 2	**Minimum Energy Performance**	Required
D	Y			Prereq 3	**Building-level Energy Metering**	Required
D	Y			Prereq 4	**Fundamental Refrigerant Management**	Required
C	5	1		Credit 1	**Enhanced Commissioning**	6
D	#	5		Credit 2	**Optimize Energy Performance**	16
D	1			Credit 3	**Advanced Energy Metering**	1
C			2	Credit 4	**Demand Response**	2
D		3		Credit 5	**Renewable Energy Production** (1%/5%/10%)	3
D		1		Credit 6	**Enhanced Refrigerant Management**	1
C		2		Credit 7	**Green Power and Carbon Offsets** (50%/100%)	2

Yes	?	No				
6	2	5		**Materials & Resources**		13
D	Y		Prereq 1	**Storage & Collection of Recyclables**		Required
C	Y		Prereq 2	**Construction and Demolition Waste Management Planning**		Required
C	3		2	Credit 1	**Building Life-cycle Impact Reduction**	5
C	1		1	Credit 2	**Building Product Disclosure and Optimization**-Environmental Product	2
C		1	1	Credit 3	**Building Product Disclosure and Optimization**-Sourcing of Raw Matls.	2
C		1	1	Credit 4	**Building Product Disclosure and Optimization**-Material Ingredients	2
C	2			Credit 5	**Construction and Demolition Waste Management**	2

Yes	?	No				
#	5	1		**Indoor Environmental Quality**		#REF!
D	Y		Prereq 1	**Minimum IAQ Performance**		Required
D	Y		Prereq 2	**Environmental Tobacco Smoke (ETS) Control**		Required
D	Y		Prereq 3	**Minimum Acoustical Performance**		Required
D	2			Credit 1	**Enhanced IAQ Strategies**	2
C	1	1	1	Credit 2	**Low-Emitting Materials** (3/5/6)	3
C	1			Credit 3	**Construction IAQ Management Plan**	1
C	1	1		Credit 4	**IAQ Assessment**	2
D		1		Credit 5	**Thermal Comfort**	1
D	1	1		Credit 6	**Interior Lighting**	2
D	2	1		Credit 7	**Daylight**	3
D	1			Credit 8	**Quality Views**	1
D	1			Credit 9	**Acoustic Performance**	1

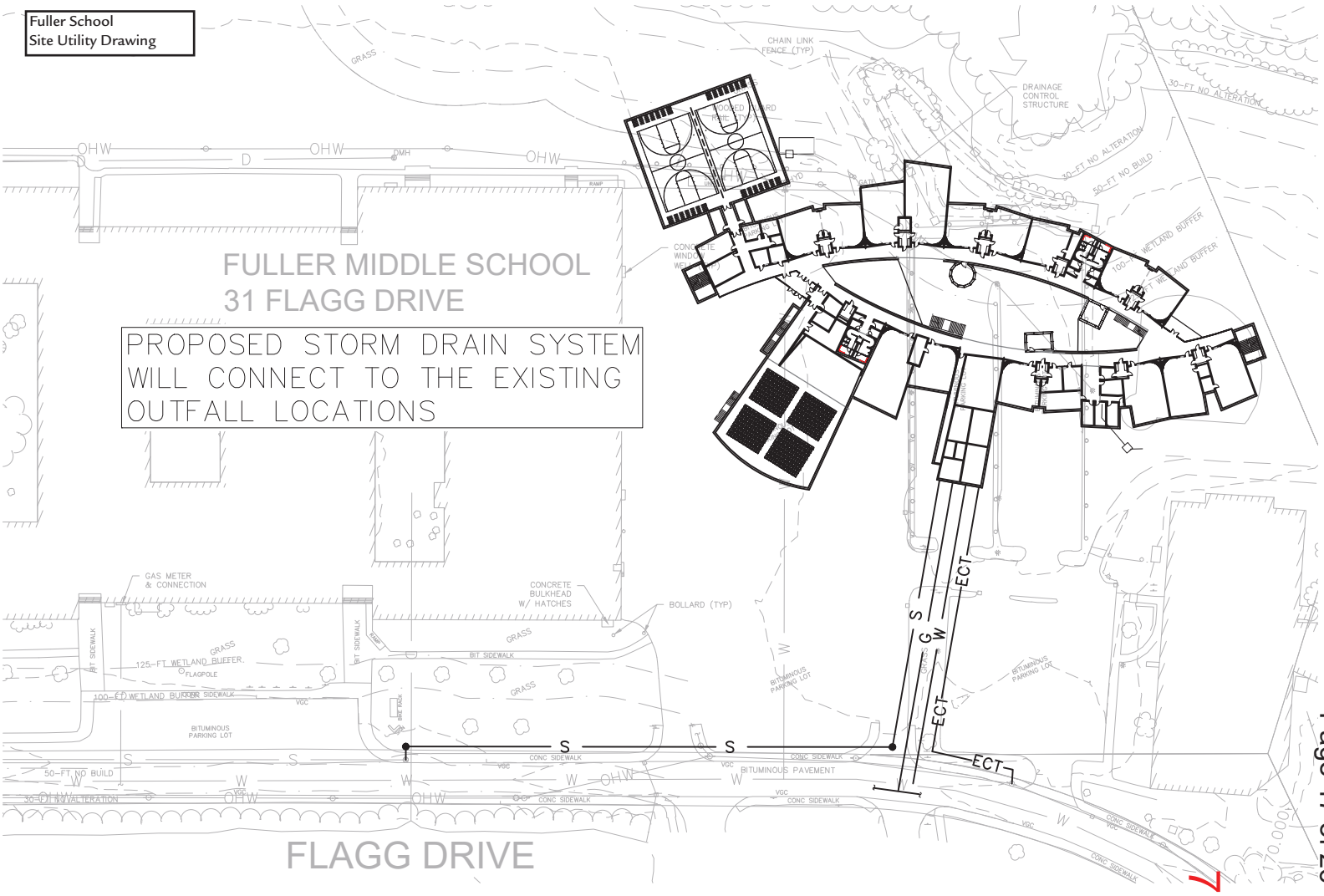
Yes	?	No				
3	3	0		**Innovation**		6
D	1			Credit 1	**Innovation: TBD**	1
D		1		Credit 2	**Innovation: TBD**	1
D		1		Credit 3	**Innovation: TBD**	1
C	1			Credit 4	**Innovation: EP**	1
C		1		Credit 5	**Innovation: Pilot Credit**	1
C	1			Credit 6	**LEED Accredited Professional**	1

Yes	?	No				
1	3	0		**Regional Priority Credits - earn up to 4 points**		4
	1		Credit 1	**EAc5 Renewable Energy Production (2pt / 3%)**		1
	1		Credit 2	**WEc2 - Indoor Water Use Reduction (4 pts)**		1
1			Credit 3	**MRc1 Building Life-Cycle Impact Reduction (2pts)**		1
	1		Credit 4	**EAc2 Optimize Energy Performance (8pts)**		1
		N/A	*Credit 5*	*SSc4 - Rainwater Management (2 pts)*		
		N/A	*Credit 6*	*LTc3 - High Priority Site (2 Pts)*		

Yes	?	No			
#	#	#		**Project Totals (Certification Estimates)**	110

Certified: 40-49 points, **Silver:** 50-59 points, **Gold:** 60-79 points, **Platinum:** 80+ pc

Fuller School
Site Utility Drawing



SMMA

Project Management

9

Memorandum

To: Fenton Bradley
Project Manager
Massachusetts School Building Authority
40 Broad Street
Boston, MA 02109

From: Joel Seeley
Project: Feasibility Study for the Fuller Middle School
Re: Project Cost Increase
Distribution: School Building Committee, JLA, (MF)

Date: 5/18/2018
Project No.: 17050

This memorandum provides an overview of the increases in the total project costs from the Preliminary Design Program (PDP) phase submission to the Preferred Schematic Report (PSR) phase submission for Options B, C and D.

The PDP phase Options B.2, C.2 and D correspond to the PSR phase Options B, C and D.

The changes in the total project costs can be attributed to six distinct project areas: 1) the addition of a 750 seat auditorium or in the case of Option B increasing the auditorium from 650 seats to 750 seats, 2) increases in the site work costs due to a combination of under estimating the scope in the PDP phase and the addition of soil remediation work for the building foundation system as a result of the soil borings performed in the PSR phase, 3) the complexities of demolishing the existing building were better understood in the PSR phase, 4) increasing the gymnasium size from 6,500 net square feet to 8,300 net square feet, 5) providing air conditioning throughout the school, and 6) more developed building design and systems information. The breakdown of the cost increases is as follows:

Total Project Cost Increase Breakdown			
	Option B	**Option C**	**Option D**
Auditorium	$3M	$10M	$10M
Site Work	$7M	$7M	$7M
Building Demolition	$1M	$1M	$1M
Larger Gymnasium	$2M	$2M	$2M
Full Air Conditioning	$1M	$1M	$1M
Building Cost	$2M	$1M	$2M
Total	**$16M**	**$22M**	**$23M**

1000 Massachusetts Avenue
Cambridge, MA 02138
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The City has determined that the project scope included for the PSR phase Options B, C and D meets the needs of the Fuller Middle School and understands that the auditorium and area of the enlarged gymnasium would represent project costs ineligible for MSBA reimbursement.

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

January 2014

Budget Statement for Preferred Schematic - Expenditures

As reported on the school district's most recent three end of year information, please updated to the 3 latest fiscal year periods and complete the fields below.

Category	2014-2015 FY2015 Staff (FTE)	2014-2015 FY2015 Budget	2015-2016 FY2016 Staff (FTE)	2015-2016 FY2016 Budget	2016-2017 FY2017 Staff	2016-2017 FY2017 Budget	Change from Previous Year Staff (FTE)	Change from Previous Year Budget	Post-Constuction Budget Staff	Post-Constuction Budget Budget	New Facility vs. Current Staff (FTE)	New Facility vs. Current Budget
Salaries												
Administration												
Admin. Secretary	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Assistant Principal	1.00	110,221	1.00	118,740	1.00	123,371	0.00	4,631	2.00	260,000	1.00	136,629
Business Office	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Curriculum Director/Coord.	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Custodians/Maintenance Staff	6.00	284,180	7.00	333,944	6.00	356,550	-1.00	22,606	7.00	430,000	1.00	73,450
Executive Secretary	3.00	132,616	3.00	134,012	3.00	138,967	0.00	4,955	3.00	142,000	0.00	3,033
Facilities Manager	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Guidance	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Adjustment Counselor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Guidance Counselors	5.00	304,937	4.50	316,913	4.00	334,156	-0.50	17,243	5.00	425,000	1.00	90,844
Guidance Director	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Legal	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Nurse	1.00	45,580	1.00	47,192	1.00	51,159	0.00	3,967	1.00	54,000	0.00	2,841
Other	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Principal	1.00	116,150	1.00	125,000	1.00	130,362	0.00	5,362	1.00	135,000	0.00	4,638
Special Education Admin	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Superintendent/Asst. Superintendent	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Transportation	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Treasurer	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Total Administration	**17.00**	**993,684**	**17.50**	**1,075,801**	**16.00**	**1,134,565**	**-1.50**	**58,764**	**19.00**	**1,446,000**	**3.00**	**311,435**
Instruction - Teaching Services												
Arts	1.00	51,706	1.00	78,145	1.00	83,222	0.00	5,077	1.50	125,000	0.50	41,778
Business	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Communications	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Coping Instructor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Culinary Arts	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
ELL	9.00	695,426	11.00	779,909	14.00	944,521	3.00	164,612	16.00	1,100,000	2.00	155,479
English Language	5.00	320,694	4.00	281,757	6.00	399,925	2.00	118,168	7.00	470,000	1.00	70,075
Family Consumer Services	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Foreign Language	3.00	193,403	3.00	176,009	3.00	207,677	0.00	31,668	4.00	285,000	1.00	77,323
Health Services	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
History & Social Science	6.50	373,279	5.25	360,473	5.25	379,789	0.00	19,316	6.25	460,000	1.00	80,211
Instructional Assistant/Paraprofessionals	1.50	52,940	1.50	53,037	0.50	27,013	-1.00	(26,024)	3.00	110,000	2.50	82,987
Library/Media	0.00	7,444	0.00	7,482	0.00	9,088	0.00	1,606	1.00	70,000	1.00	60,912
Mathematics	6.50	433,701	6.50	455,376	6.50	459,334	0.00	3,958	8.00	580,000	1.50	120,666
MCAS	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Music	2.50	154,627	1.75	98,153	1.70	102,099	-0.05	3,946	2.50	160,000	0.80	57,901
Other	2.00	148,960	2.00	145,941	2.00	155,991	0.00	10,050	2.00	160,000	0.00	4,009
Physical Education	3.00	257,126	3.00	263,862	3.00	276,265	0.00	12,403	4.00	370,000	1.00	93,735
Reading	1.00	78,979	1.00	88,514	1.00	91,433	0.00	2,919	1.00	95,000	0.00	3,567
School Adjustment Counselor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Science												
Biology	5.25	336,538	5.25	344,932	5.25	363,073	0.00	18,141	7.00	490,000	1.75	126,927
Botany	0.00	-	0.00		0.00		0.00	-	0.00	-	0.00	-
Chemistry	0.00	-	0.00		0.00		0.00	-	0.00	-	0.00	-
Geology	0.00	-	0.00		0.00		0.00	-	0.00	-	0.00	-
Physics	0.00	-	0.00		0.00		0.00	-	0.00	-	0.00	-
Special Education	23.50	1,107,079	24.00	1,219,295	25.50	1,249,651	1.50	30,356	28.00	1,400,000	2.50	150,349
Substitute Teachers	0.00	54,112	0.00	65,250	0.00	-	0.00	(65,250)	0.00	-	0.00	-
Technology	0.00	1,179	0.00	1,350	0.00	-	0.00	(1,350)	0.00	1,500	0.00	1,500
Vocational Tech.	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Total Instruction - Teaching Services	**69.75**	**4,267,193**	**69.25**	**4,419,485**	**74.70**	**4,749,081**	**5.45**	**329,596**	**91.25**	**5,876,500**	**16.55**	**1,127,419**
Total Salaries Administration & Instruction	**86.75**	**5,260,877**	**86.75**	**5,495,286**	**90.70**	**5,883,646**	**3.95**	**388,360**	**110.25**	**7,322,500**	**19.55**	**1,438,854**
Employee Benefits												
All employee-related fringe (health insurance, retirement etc)		**-**		**-**		**-**		**-**		**-**		**-**
Materials & Services												
Materials												
Audio-Visual Materials	-	-	-	-	-	-		-		-		-

January 2014

Budget Statement for Preferred Schematic - Expenditures

Category	2014-2015 FY2015 Staff (FTE)	2014-2015 FY2015 Budget	2015-2016 FY2016 Staff (FTE)	2015-2016 FY2016 Budget	2016-2017 FY2017 Staff	2016-2017 FY2017 Budget	Change from Previous Year Staff (FTE)	Change from Previous Year Budget	Post-Constuction Budget Staff	Post-Constuction Budget Budget	New Facility vs. Current Staff (FTE)	New Facility vs. Current Budget
Culinary Arts Materials		-		-		-		-		-		-
General Office Supplies		1,648		2,648		2,648		-		3,000		352
Information technology		-		-		-		-		-		-
Hardware		3,905		2,935		2,935		-		3,500		565
Software		-		1,285		1,285		-		2,000		715
Library Materials		1,545		2,045		2,045		-		7,560		5,515
Non info-tech equipment		-		-		-		-		-		-
Testing Materials & Supplies		-		-		-		-		-		-
Textbooks		-		1,141		1,141		-		3,000		1,859
Vocational Program Materials		-		-		-		-		-		-
Total Materials		**7,098**		**10,054**		**10,054**		**-**		**19,060**		**9,006**
Services												
Athletics		-		-		-		-		-		-
Attendance		-		-		-		-		-		-
Food Service		515		515		515		-		-		(515)
Health Services		-		-		-		-		-		-
Other Student Activities		16,800		19,600		20,000		400		22,000		2,000
Psychological Services		-				-		-		-		-
School Security		-		-		-		-		-		-
Student Transportation		1,030		800		800		-		1,500		700
Total Services		**18,345**		**20,915**		**21,315**		**400**		**23,500**		**2,185**
Total Material & Services		**25,443**		**30,969**		**31,369**		**400**		**42,560**		**11,191**
Facility Costs & Capital Improvements												
Facility Costs												
Custodial Supplies		-		-		-		-		-		-
Electricity		105,116		111,759		101,158		(10,601)		125,000		23,842
Heating Oil		-		-		-		-		-		-
Maintenance												
Building Security Maintenance		-		20,961		-		(20,961)		-		-
Elevator		-		-		-		-		5,000		5,000
Equipment Maintenance		-		-		-		-		-		-
Exterminating		9,300		9,630		9,630		-		10,000		370
Facility Maintenance		46,023		31,969		20,502		(11,467)		10,000		(10,502)
Fire Alarm		1,500		-		1,500		1,500		2,000		500
Fire Extinguisher Inspection		2,688		2,162		1,763		(399)		2,000		237
Generator		-		-		-		-		-		-
HVAC Maintenance		21,481		8,687		-		(8,687)		-		-
Other		-		-		-		-		-		-
Site Maintenance (Grouds)		-		-		-		-		-		-
Technology		-		-		-		-		-		-
Trash Removal		-		-		-		-		-		-
Natural Gas		134,865		80,134		74,133		(6,001)		70,000		(4,133)
Snow Removal		-		-		-		-		-		-
Telephone		-		289		-		(289)		-		-
Water/Sewer		-		-		-		-		-		-
Total Facility Costs		**320,973**		**265,591**		**208,686**		**(56,905)**		**224,000**		**15,314**
Captial Improvements												
Captial Improvements		**-**		**21,200**		**100,000**		**78,800**		**-**		**(100,000)**
Total Facility Costs & Capital Improvements		**320,973**		**286,791**		**308,686**		**21,895**		**224,000**		**(84,686)**
Debt Service												
Short-term		-		-		-		-		-		-
Long-term		-		-		-		-		-		-
Total Debt Service		**-**		**-**		**-**		**-**		**-**		**-**
Total Budget & Staff	**86.75**	**5,607,293**	**86.75**	**5,813,046**	**90.70**	**6,223,701**	**4**	**410,655**	**110**	**7,589,060**	**20**	**1,365,359**

January 2014

Budget Statement for Preferred Schematic - Revenue

As reported on the school district's most recent three End of Year Pupil and Financial Reports schedule 1, please update to the 3 latest fiscal year periods and report sources of revenue in the fields below.

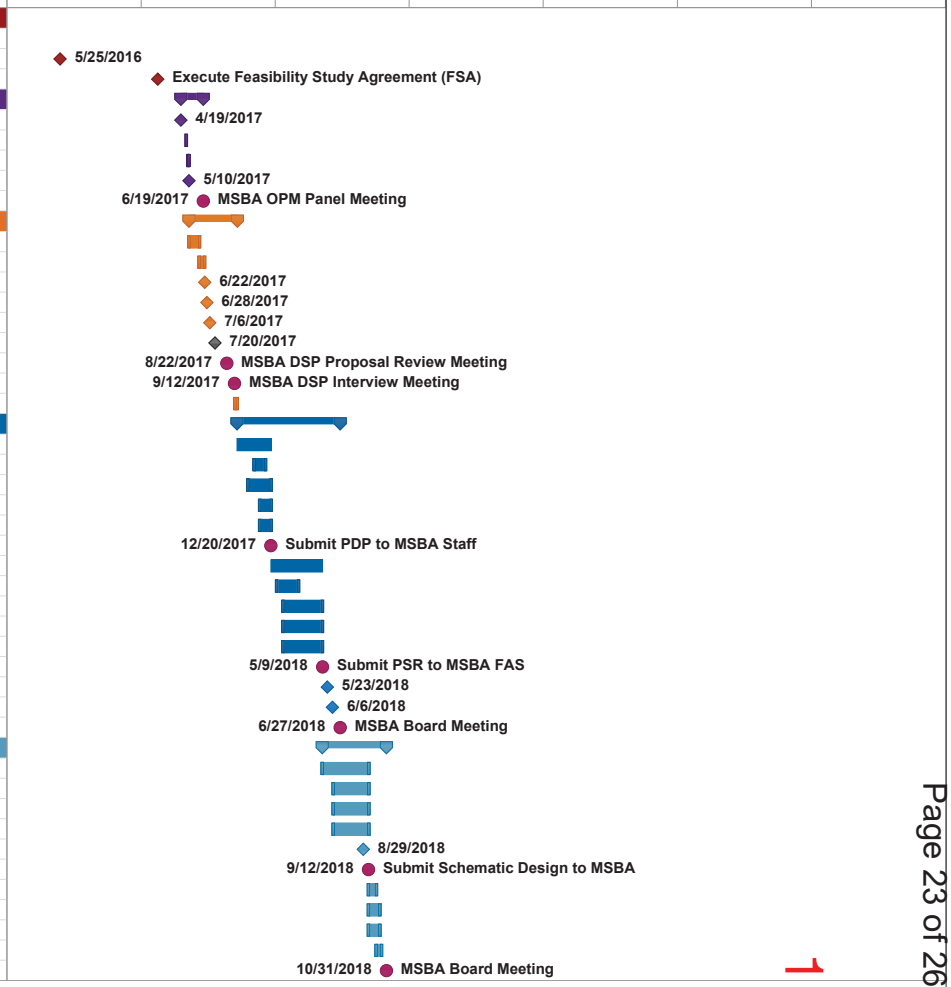
	FY15 End of Year Financial Report							FY16 End of Year Financial Report							FY17 End of Year Financial Report						
	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un-distributed	Total	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un-distributed	Total	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un-distributed	Total
A. Revenue from Local Sources																					
Assessments received by Regional Schools	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E&D Fund Appropriations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition from Individuals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition from Other Districts in Comm.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition from Districts in Other States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Previous Year Unexpended Encumbrances (Carry Forward)	-	-	-	-	-	1,841	1,841	-	-	-	-	-	3,617	3,617	-	-	-	-	-	5	5
Transportation Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Earnings on Investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rental of School Facilities	-	-	-	-	-	692,083	692,083	-	-	-	-	-	847,917	847,917	-	-	-	-	-	800,000	800,000
Other Revenue	-	-	-	-	-	3,652	3,652	-	-	-	-	-	5,397	5,397	-	-	-	-	-	2,139	2,139
Medical Care and Assistance	-	1,750,598	-	-	-	-	1,750,598	-	1,445,850	-	-	-	-	1,445,850	-	1,770,961	-	-	-	-	1,770,961
Non Revenue Receipts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue From Local Sources	**-**	**1,750,598**	**-**	**-**	**-**	**697,576**	**2,448,174**	**-**	**1,445,850**	**-**	**-**	**-**	**856,931**	**2,302,781**	**-**	**1,770,961**	**-**	**-**	**-**	**802,144**	**2,573,105**
B. Revenue from State Aid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
School Aid (Chapter 70)	-	-	-	-	-	33,596,455	33,596,455	-	-	-	-	-	37,729,858	37,729,858	-	-	-	-	-	42,091,391	42,091,391
Mass School Building Authority - Construction Aid	-	2,510,995	-	-	-	-	2,510,995	-	2,129,671	-	-	-	-	2,129,671	-	2,129,672	-	-	-	-	2,129,672
Pupil Transportation (Ch. 71, 71A,71B,74)	-	-	-	-	-	172,479	172,479	-	-	-	-	-	172,479	172,479	-	-	-	-	-	219,060	219,060
Charter Tuition Reimbursements & Charter Facilities Aid	-	679,059	-	-	-	283,675	962,734	-	212,769	-	-	-	281,331	494,100	-	455,695	-	-	-	305,047	760,742
Circuit Breaker	-	-	-	-	-	4,399,265	4,399,265	-	-	-	-	-	4,579,065	4,579,065	-	-	-	-	-	4,902,240	4,902,240
Foundation Reserve	-	-	-	-	-	-	-	-	-	-	-	-	1,000,000	1,000,000	-	-	-	-	-	-	-
Total Revenue From State Aid	**-**	**3,190,054**	**-**	**-**	**-**	**38,451,874**	**41,641,928**	**-**	**2,342,440**	**-**	**-**	**-**	**43,762,733**	**46,105,173**	**-**	**2,585,367**	**-**	**-**	**-**	**47,517,738**	**50,103,105**
C. Revenue from Federal Grants																					
ESE Administered Grants	1,895,497	2,193,860	49,580	-	-	607,271	4,746,208	1,273,851	2,133,560	59,207	-	-	534,050	4,000,668	1,717,205	2,089,232	63,546	-		930,257	4,800,240
Other Federal Grants	-	53,719	-	-	-	-	53,719	-	50,671	-	-	-	-	50,671	-	55,010	-	-	-	-	55,010
Total Revenue Federal Grants	**1,895,497**	**2,247,579**	**49,580**	**-**	**-**	**607,271**	**4,799,927**	**1,273,851**	**2,184,231**	**59,207**	**-**	**-**	**534,050**	**4,051,339**	**1,717,205**	**2,144,242**	**63,546**	**-**	**-**	**930,257**	**4,855,250**
D. Revenue from State Grants																					
ESE Administered Grants	-	-	-	-	-	323,435	323,435	-	-	-	-	-	299,979	299,979	-	-	-	-	-	24,000	24,000
Other State Grants	485,979	-	-	-	-	-	485,979	492,630	4,579,065	-	-	-	1,005,000	6,076,695	361,479	-	-	-	-	2,500	363,979
Total Revenue From State Grants	**485,979**	**-**	**-**	**-**	**-**	**323,435**	**809,414**	**492,630**	**4,579,065**	**-**	**-**	**-**	**1,304,979**	**6,376,674**	**361,479**	**-**	**-**	**-**	**-**	**26,500**	**387,979**
E. Revenue - Revolving & Special Funds																					
School Lunch Receipts	-	-	-	-	-	2,948,005	2,948,005	-	-	-	-	-	3,012,368	3,012,368	-	-	-	-	-	3,135,006	3,135,006
Athletic Receipts	-	-	-	-	-	298,785	298,785	-	-	-	-	-	294,630	294,630	-	-	-	-	-	200,341	200,341
Tuition Receipts - School Choice	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition Receipts - Other	-	1,557,366	-	-	-	311,775	1,869,141	-	1,731,035	-	-	-	270,534	2,001,569	-	1,778,747	-	-	-	361,852	2,140,599
Other Local Receipts	-	-	-	-	572,338	500,801	1,073,139	-	-	-	-	599,350	1,101,918	1,701,268	-	-	-	-	571,967	407,871	979,838
Private Grants	108,356	-	-	-	-	15,193	123,549	84,467	2,737	-	-	-	141,280	228,484	148,555	-	-	-	-	143,017	291,572
Total Revenue Revolving & Special Funds	**108,356**	**1,557,366**	**-**	**-**	**572,338**	**4,074,559**	**6,312,619**	**84,467**	**1,733,772**	**-**	**-**	**599,350**	**4,820,730**	**7,238,319**	**148,555**	**1,778,747**	**-**	**-**	**571,967**	**4,248,087**	**6,747,356**
Total Revenue All Sources	**2,489,832**	**8,745,597**	**49,580**	**-**	**572,338**	**44,154,715**	**56,012,062**	**1,850,948**	**12,285,358**	**59,207**	**-**	**599,350**	**51,279,423**	**66,074,286**	**2,227,239**	**8,279,317**	**63,546**	**-**	**571,967**	**53,524,726**	**64,666,795**

May 9, 2018
Updated June 15, 2018

FULLER MIDDLE SCHOOL
Feasibility Study
Preliminary Project Schedule - PSR Submission

PROJECT MANAGEMENT SMMA

ID	Task Name	Duration	Start	Finish
1	**MSBA PREREQUISITES**	500 days	3/13/2015	2/15/2017
2	Original Statement of Interest (SOI) Submission	0 days	3/13/2015	3/13/2015
3	MSBA Invite into Eligibility	0 days	5/25/2016	5/25/2016
4	Execute Feasibility Study Agreement (FSA)	0 days	2/15/2017	2/15/2017
5	**RETAIN OPM**	43 days	4/19/2017	6/19/2017
6	Submit OPM Proposals	0 days	4/19/2017	4/19/2017
7	OPM Interview	1 day	5/3/2017	5/3/2017
8	Negotiate OPM Contract	3 days	5/8/2017	5/10/2017
9	Submit Documents to MSBA OPM Panel	0 days	5/10/2017	5/10/2017
10	**MSBA OPM Panel Meeting**	**0 days**	**6/19/2017**	**6/19/2017**
11	**RETAIN DESIGNER**	94 days	5/11/2017	9/19/2017
12	Draft Designer RFS and Submit to MSBA	21 days	5/11/2017	6/8/2017
13	MSBA Approve Draft RFS	11 days	6/8/2017	6/22/2017
14	Submit to Central Register	0 days	6/22/2017	6/22/2017
15	Notice in Central Register	0 days	6/28/2017	6/28/2017
16	Briefing Session	0 days	7/6/2017	7/6/2017
17	Submit Designer Proposals	0 days	7/20/2017	7/20/2017
18	**MSBA DSP Proposal Review Meeting**	**0 days**	**8/22/2017**	**8/22/2017**
19	**MSBA DSP Interview Meeting**	**0 days**	**9/12/2017**	**9/12/2017**
20	Negotiate Designer Contract	5 days	9/13/2017	9/19/2017
21	**FEASIBILITY STUDY (FS)**	201 days	9/19/2017	6/27/2018
22	Develop Preliminary Design Program (PDP)	67 days	9/19/2017	12/20/2017
23	Submit PNF to MHC	23 days	11/5/2017	12/5/2017
24	Community Presentations	45 days	10/19/2017	12/20/2017
25	Town Council Presentations	23 days	11/20/2017	12/20/2017
26	School Committee Presentations	23 days	11/20/2017	12/20/2017
27	**Submit PDP to MSBA Staff**	**0 days**	**12/20/2017**	**12/20/2017**
28	Develop Preferred Schematic Report (PSR)	101 days	12/20/2017	5/9/2018
29	Receive MHC Clearance	42 days	1/5/2018	3/5/2018
30	Community Presentations	78 days	1/22/2018	5/9/2018
31	City Council Presentations	78 days	1/22/2018	5/9/2018
32	School Committee Presentations	78 days	1/22/2018	5/9/2018
33	**Submit PSR to MSBA FAS**	**0 days**	**5/9/2018**	**5/9/2018**
34	**FAS Presentation**	**0 days**	**5/23/2018**	**5/23/2018**
35	**FAS Presentation**	**0 days**	**6/6/2018**	**6/6/2018**
36	**MSBA Board Meeting**	**0 days**	**6/27/2018**	**6/27/2018**
37	**SCHEMATIC DESIGN (SD)**	125 days	5/9/2018	10/31/2018
38	Develop Schematic Design	91 days	5/9/2018	9/12/2018
39	Community Presentations	69 days	6/8/2018	9/12/2018
40	City Council Presentations	69 days	6/8/2018	9/12/2018
41	School Committee Presentations	69 days	6/8/2018	9/12/2018
42	Submit Final Budget to MSBA	0 days	8/29/2018	8/29/2018
43	**Submit Schematic Design to MSBA**	**0 days**	**9/12/2018**	**9/12/2018**
44	MSBA Review SD Submission	16 days	9/12/2018	10/3/2018
45	PS&B Agreement Execution	23 days	9/12/2018	10/12/2018
46	DESE Review	23 days	9/12/2018	10/12/2018
47	Respond to MSBA Comments	11 days	10/3/2018	10/17/2018
48	**MSBA Board Meeting**	**0 days**	**10/31/2018**	**10/31/2018**

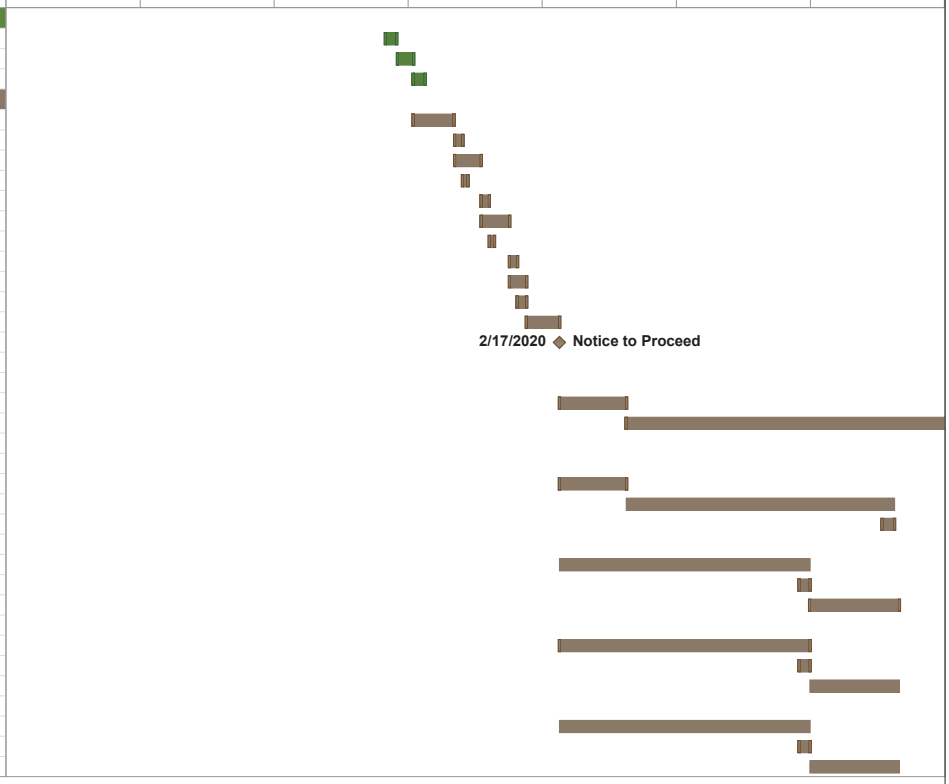


May 9, 2018
Updated June 15, 2018

FULLER MIDDLE SCHOOL
Feasibility Study
Preliminary Project Schedule - PSR Submission

PROJECT MANAGEMENT SMMA

ID	Task Name	Duration	Start	Finish
49	**LOCAL APPROPRIATION**	**78 days**	**10/31/2018**	**2/15/2019**
50	City Council Appropriation	23 days	10/31/2018	11/30/2018
51	Debt Exclusion Votes	32 days	12/3/2018	1/15/2019
52	Project Funding Agreement Execution	24 days	1/15/2019	2/15/2019
53	**DESIGN AND CONSTRUCTION**	**1198 days**	**1/15/2019**	**8/17/2023**
54	Design Development	80 days	1/15/2019	5/5/2019
55	MSBA Review of DD Submission	16 days	5/8/2019	5/29/2019
56	60% Construction Documents	52 days	5/8/2019	7/18/2019
57	Incorporate MSBA DD Comments	11 days	5/29/2019	6/12/2019
58	MSBA Review of 60% CD Submission	16 days	7/19/2019	8/9/2019
59	90% Construction Documents	56 days	7/19/2019	10/4/2019
60	Incorporate MSBA 60% CD Comments	11 days	8/10/2019	8/23/2019
61	MSBA Review of 90% CD Submission	16 days	10/4/2019	10/25/2019
62	100% Construction Documents	33 days	10/4/2019	11/19/2019
63	Incorporate MSBA 90% CD Comments	18 days	10/25/2019	11/19/2019
64	Bidding and Award	65 days	11/19/2019	2/17/2020
65	**Notice to Proceed**	**0 days**	**2/17/2020**	**2/17/2020**
66	**Construction**	**914 days**	**2/17/2020**	**8/17/2023**
67	**Option 0.0: Repair Only**	**914 days**	**2/17/2020**	**8/17/2023**
68	Create Swing Space	131 days	2/17/2020	8/17/2020
69	Renovation/Site Work	784 days	8/17/2020	8/17/2023
70	Move-in Date	25 days	7/15/2023	8/17/2023
71	**Option A: Renovation and Addition**	**653 days**	**2/17/2020**	**8/17/2022**
72	Create Swing Space	131 days	2/17/2020	8/17/2020
73	Renovation and Addition/Demo/Site Work	523 days	8/17/2020	8/17/2022
74	Move-in Date	24 days	7/15/2022	8/17/2022
75	**Option B: New Construction**	**662 days**	**2/17/2020**	**8/30/2022**
76	New Construction	489 days	2/17/2020	12/30/2021
77	Move-in Date	22 days	12/1/2021	12/30/2021
78	Demolition/Site Work	174 days	12/30/2021	8/30/2022
79	**Option C: New Construction**	**662 days**	**2/17/2020**	**8/30/2022**
80	New Construction	489 days	2/17/2020	12/30/2021
81	Move-in Date	22 days	12/1/2021	12/30/2021
82	Demolition/Site Work	174 days	12/30/2021	8/30/2022
83	**Option D: New Construction**	**662 days**	**2/17/2020**	**8/30/2022**
84	New Construction	489 days	2/17/2020	12/30/2021
85	Move-in Date	22 days	12/1/2021	12/30/2021
86	Demolition/Site Work	174 days	12/30/2021	8/30/2022



Proposed Space Summary - Middle Schools

Legend
= Change from MSBA Template
= Change from Previous Submission

14

FULLER Middle School 630 Students Grades 6-8	Existing Conditions			Preliminary Design Program MSBA Comment Response Set 2/1/2018			PSR Submission 5/9/2018			PROPOSED									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
										Existing to Remain/Renovated			New			Total						
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**31,685**			**45,570**			**43,170**			**0**			**35,710**			**35,710**			**29,580**	
(List classrooms of different sizes separately)																						
Classroom - General	775	20	15,500	900	21	18,900	900	21	18,900				900	21	18,900	900	21	18,900	950	22	20,900	850 SF min - 950 SF max
ELL Classrooms	675	9	6,075	900	9	8,100	900	9	8,100				900	6	5,400	900	6	5,400				
Teacher Planning	0	0	0	90	15	1,350	90	15	1,350				90	14	1,260	90	14	1,260				Shared between classrooms
Classroom Breakout	0	0	0	300	15	4,500	300	7	2,100				300	7	2,100	300	7	2,100				Shared between classrooms. Includes SPED use
Small Group Seminar (20-30 seats) / Resource /Professional Development/ Itinerant / Workspace	0	0	0	400	3	1,200	400	3	1,200				400	1	400	400	1	400	500	2	1,000	Professional Development/ Itinerant / Workspace. Some uses served in Admin "Teachers Work Rooms"
Science Classroom / Lab	915	10	9,150	1,150	9	10,350	1,150	9	10,350				1,150	6	6,900	1,150	6	6,900	1,200	6	7,200	
Prep Room	240	4	960	80	9	720	80	9	720				80	6	480	80	6	480	80	6	480	
Science Teacher Planning	0	0	0	90	5	450	90	5	450				90	3	270	90	3	270				Shared between classrooms
SPECIAL EDUCATION			**10,875**			**9,090**			**8,820**			**0**			**8,820**			**8,820**			**7,550**	
(List classrooms of different sizes separately)																						
Self-Contained SPED	930	5	4,650	900	6	5,400	900	6	5,400				900	6	5,400	900	6	5,400	950	5	4,750	assumed 8% of pop. in self-contained SPED
SPED Teacher Planning	0	0	0	90	6	540	90	3	270				90	3	270	90	3	270				Dedicated to SPED classrooms
SPED Classroom Breakout	620	7	4,340	300	3	900	300	2	600				300	2	600	300	2	600				Shared between classrooms. SPED use also in Gen Classroom Breakout
Self-Contained SPED Toilet	0	0	0	60	0	0	100	3	300				100	3	300	100	3	300	60	5	300	For medically fragile students
Resource Room	935	1	935	500	3	1,500	500	3	1,500				500	3	1,500	500	3	1,500	500	3	1,500	Should be divisible
Small Group Room / Reading	0	0	0	250	3	750	250	3	750				250	3	750	250	3	1,000	500	2	1,000	1/2 size Gen. Clrm.
SPED Office w/Storage	190	5	950			0			0						0	0	0	0				
ART & MUSIC			**5,620**			**3,250**			**3,650**			**0**			**3,650**			**3,650**			**3,250**	
Art Classroom	600	2	1,200	1,200	1	1,200	1,200	1	1,200				1,200	1	1,200	1,200	1	1,200	1,200	1	1,200	assumed use - 50% population 2 times / week
Art Workroom w/ Storage & kiln	0	0	0	150	1	150	150	1	150				150	1	150	150	1	150	150	1	150	
Band / Chorus - 100 seats	2,120	2	4,240	750	2	1,500	950	2	1,900				950	2	1,900	950	2	1,900	1,500	1	1,500	To accommodate 60 to 70 students
Music Practice / Ensemble	60	3	180	200	2	400	200	2	400				200	2	400	200	2	400	200	2	400	
VOCATIONS & TECHNOLOGY			**3,350**			**4,150**			**4,150**			**0**			**3,200**			**3,200**			**6,400**	Distributed V&T in Cohort Commons
Tech Clrm. - (E.G. Drafting, Business)	1,660	1	1,660	950	1	950	950	1	950				950	0	0	950	0	0	1,200	2	2,400	Functions to be served in Fab Lab
Tech Shop - (E.G. Consumer, Wood)	1,690	1	1,690	2,000	1	2,000	2,000	1	2,000				2,000	1	2,000	2,000	1	2,000	2,000	2	4,000	Assumed use - 25% Population - 5 times/week
Fab Lab	0	0	0	1,200	1	1,200	1,200	1	1,200				1,200	1	1,200	1,200	1	1,200				Includes closed off area for 3D printers
HEALTH & PHYSICAL EDUCATION			**24,265**			**8,185**			**9,985**			**0**			**9,985**			**9,985**			**8,400**	
Gymnasium	9,680	1	9,680	6,500	1	6,500	8,300	1	8,300				8,300	1	8,300	8,300	1	8,300	6,000	1	6,000	Gym enlarged to fit 2 MS BB Courts
Gym Storeroom	260	2	520	300	1	300	300	1	300				300	1	300	300	1	300	150	1	150	
Health Instructor's Office w/ Shower & Toilet	685	3	2,055	150	2	300	150	2	300				150	2	300	150	2	300	250	1	250	PE instructor - no shower or toilet
Locker Rooms - Boys / Girls w/ Toilets	3,500	2	7,000	500	2	1,000	500	2	1,000				500	2	1,000	500	2	1,000	1,000	2	2,000	3 Shower, 1 toilet, 25 lockers
Unisex Toilet / Shower	140	1	140	85	1	85	85	1	85				85	1	85	85	1	85				Include 4 lockers
Fitness Center	4,870	1	4,870			0			0						0							
MEDIA CENTER			**3,720**			**6,250**			**6,250**			**0**			**6,250**			**6,250**			**4,003**	
Media Center / Reading Room	3,720	1	3,720	1,900	1	1,900	1,900	1	1,900				1,900	1	1,900	1,900	1	1,900	4,003	1	4,003	
Cohort Commons	0	0	0	1,450	3	4,350	1,450	3	4,350				1,450	3	4,350	1,450	3	4,350				Distributed Media Center and Vocations and Technology functions
DINING & FOOD SERVICE			**13,740**			**8,923**			**8,923**			**0**			**8,923**			**8,923**			**8,922**	
Cafetorium / Dining	8,570	1	8,570	4,725	1	4,725	4,725	1	4,725				4,725	1	4,725	4,725	1	4,725	4,725	1	4,725	2 seatings - 1SSF per seat
Stage	0	0	0	1,600	1	1,600	1,600	1	1,600				1,600	1	1,600	1,600	1	1,600	1,600	1	1,600	
Chair / Table / Equipment Storage	440	1	440	410	1	410	410	1	410				410	1	410	410	1	410	410	1	410	
Kitchen	3,485	1	3,485	1,930	1	1,930	1,930	1	1,930				1,930	1	1,930	1,930	1	1,930	1,930	1	1,930	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	1,245	1	1,245	258	1	258	258	1	258				258	1	258	258	1	258	258	1	258	20 SF/Occupant
MEDICAL			**1,560**			**610**			**610**			**0**			**610**			**610**			**610**	
Medical Suite Toilet	50	3	150	60	1	60	60	1	60				60	1	60	60	1	60	60	1	60	
Nurses' Office / Waiting Room	930	1	930	250	1	250	250	1	250				250	1	250	250	1	250	250	1	250	
Examination Room / Resting	160	3	480	100	3	300	100	3	300				100	3	300	100	3	300	100	3	300	
ADMINISTRATION & GUIDANCE			**4,600**			**4,940**			**4,940**			**0**			**5,240**			**5,240**			**3,430**	
General Office / Waiting Room / Toilet	1,540	1	1,540	415	1	415	415	1	415				415	1	415	415	1	415	415	1	415	
Teachers' Mail and Time Room	100	1	100	100	1	100	100	1	100				100	1	100	100	1	100	100	1	100	
Duplicating Room	130	1	130	200	1	200	200	1	200				200	1	200	200	1	200	200	1	200	
Records Room	90	1	90	200	1	200	200	1	200				200	1	200	200	1	200	200	1	200	
Principal's Office w/ Conference Area	560	1	560	375	1	375	375	1	375				375	1	375	375	1	375	375	1	375	

Proposed Space Summary - Middle Schools

Legend

= Change from MSBA Template

= Change from Previous Submission

FULLER Middle School 630 Students Grades 6-8	Existing Conditions			Preliminary Design Program MSBA Comment Response Set 2/1/2018			PSR Submission 5/9/2018			PROPOSED Existing to Remain/Renovated			PROPOSED New			PROPOSED Total			MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
Principal's Secretary / Waiting	80	1	80	125	1	125	125	1	125				125	1	125	125	1	125	125	1	125	
Assistant Principal's Office - AP1	110	1	110	150	1	150	150	1	150				150	1	150	150	1	150	150	1	150	
Assistant Principal's Office - AP2	0	0	0	150	0	0	150	0	0				150	0	0	150	0	0	150	1	150	
Supervisory / Spare Office	170	1	170	150	1	150	150	1	150				150	1	150	150	1	150	150	1	150	
Conference Room	310	1	310	350	1	350	350	1	350				350	1	350	350	1	350	350	1	350	
Small Conference Room	0	0	0	200	1	200	200	1	200				200	1	200	200	1	200				For parent meetings
Guidance Office (Student Support)	170	8	1,360	150	6	900	150	6	900				150	6	900	150	6	900	150	4	600	Distributed 2 per cohort
Guidance Waiting Room W/ Sto Closet	0	0	0	75	3	225	75	3	225				75	3	225	75	3	225	100	1	100	Distributed 1 per cohort
Guidance Storeroom	60	1	60	50	1	50	50	1	50				50	1	50	50	1	50	50	1	50	
Teachers' Work Room			0	200	3	600	200	3	600				300	3	900	300	3	900	465	1	465	Distributed 1 per cohort. Serves uses of removed Small Seminar Rooms
Dept Head / Coach offices	90	1	90	150	6	900	150	6	900				150	6	900	150	6	900				Distributed 2 per cohort
CUSTODIAL & MAINTENANCE			**3,515**			**2,105**			**2,105**			**0**			**2,105**			**2,105**			**2,105**	
Custodian's Office	100	1	100	150	1	150	150	1	150				150	1	150	150	1	150	150	1	150	
Custodian's Workshop	250	1	250	250	1	250	250	1	250				250	1	250	250	1	250	250	1	250	
Custodian's Storage	105	9	945	375	1	375	375	1	375				375	1	375	375	1	375	375	1	375	
Recycling Room / Trash	0	0	0	400	1	400	400	1	400				400	1	400	400	1	400	400	1	400	
Receiving and General Supply	220	1	220	310	1	310	310	1	310				310	1	310	310	1	310	310	1	310	
Storeroom	1,240	1	1,240	420	1	420	420	1	420				420	1	420	420	1	420	420	1	420	
Network / Telecom Room	380	2	760	200	1	200	200	1	200				200	1	200	200	1	200	200	1	200	
						0			0						0							
OTHER			**27,670**			**13,000**			**10,000**			**0**			**10,000**			**10,000**			**0**	
Other *(specify)*																						
Adult ESL Offices	2,370	1	2,370	3,000	1	3,000	0	0	0				0	0	0	0	0	0				
City Offices, (PIC, Bldg& Grounds, BOH)	17,300	1	17,300																			
Auditorium	5,400	1	5,400	7,500	1	7,500	7,500	1	7,500				7,500	1	7,500	7,500	1	7,500				750 seat auditorium
Stage	1,900	1	1,900	1,600	1	1,600	1,600	1	1,600				1,600	1	1,600	1,600	1	1,600				
Auditorium Storage	160	1	160	400	1	400	400	1	400				400	1	400	400	1	400				
Dressing Rooms	270	2	540	250	2	500	250	2	500				250	2	500	250	2	500				
Total Building Net Floor Area (NFA)			**130,600**			**106,073**			**102,603**			**0**			**94,493**			**94,493**			**74,250**	
Proposed Student Capacity / Enrollment																					**630**	
Total Building Gross Floor Area (GFA)[2]			195,900			159,110			**153,905**						**141,740**			**141,740**			**107,280**	
Grossing factor (GFA/NFA)			**1.50**			**1.50**			**1.50**						**1.50**			**1.50**			**1.44**	

[1] **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.

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

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: Jonathan Levi Architects

Name of Principal Architect: Jonathan Levi, FAIA

Signature of Principal Architect:

Date: 6/19/2018

FULLER MIDDLE SCHOOL FEASIBILITY STUDY

School Building Committee
June 28, 2018

PROJECT MANAGEMENT SMMA

Relating Building Form to Educational Environments

PROJECT MANAGEMENT SMMA

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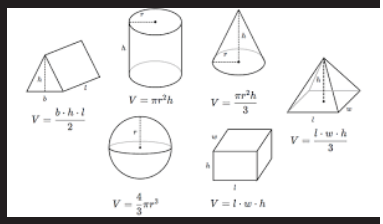
PROJECT MANAGEMENT SMMA

Relating Building Form to Educational Environments



Design Update

Design Update

Design Update – 1st Floor

Design Update – 2nd Floor

Design Update – 3rd Floor

Design Update

PROJECT MANAGEMENT SMMA

Fuller Middle School Feasibility Study
School Building Committee
June 28, 2018

Design Update

PROJECT MANAGEMENT SMMA

Fuller Middle School Feasibility Study
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June 28, 2018

Cost Reduction Strategy

Cost Reduction Strategy

• Reduce Auditorium seating from 750 seats to 420 seats	(-$3.3M)
• Delete Full Air Conditioning	(-1.0M)
Total Potential Reduction	(-$4.3 M)
Previous Total Project Cost	$104.5M
Potential Adjusted Total Project Cost	$100.2M

Air Conditioning vs Dehumidification

Air Conditioned Spaces:

- Maintains inside temperature at 75°F, 50% humidity;
- Comfortable all year;
- Typically used at a minimum in Auditorium, Cafeteria, Administrative Spaces, and Media Center.

Dehumidified Spaces:

- Reduced Construction Costs;
- For rooms not typically used in the summer;
- Temperature floats within comfort zone; typically maximum 80°F;
- Starts to become uncomfortably warm when outdoor temperature goes above 88°F.

Sustainability

LEED Goals

1. Site:

- Credit for Building on Developed Site
- Control Erosion During Construction
- Improve Storm Water Runoff
- Assess Potential Hazards in the Soil
- Reduce Heat Island Solar Absorption
- Reduce Light Pollution
- Provide Community Use

2. Reduce Energy Use:

- 3rd Party Verification of Mechanical Systems and Envelope Performance
- High Efficiency Heat and Hot Water Systems
- Excellent Thermal Insulation
- Make "Solar Ready"

3. Reduce Water Consumption:

- Low Flow Fixtures
- Minimize Irrigation
- Meter Usage

4. Materials and Resources:

- Design for Reduced Life / Cycle Costs
- Use Environmentally Friendly Materials
- Recycle Demolition and Construction Waste

5. Indoor Environmental Quality :

- Excellent Indoor Air Quality
- Use Low -Emitting Materials
- Enhanced Acoustic Performance
- Incorporate Daylighting
- Provide Access to Outdoor Views

Geothermal Systems under Review

Closed-Loop Geothermal System:

- Typical Well Depth 500 ft.
- Approximately 120 wells at 20 ft on-center for cooling loads
- Approximately 145 wells at 20 ft on-center for heating load (would eliminate boiler plant)
- Comparatively minimal DEP process
- Comparatively little maintenance

Open-Loop Geothermal System:

- Typical Depth 1500 ft.
- Approximately 13 wells at 75 ft o.c. for Cooling loads
- Approximately 16 wells at 75 ft o.c. for heating load (would eliminate boiler plant)
- More involved DEP process (wells must be sanitized)
- Requires substantially more maintenance (less reliable)

Photovoltaic Considerations under Review

Funding:

The MSBA does not reimburse for PV panels, as electricity use is considered an operational expense.

Solar Ready:

The building will be designed to accept the gravity loads of PV panels, and will have conduit from the roof to the electrical room so that PV can be easily installed at the district's discretion. This work is eligible for MSBA reimbursement

Location:

Panels can be Rooftop, Ground Mounted and / or Car Port.

Net-Zero:

To be Energy Neutral or Carbon Neutral, there will need to be more PV panels than would fit on the roof. The precise quantity will be dependent on the HVAC system chosen later this summer.

SMMA

Project Management

Project Minutes

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	8/6/18
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library	Meeting No:	23
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
✓	David Miles	Co-Chair, City Resident with Experience in Finance	**Voting Member**
	Dr. Edward Gotgart	Co-Chair, FPS Chief Operating Officer	Non-Voting Member
	Mayor Spicer	Mayor, Chief Executive Officer	Non-Voting Member
	Thatcher Kezer III	Chief Operating Officer	Non-Voting Member
✓	Richard Finlay	School Committee Member and Convenor	**Voting Member**
	Adam Freudberg	Chair, School Committee	**Voting Member**
✓	Charlie Sisitsky	City Council Member	**Voting Member**
✓	Richard Weader II	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Michael Grilli	Member of community with arch., eng., and/or construction experience	**Voting Member**
	Caitlin Stempleski	Fuller School Teacher and Co-Chair of the Union Professional Development Committee	**Voting Member**
	Dr. Jennifer Krusinger Martin	School Building Committee Member	**Voting Member**
	Donald Taggart III	City Resident/Retired Teacher	**Voting Member**
✓	Jennifer Pratt	Assistant Chief Financial Officer and SBC Member who is MCPPO certified	Non-Voting Member
✓	Dr. Robert Tremblay	Superintendent of Schools	Non-Voting Member
✓	Matt Torti	Director of Buildings and Grounds	Non-Voting Member
	Jose Duarte	Principal, Fuller Middle School	Non-Voting Member
✓	Anne Ludes	Director of Secondary Education	Non-Voting Member
✓	Mary Ellen Kelley	Chief Financial Officer and Local Budget official or member of Finance Committee	Non-Voting Member
	Michael Tusino	Certified Building Official	Non-Voting Member
	Patrick Johnson	Principal, Walsh Middle School	Non-Voting Member
	John Haidemenos	Principal, Woodrow Wilson Elementary School	Non-Voting Member
	David Panich	School Building Committee Member	Non-Voting Member
✓	Thomas Barbieri	School Building Committee Member	Non-Voting Member
	Dr. Dale Hamel	School Building Committee Member	Non-Voting Member
✓	Noval Alexander	School Committee Member **(Voting for A. Freudberg)**	Non-Voting Member
	Heather Connolly	Former Chair of the School Committee	Non-Voting Member
✓	Scott Wadland	School Committee Member	
✓	Jonathan Levi	JLA, Architect	
✓	Philip Gray	JLA, Architect	
✓	Dom Puniello	GGD, HVAC Engineer	
✓	Joel Seeley	SMMA, OPM	

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Cambridge, MA 02138
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www.smma.com

Item #	Action	Discussion
23.1	Record	Call to Order, 7:00 PM, meeting opened.
23.2	Record	Public Comments – the following comments were made: 1. Would like to see the parking needs for Fuller, Farley and McCarthy listed. 2. Would like to see a breakdown of site related construction costs. 3. Would like to know the cost to expand the school in the future. 4. Would like to know how noise from the Learning Commons will be controlled. 5. Would like to know the construction vehicle routes. 6. Would like to know what the HVAC loads will be. 7. Would like to know if a peer review will be performed on the traffic study and geotechnical investigation.
23.3	Record	A motion was made by S. Wadland and seconded by N. Alexander to approve the 7/16/18 School Building Committee meeting minutes. No discussion, motion passed unanimously by those attending.
23.4	Record	J. Seeley distributed and reviewed Warrant No. 9, attached. Committee Discussion: 1. D. Miles asked what is the balance on the $1,000,000 Feasibility Study Appropriation? *J. Seeley indicated the balance is $145,945.50*. A motion was made by M. Grilli and seconded by N. Alexander to approve Warrant No. 9. No discussion, motion passed unanimous.
23.5	J. Seeley	J. Seeley distributed and reviewed the Total Project Budget and Summary of Approximate Reimbursement, both dated 7/16/18 and attached, reflecting a total project cost of $101,265,723, approximate MSBA grant of $40,476,040 and approximate cost to City of $60,789,683. The approximate MSBA grant reflects updated MSBA base reimbursement rate of 57.83. Committee Discussion: 1. J. Seeley indicated the OPM and Designer basic services fees are included as a placeholder. *D. Miles indicated a sub-committee has been established to negotiate these fees prior to the 8/27/18 Committee meeting.* 2. J. Seeley to update the Total Project Budget and Summary of Approximate Reimbursement based on the Schematic Design cost estimate for presentation and approval at the 8/27/18 Committee meeting.
23.6	Record	P. Gray distributed and reviewed the 7/27/18 Physical Education meeting minutes, 7/30/18 Police and Fire Department meeting minutes, 7/30/18 Educational Working Group meeting minutes and the 7/30/18 Conservation Commission meeting minutes, attached.

23.7	P. Gray	P. Gray provided a summary update on the Traffic Study, attached. G. Ham, the Traffic Engineer will be present at the 8/27/18 Committee meeting for a full update. P. Gray described a raised traffic table on Flagg Drive to control traffic speed. P. Gray described the primary construction vehicle circulation route from the Fuller School site to Concord Street to Route 9 and the oversized vehicle route to Concord Street to Route 9. Committee Discussion: 1. M. Grilli indicated concern with the oversized vehicle route to Concord Street and asked why couldn't the oversized vehicles stay on Normandy Road to Concord Street? *P. Gray indicated vehicles can't turn northbound onto Concord from Normandy and that that Arsenal Road to Anzio Road intersections are too narrow for oversized vehicles.* 2. M. Grilli asked if the oversized vehicles can turn southbound on Normandy and then eastbound on Hartford Road to get to Route 9? *C. Sisitsky indicated Hartford Road has a truck ban.* 3. M. Grilli asked if the oversized vehicles can turn northbound onto Concord from Normandy with a police detail? *P. Gray indicated at the meeting with the police department it was indicated that the construction traffic route should not rely on police detail due to detail availability and that providing details would be significant cost to the project.* 4. N. Alexander asked if the oversized vehicles can utilize Oaks Road to Route 9? *P. Gray indicated the intersection at Oaks and Route 9 is only east bound on Route 9 and too narrow.* 5. R. Finlay asked if a temporary signal can be installed at the intersection of Normandy and Concord? *M. Torti indicated he reviewed with Public Works and a temporary signal would be complicated since the existing signal at Anzio and the fire station are synchronized, there could be a lengthy permitting process and a temporary signal could cost between $60-$80,000.* 6. J. Seeley indicated the Schematic Design estimate will include a budget for a temporary signal or police detail until the route can be further resolved. 7. P. Gray to provide direction on what will happen to the McCarthy parents that use the Fuller parking lot to drop-off and pick-up and walk across the street at the next Committee meeting. 8. P. Gray to define which lot teachers and staff will park in during each of the construction phases at the next Committee meeting. 9. P. Gray to review in Phases 2 and 3, students that are being dropped off by parents having to cross bus traffic at the next Committee meeting.
23.8	P. Gray	P. Gray indicated that the Preliminary Geotechnical findings, attached, of the borings performed on 7/26 and 7/27/18 confirmed the results of the prior borings and that the

		current design remains. The formal report will be complete with the Schematic Design submission.
23.9	J. Levi	J. Levi presented and reviewed the updated site plan, floor plans, roof plan and interior perspectives of the Learning Commons, Fabrication Lab and Maker Space, attached. The temporary stockpile location was reviewed. Committee Discussion: 1. R. Finlay indicated that trees and shrubs should not be planted too close to the building. *J. Levi indicated trees and shrubs will not be planted close to the building.* 2. S. Wadland asked if Donna Wresinski has been consulted about having seating on the side gallery to the stage? *J. Levi indicated the seating on the side gallery to the stage will be reviewed with D. Wresinski.*
23.10	P. Gray	P. Gray presented and reviewed the Educational Technology for the project, attached. Committee Discussion: 1. D. Miles asked why are 4 wireless ports being provided in each classroom? *P. Gray will confirm with the Technology Consultant*.
23.11	Record	P. Gray presented and reviewed the Furnishings and Equipment for the project, attached.
23.12	Record	P. Gray presented and reviewed the Structural Systems for the project, attached.
23.13	Record	D. Puniello presented and reviewed the Mechanical System Payback Analysis and Geothermal and Photovoltaic renewable energy options, attached. The preferred system is Option 2b. Committee Discussion: 1. M. Torti indicated GGD has met several times with Building and Grounds to review the systems and that Building and Grounds recommends option 2b and indicated Tim Rivers of Building and Grounds is in attendance to answer Committee questions. 2. S. Wadland asked why option 3b, which has a higher 30 year life cycle cost savings, is not the preferred option? *D. Puniello indicated option 3b has a higher maintenance cost with the additional valving and maintenance needed for the chilled beams*. 3. R. Weader II asked if a net zero energy option was analyzed? *P. Gray indicated the payback on the geothermal system was outside of 30 years and photovoltaic panels are not reimbursable by the MSBA. The building roof is designed to accommodate future installation of photovoltaic panels, outside the project cost*. 4. R. Finlay asked if carports with photovoltaic panels can be installed over the parking lots?

		P. Gray indicated a conduit can be provided to the parking lots for future installation of carports. 5. R. Weader II asked if the analysis was based on current gas prices, which are low? *D. Puniello indicated the gas prices used are escalated accordance with DOE guidelines*. 6. S. Wadland asked why is the geothermal option more costly to operate? *D. Puniello indicated that a lot of the components get shifted to electric versus gas, which counter acts the cost savings for the geothermal*. 7. D. Miles asked if the gymnasium and auditorium rooves will be designed to accommodate photovoltaic panels? *P. Gray indicated the gymnasium and auditorium will be in shadow for a large part of the day from the three-story classroom wing*. 8. D. Miles asked if the option can be tweaked in the future? *J. Levi indicated yes, all the options were very close in capital cost, with the exception of the geothermal option*. 9. P. Gray indicated that the Schematic Design cost estimate will be based on option 2b. 10. R. Finlay asked if the estimate can be provided to the Committee prior to the meeting? *J. Seeley indicated yes, the estimate will be provided in advance of the meeting*.
23.14	Record	J. Seeley distributed and reviewed the Preliminary Project Schedule for the Schematic Design Submission, attached, and described the CM@Risk selection process and schedule. Committee Discussion: 1. C. Sisitsky asked what are the contingencies included in the total project budget? *J. Seeley indicated there is a design and pricing contingency, GMP contingency, construction change order contingency and owner's contingency. The design and pricing contingency is an estimating contingency based on the level of design completion. The GMP contingency is included by the CM in the process of creating a guaranteed maximum price as a contingency for required work not identified at the time of the GMP, which can only be expended with the approval of the owner. The change order contingency is for changes in the construction for unforeseen site conditions, omissions or errors in the drawings and specifications. The owner's contingency is for non-construction costs related to design or project changes.* 2. C. Sisitsky asked if the design-bid-build project includes a GMP contingency? *J. Seeley indicated no, but those costs may be reflected in usage of the change order contingency. J. Levi added that there is a 3-5% premium for the CM@Risk process which was reviewed with the Committee and that the GMP contingency*

		is part of that premium, but can only be expended with the approval of the owner.
23.15	Record	J. Seeley provided an update on the Project Information Working Group and distributed and reviewed the updated Information Flyer, auditorium article, model school program article and the learning commons article and encouraged members to go to the on-line version of the Project Promotion Opportunities Calendar to sign up to attend the events. J. Seeley to email the Calendar to the committee. Committee Discussion: 1. S. Wadland indicated the model school program and learning commons articles have been distributed on social media with a copy sent to the City Council. The auditorium article is in draft and will be issued shortly.
23.16	Record	Old or New Business – none
23.17	Record	Next **SBC Meeting: August 27, 2018 at 7:00 PM** at Fuller Middle School Library.
23.18	Record	A Motion was made by R. Finlay and seconded by M. Grilli to adjourn the meeting. No discussion, motion passed unanimous.

Attachments: Agenda, Warrant No. 9, Total Project Budget and Summary of Approximate Reimbursement, 7/27/18 Physical Education meeting minutes, 7/30/18 Police and Fire Department meeting minutes, 7/30/18 Educational Working Group meeting minutes and the 7/30/18 Conservation Commission meeting minutes, Mechanical System Payback Analysis, Preliminary Project Schedule for the Schematic Design Submission, Updated Information Flyer, auditorium article, model school program article and the learning commons article Powerpoint

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes.

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Project Management

PROJECT MEETING SIGN-IN SHEET

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	8/6/2018
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library 31 Flagg Drive, Framingham, MA	Meeting No:	23
Distribution:	Attendees, (MF)		

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
✓	David Miles	dmiles@partners.org	Co-Chair, School Building Committee, City Resident with experience in Finance
	Dr. Edward Gotgart	egotgart@framingham.k12.ma.us	Co-Chair and FPS Chief Operating Officer
	Yvonne M. Spicer	mayorspicer@framinghamma.gov	Mayor, City of Framingham
	Thatcher Kezer, III	tkezer@framinghamma.gov	Chief Operating Officer, Mayoral Designee
	Richard Finlay	rfinlay@wellesleyma.gov	School Committee Member and Convenor
	Adam Freudberg	afreudberg@framingham.k12.ma.us	Chair of School Committee
	Charlie Sisitsky	csisitsky@rcn.com	Local Chief Executive Officer
	Richard Weader, II	weaders@aol.com	Member of community with architecture, engineering and/or construction experience
	Michael Grilli	mgrilli@beta-inc.com	Member of community with architecture, engineering and/or construction experience
	Caitlin Stempleski	cstempleski@framingham.kl2.ma.us	Fuller School Teacher and Co-Chair of the Union Professional Development Committee
	Dr. Jennifer Krusinger Martin	jkrusinger@gmail.com	School Building Committee Member
	Donald Taggart III	dontaggart134@gmail.com	City Resident / Retired Teacher
	Jennifer Pratt	jaf@framinghamma.gov	Assistant Chief Financial Officer and SBC Member who is MCPPO certified, City of Framingham
	Dr. Robert Tremblay	rtremblay@framingham.k12.ma.us	Superintendent of Schools
	Matt Torti	mtorti@framingham.k12.ma.us	Director of Buildings and Grounds
	Jose Duarte	jduarte@framingham.k12.ma.us	Principal, Fuller Middle School
	Anne Ludes	aludes@framingham.k12.ma.us	Director of Secondary Education, Framingham Public Schools
✓	Mary Ellen Kelley, CFO	mek@framinghamma.gov	Chief Financial Officer and Local Budget official
	Michael Tusino	mat@framinghamma.gov	Certified Building Official

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Project: Fuller Middle School Feasibility Study
Meeting Date: August 6, 2018
Meeting No.: 23

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	Patrick Johnson	pjohnson@framingham.kl2.ma.us	Principal, Walsh Middle School
	John Haidemenos	jhaidemenos@framingham.k12.ma.us	Principal, Woodrow Wilson Elementary School
	David Panich	david@panicharchitecture.com	School Building Committee Member
	Thomas Barbieri	Thombrbr@aol.com	School Building Committee Member
	Dr. Dale Hamel	dhamel@framingham.edu	School Building Committee Member
	Noval Alexander	n.alexander@framingham.k12.ma.us	School Committee Member
	Heather Connolly	heatheratconnolly@comcast.net	Former Chair of School Committee
	Jonathan Levi	jlevi@leviarc.com	Jonathan Levi Architects (JLA)
	Philip Gray	pgray@leviarc.com	Jonathan Levi Architects (JLA)
	Joel Seeley	jseeley@smma.com	SMMA
	Scott Walsh		

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Agenda

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Re:	School Building Committee Meeting	Meeting Date:	8/6/2018
Meeting Location:	Fuller Middle School Library	Meeting Time:	7:00 PM
Prepared by:	Joel G. Seeley	Meeting No.	23
Distribution:	Committee Members (MF)		

1. Call to Order
2. Public Comments
3. Approval of Minutes
4. Approval of Invoices and Commitments
5. Review Total Project Cost
6. Review Traffic Report
7. Review Updated Geotechnical Boring Results
8. Review Updated Design – Interior and Exterior
9. Review Preliminary Technology Systems
10. Review Preliminary FFE Layout
11. Review Structural Systems
12. Review Mechanical and Electrical Systems
13. Review Sustainable Design Features and Renewable Design Options
14. Review CM@Risk Timeline
15. Project Information Working Group Update
16. Old or New Business
17. Committee Questions
18. Next Meeting: August 27, 2018
19. Adjourn

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Total Project Budget

City of Framingham
Fuller Middle School - Option C less
MSBAComments, Reduced Auditorium

6/15/2018
(updated 7/16/2018)

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
Feasibility Study Agreement				
OPM Feasibility Study	$175,000	$0	$175,000	
A&E Feasibility Study	$545,000	$0	$545,000	
Environmental & Site	$145,000	$0	$145,000	
Other	$135,000	$0	$135,000	
Feasibility Study Agreement Subtotal	**$1,000,000**	**$0**	**$1,000,000**	**$623,100**
Administration				
Legal Fees	$120,000	$120,000	$0	**$0**
Owner's Project Manager				
Design Development	$190,000	$313,661	-$123,661	
Construction Contract Documents	$270,000	$0	$270,000	
Bidding	$130,000	$0	$130,000	
Construction Contract Administration	$1,865,000	$0	$1,865,000	
Closeout	$144,374	$0	$144,374	
Extra Services	$100,000	$0	$100,000	
Reimbursable & Other Services	$40,000	$0	$40,000	
Cost Estimates	$100,000	$0	$100,000	
Advertising	$20,000	$0	$20,000	
Permitting	$50,000	$0	$50,000	
Owner's Insurance	$120,000	$0	$120,000	
Other Administrative Costs	$100,000	$0	$100,000	
Administration Subtotal	**$3,249,374**	**$433,661**	**$2,815,713**	**$1,754,471**
Architecture and Engineering				
Basic Services				
Design Development	$2,200,000	$896,174	$1,303,826	
Construction Contract Documents	$2,900,000	$0	$2,900,000	
Bidding	$170,000	$0	$170,000	
Construction Contract Administration	$2,000,000	$0	$2,000,000	
Closeout	$111,782	$0	$111,782	
Other Basic Services	$0	$0	$0	
Basic Services Subtotal	**$7,381,782**	**$896,174**	**$6,485,608**	
Reimbursable Services				
Construction Testing	$50,000	$0	$50,000	
Printing (over minimum)	$80,000	$0	$80,000	
Other Reimbursable Costs	$180,000	$0	$180,000	
Hazardous Materials	$200,000	$0	$200,000	
Geotechnical & Geo-Environmental	$200,000	$0	$200,000	
Site Survey	$60,000	$0	$60,000	
Wetlands	$80,000	$0	$80,000	
Traffic Studies	$120,000	$0	$120,000	
Architectural/Engineering Subtotal	**$8,351,782**	**$896,174**	**$7,455,608**	**$4,645,589**
CM at Risk Preconstruction Services				
Pre-Construction Services	$800,000	**$0**	$800,000	**$498,480**
Site Acquisition				
Land / Building Purchase	$0	$0	$0	
Appraisal Fees	$0	$0	$0	
Recording fees	$0	$0	$0	
Site Acquisition Subtotal	**$0**	**$0**	**$0**	**$0**

Total Project Budget

City of Framingham
Fuller Middle School - Option C less
MSBAComments, Reduced Auditorium

6/15/2018
(updated 7/16/2018)

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
Construction Costs				
SUBSTRUCTURE				
Foundations	$50,092,820	$0		
Reduce 3 ELL CR & Science, Tech CR, Seminar Rms	-$4,987,650	$0		
SHELL				
Reduce Auditorium to 420 seats	-$2,722,500	$0		
Exterior Closure	$0	$0		
Exterior Walls	$0	$0		
Exterior Windows	$0	$0		
Exterior Doors	$0	$0		
Roofing	$0	$0		
INTERIORS				
Interior Construction	$0	$0		
Staircases	$0	$0		
Interior Finishes	$0	$0		
SERVICES				
Conveying Systems	$0	$0		
Plumbing	$0	$0		
HVAC	$0	$0		
Fire Protection	$0	$0		
Electrical	$0	$0		
EQUIPMENT & FURNISHINGS				
Equipment	$0	$0		
Furnishings	$0	$0		
SPECIAL CONSTRUCTION & DEMOLITION				
Special Construction	$0	$0		
Existing Building Demolition	$1,563,200	$0		
In-Building Hazardous Material Abatement	$1,505,356	$486,000		
Asbestos Containing Floor Material Abatement	$0	$0		
Other Hazardous Material Abatement	$0	$0		
BUILDING SITEWORK				
Site Preparation	$8,011,786	$5,447,172		
Site Improvements - temp parking	$826,000	$0		
Site Civil / Mechanical Utilities	$0	$0		
Site Electrical Utilities	$0	$0		
Other Site Construction	$0	$0		
Scope Excluded Site Cost		$0		
Construction Trades Subtotal	$54,289,012	$5,933,172		
Contingencies (Design and Pricing)	$5,810,461	$635,017		
General Conditions	$3,051,433	$333,487		
General Requirments	$2,834,442	$309,772		
Insurance	$1,037,687	$113,407		
Bonds	$751,582	$82,139		
GMP Fee	$2,345,612	$256,349		
gym phasing	$425,000	$46,448		
GMP Contingency	$2,277,293	$248,882		
Escalation to Mid-Point of Construction	$6,445,298	$704,398		
Ineligible Auditorium & PE Areas beyond Guidelines		$7,388,440		
Overall Excluded Construction Cost		$14,798,523		
Construction Budget	**$79,267,820**	**$30,850,035**	**$48,417,785**	**$30,169,122**
Alternates				
	$0		$0	
Alternates Included in the Total Project Budget	$0	$0	$0	
Alternates Excluded from the Total Project Budget	$0		$0	
Subtotal to be Included in Total Project Budget	**$0**	**$0**	**$0**	**$0**
Miscellaneous Project Costs				
Utility Company Fees	$280,000	$0	$280,000	
Testing Services	$300,000	$0	$300,000	
Swing Space / Modulars	$0	$0	$0	
Other Project Costs (Mailing & Moving)	$200,000	$200,000	$0	
Misc. Project Costs Subtotal	**$780,000**	**$200,000**	**$580,000**	**$361,398**
Furnishings and Equipment				
Furniture, Fixtures, and Equipment	$1,134,000	$378,000	$756,000	
Technology	$1,134,000	$378,000	$756,000	
FF&E Subtotal	**$2,268,000**	**$756,000**	**$1,512,000**	**$942,127**
Soft Costs that exceed 20% of Construction Cost		$0		

City of Framingham
Fuller Middle School - Option C less
MSBAComments, Reduced Auditorium

6/15/2018
(updated 7/16/2018)

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
Project Budget	**$95,716,976**	**$33,135,870**	**$62,581,106**	**$38,994,287**

Board Authorization	
Design Enrollment	630
Total Building Gross Floor Area (GSF)	136,790
Total Project Budget (excluding Contingencies)	$95,716,976
Scope Items Excluded or Otherwise Ineligible	$33,135,870
Third Party Funding (Ineligible)	$0
Estimated Basis of Maximum Total Facilities Grant[1]	$62,581,106
Reimbursement Rate[3, 4]	62.31%
Est. Max. Total Facilities Grant (before recovery)[1]	$38,994,287
Cost Recovery[5]	$0
Estimated Maximum Total Facilities Grant[1]	$38,994,287

Construction Contingency[2]	$3,963,391
Ineligible Construction Contingency[2]	$3,170,713
"Potentially Eligible" Construction Contingency[2]	$792,678
Owner's Contingency[2]	$1,585,356
Ineligible Owner's Contingency[2]	$0
"Potentially Eligible" Owner's Contingency[2]	$1,585,356
Total Potentially Eligible Contingency[2]	$2,378,034
Reimbursement Rate[3, 4]	62.31%
Potential Additional Contingency Grant Funds[2]	$1,481,753
Maximum Total Facilities Grant	$40,476,040
Total Project Budget	$101,265,723

57.83	Reimbursement Rate Before Incentive Points
4.48	Total Incentive Points[3, 4]
62.31%	MSBA Reimbursement Rate

NOTES

This template was prepared by the MSBA as a tool to assist Districts and consultants in understanding MSBA policies and practices regarding potential impact on the MSBA's calculation of a potential Basis of Total Facilities Grant and potential Total Maximum Facilities Grant. This template does not contain a final, exhaustive list of all evaluations which the MSBA may use in determining whether items are eligible for reimbursement by the MSBA. The MSBA will perform an independent analysis based on a review of information and estimates provided by the District for the proposed school project that may or may not agree with the estimates generated by the District using this template.

1. Does not include any potentially eligible contingency funds and is subject to review and audit by the MSBA.
2. The proposed demolition of the _____ School is expected to result in the MSBA recovering a portion of state funds previously paid to the District for the ____ project at the existing facilities completed in ___. The MSBA will perform an independent analysis based on a review of information and estimates provided by the District for the proposed school project that may or may not agree with the estimated cost recovery generated by the District and its consultants using this template.
3. Pursuant to Section 3.20 of the Project Funding Agreement and the applicable policies and guidelines of the Authority, any project costs associated with the reallocation or transfer of funds from either the Owner's contingency or the Construction contingency to other budget line items shall be subject to review by the Authority to determine whether any such costs are eligible for reimbursement by the Authority. All costs are subject to review and audit by the MSBA.

DRAFT

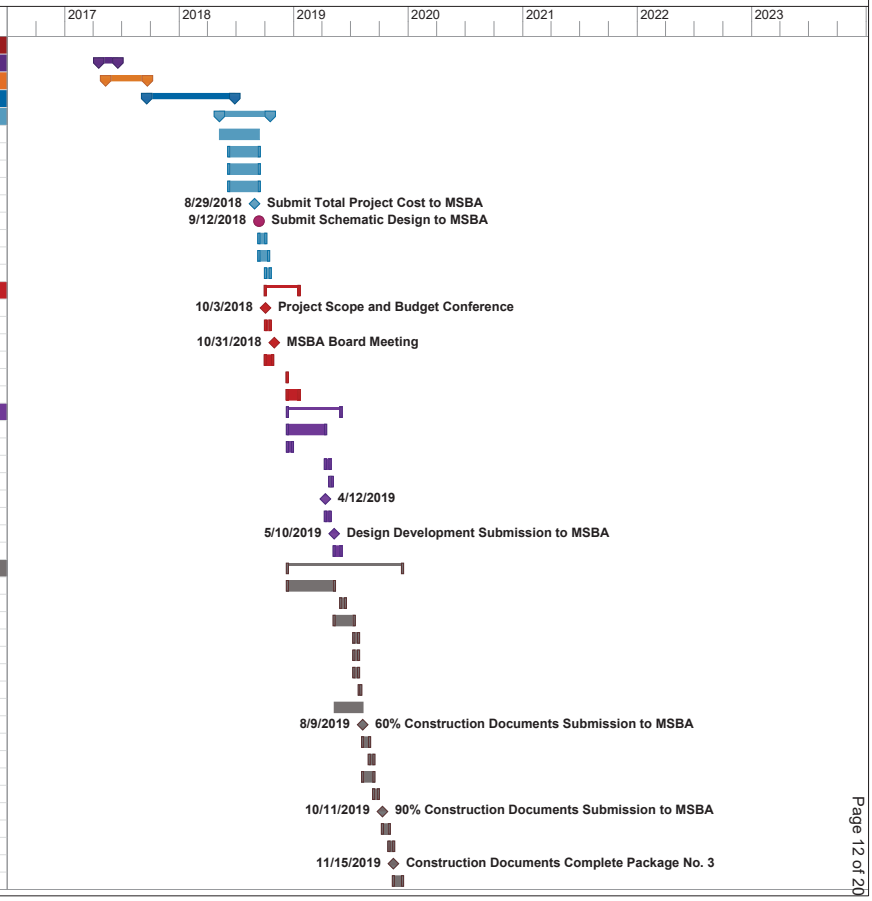
	Option C Per 7/16/18 SBC Vote 136,790 SF
Total Project Cost	$101,265,723
Approximate MSBA Reimbursement Grant	$40,476,040
Approximate Cost to the City	**$60,789,683**
Summary of Approximate Ineligible Costs	
Legal Fees	$120,000
OPM Fee on Ineligible Spaces	$313,661
Architect Fee on Ineligible Spaces	$896,174
Asbestos Flooring Abatement	$486,000
Site Costs over 8%	$8,177,072
Building Costs over $333/SF	$13,894,428
Auditorium	$5,823,829
Gymnasium over 6,500 SF	$1,564,611
Administration over guideline	$904,095
FFE over $1,200/student	$378,000
Educational Technology over $1,200/student	$378,000
Moving Expenses	$200,000
Construction Contingency	$3,170,713
	$36,306,583
Total Project Cost	$101,265,723
Ineligible Costs	$36,306,583
Eligible Costs	$64,959,140
Eligible Costs	$64,959,140
Reimbursement Rate	62.31%
Approximate MSBA Reimbursement Grant	$40,476,040

Updated June 29, 2018

City of Framingham
Fuller Middle School Feasibility Study
Preliminary Project Schedule - SD Submission

PROJECT MANAGEMENT SMMA

ID	Task Name	Duration	Start	Finish
1	**MSBA PREREQUISITES**	496 days	3/13/2015	2/15/2017
5	**RETAIN OPM**	43 days	4/19/2017	6/19/2017
11	**RETAIN DESIGNER**	93 days	5/11/2017	9/20/2017
21	**FEASIBILITY STUDY (FS)**	198 days	9/19/2017	6/27/2018
36	**SCHEMATIC DESIGN (SD)**	114 days	5/9/2018	10/17/2018
37	Develop Schematic Design	89 days	5/9/2018	9/12/2018
38	Community Presentations	67 days	6/8/2018	9/12/2018
39	City Council Presentations	67 days	6/8/2018	9/12/2018
40	School Committee Presentations	67 days	6/8/2018	9/12/2018
41	Submit Total Project Cost to MSBA	0 days	8/29/2018	8/29/2018
42	**Submit Schematic Design to MSBA**	**0 days**	**9/12/2018**	**9/12/2018**
43	MSBA Review Schematic Design (SD) Submission	16 days	9/12/2018	10/3/2018
44	DESE Review	23 days	9/12/2018	10/12/2018
45	Respond to MSBA Comments	11 days	10/3/2018	10/17/2018
46	**PROJECT SCOPE AND BUDGET**	75 days	10/2/2018	1/17/2019
47	Project Scope and Budget Conference	0 days	10/3/2018	10/3/2018
48	Execute Scope and Budget Agreement	11 days	10/3/2018	10/17/2018
49	**MSBA Board Meeting**	**0 days**	**10/31/2018**	**10/31/2018**
50	City Council Meeting to Vote Funds for Total Project Budget	18 days	10/2/2018	10/25/2018
51	Proposition 2 1/2 Ballot Vote	1 day	12/11/2018	12/11/2018
52	Execute Project Funding Agreement	26 days	12/11/2018	1/17/2019
53	**DESIGN DEVELOPMENT**	121 days	12/12/2018	5/31/2019
54	Develop Design Development Documents to Estimator	86 days	12/12/2018	4/12/2019
55	LEED-S Registration	11 days	12/12/2018	12/27/2018
56	Design Development Cost Estimate	11 days	4/12/2019	4/26/2019
57	Value Engineering	6 days	4/26/2019	5/3/2019
58	Design Development Submission for OPM and Cx Review	0 days	4/12/2019	4/12/2019
59	OPM and Cx Review	11 days	4/12/2019	4/26/2019
60	**Design Development Submission to MSBA**	**0 days**	**5/10/2019**	**5/10/2019**
61	MSBA Comments	16 days	5/10/2019	5/31/2019
62	**CONSTRUCTION DOCUMENTS**	258 days	12/12/2018	12/13/2019
63	**Early Site Enabling, and Preparation Package No. 1**	**106 days**	**12/12/2018**	**5/10/2019**
64	Incorporate MSBA DD Comments	11 days	5/31/2019	6/14/2019
65	Develop 60% Contract Documents to Estimator	45 days	5/10/2019	7/12/2019
66	OPM and Cx Review	11 days	7/12/2019	7/26/2019
67	Structural Peer Review of Early Foundation and Structural Package	11 days	7/12/2019	7/26/2019
68	60% Construction Documents Cost Estimate	11 days	7/12/2019	7/26/2019
69	Value Engineering	5 days	7/29/2019	8/2/2019
70	**Early Foundation and Structural Package No. 2**	**65 days**	**5/10/2019**	**8/9/2019**
71	**60% Construction Documents Submission to MSBA**	**0 days**	**8/9/2019**	**8/9/2019**
72	MSBA Review of 60% CD Submission	16 days	8/9/2019	8/30/2019
73	Incorporate MSBA 60% CD Comments	10 days	8/30/2019	9/13/2019
74	Develop 90% Contract Documents to Estimator	25 days	8/9/2019	9/13/2019
75	90% Construction Documents Cost Estimate	11 days	9/13/2019	9/27/2019
76	**90% Construction Documents Submission to MSBA**	**0 days**	**10/11/2019**	**10/11/2019**
77	MSBA Review of 90% CD Submission	16 days	10/11/2019	11/1/2019
78	Incorporate MSBA 90% CD Comments	11 days	11/1/2019	11/15/2019
79	**Construction Documents Complete Package No. 3**	**0 days**	**11/15/2019**	**11/15/2019**
80	LEED-S Design Submission	20 days	11/15/2019	12/13/2019

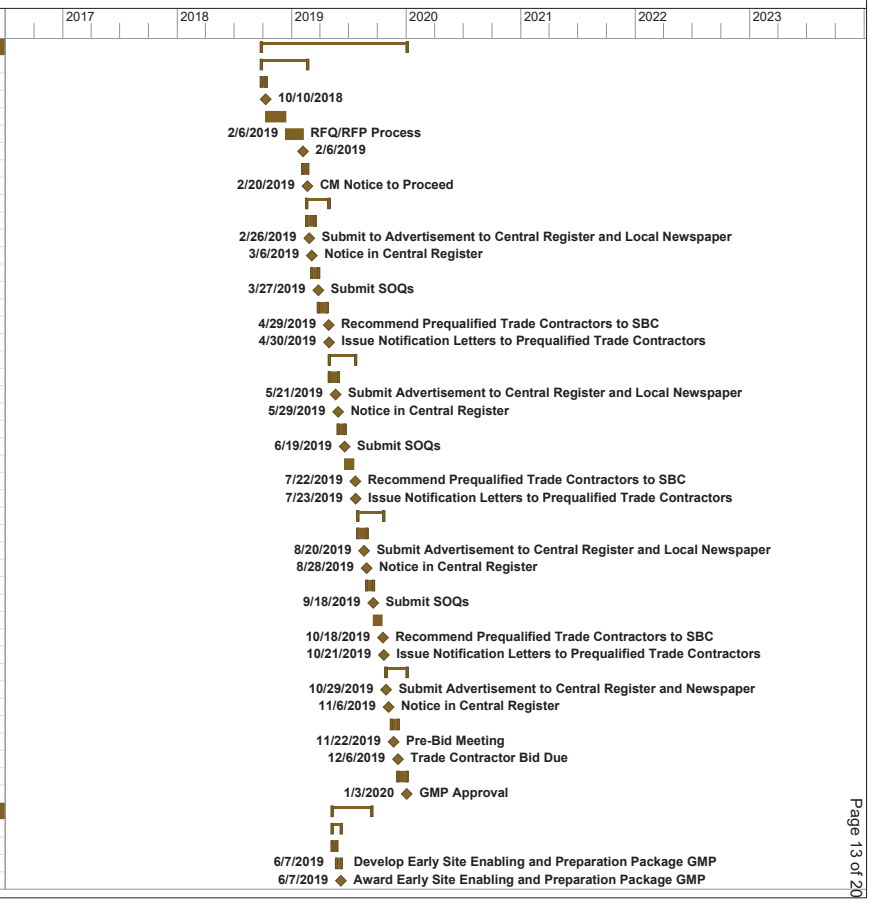


Updated June 29, 2018

City of Framingham
Fuller Middle School Feasibility Study
Preliminary Project Schedule - SD Submission

PROJECT MANAGEMENT SMMA

ID	Task Name	Duration	Start	Finish
81	**PROCUREMENT**	**325 days**	**9/26/2018**	**1/3/2020**
82	**CM Selection**	**103 days**	**9/26/2018**	**2/20/2019**
83	Develop Application to Inspector General Office	11 days	9/26/2018	10/10/2018
84	**Submit CM Application to IG Office**	**0 days**	**10/10/2018**	**10/10/2018**
85	IG Approval of CM Application	45 days	10/10/2018	12/12/2018
86	RFQ/RFP Process	39 days	12/12/2018	2/6/2019
87	Interview Shortlisted CM Firms	0 days	2/6/2019	2/6/2019
88	Negotiate and Award	11 days	2/6/2019	2/20/2019
89	CM Notice to Proceed	0 days	2/20/2019	2/20/2019
90	**Trade Contractors Prequalification - Package No. 1 (if required)**	**51 days**	**2/18/2019**	**4/30/2019**
91	Draft RFQ	20 days	2/18/2019	3/15/2019
92	Submit to Advertisement to Central Register and Local Newspaper	0 days	2/26/2019	2/26/2019
93	Notice in Central Register	0 days	3/6/2019	3/6/2019
94	Prepare SOQ	16 days	3/6/2019	3/27/2019
95	Submit SOQs	0 days	3/27/2019	3/27/2019
96	Review SOQs	20 days	3/27/2019	4/23/2019
97	Recommend Prequalified Trade Contractors to SBC	0 days	4/29/2019	4/29/2019
98	Issue Notification Letters to Prequalified Trade Contractors	0 days	4/30/2019	4/30/2019
99	**Trade Contractors Prequalification - Package No. 2 (if required)**	**59 days**	**5/1/2019**	**7/23/2019**
100	Develop Draft RFQs	21 days	5/1/2019	5/29/2019
101	Submit Advertisement to Central Register and Local Newspaper	0 days	5/21/2019	5/21/2019
102	Notice in Central Register	0 days	5/29/2019	5/29/2019
103	Prepare SOQ	16 days	5/29/2019	6/19/2019
104	Submit SOQs	0 days	6/19/2019	6/19/2019
105	Review SOQs	20 days	6/19/2019	7/17/2019
106	Recommend Prequalified Trade Contractors to SBC	0 days	7/22/2019	7/22/2019
107	Issue Notification Letters to Prequalified Trade Contractors	0 days	7/23/2019	7/23/2019
108	**Trade Contractors Prequalification - Package No. 3 (if required)**	**58 days**	**7/31/2019**	**10/21/2019**
109	Develop Draft RFQs	21 days	7/31/2019	8/28/2019
110	Submit Advertisement to Central Register and Local Newspaper	0 days	8/20/2019	8/20/2019
111	Notice in Central Register	0 days	8/28/2019	8/28/2019
112	Prepare SOQ	15 days	8/28/2019	9/18/2019
113	Submit SOQs	0 days	9/18/2019	9/18/2019
114	Review SOQs	20 days	9/18/2019	10/15/2019
115	Recommend Prequalified Trade Contractors to SBC	0 days	10/18/2019	10/18/2019
116	Issue Notification Letters to Prequalified Trade Contractors	0 days	10/21/2019	10/21/2019
117	**Bid Package No. 3**	**46 days**	**10/29/2019**	**1/3/2020**
118	Submit Advertisement to Central Register and Newspaper	0 days	10/29/2019	10/29/2019
119	Notice in Central Register	0 days	11/6/2019	11/6/2019
120	Trade Contractor Bid Package	15 days	11/15/2019	12/6/2019
121	Pre-Bid Meeting	0 days	11/22/2019	11/22/2019
122	Trade Contractor Bid Due	0 days	12/6/2019	12/6/2019
123	CM Develop GMP	19 days	12/6/2019	1/3/2020
124	GMP Approval	0 days	1/3/2020	1/3/2020
125	**EARLY PACKAGES PROCUREMENT**	**89 days**	**5/10/2019**	**9/13/2019**
126	**Early Site Package No. 1**	**21 days**	**5/10/2019**	**6/7/2019**
127	CM Bid Early Site Enabling and Preparation Package	11 days	5/10/2019	5/24/2019
128	Develop Early Site Enabling and Preparation Package GMP	11 days	5/24/2019	6/7/2019
129	Award Early Site Enabling and Preparation Package GMP	0 days	6/7/2019	6/7/2019

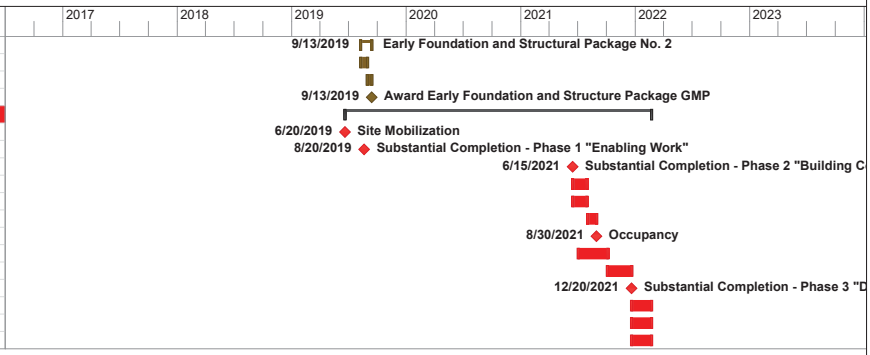


Updated June 29, 2018

City of Framingham
Fuller Middle School Feasibility Study
Preliminary Project Schedule - SD Submission

PROJECT MANAGEMENT SMMA

ID	Task Name	Duration	Start	Finish
130	**Early Foundation and Structural Package No. 2**	**25 days**	**8/9/2019**	**9/13/2019**
131	CM Bid Early Foundation and Structure Package	16 days	8/9/2019	8/30/2019
132	Develop Early Foundation and Structure Package GMP	10 days	8/30/2019	9/13/2019
133	Award Early Foundation and Structure Package GMP	0 days	9/13/2019	9/13/2019
134	**CONSTRUCTION**	**687 days**	**6/20/2019**	**2/21/2022**
135	Site Mobilization	0 days	6/20/2019	6/20/2019
136	**Substantial Completion - Phase 1 "Enabling Work"**	**0 days**	**8/20/2019**	**8/20/2019**
137	**Substantial Completion - Phase 2 "Building Construction"**	**0 days**	**6/15/2021**	**6/15/2021**
138	Final Completion, Closeout and Commissioning	34 days	6/15/2021	7/30/2021
139	FFE/Technology Installation	34 days	6/15/2021	7/30/2021
140	Teacher/Staff Move-In	21 days	8/2/2021	8/30/2021
141	**Occupancy**	**0 days**	**8/30/2021**	**8/30/2021**
142	Abate and Demolish Existing School	67 days	7/3/2021	10/5/2021
143	Parking Lot and Playfield Construction	55 days	10/4/2021	12/20/2021
144	**Substantial Completion - Phase 3 "Demolition and Site Work"**	**0 days**	**12/20/2021**	**12/20/2021**
145	Closeout	46 days	12/20/2021	2/21/2022
146	Final Completion	46 days	12/20/2021	2/21/2022
147	LEED-S Construction Submission	46 days	12/20/2021	2/21/2022



Fuller Middle School
Framingham Public Schools
Framingham, Massachusetts

PROJECT MANAGEMENT SMMA
SMMA No. 17050

Project Budget Status

Updated: 7/31/2018

Feasibility and Schematic Design Phase	MSBA ProPay Code	FSA Agreement 2/15/2017	Budget Revision 10/10/2017	Current Budget	Vendor	Committed	Balance
OPM	0001-0000	$ 185,000.00	$ (10,000.00)	$ 175,000.00	SMMA	$ 174,200.00	$ 800.00
DESIGNER	0002-0000	$ 580,000.00	$ (35,000.00)	$ 545,000.00	JLA	$ 545,000.00	$ -
Environmental and Site	0003-0000	$ 100,000.00	$ 45,000.00	$ 145,000.00		$ 134,772.00	$ 10,228.00
Other	0004-0000	$ 135,000.00	$ -	$ 135,000.00		$ 82.50	$ 134,917.50
Total Budget		**$ 1,000,000.00**		**$ 1,000,000.00**		**$ 854,054.50**	**$ 145,945.50**

** Spent from Other	Date	Amount	
Recording Fee - Middlesex Registry of Deeds	6/18/2018	$ 82.50	*Warrant No. 7*
	--/--/----	$ -	
		$ 82.50	

Project Management | SMMA

Warrant No. 9

Project:	Fuller Middle School, Framingham, Massachusetts	Project No.:	17050
Prepared by:	Joel G. Seeley, AIA	Date:	8/6/2018

School Building Committee for the Fuller Middle School hereby authorizes to draw against funds for the obligations incurred for value received in services and for materials shown below:

Vendor	Invoice No.		Invoice Date	Invoice Amount	ProPay Code	Balance After Invoice
SMMA	49290		7/27/2018	$ 10,800.00	0001-0000	$ 32,400.00
Jonathan Levi Architects	1722-00-10		8/1/2018	$ 54,500.00	0002-0000	$ 81,750.00
Jonathan Levi Architects	1722-00-10	AM-6	8/1/2018	$ 5,610.00	0003-0000	$ 0.00
Jonathan Levi Architects	1722-00-10	AM-8	8/1/2018	$ 3,960.00	0003-0000	$ 4,290.00
			Total	**$ 74,870.00**		

_____ David Miles, Chairman

_____ Richard Finlay

_____ Adam Freudberg

_____ Charles Sisitsky

_____ Richard Weader, II

_____ Michael Grilli

_____ Caitlin Stempleski

_____ Dr. Jennifer Krusinger Martin

_____ Donald Taggart, III

Approved on _____

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

Jonathan Levi Architects
266 beacon street boston ma 02116 tel 617.437.9458 fax 617.437.1965 www.leviarc.com

INVOICE

Jennifer Pratt
Chief Procurement Officer
City of Framingham
150 Concord Street
Framingham, MA 01702

DATE: August 1, 2018
CLIENT PROJECT NO:
INVOICE NO: 1722-00-10

PROJECT: Fuller Middle School

In accordance with Owner-Architect Agreement dated September 25, 2017
there is due at this time for architectural services and reimbursable items for the period
7/1/2018 — 7/31/2018 the sum of

Sixty Four Thousand Seventy Dollars and No Cents **$ 64,070.00**

the above amount shall become due and payable within 30 days from the date hereof.

A&E – FEASIBILITY STUDY	CONTRACT AMT (A)	PREVIOUS PERIOD (B)	CURRENT PERIOD (C)	EARNED (D=B+C)	% COMPLETE (D/A)
FEASIBILITY	$ 335,000.00	$ 335,000.00	$ -	$ 335,000.00	100.00%
SCHEMATIC DESIGN	$ 210,000.00	$ 73,750.00	$ 54,500.00	$ 128,250.00	61.07%
TOTAL – FEASIBILITY STUDY	$ 545,000.00	$ 408,750.00	$ 54,500.00	$ 463,250.00	85.00%

A&E – BASIC SERVICES	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
DD					
CD					
BIDDING					
CA					
CLOSEOUT					
TOTAL – BASIC SERVICES					

A&E – REIMBURSABLES & OTHER SERVICES	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
TOTAL – REIMBURSABLES					

A&E – SUB-CONSULTANTS	CONTRACT AMT	PREVIOUS PERIOD	CURRENT PERIOD	EARNED	% COMPLETE
AMEND 1 - SITE SURVEY	$ 16,500.00	$ 16,500.00		$ 16,500.00	100.00%
AMEND 2 - TRAFFIC	$ 13,200.00	$ 13,200.00		$ 13,200.00	100.00%
AMEND 3 - GEOTECH/GEOENVIRO	$ 4,400.00	$ 4,400.00		$ 4,400.00	100.00%
AMEND 4 - HAZMAT	$ 12,067.00	$ 12,067.00		$ 12,067.00	100.00%
AMEND 5 - WETLANDS	$ 4,400.00	$ 4,400.00		$ 4,400.00	100.00%
AMEND 6 - GEOTECH/GEOENVIRO	$ 18,700.00	$ 13,090.00	$ 5,610.00	$ 18,700.00	100.00%
AMEND 7 - GEOTECH/GEOENVIRO	$ 4,400.00	$ -		$ -	0.00%
AMEND 8 - GEOTECH/GEOENVIRO	$ 8,250.00	$ -	$ 3,960.00	$ 3,960.00	48.00%
AMEND 9 - GEOTECH/GEOENVIRO	$ 42,020.00	$ -		$ -	0.00%
AMEND 10 - TRAFFIC	$ 10,835.00	$ -		$ -	0.00%
TOTAL – SUB-CONSULTANTS	$ 134,772.00	$ 63,657.00	$ 9,570.00	$ 73,227.00	54.33%

ARCHITECT Jonathan Levi, FAIA

1722-03
Amend #6

McPHAIL ASSOCIATES, LLC

May 17, 2018
Project No: 6473.2.01
Invoice No: 0059072

Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

Attention: Mr. Philip Gray

Fuller Middle School; Framingham, Massachusetts
Geotechnical Engineering Services
Proposal dated 1/29/18 - Budget $17,000

Professional Services from April 1, 2018 to April 30, 2018

Fee

Total Fee	17,000.00			
Percent Complete	100.00	Total Earned	17,000.00	
		Previous Fee Billing	11,900.00	
		Current Fee Billing	5,100.00	
		Total Fee		**5,100.00**
			Total this Invoice	**$5,100.00**

Outstanding Invoices

Number	Date	Balance
0058850	3/23/2018	11,050.00
0058851	4/23/2018	850.00
Total		**11,900.00**

Billings to Date

	Current	Prior	Total
Fee	5,100.00	11,900.00	17,000.00
Totals	**5,100.00**	**11,900.00**	**17,000.00**

1722-03
Amend #8

McPHAIL ASSOCIATES, LLC

May 17, 2018
Project No: 6473.9.01
Invoice No: 0059073

Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

Attention: Mr. Philip Gray

Fuller Middle School; Framingham, Massachusetts
Additional Geoenvironmental Engineering Services
Proposal dated 4/12/18 - Budget $7,500

Professional Services from April 1, 2018 to April 30, 2018

Fee

Total Fee	7,500.00			
Percent Complete	48.00	Total Earned	3,600.00	
		Previous Fee Billing	0.00	
		Current Fee Billing	3,600.00	
		Total Fee		**3,600.00**
			Total this Invoice	**$3,600.00**

Billings to Date

	Current	Prior	Total
Fee	3,600.00	0.00	3,600.00
Totals	**3,600.00**	**0.00**	**3,600.00**

McPhail Associates, LLC
GEOTECHNICAL AND GEOENVIRONMENTAL ENGINEERS
2269 Massachusetts Avenue
Cambridge, Massachusetts 02140
617 / 868-1420

SMMA

Jennifer Pratt
Chief Procurement Officer
Town of Framingham
150 Concord Street, Room 123
Framingham, MA 01702

July 27, 2018
Project No: 17050.00
Invoice No: 0049290

Project 17050.00 Framingham Fuller MS OPM Services
OPM Services for the Fuller Middle School, Framingham, MA
Professional Services from June 30, 2018 to July 27, 2018
Fee

Billing Phase	Fee	Percent Complete	Earned	Previous Fee Billing	Current Fee Billing
Feasibility Study	90,000.00	100.00	90,000.00	90,000.00	0.00
Schematic Design	60,000.00	46.00	27,600.00	16,800.00	10,800.00
Total Fee	150,000.00		117,600.00	106,800.00	10,800.00
		Total Fee			**10,800.00**
				Total this Invoice	**$10,800.00**

Outstanding Invoices

Number	Date	Balance
0049160	7/3/2018	9,600.00
Total		**9,600.00**

Billings to Date

	Current	Prior	Total
Fee	10,800.00	106,800.00	117,600.00
Consultant	0.00	6,050.00	6,050.00
Expense	0.00	82.50	82.50
Totals	**10,800.00**	**112,932.50**	**123,732.50**

Authorized _____
Joel Seeley

Jonathan Levi Architects
266 beacon street boston ma 02116 tel 617.437.9458 www.leviarc.com

NOTES OF MEETING

project	Fuller Middle School Feasibility Study	project no.	1722
date	7/27/18, 11:00 am	location	Fuller School
re	**Physical Education Spaces and Requirements**		
present	Mike Koziara (FPS), Philip Gray (JLA)		
distribution	Attendees, Joel Seeley (SMMA); project file		

Philip provided an overview of the current floor plan layout including the Gym, Locker Rooms, PE Offices, public entry sequence and overall site plan (see attached). These were discussed in regard to the PE programs for the Fuller Middle School, and anticipated community use, with the following comments:

1. It was agreed that the design is on the right track in terms of general layout, including community access.
2. Gym size is 8,300 nsf.
3. Locker rooms should have 50 lockers for general use, approximately 15” x 15” x 30”. Locker rooms do not need showers, but should each have 1 fixture bathrooms.
4. A fully accessible unisex bathroom with shower will be provided in addition to the locker rooms.
5. The PE offices do not need dedicated bathrooms.
6. It would be helpful to locate the health classroom in general proximity to the Gym.
7. The MS programs generally require little or no bleacher seating for an audience in the Gym.
8. A basketball scoreboard would be useful, primarily for community use.
9. A small outdoor basketball court was requested by the students, and would be very useful.
10. The existing softball field near Farley, to be changed to a permanent parking area, is not required for the Fuller PE programs.
11. One athletic field with irrigation is needed (same as existing) and a multi-use lawn area would be useful for less frequent football, frisbee, etc use.

END OF MEETING NOTES
Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

by Philip Gray

Jonathan Levi Architects
266 beacon street boston ma 02116 tel 617.437.9458 www.leviarc.com

NOTES OF MEETING

project	Fuller Middle School Feasibility Study	project no.	1722
date	7/30/18, 1:00 pm	location	Fuller School
re	**Project Update**		
present	Joseph Mazzola - Framingham Fire Dept Steven Trask – Framingham Police Department Ernest Moreau (FPS) Matt Torti (FPS) Joel Seeley (SMMA) Philip Gray (JLA)		
distribution	attendees; project file		

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1) Philip Gray introduced the project to the representatives of the police and Fire Departments. Utilizing a large satellite photograph of existing conditions and current phasing plans (attached) the following overall topics were presented:

   - Framingham has been invited by the Massachusetts School Building Authority (MSBA) to partner with them on the Fuller School project.
   - The existing building is approximately 196,000 gsf, single story. The new building will serve 630 students in grades 6-8 and be three-story construction consisting of a learning commons/cafeteria at the core surrounded by balconies fronting a perimeter of classrooms and new gymnasium and auditorium served by a separate community entrance. It will be built in the general area of the existing parking lots to the east of the Fuller School. This area is large enough to accommodate the new building, and would allow it to be built with minimal interruption to the Fuller students and staff.
   - All options would be fully sprinklered and have a new fully code compliant alarm system.
   - Temporary parking and access will need to be provided during construction. Each phase will allow circulation around the existing building.
   - The size of the buildings and the proximity to existing wetlands to the north provide some restrictions on where the building and surrounding roadways may be located.

- Bus and parent vehicle access is being designed in all cases to help resolve the existing conflict with the McCarthy school, in which both schools' access and egress are directly across Flagg Drive from each other.

2) The phasing alternatives presented appeared to be workable from the standpoint of the police and fire departments. Both request emergency access for their vehicles around all sides of the new school with a plowable surface. JM to provide fire truck dimensional requirements.

3) A follow-up meeting will be scheduled after City vote December 11. At that time, the architects will develop a more detailed site design, hydrant locations, interior room layout, and temporary site design for review by the Fire Department and Police Department.

4) Construction traffic was reviewed. It was agreed that it should be possible for trucks to safely get to and from the site. This will be further reviewed and confirmed by the Designer's traffic engineering consultant and the construction manager. It is anticipated that police details should not be required for traffic management, and the construction manager will strictly limit construction vehicle traffic to off-peak hours.

END OF MEETING NOTES

Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

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by Philip Gray

Jonathan Levi Architects

266 beacon street boston ma 02116 tel 617.437.9458 www.leviarc.com

N O T E S O F M E E T I N G

project	Fuller Middle School Feasibility Study	project no.	1722
date	7/30/18, 8:00 am	location	Fuller School
re	**Plan review, Site Plan reconfiguration, Landscape, Bathrooms**		
present	David Miles, Mike Grilli, Matt Torti (FPS), Anne Ludes (FPS), Joel Seeley (SMMA), Jonathan Levi (JLA), Philip Gray (JLA), Carol Harris (JLA)		
distribution	attendees; Robert Tremblay (FPS), Jose Duarte (FPS), Edward Gotgart (FPS), project file		

1. Per standard practice, once a PSR submission has been approved by the MSBA Board, the MSBA updates the base reimbursement rate to that year. Joel confirmed the base reimbursement rate has increased from 57.05% to 57.83%, and distributed a draft update the budget projection (attached).
2. JL handed out current floor plans. JLA will adjust SPED bathroom closer to SPED classrooms on 2nd floor. JLA to review custodial spaces and elevator location with MT. Elevator will go to the roof for HVAC maintenance.
3. JLA to confirm if septic line will be gravity fed.
4. JLA to indicate potential location of rooftop photovoltaic panels.
5. JLA presented alternative site plans made possible by reorienting the gym / auditorium configuration (attached). Option A has the significant advantage of not overlapping the new building footprint with the existing building, with corresponding phasing and schedule complications and costs. It was agreed that Option A will be recommended for SBC approval.
6. JLA reviewed landscape concept plan (attached). JLA will study tree locations so as not to overly conceal the new building.
7. Parking lot plans to allow snow stockpiles and efficient plow routes. The lots will have islands for trees / lights.
8. JLA handed out a plumbing fixture analysis (attached). All Staff bathrooms will be changed from male or female to unisex, and bathrooms will be added to locker rooms and central administration. Otherwise counts seem appropriate. The analysis will be further reviewed by the district's inspectional service department.

END OF MEETING NOTES

Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

by Philip Gray

Meeting Minutes

To: **All Attendees**
From: **Eric Wilhelmsen – CDW Consultants**
Subject: **Meeting Minutes – Conservation Commission Meeting**
Date: **July 30, 2018, 10:00 am**
Project: **Fuller Middle School - Framingham**

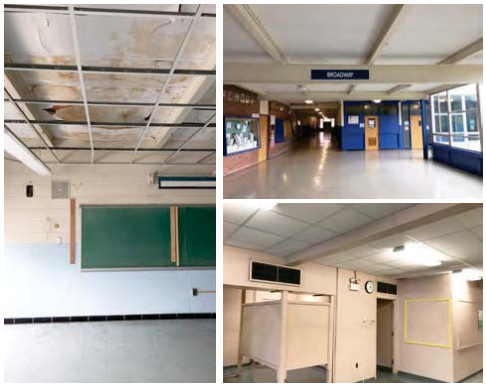
The Project meeting was held at the Fuller Middle School, Building & Grounds Office, on July 30, 2018 with the following project personnel attending:

Joel Seeley	Symmes Maini & McKee Associates
Robert McArthur	Framingham Conservation Administrator
Mathew Torti	Framingham Schools Buildings and Grounds
Eric Wilhelmsen	CDW Consultants
Phillip Gray	Jonathan Levi Architects

Philip Gray introduced the project. Utilizing a large satellite photograph of existing conditions and Schematic Design site plans and phasing plans (see attached), the following overall topics were presented:

- Erosion control will be provided during the various phases. Specifically, tarps or other stabilization methods (hydroseeding) on long term stockpiles and mulch silt socks around stockpiles.
- Stockpiles in the existing fields, may damage the irrigation system and require it to be replaced, and may be within the 125-ft buffer.
- Existing stormwater systems will need to be inspected with a report given to Conservation and DPW prior to design approval. Existing systems to be protected during construction.
- Erosion control plan should address both long and short-term erosion control protection.
- An environmental monitor may be required to inspect and review erosion control practices during construction.
- The access road behind Farley will be rebuilt (one way) to better connect between existing parking lots. The road is close to or within the 50-ft no build zone. The road can be rebuilt as part of maintenance of existing roads with a wavier if necessary.
- Permitting is expected to start in March.

Cc: Attendees



Current Building Condition

Introduction

Fuller Middle School is nearly 60 years old and no longer meets today's building codes nor supports Framingham's 21st century educational curriculum. A School Building Committee (SBC) comprised of 25 local members has been working with the Massachusetts School Building Authority (MSBA) through a multi-step process to design and build a new Fuller Middle School. Through this process, the MSBA will pay for a

Next Steps / Meetings

- Community Forum: September 6th
- City Council Meeting: August 21st
- Debt Exclusion Ballot Vote: December 11th

Learn more at
www.fullerbuildingproject.com

THE FULLER MIDDLE SCHOOL BUILDING PROJECT

August 2018

www.fullerbuildingproject.com

@framinghamps

The Chosen Design – Folded Hands Plan

[illegible] with a learning commons/cafeteria at the core surrounded by collaboration balconies fronting a perimeter of classrooms, an 8,300-square-foot gymnasium, 420 seat auditorium, and full-building air conditioning. Additionally, there will be space for Science, Technology, Engineering, Art, and Mathematics (STEAM) instruction areas. The new [illegible] will exceed the new Massachusetts Energy Code [illegible]

What All Framingham Residents Need to Know

Even if you have no direct ties to Fuller Middle School or children in the Framingham Public Schools, this project impacts you.

- The new Fuller Middle School provides a community hub with a new auditorium, [illegible] - which will be available beyond school hours and all year long.
- The quality of our schools are connected to the overall desirability of the City of Framingham as a residential destination.
- This school will serve the community for the next 70-100 years with features that are important now and for generations to come.
- The City of Framingham and Framingham Public Schools have been working for many years to get to this point with the Massachusetts School Building Authority - known as the MSBA.
- [illegible] state funding from the MSBA to complete the project – **up to 61.53% of eligible design and construction costs.**
- There will be tax implications, but as a resident, you are invited to become a part of the process to understand what that means for you.
- If the project does not happen as a result of recent work and partnership with the MSBA, the Fuller Middle School building will still be the City's top priority from a facilities maintenance standpoint - which means that all other city school and building funds will be diverted to keep Fuller safe for occupancy. This comes at a cost that taxpayers would have to fully fund without [illegible]

The Estimated Cost

(Numbers will fluctuate as the design elements are finalized.)

- Estimated Total Project Cost: $101 million
- Estimated MSBA GRANT: $40 million
- Estimated Total Cost to City: $61 million
- Expected New School Completion: Summer 2021
- Expected Final Sitework Completion: December 2021

Fuller Middle School - Auditorium

Intro

As many people know, Framingham is fortunate to have incredibly strong performing arts programs and offers a wealth of opportunities for students to participate. From vocal groups to instrumental groups to our 2016 State Champion FHS Drama Company, these ensembles help students develop self-confidence, poise, public speaking skills and teach them the value of teamwork. Beginning for many students in middle school and continuing through high school, these groups form smaller “communities” within their respective schools and allow students to form strong and positive relationships which contribute to their overall social and emotional well-being.

It is for these reasons that the auditorium in the new Fuller Middle School has been the subject of extensive analysis, discussion and refinement. For those who have not followed closely, here’s a brief history.

Act 1 - “Transformers”

Act 1 of this story took place during the fall of 2017 and early winter of 2018, as the project architects presented several “concept options” for the new Fuller Middle School to the School Building Committee (SBC). Noticeably absent from these designs was a true auditorium similar to what exists in the current Fuller, Walsh and Cameron schools. In its place, the concepts had a cafeteria with a stage tacked on to one end so that the space could be converted from a dining hall to a performance venue. This “cafetorium” design is similar to what you’d find in most elementary schools.

Beginning in early winter 2018, several community members (including me before I was appointed to the School Building Committee as an alternate representative for the School Committee) spoke before the School Building Committee about this omission of an auditorium, and asked that one be added so that we can maintain equity across the middle schools and also to support our highly-successful middle school drama program. Much to my delight my sentiments were echoed by a number of members of the School Building Committee, many of whom were aware of how well-regarded our Performing Arts programs are across the state.

Act II - “Super-Size Me”

Act II took place in late winter and spring as the project architects presented refined concept designs to the School Building Committee. In response to the SBC feedback about the auditorium, the concept designs now included proper auditoriums. Furthermore in an effort to respond to a desire expressed by the current Fuller principal to be able to have the entire school community (students and staff) come together for an assembly, the auditorium was specified to have 750 seats. These auditorium specifications persisted as the SBC reviewed the various concept options and ultimately voted to move forward with the “Folded Hands” design.

Act III - “Goldilocks”

Act III began in early summer of this year and continues to this day, as the SBC continues to refine various aspects of the design for the new Fuller Middle School. As part of this refinement the design team met with Donna Wresinski, Fine and Performing Arts Director for the Framingham Public Schools and also Chair of the Massachusetts Educational Theater Guild. With input from Donna, the design team made several changes to the design of the auditorium and supporting spaces so that this version is “just right”:

- **Reduced seating from 750 to 420** - For a middle school, an auditorium with 750 seats is much too large. Middle schoolers can’t project their voices that far, and have a harder time staying engaged in a performance if they sit too far from the stage. Although not done as a cost-cutting move, this reduction took $3.3 M off the project cost. With this reduction, full-school assembly meetings can take place using bleachers in the gymnasium. For those wondering where the number 420 came from, that is the Massachusetts School Building Authority (MSBA) standard for a high school of the same size as the new Fuller building.
- **Connection between backstage areas** - In the current Fuller building, there is no way for performers to get from “off left” to “off right” without either crossing the stage or running down the hallways around the entire auditorium. In the new Fuller design, there will be a crossover space at the back to make this much easier and safer.
- **Use of band and chorus room as “green rooms”** - In previous iterations of the auditorium, it stuck out from the building like a peninsula, making the only access to backstage being through the “house” part of the auditorium. In the current design, the auditorium is tucked up against the back of the building so that the band and chorus rooms can be used as “green rooms” and performers can go directly from there to the stage without being seen by the audience.

Finale

As you can see, considerable time and thought has gone into the design of the auditorium in the new Fuller Middle School plan, and all of it has been done in a very public and transparent way. To clarify an assertion that has been made by some in our community, we are not "building a state-of-the-art theater". What we are doing is making sure that the new Fuller Middle School auditorium is functionally equivalent to those in the existing Fuller, Walsh and Cameron buildings, and making sure that future generations of Fuller performers have the same opportunities to make us proud as a community.

For more information or to submit questions to the team, check out www.fullerbuildingproject.com where you can find FAQ documents, previous presentations and meeting materials, and a link for submitting feedback or questions.

Fuller Middle School - MSBA Model School Program

Several constituents have asked me about the MSBA Model School Program (a.k.a. the "school in a box") and specifically asked why we are not participating in it for the Fuller Middle School project. For those unfamiliar with the Model School program, in the words of the MSBA "*the Model School Program seeks to effectively adapt and re-use the design of successful, recently constructed Pre-K through 12th grade schools.*"

After some discussion with members of the School Building Committee (since I was not involved when this effort started) here's what I found:

- The original MSBA Model School program started in 2008 and invitations to the program were suspended in 2012. The original MSBA Model School program offered an additional 5% reimbursement for participating

Districts. Natick High School was constructed under the original MSBA Model School program.

- MSBA re-commenced a new MSBA Model School program in 2016 but the additional 5% reimbursement was discontinued. The Kennedy Middle School in Natick is not in the new MSBA Model School program.
- The new MSBA Model School program is not applicable to the Fuller Middle School project. There are three Middle School models to choose from: the Quinn Middle School (Hudson), the Sherwood Middle School (Shrewsbury) and the Thurgood Marshall Middle School (Lynn).
- The Quinn Middle School, a grades 5-7 middle school with a design enrollment of 715 students, is not applicable to the Fuller Middle School since the architectural firm for this model is no longer in business and this model has been removed from the program.
- The Sherwood Middle School, a grades 5-6 middle school with a design enrollment of 900 students, is not applicable to the Fuller Middle School since it has a design enrollment that is significantly larger than the Fuller Middle School. The MSBA sets the scalable range for each model school to be 20% higher or lower than the original model design. In this case, the Fuller Middle School design enrollment of 630 students falls outside this range. Further, the grades 5-6 grade configuration does not align with Fuller's 6-8 grades. Lastly, the site constraints and configuration of the Fuller site do not lend itself to the footprint of this model.
- The Thurgood Marshall Middle School, a grades 6-8 middle school with a design enrollment of 1,100 students, is likewise not applicable to the Fuller Middle School since it has a design enrollment that is significantly larger than the Fuller Middle School.

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Fuller Middle School - Cafeteria / Learning Commons

For over 2000 years, architects and builders have used atriums (or *atria* if you prefer) as integral and highly functional parts of buildings. In ancient Rome, atriums were used to provide daylight and ventilation, and in some cases included a shallow pool for collecting rainwater. Modern buildings don't need to rely on atriums for ventilation or water collection, but still rely on them to provide natural light to parts of the building that would otherwise require artificial lighting. Such is the case with the new Fuller Middle School where the glass roof over the Cafeteria / Learning Commons will provide bountiful amounts of natural light, in particular to the north-facing rear half of the building.

In addition to providing daylighting, the central Cafeteria / Learning Commons will serve several other key functions in our new middle school:

- **Visible learning** - Modern educational practices like STEM and STEAM involve both the process (students at work) and outcomes (completed project work) being highly visible. The design of the new Fuller Middle School supports these goals by providing visibility from the open central core into the classrooms (although privacy shades will be installed throughout the interior of the school) and by providing common spaces on each floor that can be used for student breakout work sessions or exhibitions of learning.
- **Connections within each grade and to the rest of the school** - In the current Fuller building the three grades physically overlap each other and students spend the entire day criss-crossing throughout the whole building. The new design is organized more strategically to support students and staff as each grade will have its own floor, and kids will have a close visual and physical connection to the rest of their cohort because the space is open in the middle. To a lesser but still important degree, kids will also have a sense as to how their cohort fits into the broader school community because they'll be able to observe students on the other floors. For many students transitioning from an elementary school to a larger building this "sense of community" is vitally important.
- **Safety and security** - Because of the sightlines across and between floors, administration and staff members will have an unprecedented ability to see and monitor what's going on in the building - unlike most of our schools where perpendicular hallways and cement block walls create blind spots throughout the building.

Compared to other schools in the district which were built decades ago using the design and construction techniques of their time, the overall design of the new Fuller Middle is quite different which not surprisingly has led to some questions being voiced in our community. Many of these questions are based on strongly-held misconceptions, and include:

- **Noise** - For many, when you think of an atrium what comes to mind is the loud "click-clack" of heels on a hard tile floor and from there you can easily imagine the shouts of children echoing throughout the building. In the case of the new Fuller Middle School, materials with appropriate acoustical

properties will be used throughout the building in order to control sound transmission. Additionally, interior doors will be gasketed to control sound leaking into the classrooms.

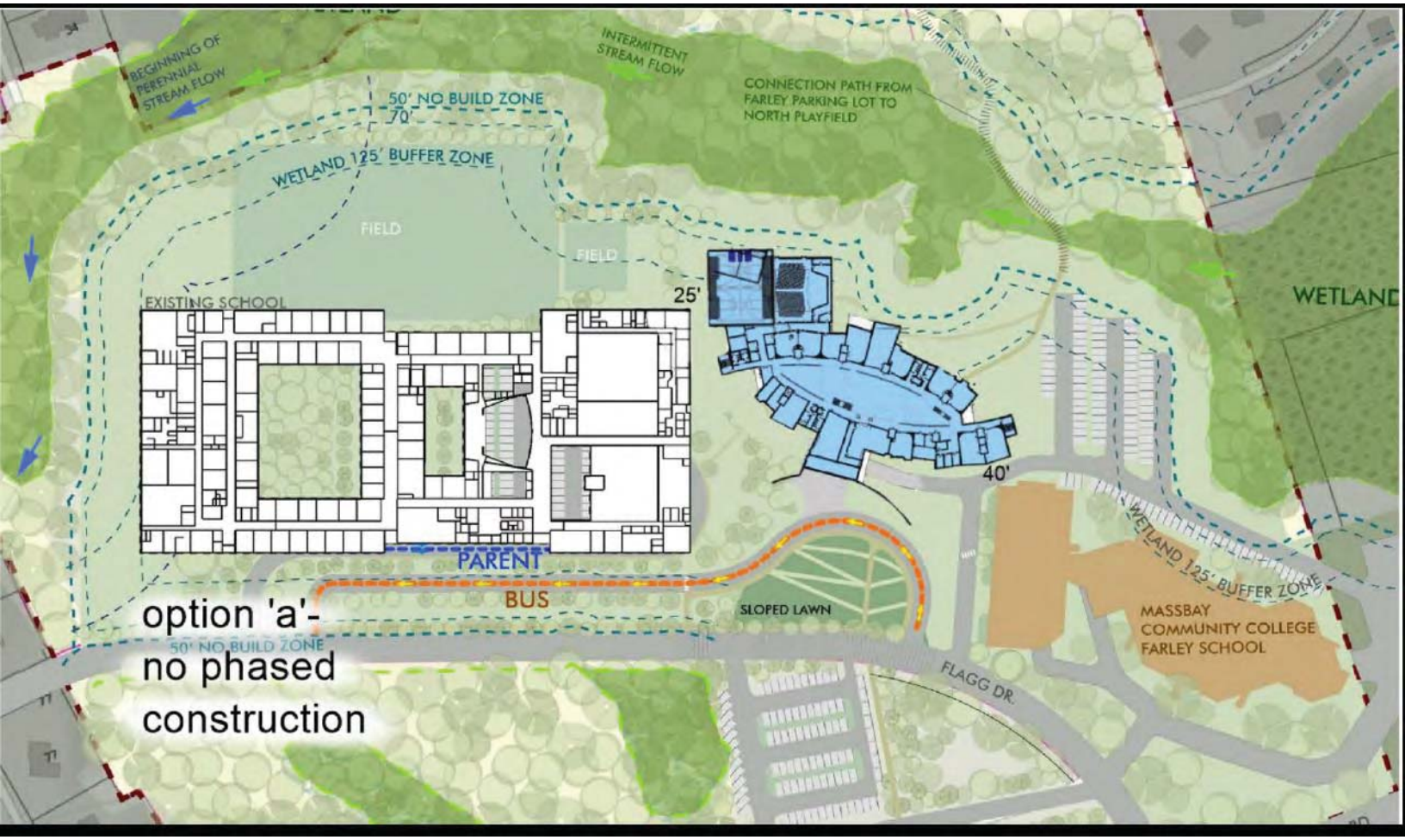
- **Heating and Cooling** - Some residents have asked if the open core of the building will place undue burden on the heating and cooling systems. If this building was built using technology from 60 years ago (when the current building was built) that would certainly be the case, but through the strategic placement of HVAC intakes and outlets as well as the use of modern glazing (glass) systems that will not be an issue. On a more general but related note, the heating system in the current building actually runs much harder than it should because there is no insulation in the walls (that's right - zero insulation in the current Fuller) and most of the windows are single-pane Plexiglas.
- **Wasted Space** - At least one critic has suggested that the open core of the two upper floors in the new Fuller Middle School design is "wasted space" and that it should be filled in to create additional classrooms or other academic spaces. That critique is simply not accurate. If we were to do this, we would lose out on all of the benefits noted above. We would also be forced by the MSBA (Massachusetts School Building Authority, our partner in this project who is allocating approximately $40 million for it) to eliminate space elsewhere in the building since we are limited in the overall square footage that we can build.

For more information or to submit questions to the team, check out www.fullerbuildingproject.com where you can find FAQ documents, previous presentations and meeting materials, and a link for submitting feedback or questions.

City of Framingham | Framingham Public Schools
Fuller Middle School Building Project

Project Promotion Opportunities

Date	Time	Location	Event	Volunteer	Notes
August 7	4-7 PM	Cushing Memorial Park	National Night Out		
August 9	10:30-11:30 AM	Framingham Centre Common	Stacey Peasley		
August 9	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
August 10	6-8 PM	Village Green at Framingham Center, 2 Oak Street	Concerts on the Green	Dick Weader	
August 10	6-9 PM	Saxonsonville Mills	Gallery Reception and Open Studios The Mill Contemporary Art		
August 15	5-8 PM	Depot 417	XChange Depot Public Market Series		
August 16	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
August 17	6-8 PM	Village Green at Framingham Center, 2 Oak Street	Concerts on the Green	Dick Weader	
August 15	TBD	Fuller Middle School	6th Grade Back to School		
August 23	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
August 23	6-7:30	Framingham Public Library	Meeting for New Bilingual Families in FPS		
August 28	1:00 PM	Framingham Callahan Center	Council on Aging		
August 29	5-8 PM	Depot 417	XChange Depot Public Market Series		
August 30	4:30 PM-7:30 PM	Farm Pond Park	Back to School Picnic		
August 30	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
September 6	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
September 12	5-8 PM	Depot 417	XChange Depot Public Market Series		
September 13	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
September 14	6-9 PM	Saxonsonville Mills	Gallery Reception and Open Studios The Mill Contemporary Art		
September 20	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		
September 26	5-8 PM	Depot 417	XChange Depot Public Market Series		
September 27	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market		


BEGINNING OF PERENNIAL STREAM FLOW
INTERMITTENT STREAM FLOW
CONNECTION PATH FROM FARLEY PARKING LOT TO NORTH PLAYFIELD
50' NO BUILD ZONE
70'
WETLAND 125' BUFFER ZONE
FIELD
FIELD
EXISTING SCHOOL
25'
WETLAND
40'
PARENT
BUS
SLOPED LAWN
WETLAND 125' BUFFER ZONE
MASSBAY COMMUNITY COLLEGE FARLEY SCHOOL
50' NO BUILD ZONE
FLAGG DR.
option 'a'-
no phased
construction

GARCIA • GALUSKA • DESOUSA
Consulting Engineers Inc.
570 Fawcett Corner Road, Dartmouth, MA 02747-1317

8/6/2018

Fuller Middle School - Mechanical System Payback Summary

Baseline	System	Gross Capital Investment*	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility $/s.f.	Annual kBTU/s.f. (EUI)	Annual Maint. Cost	Combined Annual Expense	Combined Expense Savings**	Total Life-Cycle Savings***	Discounted Payback (Years)****
-	1. Hot water coil heating/chilled water coil cooling VAV AHU system with energy recovery (where code required) and terminal VAV boxes with hot water reheat coils 2. Code efficient gas-fired non-condensing boiler plant 3. High efficiency (code) water-cooled chiller plant with cooling tower	$7,490,250	951,950	4,287.9	$175,064	$31,718	$206,782	$1.38	50.2	$31,225	$238,007	-	-	-

Option	System	Gross Capital Investment*	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility $/s.f.	Annual kBTU/s.f. (EUI)	Annual Maint. Cost	Combined Annual Expense	Combined Expense Savings**	Total Life-Cycle Savings***	Discounted Payback (Years)****
1	1. Hot water coil heating/chilled water coil cooling VAV AHU system with energy recovery and terminal VAV boxes with hot water reheat coils and CO2 controls 2. High efficiency gas-fired condensing boiler plant 3. High efficiency (code) water-cooled chiller plant with cooling tower	$7,595,750	951,320	3,612.6	$174,949	$26,722	$201,671	$1.34	45.7	$31,225	$232,896	$5,111	$21,899	25
2	1. Full air-conditioning displacement ventilation diffusers with passive heating radiation 2. Hot water coil heating/chilled water cooling VAV ventilating units with energy recovery with terminal VAV boxes with CO2 controls 3. High efficiency gas-fired condensing boiler plant 4. High efficiency water-cooled chiller plant with cooling tower	$7,326,500	650,930	2,949.7	$119,706	$21,819	$141,525	$0.94	34.5	$26,900	$168,425	$69,582	$1,844,797	Instant******
2a	1. Full air-conditioning displacement ventilation diffusers with passive heating radiation 2. Hot water coil heating/chilled water cooling VAV ventilating units with static plate energy recovery with terminal VAV boxes with CO2 controls 3. High efficiency gas-fired condensing boiler plant 4. High efficiency water-cooled chiller plant with cooling tower	$7,380,000	666,870	2,961.0	$122,637	$21,903	$144,540	$0.96	34.9	$24,900	$169,440	$68,567	$1,761,490	Instant******
2b	1. Full air-conditioning displacement ventilation diffusers with passive heating radiation 2. Hot water coil heating/chilled water cooling VAV ventilating units with static plate energy recovery with terminal VAV boxes with CO2 controls 3. High efficiency gas-fired condensing boiler plant 4. High efficiency air-cooled chiller plant	$7,317,500	657,560	2,961.0	$120,925	$21,903	$142,828	$0.95	34.7	$23,700	$166,528	$71,479	$1,891,411	Instant******
3	1. Displacement ventilation diffusers providing full air-conditioning with passive chilled beam cooling/heating radiation 2. Hot water coil heating/chilled water cooling VAV ventilating units with energy recovery with terminal VAV boxes with CO2 controls 3. High efficiency gas-fired condensing boiler plant 4. High efficiency water-cooled chiller plant with cooling tower	$7,274,750	639,710	2,958.5	$117,643	$21,884	$139,527	$0.93	34.3	$30,250	$169,777	$68,230	$1,872,422	Instant******
3a	1. Displacement ventilation diffusers providing full air-conditioning with passive chilled beam cooling/heating radiation 2. Hot water coil heating/chilled water cooling VAV ventilating units with static plate energy recovery with terminal VAV boxes with CO2 controls 3. High efficiency gas-fired condensing boiler plant 4. High efficiency water-cooled chiller plant with cooling tower	$7,319,100	652,030	2,959.6	$119,908	$21,892	$141,800	$0.95	34.6	$28,250	$170,050	$67,957	$1,816,268	Instant******
3b	1. Displacement ventilation diffusers providing full air-conditioning with passive chilled beam cooling/heating radiation 2. Hot water coil heating/chilled water cooling VAV ventilating units with static plate energy recovery with terminal VAV boxes 3. High efficiency gas-fired condensing boiler plant 4. High efficiency air-cooled chiller plant	$7,256,600	647,400	2,959.6	$119,057	$21,892	$140,949	$0.94	34.5	$27,050	$167,999	$70,008	$1,925,347	Instant******
4	1. Displacement ventilation diffusers providing full air-conditioning with passive chilled beam cooling/heating radiation 2. Hot water coil heating/chilled water cooling VAV ventilating units with static plate energy recovery with terminal VAV boxes 3. High efficiency gas-fired condensing boiler plant 4. Geothermal wells with water-to-water source heat pump chillers	$10,119,500	861,810	1,395.4	$158,487	$10,322	$168,809	$1.13	28.9	$25,900	$194,709	$43,298	-$1,578,949	N/A*****

* Gross capital investment based upon in-house cost estimate utilizing cost data from similar past projects and industry standard estimating references. Costs have been estimated for system comparison purposes only and do not incorporate all supplemental/independent HVAC system costs which would be required for all systems studied (i.e. kitchen exhaust, overhead and profit).
** Combined expense savings is the difference between the combined annual expense of the baseline and system in comparison.
*** Total life-cycle savings is based on a 30 year study period.
**** Discounted payback years is based upon BLCC5 Life Cycle Analysis.
***** Discounted payback never reached within 30 year study period.
****** Discounted payback never reached because system is more efficient and/or less expensive than baseline system.

Note 1: Values based on energy model performed for HVAC System Life Cycle Cost Analysis purposes. A 30% safety factor should be applied for budgeting purposes to account for potential variances to the actual operation of the building. Per ASHRAE Standard 90.1-2010:

Neither the proposed building performance nor the baseline building performance are predictions of actual energy consumption or costs for the proposed design after construction. Actual experience will differ from these calculations due to variations such as occupancy, building operation and maintenance, weather, energy use not covered by this procedure, changes in energy rates between design of the building and occupancy, and the precision of the calculation tool.

FULLER MIDDLE SCHOOL FEASIBILITY STUDY

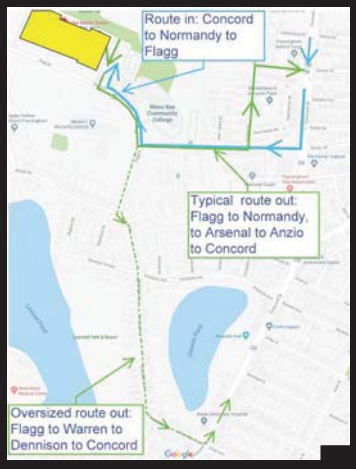
School Building Committee
August 6, 2018

TRAFFIC UPDATE

McCarthy Parent Drop-Off

- Project will provide a safer route than exists today with crosswalks from new parking areas to McCarthy over raised traffic table with separated driveway entrances.
- Potential temporary or permanent additional parking at McCarthy will be investigated.

Construction Vehicle Routes



TRAFFIC UPDATE

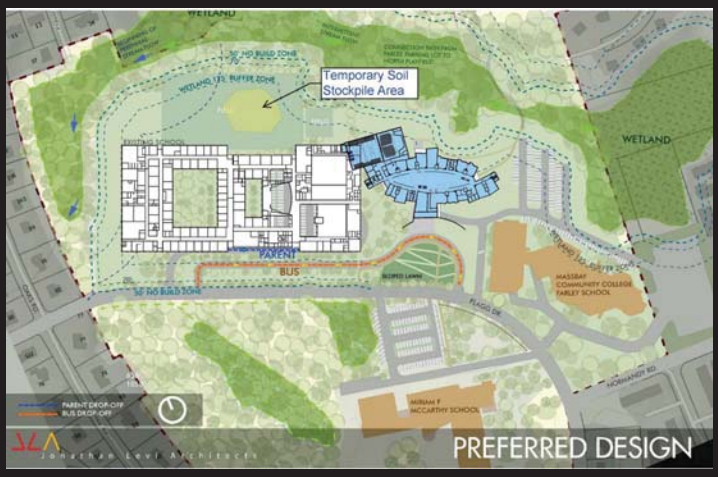
Impact on Adjacent Intersections

- Formal Traffic Impact Assessment still in progress and will be submitted in advance of 8/27 meeting when VAI will present the report. Initial findings are that the traffic at nearby intersections will not be dramatically different than it is today.

New Geotechnical Boring Results

- New Geotechnical boring results reveal "no surprises" compared to prior borings. They are still quite useful and provide additional refinement for foundation design.
- New geotechnical information will be incorporated into Schematic Design Pricing Set
- Formal updated Foundation Engineering Report will be submitted as part of the Schematic Design Set.

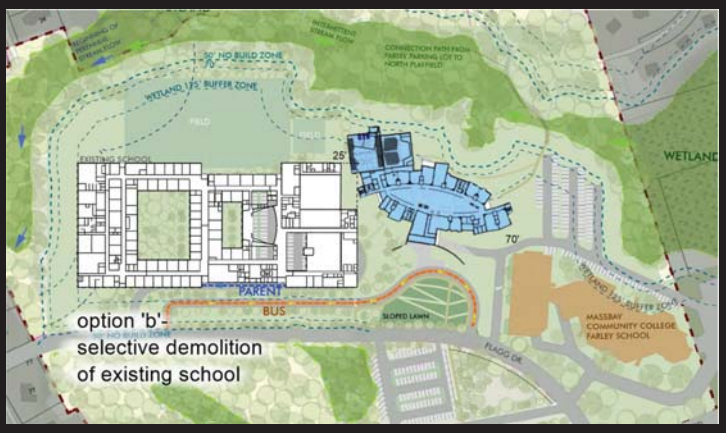
SD Refinement – Site Plan



SD Refinement – Option A

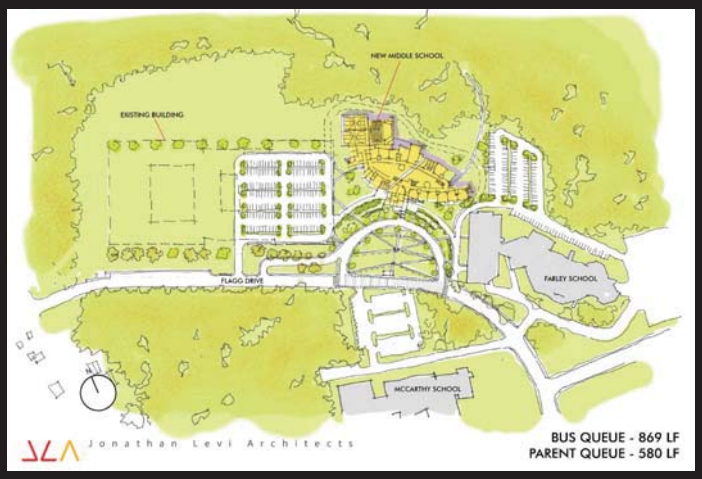
PROJECT MANAGEMENT SMMA

SD Refinement – Option B



PROJECT MANAGEMENT SMMA

SD Refinement – Landscape



PROJECT MANAGEMENT SMMA

SD Refinement – Level 1 Plan

PROJECT MANAGEMENT SMMA

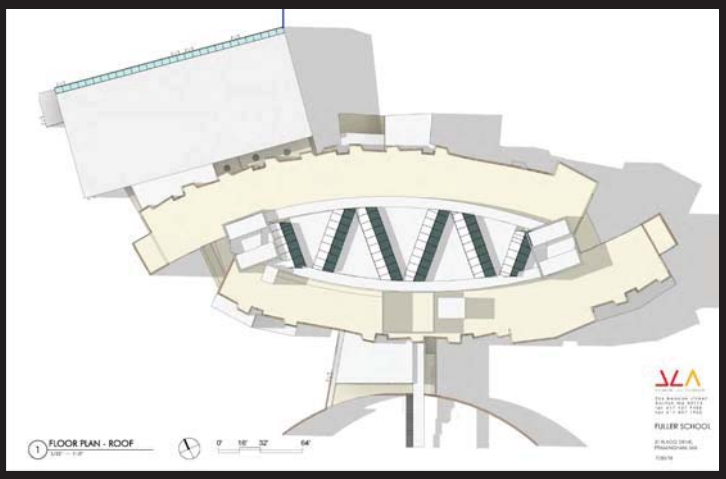
SD Refinement – Level 2 Plan

PROJECT MANAGEMENT SMMA

SD Refinement – Level 3 Plan

PROJECT MANAGEMENT SMMA

SD Refinement – Roof Plan



SD Refinement – Interior Perspective

SD Refinement – Interior Perspective

SD Refinement – Interior Perspective

Front View

Rear View

Technology Systems

- The data system infrastructure will consist of fiber optic backbone cabling. Horizontal wiring will consist of Category 6A UTP cabling for both data and telephone systems for gigabit connectivity. The telephone infrastructure will accommodate VOIP based voice systems. A new IP telephone system will be used.
- Each Classroom will have data, video and audio connections to a wall mounted touch screen monitor. A wall phone will be provided for communications with administration in each classroom. Wireless access points will be provided in all classrooms and other spaces with two (2) CAT6A cables.

Technology Systems

- A central paging system will be provided and integrated with the telephone system. The speakers shall be IP.
- The Main Distribution Frame (MDF) will contain all core network switching and IP voice switch. Intermediate Distribution Frames (IDFs) will serve each floor/wing of the school. A fiber optic backbone will be provided from each IDF to MDF. The backbone will be designed for 10 Gbps Ethernet.

SD Refinement – Level 1 Plan – FF&E

Classroom Suite 'Building Block' FF&E

Structural Systems

- Steel frame / composite steel deck throughout
- Ground floor will be slab on grade with aggregate piers over entire building site at 10'x10' grid.
- Footings: 10'x10'x2' spread footing. Continuous frost wall footings along perimeter.
- The auditorium roof will be framed with long-span trusses designed for theater lighting
- The atrium balconies will be supported by steel hangers up to the roof steel.

Mechanical System Payback Summary

Option	System Description ALL OPTIONS HAVE FULL AIR CONDITIONING. High efficiency gas-fired condensing boiler plant and energy recovery	Capital Costs ($M)	Annual Energy Costs ($K)	Annual Maint Costs ($K)	Total Annual Costs ($K)	Total Annual Savings ($K)	Total Life-Cycle Savings
Baseline	Code Driven - VAV AHU system with gas-fired non-condensing boiler Water-cooled chiller plant with cooling tower	$7.5	$207	$31	$238	-	-
1	VAV AHU system Water-cooled chiller with cooling tower	$7.6	$202	$31	$233	$5	$22,000
2	Displacement air with VAV boxes Water-cooled chiller with cooling tower	$7.3	$142	$27	$169	$69	$1,850,000
2a	Displacement air with VAV boxes with static plate energy recovery Water-cooled chiller with cooling tower	$7.4	$145	$25	$170	$68	$1,760,000
2b	Displacement air with VAV boxes with static plate energy recovery Air-cooled chiller	$7.3	$143	$24	$167	$71	$1,890,000
3	Displacement air with chilled beams Water-cooled chiller plant	$7.3	$140	$30	$170	$68	$1,870,000
3a	Displacement air with chilled beam with static plate energy recovery Water-cooled chiller plant with cooling tower	$7.3	$142	$28	$170	$68	$1,810,000
3b	Displacement air with chilled beams with static plate energy recovery Air-cooled chiller plant	$7.3	$141	$27	$168	$70	$1,930,000
4	Displacement air with chilled beams Geothermal wells with heat pump chillers	$10.1	$169	$26	$195	$43	-$1,580,000

Fuller Middle School Proposed HVAC System Design

HVAC Central Heating & Cooling Plants

- High-efficiency gas-fired condensing boiler plant
- High-efficiency air-cooled chiller plant
- Lower maintenance
- Good equipment access

HVAC Distribution System

- Variable air volume (VAV) displacement ventilation w/ perimeter hot water heating
- Cooling load and equipment size reduction
- High level of energy efficiency (36.9% above LEED baseline with and E.U.I. OF 34.7 kBTU/s.f.)
- Provides high level of indoor air quality
- Superior acoustical performance
- Provides good thermal comfort and control
- Central air handling units with service vestibule
- Web accessible temperature controls

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Renewable Design
Geothermal Plant Design Findings

An alternate simulation of the design system with a geothermal plant was studied (Option 4) in the life cycle cost analyses report to determine the cost effectiveness of the system. Due to the significant increase in initial capital investment (+ $2,802,200) and maintenance (+ $2,200) above the design displacement system served by central hot water boilers and air-cooled chiller cooling plants, the geothermal design did not achieve a payback within the 30 year study period. Though the system is not cost effective due to higher installation and annual operating costs compared to the design system, it is able to achieve a lower Energy Usage Intensity (EUI) of 28.9 kBTU/s.f. compared to the design system of 34.7 kBTU/s.f.

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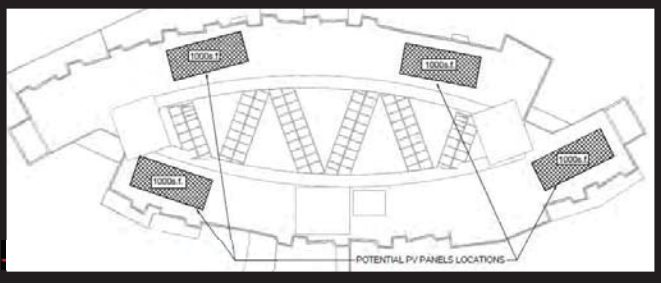
RENEWABLE DESIGN - PHOTOVOLTAIC ARRAY (PV) SYSTEM

ROOF MOUNTED SYSTEM:

- Estimated Size: 52KW
- Generated kWh = 69,629 kWH= 10% of total electrical usage for mechanical option 2B.
- LEED points renewable energy production= 2 Points
- Cost of usable energy produced by PV system: $12,806= 9% of total combined utility cost of mechanical option 2B.
- **Estimated cost: $130,000**
- **Estimated discounted payback: 7 years***
  *Includes utility incentive from SMART Program



GGD

LEED Goals

1. Site:

- Credit for Building on Developed Site
- Control Erosion During Construction
- Improve Storm Water Runoff
- Assess Potential Hazards in the Soil
- Reduce Heat Island Solar Absorption
- Reduce Light Pollution
- Provide Community Use

2. Reduce Energy Use:

- 3rd Party Verification of Mechanical Systems and Envelope Performance
- High Efficiency Heat and Hot Water Systems
- Excellent Thermal Insulation
- Make "Solar Ready"

3. Reduce Water Consumption:

- Low Flow Fixtures
- Minimize Irrigation
- Meter Usage

4. Materials and Resources:

- Design for Reduced Life / Cycle Costs
- Use Environmentally Friendly Materials
- Recycle Demolition and Construction Waste

5. Indoor Environmental Quality :

- Excellent Indoor Air Quality
- Use Low -Emitting Materials
- Enhanced Acoustic Performance
- Incorporate Daylighting
- Provide Access to Outdoor Views

SMMA

Project Management

Project Minutes

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	8/27/18
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library	Meeting No:	24
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
✓	David Miles	Co-Chair, City Resident with Experience in Finance	**Voting Member**
✓	Dr. Edward Gotgart	Co-Chair	Non-Voting Member
	Mayor Spicer	Mayor, Chief Executive Officer	Non-Voting Member
	Thatcher Kezer III	Chief Operating Officer	Non-Voting Member
✓	Richard Finlay	School Committee Member and Convenor	**Voting Member**
✓	Adam Freudberg	Chair, School Committee	**Voting Member**
✓	Charlie Sisitsky	City Council Member	**Voting Member**
✓	Richard Weader II	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Michael Grilli	Member of community with arch., eng., and/or construction experience	**Voting Member**
✓	Caitlin Stempleski	Fuller School Teacher and Co-Chair of the Union Professional Development Committee	**Voting Member**
✓	Dr. Jennifer Krusinger Martin	School Building Committee Member	**Voting Member**
✓	Donald C. Taggart III	City Resident/Retired Teacher	**Voting Member**
✓	Jennifer Pratt	Assistant Chief Financial Officer and SBC Member who is MCPPO certified	Non-Voting Member
✓	Dr. Robert Tremblay	Superintendent of Schools	Non-Voting Member
✓	Matt Torti	Director of Buildings and Grounds	Non-Voting Member
	Jose Duarte	Principal, Fuller Middle School	Non-Voting Member
	Anne Ludes	Director of Secondary Education	Non-Voting Member
✓	Mary Ellen Kelley	Chief Financial Officer and Local Budget official or member of Finance Committee	Non-Voting Member
	Michael Tusino	Certified Building Official	Non-Voting Member
	Patrick Johnson	Principal, Walsh Middle School	Non-Voting Member
	John Haidemenos	Principal, Woodrow Wilson Elementary School	Non-Voting Member
	David Panich	School Building Committee Member	Non-Voting Member
	Thomas Barbieri	School Building Committee Member	Non-Voting Member
✓	Dr. Dale Hamel	School Building Committee Member	Non-Voting Member
✓	Noval Alexander	School Committee Member	Non-Voting Member
	Heather Connolly	Former Chair of the School Committee	Non-Voting Member
✓	Scott Wadland	School Committee Member **(Voting for R. Finlay)**	
✓	Lincoln Lynch	Executive Director of Finance and Operations	
✓	Jonathan Levi	JLA, Architect	
✓	Philip Gray	JLA, Architect	
✓	Giles Ham	Vanasse & Associates	
✓	Joel Seeley	SMMA, OPM	

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www.smma.com

Item #	Action	Discussion
24.1	Record	Call to Order, 7:00 PM, meeting opened.
24.2	Record	Public Comments – None
24.3	Record	A motion was made by S. Wadland and seconded by C. Sisitsky to approve the 8/6/18 School Building Committee meeting minutes. No discussion, motion passed unanimously by those attending, one abstention.
24.4	Record	P. Gray distributed and reviewed the 8/20/18 Educational Working Group meeting minutes, attached.
24.5	J. Levi	J. Levi to confirm with Donna Wresinski that the seating on the side gallery to the stage is acceptable.
24.6	P. Gray	P. Gray introduced G. Ham of Vanasse & Associates, the traffic consultant. G. Ham distributed and reviewed the Traffic Study, attached. Committee Discussion: 1. R. Weader II indicated Flagg Drive is incorrectly labeled as Flagg Street. *P. Gray will correct to Flagg Drive*. 2. D. Miles asked how long is the raised intersection in front of the new school? *G. Ham indicated the raised intersection is approximately 300 feet long*. 3. N. Alexander asked if exiting oversized construction vehicles can be routed to the wetlands crossing north of Farley to Guadalcanal Road. From there, they can go north and then eastbound on Route 9, or for those wanting to travel westbound on Route 9, they can take Guadalcanal Road to Arsenal Road to Anzio Road? *G. Ham indicated there may be challenges with supporting the weight of oversized construction vehicles on the wetland crossing as well as permitting challenges. The Arsenal Road to Anzio Road intersection is too narrow for oversized vehicles and there is no signal at the Guadalcanal/Route 9 intersection*. 4. M. Grilli indicated the Warren Road to Dennison Road to Concord Street route for oversized construction vehicles should not be pursued. *P. Gray indicated that route is shown as an option, along with a temporary signal and police detail options at the Normandy/Concord intersection and that the Schematic Design estimate includes a traffic mitigation budget until the route can be further resolved*. 5. J. Krusinger Martin expressed concern with the Warren Road to Dennison Road to Concord Street route for oversized construction vehicles as well. 6. S. Wadland asked if the raised intersection in front of the new school and the proposed traffic signage needs to be reviewed by the DPW? *P. Gray indicated yes, and that a meeting will be scheduled shortly*. 7. C. Sisitsky indicated the traffic plan should be reviewed by the Traffic Commission. *P. Gray indicated that a meeting will be scheduled shortly*.

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		8. P. Gray to provide direction on what will happen to the McCarthy parents that use the Fuller parking lot to drop-off and pick-up and walk across the street at the next Committee meeting. 9. P. Gray to define which lot teachers and staff will park in during each of the construction phases at the next Committee meeting. 10. P. Gray to review in Phases 2 and 3, students that are being dropped off by parents having to cross bus traffic at the next Committee meeting.
24.7	J. Seeley	J. Seeley distributed and reviewed the reconciled Schematic Design Construction Cost estimates from Miyakoda Consulting and AM Fogarty and the Construction Cost Estimate Comparison Form, all dated 8/24/18 and attached. J. Seeley distributed and reviewed the Preliminary Schematic Design Approximate Reimbursement Form and the Total Project Budget Form, dated 8/24/18 and attached. The Total Project Budget is $98,276,878 and the approximate cost to the City is $58,793,285. Committee Discussion: 1. D. Miles indicated the Designer and OPM Fee Negotiation Subcommittee met with JLA and SMMA and negotiated their Design Development thru Construction Phase Fees, which have been included in the Total Project Budget. The Subcommittee was chaired by J. Pratt and included R. Finlay, D. Hamel, E. Gotgart, T. Kezer III, M. Torti, and D. Miles. 2. A. Freudberg indicated that the collaborative cost reduction strategies taken by the Committee that balanced affordability with educational needs and community use have been successful. 3. D. Taggart III requested that hardcopy handouts be provided of any cost figures that are included in powerpoint presentations. *J. Seeley will provide hardcopy handouts*. A motion was made by R. Weader II and seconded by M. Grilli to approve the total project budget and authorize the OPM to submit to the MSBA. No discussion, motion passed unanimously.
24.8	D. Miles J. Seeley	J. Seeley distributed and reviewed the Project Information Memorandum to the City Council, dated 8/14/18, the MSBA Bulletin 08-02 relative to the Appropriation and Ballot vote language and the draft Fuller Middle School Appropriation and Ballot vote language, all attached. The City Solicitor has approved the ballot vote language and that the MSBA legal counsel is currently reviewing. The Appropriation Vote language will be updated with the approved total project budget and submitted to the City Solicitor for approval. J. Seeley reviewed the timeline for the Appropriation Vote and the Ballot Vote, attached. Committee Discussion: 1. D. Miles and J. Seeley to coordinate with the City Council on the final voting timeline.
24.9	Record	J. Seeley distributed and reviewed the Post-Schematic Design Meetings and Agendas Schedule, attached.

24.10	Record	J. Seeley provided an update on the Project Information Working Group and distributed and reviewed the Back-to-School Family Picnic Flyer and the Project Promotion Opportunities Calendar. Community Forum No. 7 is scheduled for 9/6/18. The Project Informational video with Mayor Spicer, B. Tremblay, J. Levi and J. Seeley has been taped with an anticipated roll-out in the upcoming weeks. A presentation to the Council on Aging is scheduled for 8/28/18. Committee Discussion: 1. S. Wadland asked that any Committee members that can man the Fuller Middle School table at the Back-to-School Family Picnic will be appreciated, as all four school committee members on the Committee will be tied up. 2. M. Kelley indicated that language on the Fuller Project is being developed to be included in the upcoming Tax Mailer.
24.11	Record	Old or New Business – none
24.12	Record	**Community Forum No. 7: September 6, 2018 at 6:00 PM** at Fuller Middle School Library
24.13	Record	Next **SBC Meeting: September 11, 2018 at 7:00 PM** at Fuller Middle School Library.
24.14	Record	A Motion was made by M. Grilli and seconded by D. Taggart III to adjourn the meeting. No discussion, motion passed unanimous.

Attachments: Agenda, 8/20/18 Educational Working Group meeting minutes, Traffic Study, Reconciled Schematic Design Construction Cost estimates from Miyakoda Consulting and AM Fogarty, Construction Cost Estimate Comparison Form, Preliminary Schematic Design Approximate Reimbursement Form, Total Project Budget Form, Project Information Memorandum to the City Council, MSBA Bulletin 08-02, draft Fuller Middle School Appropriation and Ballot vote language, Post-Schematic Design Meetings and Agendas Schedule, Back-to-School Family Picnic Flyer and the Project Promotion Opportunities Calendar, Powerpoint

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes.

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Project Management

PROJECT MEETING SIGN-IN SHEET

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Prepared by:	Joel Seeley	Meeting Date:	8/27/2018
Re:	School Building Committee Meeting	Time:	7:00pm
Location:	Fuller Middle School Library 31 Flagg Drive, Framingham, MA	Meeting No:	24
Distribution:	Attendees, (MF)		

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	David Miles	dmiles@partners.org	Co-Chair, School Building Committee, City Resident with experience in Finance
	Dr. Edward Gotgart	egotgart@framingham.k12.ma.us	Co-Chair and FPS Chief Operating Officer
	Yvonne M. Spicer	mayorspicer@framinghamma.gov	Mayor, City of Framingham
	Thatcher Kezer, III	tkezer@framinghamma.gov	Chief Operating Officer, Mayoral Designee
	Richard Finlay	rfinlay@wellesleyma.gov	School Committee Member and Convenor
✓	Adam Freudberg	afreudberg@framingham.k12.ma.us	Chair of School Committee
	Charlie Sisitsky	csisitsky@rcn.com	Local Chief Executive Officer
	Richard Weader, II	weaders@aol.com	Member of community with architecture, engineering and/or construction experience
	Michael Grilli	mgrilli@beta-inc.com	Member of community with architecture, engineering and/or construction experience
	Caitlin Stempleski	cstempleski@framingham.kl2.ma.us	Fuller School Teacher and Co-Chair of the Union Professional Development Committee
	Dr. Jennifer Krusinger Martin	jkrusinger@gmail.com	School Building Committee Member
	Donald Taggart III	dontaggart134@gmail.com	City Resident / Retired Teacher
✓	Jennifer Pratt	jaf@framinghamma.gov	Assistant Chief Financial Officer and SBC Member who is MCPPO certified, City of Framingham
	Dr. Robert Tremblay	rtremblay@framingham.k12.ma.us	Superintendent of Schools
	Matt Torti	mtorti@framingham.k12.ma.us	Director of Buildings and Grounds
	Jose Duarte	jduarte@framingham.k12.ma.us	Principal, Fuller Middle School
	Anne Ludes	aludes@framingham.k12.ma.us	Director of Secondary Education, Framingham Public Schools
✓	Mary Ellen Kelley, CFO	mek@framinghamma.gov	Chief Financial Officer and Local Budget official
	Michael Tusino	mat@framinghamma.gov	Certified Building Official

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Project: Fuller Middle School Feasibility Study
Meeting Date: August 27, 2018
Meeting No.: 24

SIGNATURE	ATTENDEES	EMAIL	AFFILIATION
	Patrick Johnson	pjohnson@framingham.k12.ma.us	Principal, Walsh Middle School
	John Haidemenos	jhaidemenos@framingham.k12.ma.us	Principal, Woodrow Wilson Elementary School
	David Panich	david@panicharchitecture.com	School Building Committee Member
	Thomas Barbieri	Thombrbr@aol.com	School Building Committee Member
	Dr. Dale Hamel	dhamel@framingham.edu	School Building Committee Member
	Noval Alexander	n.alexander@framingham.k12.ma.us	School Committee Member
	Heather Connolly	heatheratconnolly@comcast.net	Former Chair of School Committee
✓	Jonathan Levi	jlevi@leviarc.com	Jonathan Levi Architects (JLA)
✓	Philip Gray	pgray@leviarc.com	Jonathan Levi Architects (JLA)
✓	Joel Seeley	jseeley@smma.com	SMMA
	Scott Walsh		

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Agenda

Project:	Fuller Middle School Feasibility Study	Project No.:	17050
Re:	School Building Committee Meeting	Meeting Date:	8/27/2018
Meeting Location:	Fuller Middle School Library	Meeting Time:	7:00 PM
Prepared by:	Joel G. Seeley	Meeting No.	24
Distribution:	Committee Members (MF)		

1. Call to Order
2. Public Comments
3. Approval of Minutes
4. Approval of Invoices and Commitments
5. Review Traffic Report
6. Review Schematic Design Total Project Cost
7. Vote to Submit Schematic Design Total Project Cost to MSBA
8. Voting Process
9. Post Schematic Design Schedule
10. Project Information Working Group Update
11. Old or New Business
12. Committee Questions
13. Next Meeting: September 11, 2018
14. Adjourn

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Jonathan Levi Architects

266 beacon street boston ma 02116 tel 617.437.9458 www.leviarc.com

NOTES OF MEETING

project	Fuller Middle School Feasibility Study	project no.	1722
date	8/20/18, 8:00 am	location	Fuller School/Buildings & Grounds
re	**Parking, site work/phasing, elevator location**		
present	David Miles (SBC), Jose Duarte (FPS), Lincoln Lynch IV (FPS), Edward Gotgart (FPS), Matt Torti (FPS), Joel Seeley (SMMA), Carol Harris (JLA)		
distribution	attendees; Robert Tremblay (FPS), project file		

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1. Teacher parking for 100 needed. JLA to propose teacher parking counts and locations during construction phasing. A preference was expressed to not depend on new lot behind Farley since MassBay, Board of Health, PIC, and Adult ESL will also be looking for parking spaces.
2. Proposed 'speed table' on Flagg Drive at the entry to the raised bus drop off loop is well received. JLA to confirm with DPW. A second 'speed table' is suggested at the west end of Flagg Drive to further slow down traffic.
3. JLA confirms accessible parking spaces will be included in the new parking lots with accessible access to front entry as required.
4. JLA to schedule a meeting with Matt to review proposed Custodial & Maintenance areas.
5. JLA to follow up with Donna Wresinski regarding updates incorporated to the Auditorium/performance areas including approval of seating on the side galleries.
6. Elevator location reviewed. JLA to look at alternate locations identifying the impact on the design as a whole.
7. JLA provide a walk-thru review of storage in academic areas for Jose in order to confirm that enough storage will be provided.
8. A 15% future classroom expansion area is to be identified on plans. JLA to notate a 3-story future bay add on and clarify how future MEP systems to be included.
9. Matt would like a review of how trash and deliveries in the existing school are to be accommodated during construction – JLA to clarify.
10. Soil stockpile location - The preferred solution is to keep the recess area in current area behind gym and locate stockpile further to the west, including a temporary path for vehicles from the Farley parking to the stockpile bypassing the recess area, and extending the construction fence.

END OF MEETING NOTES

Addressees believing these notes are in error or are inaccurate should contact the writer within five business days, otherwise these notes will be considered accurate.

SMMA

Project Management

Memorandum

To:	Framingham City Council	Date:	8/14/2018
From:	Joel Seeley	Project No.:	17050
Project:	Feasibility Study for the Fuller Middle School		
Re:	Feasibility Study Progress Information Packet		
Distribution:	School Building Committee, JLA, (MF)		

This memorandum provides a brief summary of the Fuller Middle School Feasibility Study work performed by the School Building Committee (SBC) since the June 19, 2018 presentation to the City Council. This includes a summary of: the MSBA's recent Board meeting where the project was moved to the final submission phase; the SBC's Collaborative Cost Reduction Actions to reduce the project's budget by $9.2 million; the MSBA's increase to the base Reimbursement Rate; the current Project Costs; a comparison to Natick's JFK Middle School; and the status of the Feasibility Study's Budget.

The Massachusetts School Building Authority (MSBA) Board of Directors unanimously approved the Preferred Schematic Report (PSR), the second submission to the MSBA, at their June 27, 2018 meeting. Attendees at that meeting included Senator Spilka, Representatives Lewis and Gentile, Mayor Spicer, Superintendent Dr. Tremblay, Council Chairman Giombetti and School Committee Chairman Freudberg. Since that milestone, the SBC has been working towards the Feasibility Study's final submission to the MSBA, the Schematic Design (SD) submission, scheduled for September 12, 2018. The MSBA Board of Directors will review this submission for project approval and allocation of the state grant, at their October 31, 2018 meeting.

The SBC has continued to incorporate cost reduction strategies in the project that balance affordability with educational needs and community use. At their July 16, 2018 meeting, the SBC voted to reduce the auditorium seating capacity from 750 seats to 420 seats, reducing the project cost from $104.5 million to $101.3 million. Since the PSR submission to the MSBA on May 9, 2018, which reflected a project cost of $110.5 million, the SBC has reduced the project cost by $9.2 million equating to a reduction in the City's cost of $5.2 million. This reduction was done in a thoughtful, collaborative way alongside the MSBA and FPS leadership.

Upon the MSBA Board of Directors' approval of the PSR submission, the MSBA re-calculated the City's base reimbursement rate to the current year. The original base reimbursement rate of 57.05% of eligible costs was calculated at the time of the Feasibility Study Agreement, February 2017. The re-calculated base reimbursement rate has increased to 57.83% of eligible costs. The increase in the MSBA reimbursement rate further lowered the cost to the City by approximately $507 thousand. The approximate cost to the City is $60.8 million, as shown below:

Summary of Approximate Ineligible Costs for MSBA Reimbursement	
Legal fees	$120,000
OPM fee associated with Ineligible Spaces	$313,661
Architect fee associated with Ineligible Spaces	$896,174
Asbestos flooring abatement	$486,000
Site costs over 8%	$8,177,072
Building costs over $333/s.f.	$13,894,428

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Auditorium ineligible space	$5,823,829
Gymnasium ineligible space over 6,500 s.f.	$1,564,611
Administration ineligible space over MSBA Guideline	$904,095
Furnishings and equipment over $1,200/student	$378,000
Educational technology over $1,200/student	$378,000
Moving expenses	$200,000
Construction contingency over 1%	$3,170,713
Approximate Ineligible Costs	$36,306,583

Cost to City Calculation	
Total Project Cost	$101,265,723
Minus Approximate Ineligible Costs	$36,306,583
Equals Eligible Costs	$64,959,140
Eligible Costs	$64,959,140
Times Reimbursement Rate (57.83% plus 4.48%)	62.31%
Equals Approximate MSBA Reimbursement Grant	$40,476,040
Total Project Cost	$101,265,723
Minus Approximate MSBA Reimbursement Grant	$40,476,040
Equals Approximate Cost to the City	$60,789,683

Council members had asked what the cost per student for the Fuller Middle School project is in comparison to Natick's JFK Middle School project. Fuller's project cost per student is $160 thousand and JFK's is $109 thousand. A top contributing factor in this difference is the building demolition and site costs for each project. As the footprint of the current Fuller is on a much larger parcel of land with a building the size of a high school, Fuller's demolition and site costs are approximately $17.4 million while JFK's are approximately $12.2 million, which equates to $28 thousand per student for Fuller and $12 thousand per student for JFK. Another contributing factor in this disparity is Fuller's student design enrollment requires more classroom and instructional space than JFK's student design enrollment on a per student basis because of the great difference in student demographics in their respective schools. Fuller provides for 217 square feet per student, while JFK provides for 182 square feet per student. This is in part due to the significant English Learner and former English Learner students, which make up 41% of Fuller's population. As an example, Fuller has 27 classrooms for 630 students, while JFK has 39 classrooms for 1,000 students. Fuller also requires classrooms supporting a substantially separate program for students with Intellectual Impairments and has a substantially separate program for students with Autism. This equates to Fuller having six self-contained SPED classrooms, while JFK has two self-contained SPED classrooms.

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With respect to the status on the $1,000,000 appropriation for the Feasibility Study, a balance of $145,945.50 remains which is more than sufficient to complete this phase, as shown below:

Feasibility Study Budget			
	Budget	Committed	Balance
OPM Services	$175,000.00	$174,200.00	$800.00
Designer Services	$545,000.00	$545,000.00	$0.00
Environmental and Site Services	$145,000.00	$134,772.00	$10,228.00
Owner Contingency	$135,000.00	$82.50	$134,917.50
Balance	$1,000,000.00	$854,054.50	$145,945.50

At your next meeting, SBC Co-Chairman Miles will provide a short update on the work recently performed by the SBC as outlined in this memo. He will also discuss the role the Council will play on any necessary actions at your fall meetings, which will be scheduled with Chairman Giombetti, to occur before the expected December 11th debt exclusion vote. The SBC will continue to keep the City Council updated on the progress of the Fuller Building Project, including the total project costs and the City's share. The Committee is very interested in continued engagements with the City Council as the project moves forward to the important next phase in accordance with the MSBA's process and the City's timeline.

A Project Website has been established to provide access to all project information, including timelines, MSBA submissions, presentations and meeting minutes and can be found at https://www.fullerbuildingproject.com.

Total Project Budget

City of Framingham
Fuller Middle School - Option C

DRAFT

8/24/2018

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
Feasibility Study Agreement				
OPM Feasibility Study	$175,000	$0	$175,000	
A&E Feasibility Study	$545,000	$0	$545,000	
Environmental & Site	$145,000	$0	$145,000	
Other	$135,000	$0	$135,000	
Feasibility Study Agreement Subtotal	**$1,000,000**	**$0**	**$1,000,000**	**$623,100**
Administration				
Legal Fees	$80,000	$80,000	$0	**$0**
Owner's Project Manager				
Design Development	$175,445	$286,361	-$110,916	
Construction Contract Documents	$242,886	$0	$242,886	
Bidding	$115,789	$0	$115,789	
Construction Contract Administration	$1,727,876	$0	$1,727,876	
Closeout	$95,905	$0	$95,905	
Extra Services	$40,000	$0	$40,000	
Reimbursable & Other Services	$40,000	$0	$40,000	
Cost Estimates	$80,000	$0	$80,000	
Advertising	$20,000	$0	$20,000	
Permitting	$50,000	$0	$50,000	
Owner's Insurance	$120,000	$0	$120,000	
Other Administrative Costs	$100,000	$0	$100,000	
Administration Subtotal	**$2,887,901**	**$366,361**	**$2,521,540**	**$1,571,172**
Architecture and Engineering				
Basic Services				
Design Development	$2,059,998	$837,936	$1,222,062	
Construction Contract Documents	$2,746,664	$0	$2,746,664	
Bidding	$137,334	$0	$137,334	
Construction Contract Administration	$1,833,398	$0	$1,833,398	
Closeout	$89,265	$0	$89,265	
Other Basic Services	$0	$0	$0	
Basic Services Subtotal	**$6,866,659**	**$837,936**	**$6,028,723**	
Reimbursable Services				
Construction Testing	$30,000	$0	$30,000	
Printing (over minimum)	$20,000	$0	$20,000	
Other Reimbursable Costs	$180,000	$0	$180,000	
Hazardous Materials	$170,984	$0	$170,984	
Geotechnical & Geo-Environmental	$155,925	$0	$155,925	
Site Survey	$44,000	$0	$44,000	
Wetlands	$44,000	$0	$44,000	
Traffic Studies	$38,500	$0	$38,500	
Architectural/Engineering Subtotal	**$7,550,068**	**$837,936**	**$6,712,132**	**$4,182,329**
CM at Risk Preconstruction Services				
Pre-Construction Services	$400,000	**$0**	$400,000	**$249,240**
Site Acquisition				
Land / Building Purchase	$0	$0	$0	
Appraisal Fees	$0	$0	$0	
Recording fees	$0	$0	$0	
Site Acquisition Subtotal	**$0**	**$0**	**$0**	**$0**

City of Framingham
Fuller Middle School - Option C

DRAFT

8/24/2018

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
Construction Costs				
SUBSTRUCTURE				
Foundations	$3,342,276	$0		
Basement Construction	$0	$0		
SHELL				
SuperStructure	$4,939,081	$0		
Exterior Closure	$0	$0		
Exterior Walls	$4,172,373	$0		
Exterior Windows	$3,024,209	$0		
Exterior Doors	$109,600	$0		
Roofing	$2,266,611	$0		
INTERIORS				
Interior Construction	$5,705,569	$0		
Staircases	$494,685	$0		
Interior Finishes	$4,619,453	$0		
SERVICES				
Conveying Systems	$242,200	$0		
Plumbing	$2,051,850	$0		
HVAC	$7,052,250	$0		
Fire Protection	$752,345	$0		
Electrical	$5,232,218	$0		
EQUIPMENT & FURNISHINGS				
Equipment	$1,448,669	$0		
Furnishings	$1,779,353	$0		
SPECIAL CONSTRUCTION & DEMOLITION				
Special Construction	$0	$0		
Existing Building Demolition	$1,563,200	$0		
In-Building Hazardous Material Abatement	$1,500,000	$388,800		
Asbestos Containing Floor Material Abatement	$0	$0		
Other Hazardous Material Abatement	$0	$0		
BUILDING SITEWORK				
Site Preparation	$2,816,982	$2,941,071		
Site Improvements	$2,786,868	$0		
Site Civil / Mechanical Utilities	$715,840	$0		
Site Electrical Utilities	$400,000	$0		
Other Site Construction	$0	$0		
Scope Excluded Site Cost		$0		
Construction Trades Subtotal	$57,015,632	$3,329,871		
Contingencies (Design and Pricing)	$5,395,243	$315,097		
General Conditions	$3,651,036	$213,231		
General Requirments	$2,642,476	$154,328		
Insurance	$964,661	$56,339		
Bonds	$698,690	$40,805		
GMP Fee	$1,992,863	$116,389		
Traffic Mitigation	$200,000	$11,681		
GMP Contingency	$1,900,000	$110,965		
Escalation to Mid-Point of Construction	$3,474,828	$202,940		
Ineligible Auditorium & PE Areas beyond Guidelines		$7,264,250		
Overall Excluded Construction Cost		$17,816,886		
Construction Budget	**$77,935,429**	**$29,632,781**	**$48,302,648**	**$30,097,380**
Alternates				
	$0		$0	
Alternates Included in the Total Project Budget	$0	$0	$0	
Alternates Excluded from the Total Project Budget	$0		$0	
Subtotal to be Included in Total Project Budget	**$0**	**$0**	**$0**	**$0**
Miscellaneous Project Costs				
Utility Company Fees	$280,000	$0	$280,000	
Testing Services	$300,000	$0	$300,000	
Swing Space / Modulars	$0	$0	$0	
Other Project Costs (Mailing & Moving)	$200,000	$200,000	$0	
Misc. Project Costs Subtotal	**$780,000**	**$200,000**	**$580,000**	**$361,398**
Furnishings and Equipment				
Furniture, Fixtures, and Equipment	$1,134,000	$378,000	$756,000	
Technology	$1,134,000	$378,000	$756,000	
FF&E Subtotal	**$2,268,000**	**$756,000**	**$1,512,000**	**$942,127**
Soft Costs that exceed 20% of Construction Cost		$0		

Total Project Budget

City of Framingham
Fuller Middle School - Option C

DRAFT

8/24/2018

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Estimated Basis of Maximum Facilities Grant or Otherwise Ineligible	Estimated Basis of Maximum Total Facilities Grant[1]	Estimated Maximum Total Facilities Grant[1]
Project Budget	**$92,821,398**	**$31,793,078**	**$61,028,320**	**$38,026,746**

Board Authorization	
Design Enrollment	630
Total Building Gross Floor Area (GSF)	136,790
Total Project Budget (excluding Contingencies)	$92,821,398
Scope Items Excluded or Otherwise Ineligible	$31,793,078
Third Party Funding (Ineligible)	$0
Estimated Basis of Maximum Total Facilities Grant[1]	$61,028,320
Reimbursement Rate[3, 4]	62.31%
Est. Max. Total Facilities Grant (before recovery)[1]	$38,026,746
Cost Recovery[5]	$0
Estimated Maximum Total Facilities Grant[1]	$38,026,746

Construction Contingency[2]	$3,896,771
Ineligible Construction Contingency[2]	$3,117,417
"Potentially Eligible" Construction Contingency[2]	$779,354
Owner's Contingency[2]	$1,558,709
Ineligible Owner's Contingency[2]	$0
"Potentially Eligible" Owner's Contingency[2]	$1,558,709
Total Potentially Eligible Contingency[2]	$2,338,063
Reimbursement Rate[3, 4]	62.31%
Potential Additional Contingency Grant Funds[2]	$1,456,847
Maximum Total Facilities Grant	$39,483,593
Total Project Budget	$98,276,878

57.83	Reimbursement Rate Before Incentive Points
4.48	Total Incentive Points[3, 4]
62.31%	MSBA Reimbursement Rate

NOTES

This template was prepared by the MSBA as a tool to assist Districts and consultants in understanding MSBA policies and practices regarding potential impact on the MSBA's calculation of a potential Basis of Total Facilities Grant and potential Total Maximum Facilities Grant. This template does not contain a final, exhaustive list of all evaluations which the MSBA may use in determining whether items are eligible for reimbursement by the MSBA. The MSBA will perform an independent analysis based on a review of information and estimates provided by the District for the proposed school project that may or may not agree with the estimates generated by the District using this template.

1. Does not include any potentially eligible contingency funds and is subject to review and audit by the MSBA.

2. The proposed demolition of the _____ School is expected to result in the MSBA recovering a portion of state funds previously paid to the District for the ____ project at the existing facilities completed in ___. The MSBA will perform an independent analysis based on a review of information and estimates provided by the District for the proposed school project that may or may not agree with the estimated cost recovery generated by the District and its consultants using this template.

3. Pursuant to Section 3.20 of the Project Funding Agreement and the applicable policies and guidelines of the Authority, any project costs associated with the reallocation or transfer of funds from either the Owner's contingency or the Construction contingency to other budget line items shall be subject to review by the Authority to determine whether any such costs are eligible for reimbursement by the Authority. All costs are subject to review and audit by the MSBA.

DRAFT

	Option C
	136,790 SF
Summary of Approximate Ineligible Costs	
Legal Fees	$80,000
OPM Fee on Ineligible Spaces	$286,361
Architect Fee on Ineligible Spaces	$837,936
Asbestos Flooring Abatement	$388,800
Site Costs over 8%	$4,162,845
Building Costs over $333/SF	$16,912,791
Auditorium	$5,823,829
Gymnasium over 6,500 SF	$1,440,421
Administration over guideline	$904,095
FFE over $1,200/student	$378,000
Educational Technology over $1,200/student	$378,000
Moving Expenses	$200,000
Construction Contingency	$3,117,417
	$34,910,495
Total Project Cost	$98,276,878
Minus Ineligible Costs	$34,910,495
Equals Eligible Costs	$63,366,383
Eligible Costs	$63,366,383
Reimbursement Rate	62.31%
Approximate MSBA Reimbursement Grant	$39,483,593
Total Project Cost	$98,276,878
Minus Approximate MSBA Reimbursement Grant	$39,483,593
Equals Approximate Cost to the City	$58,793,285

DRAFT

Miyakoda Estimate
Dated 8/24/18
AM Fogarty Estimate
Dated 8/24/18

	Miyakoda Estimate Option C SD Estimate			AM Fogarty Estimate Option C SD Estimate		
SF	**136,790**			**136,790**		
Building						
Foundations	$ 2,562,654			$ 2,419,398		
Slab on Grade	$ 779,622			$ 857,080		
Floor Structure	$ 2,940,342			$ 3,073,518		
Roof Structure	$ 1,998,739			$ 2,140,710		
Exterior Walls	$ 4,172,373			$ 4,468,772		
Exterior Windows	$ 3,024,209			$ 3,263,185		
Exterior Doors	$ 109,600			$ 159,306		
Roofing	$ 2,266,611			$ 2,430,928		
Interior Partitions	$ 2,999,135			$ 3,323,651		
Interior Doors	$ 822,935			$ 585,755		
Interior Fittings	$ 1,883,499			$ 1,683,075		
Stairs	$ 494,685			$ 468,916		
Interior Wall Finishes	$ 1,919,375			$ 1,509,783		
Interior Floor Finishes	$ 1,388,941			$ 1,176,293		
Interior Ceiling Finishes	$ 1,311,137			$ 1,624,091		
Conveying Systems	$ 242,200			$ 218,037		
Plumbing	$ 2,051,850		$15	$ 2,270,043		$17
HVAC	$ 7,052,250		$52	$ 7,193,755		$53
Fire Protection	$ 752,345		$6	$ 744,753		$5
Electrical	$ 5,232,218		$38	$ 5,383,654		$39
Equipment	$ 1,448,669			$ 1,344,633		
Furnishings	$ 1,779,352			$ 1,311,326		
Selective Demolition	$ -	**$ 47,232,741**	$345	$ -	**$ 47,650,662**	$348
Building HazMat	$ 1,500,000			$ 1,505,356		
Building Demolition	$ 1,563,200	$ 3,063,200		$ 1,568,000	$ 3,073,356	
Building Trade Cost		**$ 50,295,941**	**$368**		**$ 50,724,018**	**$371**
Sitework						
Site Development						
Site Preparation	$ 2,816,982			$ 2,473,801		
Site Improvements	$ 2,786,868			$ 2,734,420		
Mechanical Utilities	$ 715,840			$ 682,854		
Electrical Utilities	$ 400,000			$ 462,299		
Site Trade Cost		**$ 6,719,690**			**$ 6,353,374**	
Total Trade Cost		**$ 57,015,631**			**$ 57,077,392**	
General Conditions	$ 3,651,036			$ 4,500,000		
General Requirements	$ 2,642,476			$ 1,810,053		
Insurance	$ 964,661			$ 1,013,103		
Bonds	$ 698,690			$ 632,503		
Permit	$ -			$ -		
Traffic Mitigation	$ 200,000			$ 200,000		
Fee	$ 1,992,863			$ 1,901,444		
Design Contingency	$ 5,395,243			$ 5,707,739		
GMP Contingency	$ 1,900,000			$ 1,883,554		
Escalation	$ 3,474,828			$ 3,233,434		
		$ 20,919,797			**$ 20,881,830**	
Total Construction Cost		**$ 77,935,428**	**$570**		**$ 77,959,222**	**$570**

Fuller Middle School

Framingham, MA

August 24, 2018

Module 4: Schemtic Report

Schematic Estimate

Owner's Project Manager

SMMA

1000 Massachusetts Ave.

Cambridge, MA

Architect:

Jonathan Levi Architects
266 Beacon Street
Boston, MA 02116

Estimator:

Miyakoda Consulting
PO Box 47
Raynham, MA 02767
(617) 799-5832

Fuller Middle School

Fuller Middle School

INTRODUCTION

Description:

1. Construction of the Framingham Middle School
2. The scope of the work includes all related sitework, hardscape/landscape, and underground utilities

Particulars:

1. Drawings received from Jonathan Levi Architects
2. Detailed quantity takeoff from these documents where possible
3. Experience with similar projects of this nature with JLA

Assumptions:

1. The project will be constructed by a Construction Manager
2. Our costs assume that there will be at least three subcontractors submitting unrestricted bids in each sub-trade
3. Unit rates are based on current dollars
4. General Conditions and Requirements value covers Sub-Contractor's bond, site office overheads, and building permit applications
5. Fee markup is calculated on a percentage basis of direct construction costs. The value covers Contractor's bond, insurance and profit
6. Design and Pricing Contingency markup is an allowance for unforeseen design issues, design detail development and specification clarifications
7. Escalation has been included to midpoint of construction. The construction start date is June 2020.
8. Atrium ceiling unit rate allowance at $15/SF per email on August 23, 2018 from Philip Gray
9. Reduce skylight quantity by 20% per email on August 23, 2018 from Philip Gray

Exclusions:

1. Design fees and other soft costs
2. Owner's project administration
3. Construction of temporary facilities (Options priced separately)
4. Relocation expenses
5. Printing and advertising
6. Existing condition surveys and investigations
7. Work beyond the boundary of the site
8. Testing
9. Specialties, loose furnishings, fixtures and equipment beyond those noted
10. Preconstruction Fee
11. Construction Contingency
12. Traffic Improvements

Fuller Middle School

Fuller Middle School
136,790 GSF

MAIN SUMMARY - NEW CONSTRUCTION

DESCRIPTION			*TOTAL*	*COST/SF*
Direct Trade Costs With Site				
New Construction	136,790	GSF	$47,232,741	$345.29
Site Development			$6,719,690	
Direct Trade Cost SubTotal			**$53,952,431**	**$394.42**
Design and Pricing Contingency	10.00%	$53,952,431	$5,395,243	$39.44
Building Cost			**$59,347,674**	**$433.86**
Demolish Existing Building	195,400	GSF	$1,563,200	$11.43
Hazardous Waste Abatement (Budget provided)			$1,500,000	$10.97
Trade Cost SubTotal			**$62,410,874**	**$456.25**
General Conditions	5.85%	$62,410,874	$3,651,036	$26.69
General Requirements	4.00%	$66,061,910	$2,642,476	$19.32
Traffic mitigation			$200,000	$1.46
Insurance	1.40%	$68,904,387	$964,661	$7.05
Bonds	1.00%	$69,869,048	$698,690	$5.11
Construction Contingency		$70,567,739	$1,900,000	$13.89
CM Fee	2.75%	$72,467,739	$1,992,863	$14.57
Estimated Construction Cost Total			**$74,460,601**	**$544.34**
Escalation (Assume June 2019 Start of Construction)	4.67%	$74,460,601	$3,474,828	$25.40
Estimated Construction Cost Total			**$77,935,429**	**$569.75**

Alternate: Add Irrigation (including markkup) $205,000

Fuller Middle School

Fuller Middle School
136,790 GSF

DIRECT COST SUMMARY - NEW CONSTRUCTION

DIV.	*ELEMENTS*	*SITEWORK*	*BUILDING*	*TOTAL*
A	***SUBSTRUCTURES***			
A10	FOUNDATIONS			
	Foundations		$2,562,654	$2,562,654
	Slab on Grade		$779,622	$779,622
	FOUNDATIONS TOTAL		**$3,342,277**	**$3,342,277**
A20	BASEMENT CONSTRUCTION		$0	
A	**SUBSTRUCTURES TOTAL**			**$3,342,277**
B	***SHELL***			
B10	STRUCTURE			
	Upper Floor Construction		$2,940,342	$2,940,342
	Roof Construction		$1,998,739	$1,998,739
	STRUCTURE TOTAL		**$4,939,081**	**$4,939,081**
B20	EXTERIOR CLOSURE			
	Exterior walls		$4,172,373	$4,172,373
	Exterior windows		$3,024,209	$3,024,209
	Exterior Doors		$109,600	$109,600
	EXTERIOR CLOSURE TOTAL		**$7,306,183**	**$7,306,183**
B30	ROOFING			
	Roof Coverngs		$2,266,611	$2,266,611
	ROOFING TOTAL		**$2,266,611**	**$2,266,611**
B	**SHELL TOTAL**			**$14,511,874**
C	***INTERIORS***			
C10	INTERIOR CONSTRUCTION			
	Partitions		$2,999,135	$2,999,135
	Interior Doors, frames & Hardware		$822,935	$822,935
	Fittings		$1,883,499	$1,883,499
	INTERIOR CONSTRUCTION TOTAL		**$5,705,569**	**$5,705,569**

Fuller Middle School

Fuller Middle School
136,790 GSF

DIRECT COST SUMMARY - NEW CONSTRUCTION

DIV.	*ELEMENTS*	*SITEWORK*	*BUILDING*	*TOTAL*
C20	STAIRCASES			
	Staircases		$494,685	$494,685
	STAIRCASES TOTAL		**$494,685**	**$494,685**
C30	INTERIOR FINISHES			
	Wall finishes		$1,919,375	$1,919,375
	Floor finishes		$1,388,941	$1,388,941
	Ceiling finishes		$1,311,137	$1,311,137
	INTERIOR FINISHES TOTAL		**$4,619,453**	**$4,619,453**
C	**INTERIORS TOTAL**			**$10,819,707**
D	***SERVICES***			
D10	VERTICAL MOVEMENT			
	Conveying System		$242,200	$242,200
	VERTICAL MOVEMENT TOTAL		**$242,200**	**$242,200**
D20	PLUMBING			
	Plumbing		$2,051,850	$2,051,850
	PLUMBING TOTAL		**$2,051,850**	**$2,051,850**
D30	HVAC			
	HVAC		$7,052,250	$7,052,250
	HVAC TOTAL		**$7,052,250**	**$7,052,250**
D40	FIRE PROTECTION			
	Fire Protection		$752,345	$752,345
	FIRE PROTECTION TOTAL		**$752,345**	**$752,345**
D50	ELECTRICAL			
	Service and distribution		$5,232,218	$5,232,218
	ELECTRICAL TOTAL		**$5,232,218**	**$5,232,218**
D	**SERVICES TOTAL**			**$15,330,863**
E	***EQUIPMENT AND FURNISHINGS***			

Fuller Middle School

Fuller Middle School
136,790 GSF

DIRECT COST SUMMARY - NEW CONSTRUCTION

DIV.	*ELEMENTS*	*SITEWORK*	*BUILDING*	*TOTAL*
E10	EQUIPMENT			
	Institutional Equipment		$1,448,669	$1,448,669
	EQUIPMENT TOTAL		**$1,448,669**	**$1,448,669**
E20	FURNISHINGS			
	Specialties / Millwork		$1,779,352	$1,779,352
	FURNISHINGS TOTAL		**$1,779,352**	**$1,779,352**
D	**EQUIPMENT AND FURNISHINGS TOTAL**			**$3,228,021**
F	***SPECIAL CONSTRUCTION & DEMOLITION***			
F10	SPECIAL CONSTRUCTION			
	Special construction		$0	$0
	SPECIAL CONSTRUCTION TOTAL		**$0**	**$0**
F20	SELECTIVE DEMOLITION			
	Selectice Demolition		$0	$0
	SELECTIVE DEMOLITION TOTAL		**$0**	**$0**
D	**SPECIAL CONSTRUCTION & DEMOLITION TOTAL**			**$0**
G	***BUILDING SITEWORK***			
G10	G10 SITE PREPARATION			
	G1010 Site Clearing	$508,778		$508,778
	G1020 Site Demolition and Relocation	$98,000		$98,000
	G1030 Site Earthwork	$2,210,205		$2,210,205
	G10 SITE PREPARATION TOTAL	**$2,816,982**		**$2,816,982**
G20	G20 SITE IMPROVEMENTS			
	G2020 Roadways	$1,140,114		$1,140,114
	G2030 Pedestrian Paving	$329,516		$329,516
	G2040 Site Development	$1,317,238		$1,317,238
	G20 SITE IMPROVEMENTS TOTAL	**$2,786,868**		**$2,786,868**
G30	G30 SITE CIVIL/MECHANICAL UTILITIES			

Fuller Middle School

Fuller Middle School
136,790 GSF

DIRECT COST SUMMARY - NEW CONSTRUCTION

DIV.	*ELEMENTS*	*SITEWORK*	*BUILDING*	*TOTAL*
	G3010 Water Supply	$480,840		$480,840
	G3030 Storm Sewer	$220,000		$220,000
	G3040 Heating Distribution	$15,000		$15,000
	G30 SITE CIVIL/MECHANICAL UTILITIES TOTAL	**$715,840**		**$715,840**
G40	G40 SITE ELECTRICAL UTILITIES			
	G4010 Site Electrical Utilities	$400,000		$400,000
	G40 SITE ELECTRICAL UTILITIES TOTAL	**$400,000**		**$400,000**
G	**BUILDING SITEWORK TOTAL**			**$6,719,690**
	CONSTRUCTION TRADE TOTAL	**$6,719,690**	**$47,232,741**	**$53,952,431**

Fuller Middle School

Framingham, MA
136,790 GSF

DETAILED ESTIMATE - NEW CONSTRUCTION

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
10	**A10 FOUNDATIONS**				
11					
12	**A1010 FOUNDATIONS**				
13	*Earthwork*				
14	Slab-on-Grade platform preparation in Sitework Tab	**64,548**	SF		
15	Continuous footing w/foundation wall	**2,004**	LF		
16	Excavation	**4,781.33**	CY	$12.00	See below
17	Backfill from import	**4,132**	CY	$22.00	See below
18	Spread footings	**140**	EA		
19	Excavation	**400**	CY	$12.00	See below
20	Backfill from import		CY	$22.00	See below
21	Elevator pits - 8'-0"W x 8'-0"L x 5'-0"D	**1**	EA		
22	Excavation	**26**	CY	$12.00	See below
23	Backfill from import	**1**	CY	$22.00	See below
24	Disposal				
25	Cast to off-site waste	**1,074**	CY	$22.00	See below
26	Grade & compact	**64,548**	SF	$1.00	See below
27	24" base course sand & gravel below slab on grade	**2,391**	CY	$35.00	See below
28					
29	Building overexcavation:				
30	Over-excavation to remove topsoil	**11,953**	CY	$8.00	$95,627
31	Over-excavation	**11,356**	CY	$7.50	$85,170
32	Dispose materials	**5,977**	CY	$18.00	$107,580
33	Structural fill	**5,110**	CY	$22.00	$112,428
34	Ground improvement (rammed aggregate piers) over entire building site at 10'x10' grid and 10' at perimeter	**4,552**	LF	$175.00	$796,603
35					
36	Building Area:				
37	Cut and fill for building	**2,391**	CY	$8.00	$19,125
38	2" Gravel base to building	**4,781**	CY	$35.00	$167,335
39					
40	*Concrete*				
41	*Continuous footings; 3' x 1' 0" typ.*	***2,004***	*LF*		
42	Concrete; material	**234**	CY	$130.00	$30,420
43	Concrete; place (combination of pumping/trucking)	**234**	CY	$85.00	$19,890
44	Reinforcement w/ftn wall dowels (10#/lf)	**20,038**	LB	$1.10	$22,041
45	Formwork	**8,015**	SF	$9.00	$72,135
46	*Spread footings; 10'x10'x2'*	***140***	*EA*		
47	Concrete; material	**1,085**	CY	$130.00	$141,050
48	Concrete; place	**1,085**	CY	$85.00	$92,225
49	Reinforcement (100#/cy)	**108,500**	LB	$1.10	$119,350
50	Formwork	**11,719**	SF	$8.00	$93,752
51	*Foundation walls; 16" thick x 4' 0" high typ.*	***8,015***	*SF*		

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
52	Concrete; material	**415**	CY	$130.00	$53,950
53	Concrete; place	**415**	CY	$85.00	$35,275
54	Reinforcement (150#/cy)	**62,250**	LB	$1.00	$62,250
55	Formwork	**16,832**	SF	$8.00	$134,656
56	Brick shelf	**2,004**	LF	$5.00	$10,019
57	Elevator pits - 8'-0"W x 8'-0"L x 5'-0"D	**1**	EA	$5,000.00	$5,000
58	Anchor bolts	**558**	SET	$35.00	$19,532
59					
60	*Retaining Wall:*				
61	Footing	*123*	*lf*		
62	Concrete; material	**14**	CY	$130.00	$1,820
63	Concrete; place	**14**	CY	$85.00	$1,190
64	Reinforing	**910**	LBS	$1.10	$1,001
65	Formwork	**258**	SF	$9.00	$2,322
66	Wall	*1,968*	*sf*		
67	Concrete	**120**	CY	$130.00	$15,600
68	Placing	**120**	CY	$85.00	$10,200
69	Reinforing	**18,000**	LBS	$1.10	$19,800
70	Formwork	**4,133**	SF	$8.00	$33,064
71	Brick veneer	**2,460**	SF	$34.00	$83,640
72	Cap at retaining wall	**123**	LF	$150.00	$18,450
73	Miscellaneous concrete	**1**	LS	$20,000.00	$20,000
74					
75	*Thermal & Moisture Protection*				
76	2" rigid insulation at foundation walls	**8,015**	SF	$2.50	$20,038
77	Waterproofing elevator pit	**225**	SF	$18.00	$4,050
78	Damp proofing to foundation walls	**8,015**	SF	$4.50	$36,068
79	**A1010 FOUNDATIONS TOTAL**				**$2,562,654**
80					
81	**A1030 SLAB ON GRADE**				
82	*Concrete*				
83	*Slab on grade, 5" thick, WWF, top of slab 314' 0"*	***64,548***	*SF*		
84	Concrete; material	**1,004**	CY	$130.00	$130,530
85	Concrete; place & finish	**64,548**	SF	$2.25	$145,233
86	Reinforcement (6x6 mesh)	**74,230**	SF	$0.75	$55,673
87	Slab depressions	**1,000**	LF	$75.00	$75,000
88	Slab thickening at stair 5'x2'x1' deep	**9**	LOC	$2,500.00	$22,500
89	*Slab on grade at loading dock, 6" thick, #4 bars*	***350***	*SF*		
90	Concrete; material	**6**	CY	$125.00	$810
91	Concrete; place & finish	**350**	SF	$2.50	$875
92	Reinforcement; #4@12"bew	**469**	LBS	$1.10	$516
93	*Miscellaneous*				

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
94	Allow for additional work for auditorium flooring	**1**	LS	$50,000.00	$50,000
95	Housekeeping & mechanical equipment pads	**1**	LS	$10,000.00	$10,000
96	Miscellaneous concrete	**1**	LS	$40,000.00	$40,000
97					
98	*Special Foundation Conditions*				
99	Dewatering during excavation	**1**	LS	$50,000.00	$50,000
100					
101	*Thermal & Moisture Protection*				
102	2" rigid insulation under slab	**64,548**	SF	$2.50	$161,370
103	Vapor retarder under slab	**74,230**	SF	$0.50	$37,115
104	**A1030 SLAB ON GRADE TOTAL**				**$779,622**
105					
106	**A10 FOUNDATIONS TOTAL**				**$3,342,277**
107					
108					
109	**A20 BASEMENT**				
110					
111	No anticipated work				
112					
113	**TOTAL SYSTEM A20 BASEMENT**				**$0**
114					
115					
116	**B10 STRUCTURE**				
117					
118	**B1010 UPPER FLOOR CONSTRUCTION**				
119	*Concrete*				
120	*Slab on deck topping, 3 ¼" light weight, WWF*	*72,242*	*SF*		
121	Concrete; material	**1,003**	CY	$130.00	$130,437
122	Reinforcement (6x6 mesh)	**79,466**	SF	$0.75	$59,600
123	Rebar at corners and openings	**3,973**	LBS	$1.10	$4,371
124	Concrete; place & finish	**72,242**	SF	$2.50	$180,605
125					
126	*Steel Framing; 13#/sf, allowance provided*	*483*	*TNS*		
127	Wide flange beams	**213**	TNS	$3,500.00	$745,500
128	W-shapes >100#/lf	**18**	TNS	$4,100.00	$73,800
129	WT-shapes	**81**	TNS	$4,000.00	$324,000
130	HSS-shapes	**36**	TNS	$4,050.00	$145,800
131	HSS columns	**72**	TNS	$4,050.00	$291,600
132	HSS brace frames	**63**	TNS	$4,200.00	$264,600
133	Plates, bent plates and angles	**140**	EA	$75.00	$10,463
134	Moment connections	**1**	LS	$50,000.00	$50,000
135	Shear studs	**10,320**	EA	$5.00	$51,600

DETAILED ESTIMATE - NEW CONSTRUCTION

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
136	3" deep x 18ga galv composite floor deck	**72,242**	SF	$4.25	$307,029
137					
138	*Thermal & Moisture Protection*				
139	Firestopping	**136,790**	GSF	$0.30	$41,037
140	Fireproofing	**136,790**	SF	$1.90	$259,901
141	**B1010 UPPER FLOOR CONSTRUCTION TOTAL**				**$2,940,342**
142					
143	**B1020 ROOF CONSTRUCTION**				
144	*Structural steel; beams, bridging, and connections, 10#/sf, (Allowance provided)*	**375**	TNS	$3,600.00	$1,350,000
145	3" deep x 18ga galv composite roof deck	**74,914**	SF	$4.25	$318,385
146	Premium for galv acoustic roof deck at Auditorium, Gym	**14,765**	SF	$3.00	$44,295
147	Other misc plates, connections	**74,914**	SF	$1.00	$74,914
148	Rough blocking to roof	**136,790**	SF	$0.50	$68,395
149					
150	*Mechanical roof top equipment*				
151	Roof screen, galv, assume 12' high; HSS shapes	**3**	TNS	$3,750.00	$12,750
152	Galvanized bar grating	**1,000**	SF	$55.00	$55,000
153	Roof soffit/fascia framing; assumed qty	**500**	LF	$150.00	$75,000
154	**B1020 ROOF CONSTRUCTION TOTAL**				**$1,998,739**
155					
156	**TOTAL SYSTEM B10 SUPERSTRUCTURE**				**$4,939,081**
157					
158					
159	**B20 EXTERIOR CLOSURE**				
160					
161	**B2010 EXTERIOR WALLS**	**68,885**	SF		
162					
163	Exterior brick wall; 8x8 iron spot brick	**43,231**	SF	$37.00	$1,599,538
164	3" insulation at brick	**43,231**	SF	$4.00	$172,923
165	Air vapor barrier at brick	**43,231**	SF	$5.50	$237,769
166	1/2" sheathing at brick	**43,231**	SF	$2.00	$86,462
167	6" metal stud @ Auditorium, Gym, Stairs and BOH	**21,644**	SF	$8.00	$173,152
168	6" metal stud at brick	**21,587**	SF	$8.00	$172,694
169	5/8 GWB at brick	**21,587**	SF	$2.25	$48,570
170	Caulking and sealants at brick	**43,231**	SF	$0.65	$28,100
171					
172	Trespa - at projections/window bay	**7,249**	SF	$70.00	$507,430
	Furring	**7,249**	SF	$3.50	$25,372
174	3" insulation at Trespa cladding -	**7,249**	SF	$4.00	$28,996
175	Air vapor barrier at Trespa cladding -	**7,249**	SF	$5.50	$39,870
176	1/2" sheathing at Trespa cladding -	**7,249**	SF	$2.00	$14,498
177	6" metal stud at Trespa cladding -	**7,249**	SF	$8.00	$57,992

DETAILED ESTIMATE - NEW CONSTRUCTION

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
178	5/8 GWB at Trespa cladding -	**7,249**	SF	$8.00	$57,992
179	Caulking and sealants at Trespa cladding - Ext. soffit	**7,249**	SF	$2.25	$16,310
180					
181	Trespa - Exterior soffit at projections/window bay	**1,249**	SF	$70.00	$87,430
	Furring	**1,249**	SF	$3.50	$4,372
183	3" insulation at Trespa cladding - Exterior soffit	**1,249**	SF	$4.00	$4,996
184	Air vapor barrier at Trespa cladding - Exterior soffit	**1,249**	SF	$5.50	$6,870
185	1/2" sheathing at Trespa cladding - Exterior soffit	**1,249**	SF	$2.00	$2,498
186	6" metal stud at Trespa cladding - Exterior soffit	**1,249**	SF	$8.00	$9,992
187	5/8 GWB at Trespa cladding - Exterior soffit	**1,249**	SF	$2.25	$2,810
188	Caulking and sealants at Trespa cladding - Ext. soffit	**1,249**	SF	$0.65	$812
189					
190	*Miscellaneous*				
191	Articulation to exterior	**1**	LS	$200,000.00	$200,000
192	Miscellaneous metals in exterior closure	**44,480**	SF	$2.00	$88,960
193	Through wall sheet mtl flashing sheathing & rigid insul.	**44,480**	SF	$0.35	$15,568
194	Corrugated perforated metal; mechanical RTU screen	**6,715**	SF	$60.00	$402,900
195	Temporary enclosures	**1**	LS	$50,000.00	$50,000
196	Louver panels in penthouse; allow	**500**	SF	$55.00	$27,500
197	**B2010 EXTERIOR WALLS TOTAL**				**$4,172,373**
198					
199	**B2020 EXTERIOR WINDOWS**	**24,405**	SF		
200	Curtain wall	**17,240**	SF	$110.00	$1,896,389
201	Storefront; Exterior	**4,310**	SF	$95.00	$409,464
202	Windows	**2,855**	SF	$90.00	$256,986
203	Aluminum sun shades attached to CW @ south elevation	**1,270**	LF	$150.00	$190,500
204	Blocking for openings	**6,467**	LF	$10.00	$64,670
205					
206	*Mechanical louvers in exterior closure*				
207	Window caulking	**1**	LS	$70,000.00	$70,000
208	Elevator vent	**1**	EA	$1,200.00	$1,200
209	Exterior mockup	**1**	LS	$50,000.00	$50,000
210	Allow for premium cost for security glazing	**1**	LS	$50,000.00	$50,000
211	Miscellaneous louvers	**500**	SF	$70.00	$35,000
212	**B2020 EXTERIOR WINDOWS TOTAL**				**$3,024,209**
213					
214	**B2030 EXTERIOR DOORS**				
215	Exterior; Overhead coiling door, motor operated; allow	**1**	EA	$10,000.00	$10,000
216	Exterior HM doors; complete	**17**	LEAF	$1,800.00	$30,600
217	Aluminum entry doors including hardware	**23**	LEAF	$3,000.00	$69,000
218	**B2030 EXTERIOR DOORS TOTAL**				**$109,600**
219					
220	**TOTAL SYSTEM B20 EXTERIOR CLOSURE**				**$7,306,183**

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
221					
222					
223	***B30 ROOFING***				
224					
225	**B3010 ROOF COVERINGS**				
226					
227	*Roofing*				
228	*TPO membrane roofing system*	***70,918***	*SF*		
229	Main roof	**38,547**	SF	$12.00	$462,564
230	Gym & Auditorium	**14,765**	SF	$12.00	$177,180
231	Low roof	**9,330**	SF	$12.00	$111,960
232	Low roof/Canopy	**770**	SF	$12.00	$9,240
233	Vertical roof membrane, 42'-48'h	**7,506**	SF	$13.00	$97,578
234	1/2" cover board	**70,918**	SF	$1.25	$88,648
235	6" insulation	**70,918**	SF	$2.50	$177,295
236	Vapor retarder	**70,918**	SF	$0.50	$35,459
237	1/2" substrate board	**70,918**	SF	$1.25	$88,648
238	Polycarbonate entrance canopy	**690**	SF	$150.00	$103,500
239					
240	*Roofing Accessories*				
241	Miscellaneous roof accessories	**1**	LS	$75,000.00	$75,000
242	Paver walkway	**1,546**	SF	$15.00	$23,190
243					
244	*Roof openings*				
245	Glazed angled clerestory; Gym & Auditorium	**1,855**	SF	$90.00	$166,950
246	3' & 6' Ø double dome acrylic bubble skylight; Auditorium	**1**	LS	$50,000.00	$50,000
247	Glazed aluminum-framed skylight (reduced by 20%)	**3,996**	SF	$150.00	$599,400
248	**B3010 ROOF COVERINGS TOTAL**				**$2,266,611**
249					
250	**TOTAL SYSTEM B30 ROOFING**				**$2,266,611**
251					
252					
253	**C10 INTERIOR CONSTRUCTION**				
254					
255	**C1010 PARTITIONS**				
256					
257	*Gypsum board partitions*				
258	Partitions at auditorium, gym, locker rooms, elevator shaft	**22,394**	SF	$18.50	$414,289
259	Drywall partitions	**81,305**	SF	$12.50	$1,016,313
260	Chasewalls	**5,676**	SF	$10.00	$56,760
261	Rough carpentry internal partitions and ceilings	**136,790**	GSF	$1.50	$205,185
262	Misc metals for interior construction	**136,790**	SF	$2.50	$341,975

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
263					
264	*Operable partition*				
265	Operable paritions between classroom pair, magnetic writable surface both sides	**3,360**	SF	$100.00	$336,000
266					
267	*Interior windows*				
268	Interior window	**2,110**	SF	$60.00	$126,600
269					
270	*Interior storefront*				
271	Interior storefront; Breakrooms, circular & square shape	**4,860**	SF	$85.00	$413,100
272					
273	*Interior penetration firestopping*				
274	Interior caulking	**136,790**	GSF	$0.50	$68,395
275	Top-of-partition firestopping	**136,790**	GSF	$0.15	$20,519
276	**C1010 PARTITIONS TOTAL**				**$2,999,135**
277					
278	**C1020 INTERIOR DOORS, FRAMES & HARDWARE**				
279	*Hollow Metal Doors and Frames:*				
280	HM frames	**250**	EA	$250.00	$62,500
281	HM frames for pair doors	**80**	EA	$275.00	$22,000
282	Wood doors	**410**	EA	$300.00	$123,000
283	Premium cost for acoustical doors	**1**	LS	$15,000.00	$15,000
284					
285	*Coiling security screen*				
286	Cafeteria	**1,372**	SF	$55.00	$75,460
287	Kitchen	**336**	SF	$55.00	$18,480
288	Admin area	**114**	SF	$55.00	$6,270
289					
290	*Aluminum-Framed Entrances and Storefronts:*				
291	Interior glazed aluminum doors	**6**	EA	$2,500.00	$15,000
292	Pairs of doors	**8**	PR	$5,000.00	$40,000
293					
294	*Access Doors and Frames*				
295	Access doors	**100**	EA	$250.00	$25,000
296					
297	Door sidelights	**900**	SF	$55.00	$49,500
298	Glazing to doors	**1**	AL	$3,000.00	$3,000
299					
300	Hardware	**410**	SET	$550.00	$225,500
301	Powered door openers	**4**	LOC	$3,000.00	$12,000
302	Paint door frames	**330**	EA	$85.00	$28,050
303	Paint door	**410**	EA	$65.00	$26,650

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
304	Blocking at doors	**5,610**	LF	$2.50	$14,025
305	Door Installation	**410**	EA	$150.00	$61,500
306	**C1020 INTERIOR DOORS, FRAMES & HARDWARE TOTAL**				**$822,935**
307					
308	**C1030 FITTINGS**				
309	*Misc. Metals*				
310	Misc. metals	**136,790**	SF	$1.00	$136,790
311	Furnishings; miscellaneous metals	**136,790**	GSF	$0.50	$68,395
312					
313	Furnishings; miscellaneous wood blocking	**136,790**	GSF	$0.25	$34,198
314					
315	Tackboards	**2,688**	SF	$12.00	$32,256
316	Markerboards	**5,376**	SF	$18.00	$96,768
317	Tackable wall; allow	**3,000**	SF	$10.50	$31,500
318					
319	*Interior guardrails*				
320	Handrailing	**150**	LF	$250.00	$37,500
321	Glass guardrail in Common areas	**365**	LF	$550.00	$200,750
322	Railings in auditorium	**1**	LS	$50,000.00	$50,000
323	Vertical duct enclosure	**4,200**	LF	$90.00	$378,000
324					
325	*Signage*				
326	Commerative plaque	**2**	LOC	$1,500.00	$3,000
327	Dimensional characters; School name	**1**	AL	$5,000.00	$5,000
328	Plastic panel signs for room idenfication, way finding, hazard identification	**1**	AL	$7,500.00	$7,500
329	Framed paper signs	**1**	AL	$2,500.00	$2,500
330	Miscellaneous signage	**136,790**	GSF	$0.30	$41,037
331					
332	*Wall & corner guards*				
333	Stainless steel corner guards	**1**	LS	$10,000.00	$10,000
334					
335	*Toilet compartments (plastic laminate)*				
336	Toilet compartments	**20**	EA	$1,200.00	$24,000
337	Toilet compartments - ADA	**14**	EA	$1,400.00	$19,600
338	*Urinal screen*	**20**	EA	$850.00	$17,000
339					
340	*Lockers*				
341	Student lockers 15"x12"x36" w/angled top, phenolic w/plam finish and wd veneer sides and back	**630**	EA	$300.00	$189,000
342	angled glass display cabinets above lockers	**365**	LF	$275.00	$100,375
343	athletic / pe lockers: metal 2-tier 30”h. x 15”w x 15”d	**50**	EA	$250.00	$12,500

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
344	Kitchen staff lockers, single tier, 12" x 12" x 6' high	**6**	EA	$250.00	$1,500
345					
346	*Toilet accessories*				
347	Combination PTD/WR unit	**8**	EA	$150.00	$1,200
348	Towel dispenser/waste receptacle	**45**	EA	$100.00	$4,500
349	Soap dispensers	**45**	EA	$35.00	$1,575
350	Toilet paper dispensers	**48**	EA	$65.00	$3,120
351	Sanitary napkin disposal units	**21**	EA	$250.00	$5,250
352	Robe hook	**15**	EA	$25.00	$375
353	Fold-down shower seat	**1**	EA	$200.00	$200
354	Grab bars	**28**	PR	$160.00	$4,480
355	Mirrors - in private bathrooms	**14**	EA	$150.00	$2,100
356	Mop holder w/shelf (Janitors)	**6**	EA	$200.00	$1,200
357					
358	*Fire extinguisher cabinets*				
359	Fully recessed/non-rated	**14**	EA	$450.00	$6,156
360	Semi-recessed/non-rated	**6**	EA	$300.00	$1,800
361					
362	*Other fittings*				
363	Curtain track, carriers and curtains	**2**	EA	$200.00	$400
364	Chainlink fence & gate; custodial area; allow	**250**	SF	$40.00	$10,000
365	Miscellaneous specialties and furnishings	**136,790**	GSF	$2.50	$341,975
366	**C1030 FITTINGS TOTAL**				**$1,883,499**
367					
368	**TOTAL SYSTEM C10 INTERIOR CONSTRUCTION**				**$5,705,569**
369					
370					
371	**C20 STAIRCASES**				
372					
373	**C2010 STAIRCASES**				
374	*Interior stairs*				
375	Egress stairs	**5**	FLT	$20,000.00	$100,000
376	Monumental/open stairs	**4**	FLT	$65,000.00	$260,000
377					
378	*Stair finishes*				
379	Railings	**1**	LS	$75,000.00	$75,000
380	VCT treads & risers with rubber nosing	**690**	LFR	$15.50	$10,695
381	VCT tile at landings	**1,124**	SF	$8.00	$8,990
382	Monumental/open stairs; assume porcelain tile	**4**	FLT	$10,000.00	$40,000
383	**C2010 STAIRCASES TOTAL**				**$494,685**
384					
385	**TOTAL C20 STAIRCASES**				**$494,685**

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
386					
387					
388	**C30 INTERIOR FINISHES**				
389					
390	**C3010 WALL FINISHES**				
391	P.lam panel wall cover 8' high at Corridors & Public areas	**7,500**	SF	$20.00	$150,000
392	*Auditorium walls:*				
393	50% acoustic wood wall system	**4,564**	SF	$25.00	$114,100
394	50% ground faced block; premium	**4,564**	SF	$5.00	$22,820
395	FRP; fiber reinforced panels in Kitchen, Custodian	**1,896**	SF	$15.00	$28,440
396	Interior aluminum glazing	**8,508**	SF	$80.00	$680,640
397	Ceramic tile walls 9' high at Toilets	**13,068**	SF	$18.00	$235,224
398	Wall base; 12" VCT	**12,630**	LF	$5.00	$63,150
399	Metal trim detail	**12,630**	LF	$5.00	$63,150
400	Vented rubber wall base	**364**	LF	$3.00	$1,092
401	Metal trim detail	**364**	LF	$5.00	$1,820
402	Exposed column covers; allowance	**1**	LS	$15,000.00	$15,000
403	*Academic areas:*				
404	Magnetic writable surface wall covering at walls; 6' h	**5,040**	SF	$17.00	$85,680
405	over curved gwb partition at curved wall	**3,780**	SF	$19.50	$73,710
406	Fabric wrapped acoustic wall panels @ Music areas	**882**	SF	$15.00	$13,230
407	Fixed sound absorbing wood fiber/fabric in Gym	**1,456**	SF	$15.00	$21,840
408	Wall pads with cutout for MEH units; allow	**1**	AL	$1,500.00	$1,500
409	Cafeteria fixed sound absorbing panel, wood fiber; allow	**2,000**	SF	$15.00	$30,000
410	Paint drywall partitions	**241,586**	SF	$0.75	$181,189
411	Paint	**136,790**	GSF	$1.00	$136,790
412	**C3010 WALL FINISHES TOTAL**				**$1,919,375**
413					
414	**C3020 FLOOR FINISHES**	*129,951*	*SF*		
415	*Tile:*				
416	Porcelain tile flooring at Toilets	**4,587**	SF	$18.00	$82,566
417	Quarry tile at Kitchen	**1,917**	SF	$16.00	$30,672
418					
419	*Flooring*				
420	Self-leveling, gypsum cement; 2"maxxon topping slab-acoustic at floors 2 & 3, below VCT flooring	**107,240**	SF	$3.75	$402,150
421	VCT flooring; Corridors, Academic area, Admin area	**107,240**	SF	$5.50	$589,820
422	Wood athletic flooring at Gym	**8,230**	SF	$25.00	$205,750
423	Wood flooring at Stage	**1,167**	SF	$25.00	$29,175
424	*Auditorium:*				
425	slab on grade power troweled concrete at seats	**2,240**	SF	$9.00	$20,160
426	carpet at aisles	**1,750**	SF	$5.00	$8,750

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
427	*Painting*				
428	Sealed concrete at back of house	**2,370**	SF	$1.75	$4,148
429	*Entrance mats*				
430	Mat	**450**	SF	$35.00	$15,750
431	**C3020 FLOOR FINISHES TOTAL**				**$1,388,941**
432					
433	**C3030 CEILING FINISHES**	*131,868*	*SF*		
434	ACT ceilings at Corridors, Public, Admin areas, Teacher Pl	**63,829**	SF	$5.00	$319,145
435	ACT ceiling in BOH areas, locker rooms	**3,190**	SF	$5.00	$15,950
436	ACT ceiling, washable in kitchen	**1,917**	SF	$5.50	$10,544
437	*Academic areas: classrooms, science, media, art, music, etc*				
438	Exposed deck, painted 2/3 of room	**27,056**	SF	$1.25	$33,820
439	ACT ceiling 1/3 of ceiling area	**12,568**	SF	$5.00	$62,842
440	GWB soffit, light cove	**1,320**	LF	$35.00	$46,200
441	Ceilings in classrooms	**672**	LF	$250.00	$168,000
442	3D-metal panel ceiling at band/chorus	**1,806**	SF	$45.00	$81,270
443	Auditorium ceiling; painted exposed metal deck	**6,432**	SF	$1.50	$9,648
444	50% suspended wood panel ceiling	**3,216**	SF	$40.00	$128,640
445	Gym ceiling; suspended lay in pre painted tegular edge tectum plank	**2,058**	SF	$10.00	$20,575
446	Atrium ceiling ($15 allowance)	**21,479**	SF	$15.00	$322,185
447	exposed deck, painted	**8,230**	SF	$1.50	$12,345
448	GWB - MR ceiling at Toilets	**6,840**	SF	$10.50	$71,815
449	Paint GWB ceilings w/high performance coating at Toilets	**8,160**	SF	$1.00	$8,160
450	**C3030 CEILING FINISHES TOTAL**				**$1,311,137**
451					
452	**TOTAL SYSTEM C30 INTERIOR FINISHES**				**$4,619,453**
453					
454					
455	**D10 CONVEYING SYSTEMS**				
456					
457	**D1010 CONVEYING SYSTEMS**				
458	Elevators; 4 stops	**1**	EA	$235,000.00	$235,000
459	Elevator pit ladder	**1**	EA	$1,500.00	$1,500
460	Sill angles	**4**	EA	$175.00	$700
461	Hoist beam	**1**	EA	$5,000.00	$5,000
462	**D1010 CONVEYING SYSTEMS TOTAL**				**$242,200**
463					
464	**TOTAL SYSTEM D10 CONVEYING SYSTEMS**				**$242,200**
465					
466					
467	**D15 MECHANICAL**				

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
468					
469	**D20 PLUMBING**				
470	Plumbing	**136,790**	GSF	$15.00	$2,051,850
471	**D20 PLUMBING TOTAL**				**$2,051,850**
472					
473	**D30 HVAC**				
474	HVAC	**136,790**	GSF	$50.00	$6,839,500
475	Pre-fab rooftop mechanical room	**821**	GSF	$250.00	$205,250
589	roof	**746**	SF		incl.
588	exterior wall panels	**1,344**	SF		incl.
590	metal stud framing, backup to exterior wall, insul.	**1,344**	SF		incl.
479	Allowance for lifting structure up to roof	**1**	AL	$7,500.00	$7,500
480	**D30 HVAC TOTAL**				**$7,052,250**
481					
482	**D40 FIRE PROTECTION**				
483	Sprinkler Coverage	**136,790**	SF	$5.50	$752,345
484	**D40 FIRE PROTECTION TOTAL**				**$752,345**
485					
486	**TOTAL SYSTEM D15 MECHANICAL**				**$9,856,445**
487					
488					
489	**D50 ELECTRICAL**				
490					
491	**D5011 SERVICE & DISTRIBUTION**				
492	Interior Electrical	**136,790**	GSF	$37.00	$5,061,230
493	Mass notification	**136,790**	GSF	$1.25	$170,988
494	**D5011 SERVICE & DISTRIBUTION TOTAL**				**$5,232,218**
495					
496	**TOTAL SYSTEM D50 ELECTRICAL**				**$5,232,218**
497					
498					
499	**E10 EQUIPMENT**				
500					
501	**E1020 INSTITUTIONAL EQUIPMENT**				
502	*Projection Screens*				
540	Motorized projection screen; Gym, Cafeteria; allow	**2**	EA	$17,500.00	$35,000
504	Projection screen - Admin/Conference	**1**	EA	$3,500.00	$3,500
540	*Residential Appliances*				
540	Refrigerator/Freezer, microwave oven	**5**	RMS	$1,700.00	$8,500
540	Dishwasher	**1**	EA	$1,200.00	$1,200
540	Undercounter refrigerator @ Nurse	**1**	EA	$650.00	$650
509	*Food service equipment*				

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
510	Dining & Food Service (Budget provided)	**1**	AL	$398,115.00	$398,115
511	*Auditorium/Theatre Equipment*				
512	AV	**1**	AL	$185,000.00	$185,000
513	Lighting and dimming	**1**	AL	$195,000.00	$195,000
514	Rigging	**1**	AL	$180,000.00	$180,000
515	Floor mounted fold up auditorium seating	**420**	EA	$275.00	$115,500
516	*Science Room Equipment*				
517	Science Room Equipment	**1**	AL	$100,000.00	$100,000
518	*Gymnasium equipment*				
519	Electronic scoreboard	**1**	EA	$7,500.00	$7,500
520	Shot clock/shot timer	**1**	EA	$1,250.00	$1,250
521	Pull up bar	**1**	EA	$850.00	$850
522	Stall bar	**1**	EA	$850.00	$850
523	Vertical ladder	**1**	EA	$550.00	$550
524	Rope hoist	**1**	EA	$500.00	$500
525	Overhead mounted folding backstops w/glass backboards	**6**	EA	$6,500.00	$39,000
526	Gym motorized divider curtains	**1**	EA	$40,000.00	$40,000
552	Sleeves & floor plates for badminton & volleyball uprights; all(	**2**	SETS	$6,000.00	$12,000
528	Gym equipment controls-power touch	**1**	LS	$5,000.00	$5,000
529	Gym wall safety pads to be 8'-8" high	**1,385**	SF	$20.00	$27,704
530	Telescoping bleachers, motorized	**760**	SEAT	$100.00	$76,000
531	Loading dock equipment	**1**	LS	$15,000.00	$15,000
532	**E1020 INSTITUTIONAL EQUIPMENT TOTAL**				**$1,448,669**
533					
534	**TOTAL SYSTEM E10 FITTINGS & EQUIPMENT**				**$1,448,669**
535					
536					
537	**E20 FURNISHINGS**				
538					
539	**E2020 SPECIALTIES / MILLWORK**				
540	*Academic areas: classrooms, science, media, art, music, vocationa*	***44***	*RMS*		
541	plam upper w/ss counter	**945**	LF	$400.00	$378,000
542	mobile storage-36"wx27"h (4) per classroom	**176**	EA	$600.00	$105,600
543	shelving at exterior wall-(4) adjustable shelves	**945**	LF	$200.00	$189,000
544	folding screen – 6' x 8' x 2"	**42**	EA	$1,000.00	$42,000
545	*Science classrooms, Science Prep room*	***6***	*RMS*		
546	plam upper and base cabinets w/solid epoxy counter	**240**	LF	$665.00	$159,600
547	mobile storage- 36"wx27"h (6) per classroom	**36**	EA	$600.00	$21,600
548	*Teacher Planning [tp] rooms :*	***21***	*RMS*		
549	plam counters	**220**	LF	$240.00	$52,800
550	shelving-full width-(5) adjustable shelves	**220**	LF	$250.00	$55,000
551	*Corridors and Public areas:*				

DETAILED ESTIMATE - NEW CONSTRUCTION

	DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL
552	wood cantelevered benches at classroom glazed partitions	**42**	EA	$350.00	$14,700
553	Bench	**1**	AL	$200,000.00	$200,000
554	*Administration areas, Offices, Medical:*				
555	plam custom base & upper cabinets w/plam counter	**20**	LF	$630.00	$12,600
556	tackable surface backsplash; (5) adj shelves at offices	**120**	LF	$250.00	$30,000
557	Auditorium millwork; allowance	**1**	AL	$125,000.00	$125,000
558	*Toilet rooms:*				
559	solid surface counters w/concealed steel brackets	**250**	LF	$240.00	$60,000
560	*Other areas:*				
561	Adjustable Mail slots	**1**	LS	$3,500.00	$3,500
562	Window stools - Solid surfacing material	**1,199**	LF	$35.00	$41,959
563					
564	Window treatment, manually operated roller shades	**13,630**	GSF	$5.00	$68,152
565	motorized roller shades @ exterior CW and SF	**10,775**	GSF	$12.00	$129,300
566	roller shade at interior doors w/lites & glazed partitions	**5,760**	GSF	$4.00	$23,040
567					
568	Interior specialty shade	**45**	EA	$1,500.00	$67,500
569					
570	**E2020 SPECIALTIES / MILLWORK TOTAL**				**$1,779,352**
571					
572	**TOTAL SYSTEM E20 FURNISHINGS**				**$1,779,352**
573					
574					
575	**F10 SPECIAL CONSTRUCTION**				
576					
577	**F1010 SPECIAL CONSTRUCTION**				
578	No work in this section				
579	**F1010 SPECIAL CONSTRUCTION TOTAL**				**$0**
580					
581	**TOTAL SYSTEM F10 SPECIAL CONSTRUCTION**				**$0**
582					
583					
584	**F20 SELECTIVE DEMOLITION**				
585					
586	**F2020 SELECTIVE DEMOLITION**				
587	Demolition of existing building allowance	**195,400**	SF		Main Summary
588	Haz mat removal allowance				Main Summary
589	**F2020 SELECTIVE DEMOLITION TOTAL**				**$0**
590					
591	**TOTAL SYSTEM F20 DEMOLITION**				**$0**
592					
593				**TOTAL BUILDING SUMMARY**	**$47,232,741**

DETAILED ESTIMATE - NEW CONSTRUCTION

DESCRIPTION	QUANTITY	UNIT	RATE/UNIT	TOTAL

594

Fuller Middle School

Framingham, MA
136,790 GSF

SITEWORK: NEW CONSTRUCTION

	DESCRIPTION	*QUANTITY*	*UNIT*	*UNIT COST*	*TOTAL*
10	**G10 SITE PREPARATION**				
11					
12	**G1010 Site Clearing**				
13	31 10 00 Site Clearing				
14	Site clearing	**298,137**	SF	$0.50	$149,069
15	Safety barricade	**1**	AL	$10,000.00	$10,000
16	Construction fence, install, maintain, remove & reinstall;	**8,277**	LF	$12.00	$99,324
17	for all phases				
18	Double construction gate	**2**	PR	$2,500.00	$5,000
19	Temporary construction entrance	**2**	LOC	$7,000.00	$14,000
20	Add premium for moving and reinstalling for 3 phases	**1**	LS	$37,385.00	$37,385
21	Temp signs	**1**	LS	$3,000.00	$3,000
22	Wash down/re-fueling/parking allowance	**3,000**	SF	$2.00	$6,000
23	31 23 19 Dewatering and Drainage				
24	Dewatering for sitework excavation; allow	**1**	LS	$50,000.00	$50,000
25	31 25 00 Erosion and Sedimentation Controls				
26	Temporary seed cover	**1**	AL	$10,000.00	$10,000
27	Install and maintain perimeter erosion control	**7,500**	LF	$14.00	$105,000
28	Haybale at stockpile topsoil for reuse; allow	**2,500**	LF	$8.00	$20,000
29					
30	**G1020 Site Demolition and Relocation**				
31	02 41 00 Demolition				
32	Saw cut existing pavement	**300**	LF	$10.00	$3,000
33	Miscellaneous demolition	**1**	AL	$95,000.00	$95,000
34					
35	*G1020.01 Building Demolition*				
36	*02 30 00 Building Demolition*				
37	Building demoltion				See Main Summary
38					
39	**G1030 Site Earthwork**				
40	Strip and stockpile existing topsoil	**10,516**	CY	$7.50	$78,870
41	Rock excavation				NIC
42	Rough and fine grading	**24,377**	SY	$1.50	$36,566
43	Cut and fill for building	**2,391**	CY	$8.00	$19,128
44	Gravel base to building	**2,391**	CY	$8.00	$19,125
45	Cut	**17,537**	CY	$8.00	$140,296
46	Fill using existing	**15,783**	CY	$6.00	$94,700
47	Imported fill	**27,658**	CY	$22.00	$608,477
48	Spread loam	**32,000**	CY	$11.00	$352,000
49	Cut and fill at roadway/parking lot	**13,682**	CY	$8.00	$109,456
50	Cut and fill at sidewalks	**1,589**	CY	$8.00	$12,712
51	Ground improvement at bus loop	**16,500**	SF	$12.00	$198,000
52	Temporary parking	**1**	AL	$490,875.00	$490,875

Fuller Middle School

Framingham, MA
136,790 GSF

SITEWORK: NEW CONSTRUCTION

	DESCRIPTION	*QUANTITY*	*UNIT*	*UNIT COST*	*TOTAL*
53	Allow for miscellaneous repairs during construction	**1**	LS	$50,000.00	$50,000
55	**G10 SITE PREPARATION TOTAL**				**$2,816,982**
56					
57					
58	**G20 SITE IMPROVEMENTS**				
59					
60	**G2020 Roadways**				
61	*32 12 00 Flexible Paving*				
62	Vehicular asphalt pavement	**176,490**	SF	$3.00	$529,470
63	Asphalt walkway paving	**8,215**	SF	$2.25	$18,484
64	Gravel base to roadway & parking lot	**6,689**	CY	$35.00	$234,115
65	32 16 00 Curbs and Gutters				
66	Granite curb	**7,969**	LF	$42.00	$334,698
67	Bit. Berm Curb	**2,398**	LF	$5.00	$11,990
68	32 17 00 Paving Specialties				
69	Crosswalk	**2,109**	SF	$2.50	$5,273
70	Parking stall painting	**289**	EA	$15.00	$4,335
71	Parking stall painting; HC	**10**	EA	$75.00	$750
72	Misc. marking other than above	**1**	LS	$1,000.00	$1,000
73					
74	**G2030 Pedestrian Paving**				
75	32 13 10 Rigid Paving				
76	Concrete paving	**34,687**	SF	$8.00	$277,496
77	Gravel base to concrete pavement	**642**	CY	$35.00	$22,470
78	Concrete steps	**69**	LFR	$150.00	$10,350
79	Curb cut	**16**	EA	$450.00	$7,200
80	Concrete pad	**1**	AL	$12,000.00	$12,000
81					
82	**G2040 Site Development**				
83	*G2040.01 Fences and Gates*				
84	32 31 00 Fences and Gates				
85	Vehical guardrail	**271**	LF	$250.00	$67,750
86					
87	*G2040.02 Site and Street Furnishes*				
88	32 18 00 Athletic and Recreational Surfacing				
89	Multipurpose field #1	**81,000**	SF		
90	Rough/fine grading	**81,000**	SF	$1.00	NIC
91	Cut and fill	**3,510**	CY	$10.00	NIC
92	8" Stone base	**2,200**	CY	$28.00	NIC
93	Sand base	**550**	CY	$38.00	NIC
94	Underdrain	**81,000**	SF	$1.50	NIC
95	Sports seed mix	**81,000**	SF	$0.60	$48,600

Fuller Middle School

Framingham, MA
136,790 GSF

SITEWORK: NEW CONSTRUCTION

	DESCRIPTION	*QUANTITY*	*UNIT*	*UNIT COST*	*TOTAL*
96	Remove and install new irrigation System	**81,000**	SF	$3.00	$243,000
97	Multipurpose field #2	**81,000**	SF		
98	Rough/fine grading	**81,000**	SF	$1.00	NIC
99	Cut and fill	**3,510**	CY	$10.00	NIC
100	8" Stone base	**2,200**	CY	$28.00	NIC
101	Sand base	**550**	CY	$38.00	NIC
102	Underdrain	**81,000**	SF	$1.50	NIC
103	Sports seed mix	**81,000**	SF	$0.60	$48,600
104					
105	Baseball field				Existing to Remain
106	Rough/fine grading				
107	Cut and fill				
108	8" Stone base				
109	Sand base				
110	Underdrain				
111	Infield surfacing				
112	Sod				
113	Irrigation				
114	Base plate				
115	Closed dugout				
116	Play field equipment				
117					
118	Bike rack	**2**	EA	$3,500.00	$7,000
119	Color Galvanized Handrails	**379**	LF	$250.00	$94,750
120	Aluminum players bench on concrete slab	**8**	EA	$1,200.00	$9,600
121	Flagpole	**2**	EA	$7,500.00	$15,000
122	Signage	**1**	EA	$15,000.00	$15,000
123	Outdoor fitness equipment				NIC
124	Traffic signs	**1**	AL	$30,000.00	$30,000
125	Miscellaneous site improvements	**1**	LS	$100,000.00	$100,000
126					
127	**G2050.02 Lawns and Grasses**				
128	32 92 00 Turfs and Grasses				
129	Respread top soil	**6,496**	CY	$8.00	$51,968
130	Topsoil for planting beds, shrubs and perennials	**252**	CY	$25.00	$6,300
131	Mulch	**1**	LS	$35,000.00	$35,000
132	Hydroseed	**357,629**	SF	$0.50	$178,815
133	Sod	**29,477**	SF	$1.50	$44,216
134					
135	**G2050.03 Trees, Plants and Ground Covers**				
136	32 93 00 Plants				
137	Trees	**159**	EA	$750.00	$119,250
138	Shrubs	**5,913**	SF	$30.00	$177,390

Fuller Middle School

Framingham, MA
136,790 GSF

SITEWORK: NEW CONSTRUCTION

	DESCRIPTION	*QUANTITY*	*UNIT*	*UNIT COST*	*TOTAL*
139	Allow for ground cover	**1**	LS	$25,000.00	$25,000
140					
141	**G20 SITE IMPROVEMENTS TOTAL**				**$2,786,868**
142					
143					
144	**G30 SITE CIVIL/MECHANICAL UTILITIES**				
145					
146	**G3010 Water Supply**				
147	33 10 00 Water Distribution				
148	Domestic water line	**1,889**	LF	$60.00	$113,340
149	Fire protection line	**1,600**	LF	$70.00	$112,000
150	Hydrant	**2**	EA	$4,500.00	$9,000
151					
152	33 31 00 Sanitary Sewerage				
153	33 31 00 Sanitary Sewerage				
154	All incl. trench and backfill				
155	Sewer line	**420**	LF	$75.00	$31,500
156	Sanitary sewage	**1**	LS	$200,000.00	$200,000
157	Grease trap	**1**	EA	$15,000.00	$15,000
158					
159	**G3030 Storm Sewer**				
160	33 41 00 Storm Utility Drainage				
161	All incl. trench and backfill				
162	Storm drainage	**1**	LS	$100,000.00	$100,000
163	Gravel and sod buffer for pretreatment	**1**	LS	$2,500.00	$2,500
164	Stormceptors	**1**	LS	$25,000.00	$25,000
165	Rain garden	**1**	AL	$75,000.00	$75,000
166	Catch basines	**5**	EA	$3,500.00	$17,500
167					
168	**G3040 Heating Distribution**				
169	33 50 00 Gas Service				
170	Connection to existing gas main				By Other
171	Gas line piping, incl's valves (2)				By Other
172	Allowance for gas	**1**	LS	$15,000.00	$15,000
173					
174	**G30 SITE CIVIL/MECHANICAL UTILITIES TOTAL**				**$715,840**
175					
176					
177	**G40 SITE ELECTRICAL UTILITIES**				
178					
179	**G4010 Site Electrical Utilities**				
180	33 70 00 Electrical Utilities				
181	Site electrical system	**1**	LS	$350,000.00	$350,000

Fuller Middle School

Framingham, MA

136,790 GSF

SITEWORK: NEW CONSTRUCTION

	DESCRIPTION	*QUANTITY*	*UNIT*	*UNIT COST*	*TOTAL*
182	Site demolition and make safe	**1**	LS	$50,000.00	$50,000
183					
184	**G40 SITE ELECTRICAL UTILITIES TOTAL**				**$400,000**
185					
186				**TOTAL SITEWORK SUMMARY**	**$6,719,690**
187					

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"Construction Cost Consultants"

Schematic Cost Estimate
Fuller Middle School
Framingham, MA

24-Aug-18

NEW BUILDING				$47,650,660
SITEWORK				$6,353,374
BUILDING DEMOLITION	196,000	GSF	$8.00	$1,568,000
ASBESTOS REMOVAL (cdw 11/7/17)				$892,616
VAT REMOVAL (cdw 11/7/17)				$388,800
OTHER HAZARDOUS MATERIAL (cdw 11/7/17)				$223,940
TOTAL DIRECT COST (estimated to the mid-point of construction)				$57,077,390
Chapter 149 a:				
DESIGN CONTINGENCY		10%		$5,707,739
CM CONTINGENCY		3%		$1,883,554
ESCALATION (ebp 7/19, bid 12/19)		5%		$3,233,434
GENERAL CONDITIONS	30	MOS	$150,000	$4,500,000
GENERAL REQUIREMENTS		2.5%		$1,810,053
TRAFFIC MITIGATION				$200,000
BUILDING PERMIT		waived		
P&P BOND		0.85%		$632,503
GENERAL LIABILITY INSURANCE		1.35%		$1,013,103
FEE		2.5%		$1,901,444
TOTAL CONSTRUCTION COST				$77,959,221
COST PER S.F.				$569.92

ALTERNATES:

ALTERNATE NO. 1 - ADD IRRIGATION SYSTEM (82,800 SF)	$123,369

PROJECT:	Fuller Middle School	NO. OF SQ. FT.:	136,790
LOCATION:	Framingham, MA	COST PER SQ. FT.:	$394.80
CLIENT:	SMMA		
DATE:	24-Aug-18		

No.: 17002

SUMMARY

	TOTAL	PERCENT OF PROJECT	COST PER SF
A. SUBSTRUCTURE			
A10 - FOUNDATIONS			
A1010 STANDARD FOUNDATIONS	2,419,398	4%	17.69
A1020 SPECIAL FOUNDATIONS	0	0%	0.00
A1030 SLAB ON GRADE	857,080	2%	6.27
A20 - BASEMENT CONSTRUCTION			
A2010 BASEMENT EXCAVATION	0	0%	0.00
A2020 BASEMENT WALLS	0	0%	0.00
B. SHELL			
B10 - SUPERSTRUCTURE			
B1010 FLOOR CONSTRUCTION	3,073,518	6%	22.47
B1020 ROOF CONSTRUCTION	2,140,710	4%	15.65
B20 - EXTERIOR ENCLOSURE			
B2010 EXTERIOR WALLS	4,468,772	8%	32.67
B2020 EXTERIOR WINDOWS	3,263,185	6%	23.86
B2030 EXTERIOR DOORS	159,306	0%	1.16
B30 - ROOFING			
B3010 ROOF COVERINGS	1,793,968	3%	13.11
B3020 ROOF OPENINGS	636,960	1%	4.66
C. INTERIORS			
C10 - INTERIOR CONSTRUCTION			
C1010 PARTITIONS	3,323,651	6%	24.30
C1020 INTERIOR DOORS	585,755	1%	4.28
C1030 FITTINGS	1,683,075	3%	12.30
C20 - STAIRS			
C2010 STAIR CONSTRUCTION	414,584	1%	3.03
C2020 STAIR FINISHES	54,332	0%	0.40
C30 - INTERIOR FINISHES			
C3010 WALL FINISHES	1,509,783	3%	11.04
C3020 FLOOR FINISHES	1,176,293	2%	8.60
C3030 CEILING FINISHES	1,624,091	3%	11.87
D. SERVICES			
D10 - CONVEYING			
D1010 ELEVATORS & LIFTS	218,037	0%	1.59
D20 - PLUMBING			
D2010 PLUMBING	2,270,043	4%	16.60

	TOTAL	PERCENT OF PROJECT	COST PER SF
D30 - HVAC			
D3010 HVAC	7,193,755	13%	52.59
D40 - FIRE PROTECTION			
D4010 SPRINKLERS	744,753	1%	5.44
D4020 STANDPIPES	0	0%	0.00
D4030 FIRE PROTECTION SPECIALTIES	0	0%	0.00
D4090 OTHER FIRE PROTECTION SYSTEMS	0	0%	0.00
D50 - ELECTRICAL			
D5010 ELECTRICAL SERVICE & DISTRIBUTION	1,521,036	3%	11.12
D5020 LIGHTING & BRANCH WIRING	1,436,295	3%	10.50
D5030 COMMUNICATION & SECURITY	1,780,078	3%	13.01
D5090 OTHER ELECTRICAL SYSTEMS	646,245	1%	4.72
E. EQUIPMENT & FURNISHINGS			
E10 - EQUIPMENT			
E1010 COMMERCIAL EQUIPMENT	398,115	1%	2.91
E1020 INSTITUTIONAL EQUIPMENT	0	0%	0.00
E1030 VEHICULAR EQUIPMENT	0	0%	0.00
E1090 OTHER EQUIPMENT	946,518	2%	6.92
E20 - FURNISHINGS			
E 2010 FIXED FURNISHINGS	1,311,326	2%	9.59
E2020 MOVABLE FURNISHINGS	0	0%	0.00
F. SPECIAL CONSTRUCTION & DEMOLITION			
F10 - SPECIAL CONSTRUCTION			
F1010 SPECIAL STRUCTURES	0	0%	0.00
F20 - SELECTIVE BUILDING DEMOLITION			
F2010 BUILDING ELEMENTS DEMOLITION	0	0%	0.00
F2020 HAZARDOUS COMPONENTS ABATEMENT	0	0%	0.00
G. BUILDING SITEWORK			
G10 - SITE PREPARATION			
G1010 SITE CLEARING	701,822	1%	5.13
G1020 SITE DEMOLITION & RELOCATIONS	0	0%	0.00
G1030 SITE EARTHWORK	1,771,979	3%	12.95
G1040 HAZARDOUS WASTE REMEDIATION	0	0%	0.00
G20 - SITE IMPROVEMENTS			
G2010 ROADWAYS	1,036,689	2%	7.58
G2020 PARKING LOTS	0	0%	0.00
G2030 PEDESTRIAN PAVING	365,863	1%	2.67
G2040 SITE DEVELOPMENT	317,465	1%	2.32
G2050 LANDSCAPING	1,014,403	2%	7.42

	TOTAL	PERCENT OF PROJECT	COST PER SF
G30 - SITE MECHANICAL UTILITIES			
G3010 WATER SUPPLY	205,210	0%	1.50
G3020 SANITARY SEWER	47,725	0%	0.35
G3030 STORM SEWER	391,419	1%	2.86
G3040 HEATING DISTRIBUTION	0	0%	0.00
G3050 COOLING DISTRIBUTION	0	0%	0.00
G3060 FUEL DISTRIBUTION	38,500	0%	0.28
G3090 OTHER SITE MECHANICAL UTILITIES	0	0%	0.00
G40 - SITE ELECTRICAL UTILITIES			
G4010 ELECTRICAL DISTRIBUTION	228,573	0%	1.67
G4020 SITE LIGHTING	233,726	0%	1.71
G4030 SITE COMMUNICATIONS & SECURITY	0	0%	0.00
G4090 OTHER SITE ELECTRICAL UTILITIES	0	0%	0.00
G90 - OTHER SITE CONSTRUCTION			
G9090 OTHER SITE SYSTEMS	0	0%	0.00
TOTAL DIRECT COST	54,004,034	100%	394.80

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
A. SUBSTRUCTURE				
A10 - FOUNDATIONS				
A1010 STANDARD FOUNDATIONS				
033000 CAST IN PLACE CONCRETE				
Column Footing Perm - (10' x10' x2' @ 70 ea):				
4000 psi, NW, (incl. placement)	519	CY	195.00	101,205
Formwork	5,600	SFCA	9.25	51,800
Rebar	51,900	LBS	1.20	62,280
**unit cost $414.81*				
Column Footing Int. - (10' x10' x 2' @ 50 ea):				
4000 psi, NW, (incl. placement)	370	CY	195.00	72,150
Formwork	4,000	SFCA	9.25	37,000
Rebar	37,000	LBS	1.20	44,400
**unit cost $415.00*				
Perim Wall Footing 1' x 3' (927 LF):				
4000 psi, NW, (incl. placement)	103	CY	195.00	20,085
Formwork	1,854	SFCA	8.00	14,832
Rebar	5,150	LBS	1.20	6,180
**unit cost $399.00*				
Retaining Wall Footing 2' x 6' (211 LF):				
4000 psi, NW, (incl. placement)	94	CY	195.00	18,330
Formwork	633	SFCA	8.00	5,064
Rebar	7,050	LBS	1.20	8,460
**unit cost $338.87*				
Foundation Wall 16" thick x height varies (1,600 lf):				
4000 psi, NW, (incl. placement)	375	CY	205.00	76,875
Formwork - 4' or less	11,760	SFCA	12.75	149,940
Formwork - 8'	720	SFCA	15.00	10,800
Formwork - 16'	2,720	SFCA	20.00	54,400
Brick Shelf	1,470	LF	14.50	21,315
Reinforcing steel	56,250	LBS	1.20	67,500
**unit cost $1,015.55*				
Retaining Wall 16" thick x 16' h (188 lf):				
4000 psi, NW, (incl. placement)	149	CY	205.00	30,545
Formwork radial - 16'	6,016	SFCA	23.25	139,872
Reinforcing steel	22,350	LBS	1.20	26,820
**unit cost $1,323.74*				
Auditorium Foundations:				
Wall footing	11	CY	350.00	3,850
12" Knee wall	15	CY	850.00	12,750
Entry Ramp:				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Wall footing	9	CY	350.00	3,150
Foundation wall	17	CY	900.00	15,300
Loading Dock:				
Wall footing - 8'	3	CY	350.00	1,050
Foundation wall	18	CY	975.00	17,550
Misc. Foundations:				
Tie Beam @ Brace Frame	10	CY	675.00	6,750
12" Elevator mat (2 EA)	6	CY	650.00	3,900
Elev sump pit	1	EA	900.00	900
12" Elevator pit wall	6	CY	900.00	5,400
Interior Mechanical pads - allow	1	LS	5,000.00	5,000
Concrete Pilaster	35	CY	1,050.00	36,750
Setting Anchor Bolts and Grout	130	EA	235.00	30,550
072100 INSULATION				
2" Rigid found. insul - ret. wall	1,360	SF	3.20	4,352
2" Rigid found. insul - frost wall	6,240	SF	3.20	19,968
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Foundation dampproofing	6,240	SF	1.90	11,856
Retaining wall waterproofing	1,360	SF	6.85	9,316
Elev. pit waterproofing	1	LOC	4,300.00	4,300
310000 EARTHWORK				
Ground Improvements:				
Geopiers	82,000	FTP	10.50	861,000
Foundation Earthwork:				
Building Cut (to elev 162.5)	3,554	CY	12.00	42,648
Excavate Footings	1,700	CY	15.00	25,500
Stockpile Cut for Future fill	5,254	CY	6.50	34,151
Gravel Sub Base - 24" (bldg ftp)	4,781	CY	34.00	162,554
Slab Fill	2,000	CY	28.00	56,000
Dewatering	1	LS	25,000.00	25,000
Foundation drain		NIC		
				2,419,398

A1020 SPECIAL FOUNDATIONS

NOT USED

0

A1030 SLAB ON GRADE

310000 EARTHWORK

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
12" Gravel base - SOG	2,390	CY	28.00	66,920
Excavate plumbing trenches	64,548	SF	0.50	32,274
Moisture mitigation		W/ C 3020		
033000 CAST IN PLACE CONCRETE				
5" Slab on Grade - Typ:				
3,500 psi, NW, (incl. placement)	1,004	CY	220.00	220,880
6x6 W2.9 X W2.9	64,548	SF	1.68	108,441
Control Joint	4,300	LF	2.60	11,180
Form slab depression	200	LF	3.00	600
Trowel Finish	64,548	SF	2.10	135,551
*unit cost $7.38				
Ext. 6" Entry Stoop w/Reinf Edge		W /Site paving		
Misc. Slabs and Concrete:				
Ext. 6" Loading Dock	320	SF	10.00	3,200
Entry Ramp	266	SF	10.00	2,660
Loading Dock Stair Structure-allow	1	LS	7,500.00	7,500
Gyp cement underlayment(spec 035413)		n/a		
072100 INSULATION				
2" Rigid Slab Insul.-100%	64,548	SF	3.30	213,008
072616 BELOW GRADE VAPOR RETARDER				
Stegro vapor barrier (15 mil)	64,548	SF	0.85	54,866
*Excludes under slab waterproofing system				

				857,080
TOTAL A10 FOUNDATIONS				3,276,478
B. SHELL				
B10 - SUPERSTRUCTURE				
B1010 FLOOR CONSTRUCTION				
051200 STRUCTURAL STEEL				
Steel Allowance (72,242 GSF):				
TYP Floor Frame (13 lbs /68,861 SF)	469.5730	TONS	3,700.00	1,737,420
HSS Beam		Included Above		
Wide Flange Beam		Included Above		
HSS Column		Included Above		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
HSS Brace Frame		Included Above		
FND wall deck support angle		Included Above		
Relieving angle		Included Above		
Atrium corridor support hangers		Included Above		
Shear stud (10/100sf)	7,300	EA	5.35	39,055
TOTAL STEEL WEIGHT	470	TONS		
033000 CAST IN PLACE CONCRETE				
TYP 6 1/2" LW Deck fill	68,861	SF	8.45	581,875
Gyp cement underlayment(spec 035413):				
2" Maxxon acoustic topping slab 2nd & 3rd flr	68,861	SF	4.00	275,444
053100 STEEL DECKING				
3" x 18 Ga. Comp Deck- Typ	68,861	SF	3.15	216,912
078120 FIREPROOFING (No Spec)				
Allow:				
Intumescent paint	1	LS	30,000.00	30,000
Spray fireproofing	68,861	SF	2.80	192,811
				3,073,518
B1020 ROOF CONSTRUCTION				
051200 STRUCTURAL STEEL				
Steel Allowance (65,892 GSF):				
TYP Roof Frame (10 # /52,733 SF)	263.6650	TONS	3,700.00	975,561
AUD Roof Frame (10 # / 6,505 SF)	32.5250	TONS	3,950.00	128,474
Gym Roof Frame (10 # / 8,346 SF)	41.7300	TONS	3,800.00	158,574
Atrium Roof Frame (10 # /15,000 SF)	75.0000	TONS	4,250.00	318,750
Truss		Included Above		
HSS Beam		Included Above		
Wide Flange Beam		Included Above		
HSS Column		Included Above		
HSS Brace Frame		Included Above		
Atrium corridor support hangers		Included Above		
Relieving angle		Included Above		
Roof edge angle		Included Above		
Galv. RTU dunnage		Included Above		
Moment connection		Included Above		
Shear stud (10/100sf)	972	EA	5.50	5,346
Color Galv		N/A		
Premium -AESS		N/A		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Allow:				
12'H Mech roof screen (7 lbs/sf @ 6,756 SF)	23.6460	TONS	4,200.00	99,313
033000 CAST IN PLACE CONCRETE				
Allow - TYP 6 1/2" LW Deck fill @:				
LVL 2 main entrance terrace	2,193	SF	8.45	18,531
LVL 2 & 3 terrace (2 loc)	756	SF	8.45	6,388
Pre Fab Roof Top Mech enclosure	772	SF	8.45	6,523
Roof Top mech equip -allow	6,000	SF	8.45	50,700
Allow - Roof top 8" x 12"H Concrete Curb @:				
Pre-fab mech PH unit	115	LF	82.00	9,430
Misc Equip curbs	1	LS	5,000.00	5,000
053100 STEEL DECKING				
1 1/2" x 18Ga comp deck	9,721	SF	2.95	28,677
3" x 18 Ga roof deck - gym	8,346	SF	3.22	26,874
3" x 18 Ga acoustical roof deck -Aud	6,505	SF	7.95	51,715
3" x 18 Ga roof deck - atrium	11,481	SF	3.22	36,969
3" x 18 Ga Typ. Flat roof deck	27,320	SF	3.22	87,970
078120 FIREPROOFING (No Spec)				
Allow:				
Intumescent paint	1	LS	25,000.00	25,000
Spray fireproofing	36,041	SF	2.80	100,915
				2,140,710
TOTAL B10 SUPERSTRUCTURE				5,214,227

B20 - EXTERIOR ENCLOSURE

B2010 EXTERIOR WALLS

100% GSF Exterior -70,258

040001 MASONRY*				
BLDG CMU Backup :		N/A		
Masonry Veneer Building:				
8" x 8" iron spot Brick 1st - 3rd flr (80% solid area)	31,964	SF	33.00	1,054,812
Brick window jamb return	6,500	LF	45.00	292,500
3" Mineral Fiber Insulation		W/072000		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
SS Masonry flashing	1	LS	35,000.00	35,000
Staging		inc. w/ unit		
2nd Floor Main Entry:				
4'6"H Brick Partial HT wall-complete	52	LF	560.00	29,120
6'H Radial Brick Partial HT wall-complete	171	LF	700.00	119,700
Radial Retaining wall brick finish- both sides	3,000	SF	35.00	105,000
Retaining Wall Cap	188	LS	175.00	32,900
Concrete stair masonry trim		NIC		
Concrete ramp masonry trim		NIC		
Aud GF block veneer 50% wall fin		W /C3010		
054000 COLD FORMED METAL FRAMING				
Exterior wall Backup:				
6" x 16 Ga. stud @ Typ 14'	27,628	SF	9.85	272,136
6" x 16 Ga. stud @ Gym 28-36'	6,383	SF	9.85	62,873
6" x 16 Ga. stud @ Aud 28-35'	5,944	SF	9.85	58,548
6" x 16 Ga. stud @ Elev override 12'h	492	SF	9.85	4,846
6" x 16 Ga. stud @ PH stair 10'	680	SF	9.85	6,698
6" x 16 Ga. stud @ atrium 2'h	806	SF	9.85	7,939
6" x 16 Ga. stud @ atrium 6'h	3,132	SF	9.85	30,850
1/2" Dens glass sheathing	45,065	SF	3.30	148,715
* Mech Penthouse Unit - Complete		W / HVAC		
Roof Edge Framing :				
Parapet roof edge		NIC		
Projected roof edge		NIC		
Ext Ceiling Framing @ :				
Canopy & covered entry	1,048	SF	6.50	6,812
1/2" Dens glass sheathing	1,048	SF	3.50	3,668
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Galv, loose lintel @ HM egress	67	LF	36.00	2,412
Misc metals @ ext wall	1	LS	25,000.00	25,000
Reliving angle		W /Structural		
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Control and expansion joints	1	LS	30,000.00	30,000
Fluid Applied air & vapor barrier:				
Exterior Wall	45,065	SF	7.20	324,468
Canopy & covered entry	1,048	SF	7.20	7,546
072100 INSULATION				
Exterior Wall:				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
3" Mineral Fiber Insulation	45,065	SF	3.65	164,487
Spray foam at perm openings	9,299	LF	8.00	74,392
Exterior Ceiling Insulation @ :				
Covered entry	1,048	SF	5.00	5,240
074000 WALL PANELS & TRIM				
Additional Exterior Wall Framing:				
3"Horiz furr	13,101	SF	4.00	52,404
Exterior Wall Panel System:				
Trespa Phenolic 1st - 3rd flr (20% solid area)	7,991	SF	76.00	607,316
Elev override 12'h	492	SF	76.00	37,392
PH stair 10'	680	SF	76.00	51,680
Atrium 2'h	806	SF	76.00	61,256
Atrium 6'h	3,132	SF	76.00	238,032
*Insulated spandrel panels also included as part of the window system				
Exterior Ceiling /Soffit Panel System:				
Prefinished Soffit / Ceiling Panel	1,048	SF	76.00	79,648
12'H Mech roof screen(NIC Struct Frame):				
Corrugated Perf Mtl wall panel-complete	6755	SF	40.00	270,200
Screen wall cap	563	LF	40.00	22,520
090007 PAINTING*				
Misc exterior painting -allow	1	LS	10,000.00	10,000
092116 GYPSUM WALLBOARD ASSEMBLIES				
1 lyr 5/8" gyp @ ext. 6" x 16 Ga. Stud	45,065	SF	2.50	112,663
109000 MISCELLANEOUS SPECIALTIES				
Ext bldg mtd signage -allow	1	LS	20,000.00	20,000
				4,468,772
B2020 EXTERIOR WINDOWS				
061000 ROUGH CARPENTRY				
P.T. - perim blocking 2x6	9,009	LF	5.65	50,901
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Flex flashing - perim	9,009	LF	8.00	72,072
Exterior sealants - perim.	9,009	LF	7.50	67,568

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
080001 METAL WINDOWS*				
14' Curtainwall/Storefront:				
Class/admin 3'w (33 loc)	1,386	SF	115.00	159,390
Class/admin 4'w (3 loc)	168	SF	115.00	19,320
Class/admin 8'w (41 loc)	4,592	SF	115.00	528,080
Class/admin 9'w (1 loc)	126	SF	115.00	14,490
3 Section knuckle 15' (17 loc)	3570	SF	115.00	410,550
Full bay (13 loc)	5,324	SF	115.00	612,260
Main entry	75	SF	115.00	8,625
Aud entry	162	SF	115.00	18,630
Full Ht Curtainwall/Storefront:				
Toilet rm 3'w	476	SF	115.00	54,740
Stair hall	1,510	SF	115.00	173,650
Media ctr	900	SF	115.00	103,500
SW entry/terrace	2,139	SF	115.00	245,985
NE entry/terrace	2,569	SF	115.00	295,435
Alum Storefront System:				
Sloped Gym clerestory(86' 6"x 10')	865	SF	115.00	99,475
Sloped Aud clerestory (79'x9')	711	SF	115.00	81,765
*Includes perimeter int/ext sealants, glass, glazing , spandrel and alum break metal				
ALLOW:				
Security Glazing Film 2nd flr entry	1	LS	50,000.00	50,000
Exterior Wall Mock-up	1	LS	35,000.00	35,000
Horizontal Sun Shade 4' Projection (150 lf/flr)	450	LF	315.00	141,750
Vert. Sun Shade		N/A		
084500 TRANSLUCENT WALL ASSEMBLIES		N/A		
089000 METAL WALL LOUVERS				
Misc Alum louvers -allow	1	LS	20,000.00	20,000
				3,263,185
B2030 EXTERIOR DOORS				
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
OH door frame @:				
Tech-Makerspace (14'x 10')	1	EA	500.00	500
061000 ROUGH CARPENTRY				
P.T. - perim blocking HM open	256	LF	8.00	2,048

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Perim. Ext HM opening:				
Flex flashing - perim	256	LF	8.00	2,048
Exterior sealants - perim.	256	LF	7.50	1,920
080001 METAL WINDOWS*				
8' Alum. Doors (Incl. Hardware):				
1st Flr Entry - dbl	4	PR	8,250.00	33,000
2nd Flr Entry - sgl	1	EA	4,500.00	4,500
2nd Flr Entry - dbl	1	PR	8,250.00	8,250
2nd & 3rd Flr Terrace - dbl	2	PR	8,250.00	16,500
Stair egress - sgl	2	EA	4,500.00	9,000
Art class - sgl	1	EA	4,500.00	4,500
Media ctr - sgl	1	EA	4,500.00	4,500
Tech-Makerspace- sgl	1	EA	4,500.00	4,500
081113 HOLLOW METALWORK				
Ext 7' Insulated HM Doors and Frame:				
PH Roof access- sgl	1	EA	850.00	850
Receiving-sgl	1	EA	850.00	850
Receiving-dbl	2	EA	1,450.00	2,900
Aud -dbl	2	EA	1,450.00	2,900
Gym -dbl	4	EA	1,450.00	5,800
Storage -dbl	1	EA	1,450.00	1,450
083323 SPECIAL DOORS				
Motor Operated Insulated OH Door:				
Tech-Makerspace (14'x 10')	1	EA	12,500.00	12,500
087100 DOOR HARDWARE				
Auto opener -allow:	1	LOC	7,600.00	7,600
Ext HM Door HDW SET:				
PH Roof access- sgl	1	EA	650.00	650
Receiving-sgl	1	EA	1,200.00	1,200
Receiving-dbl	2	EA	2,500.00	5,000
Aud -dbl	2	EA	3,850.00	7,700
Gym -dbl	4	EA	3,850.00	15,400
Storage -dbl	1	EA	975.00	975
*Hardware also included with 080001				
090007 PAINTING*				
Paint HM door & Frame - sgl	2	EA	120.00	240
Paint HM door & Frame - dbl	9	EA	225.00	2,025
				159,306

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
TOTAL B20 - EXTERIOR ENCLOSURE				7,891,263
B30 - ROOFING				
B3010 ROOF COVERINGS				
061000 ROUGH CARPENTRY				
Flat Roof Blocking @:				
Base flashing	2,058	LF	12.50	25,725
Typ roof fascia	3,307	LF	12.50	41,338
Expansion joint	86	LF	40.00	3,440
6' dome skylight curb (3 EA)	57	LF	35.00	1,995
Gable skylight curb (4 EA)	573	LF	45.00	25,785
Flash Pre Fab Roof Top Mech encl curb	115	LF	35.00	4,025
Equip blocking	1	LS	7,500.00	7,500
Roof hatch-allow	1	EA	750.00	750
Stage vent-allow	1	EA	750.00	750
Atrium vent-allow	2	EA	750.00	1,500
070002 ROOFING AND FLASHING*				
White 60 mil PVC Roofing w/6" Insulation (NIC Pre-fab mech rm 772 sf):				
Typ Flat roof	44,601	SF	13.75	613,264
Low slope Aud & Gym roof	14,851	SF	13.75	204,201
Low slope PH roof	200	SF	13.75	2,750
LVL 2 main entrance roof w/ terrace pavers	2,193	SF	48.00	105,264
LVL 2 & 3 roof w/ terrace pavers(2 loc)	756	SF	48.00	36,288
1/2 " glass mat cover bd -100%	61,601	SF	1.68	103,490
5/8" glass mat protection bd -100%	61,601	SF	1.68	103,490
Roof vapor retarder-100%	61,601	SF	0.95	58,521
High Roof Rubber Walkway Pad	1,518	SF	7.00	10,626
Membrane flashing	61,601	SF	0.50	30,801
Base flashing	2,058	LF	32.00	65,856
(Spec)ZCC Typ roof fascia	3,307	LF	18.00	59,526
(Note 11/A200) Alum Typ roof fascia		NIC		
Expansion joint	86	LF	185.00	15,910
Flash 6' dome skylight curb (3 EA)	57	LF	45.00	2,565
Flash gable skylight curb (4 EA)	573	LF	45.00	25,785
Flash Pre Fab Roof Top Mech encl curb	115	LF	45.00	5,175
080002 GLASS AND GLAZING*				
Main Entrance Canopy -Complete:				
Clear Polycarb glazing w/ alum struct	679	SF	350.00	237,650
				1,793,968

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
B3020 ROOF OPENINGS				
070002 ROOFING AND FLASHING*				
Roof hatch-allow	1	EA	4,200.00	4,200
Stage vent-allow	2	EA	13,500.00	27,000
Elevator vent	1	EA	1,500.00	1,500
085200 SKYLIGHTS				
6' Dome Skylight (3 loc)	95	SF	135.00	12,825
Gable Skylight w/ 42% slope (4 loc)	3,997	SF	135.00	539,595
Gable Skylight Endwall (8 loc)	384	SF	135.00	51,840
				636,960
TOTAL B30 ROOFING				2,430,928
C. INTERIORS				
C10 - INTERIOR CONSTRUCTION				
C1010 PARTITIONS				
040001 MASONRY*				
Interior CMU Partition:		NIC		
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Folding Panel partition Support:				
Typ classroom (14 EA)	224	LF	145.00	32,480
Music classroom (1 EA)	16	LF	145.00	2,320
SPED suite (3 EA)	84	LF	145.00	12,180
Folding Grille Support:				
Café/Learning common (1 EA)	69	LF	200.00	13,800
Coiling Grille Support:				
Servery(1 EA)	16	LF	100.00	1,600
Main office(1 EA)	10.5	LF	100.00	1,050
061000 ROUGH CARPENTRY				
Interior blocking	136,790	GSF	0.50	68,395
Misc. rough carpentry	136,790	GSF	0.50	68,395
072100 INSULATION				
Firestopping	136,790	GSF	0.65	88,914

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
071000 DAMPPROOF., WATERPROOF. & CAULKING*				
Joint sealants	136,790	GSF	0.85	116,272
079513 EXPANSION JOINT COVER ASSEMBLIES				
Int Wall Expansion joints	1	LS	10,000.00	10,000
081113 HOLLOW METALWORK				
Interior H.M Windows, Sidelites and Transoms:				
Observ. / therapy rm wind		N/A		
Aud control booth wind		N/A		
Stair - dbl		N/A		
083323 SPECIAL DOORS				
Access panels	1	LS	30,000.00	30,000
Folding Grille :				
Café/Learning common (1 EA-69 LF x 12' H)	828	SF	120.00	99,360
Coiling Grille :				
Servery(1 EA-16LF x 10'H)	160	SF	95.00	15,200
Main office(1 EA-10' 6"LF x10'H)	105	SF	95.00	9,975
080001 METAL WINDOWS*				
10'H Aluminum Storefront Frame, Glass & Glazing-Allow:				
1st Floor Vestibule (3 loc)	466	SF	92.00	42,872
2nd Floor Vestibule (2 loc)	56	SF	92.00	5,152
Office/ vestibule security window -Allow:				
2nd Flr Main office	1	EA	5,000.00	5,000
080002 GLASS AND GLAZING*				
Alum channel ,Glass & Glazing @ Interior Windows, Sidelites and Transoms :				
Corr/class & admin wind 7'W x 7' 4"H	2,206	SF	62.00	136,772
Corr /music class wind 7'W x 7' 4"H	103	SF	62.00	6,386
Corr /music class wind 3'W x 7' 4"H	44	SF	62.00	2,728
Corr & class /teach prep rm SL 8' 2" H	3,277	SF	62.00	203,174
Corr & music class /teach prep rm SL 8' 2" H	151	SF	62.00	9,362
Typ Breakout Room (4 EA) SL 8' 2" H	1,160	SF	62.00	71,920
Radial Breakout Room (5 EA) SL 8' 2" H	1,283	SF	62.00	79,546
Media Center SL 8' 2" H(6 loc)	322	SF	62.00	19,964
Class & admin /corridor SL 8' 2" H(6 loc)	118	SF	62.00	7,316
Graduated glass premium-allow	1	LS	30,000.00	30,000
092116 GYPSUM WALLBOARD				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Elevator shaft - 42'H	1,743	SF	18.00	31,374
Gym - 28'H	1,736	SF	15.50	26,908
Gym chase - 32'H	2,704	SF	12.50	33,800
Aud chase - 32'H	2,704	SF	12.50	33,800
Auditorium - 14'H	1,078	SF	15.50	16,709
Auditorium stage front -32'H	2,056	SF	15.50	31,868
Auditorium dressing rm - 32'H	1,920	SF	15.50	29,760
Aud. furr w/gyp @ fnd	300	SF	9.00	2,700
TYP -14' Drywall Partitions:				
1 side class radial mech chase	8,922	SF	11.00	98,142
1 side class closet chase	2,014	SF	9.00	18,126
1 side radial plumb chase	1,123	SF	11.00	12,353
1 side plumb chase	6,649	SF	9.00	59,841
Chase @ fnd wall	1,152	SF	9.00	10,368
Drinking fountain chase wall	689	SF	9.00	6,201
4" Toilet rm	7,773	SF	10.50	81,617
4" Radial Toilet rm	1,368	SF	15.00	20,520
4" Class /admin	2,810	SF	10.50	29,505
6" Class /admin	19,582	SF	12.00	234,984
8" Class /admin	8,359	SF	14.00	117,026
6" Corridor	19,188	SF	13.00	249,444
6" Corridor bulkhead 6'H	4,533	SF	13.00	58,929
8" Corridor	6,817	SF	15.00	102,255
12" Corridor/vest	615	SF	11.50	7,073
1 HR Mech / elec rm	2,190	SF	12.50	27,375
2 HR Mech / elec rm	2,209	SF	15.50	34,240
Stair hall	2,187	SF	15.50	33,899
Kitchen / servery perim	1,940	SF	15.50	30,070
Misc. kitchen/servery part.	1,940	GSF	5.00	9,700
Typ Breakout Room (4 EA NIC SL 8' 2" H)	2,816	SF	12.50	35,200
Radial Breakout Room (5 EA NIC SL 8' 2" H)	3,115	SF	16.00	49,840
Music Rm	4,866	SF	24.50	119,217
Tile Backer Bd Premium @:				
Multi user toilet rm	9,621	SF	1.85	17,799
Single user toilet rm	3,660	SF	1.85	6,771
Misc. GWB assemblies	136,790	GSF	1.00	136,790
Load, Distribute and Misc.	136,790	GSF	0.25	34,198
*Partitions include sound attenuation, tape & joint compound finish				
109000 MISCELLANEOUS SPECIALTIES				
Folding Panel partition:				
16' x 8' H Typ classroom (14 EA)	1,792	SF	110.00	197,120
16' x 8' H Music classroom (1 EA)	128	SF	110.00	14,080
28' x8' H SPED suite (3 EA)	672	SF	110.00	73,920
*Includes pass dr & white bd finish				

				3,323,651

C1020 INTERIOR DOORS

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
081113 HOLLOW METALWORK				
Int. HM Frame 7'H:				
Single Door	124	EA	285.00	35,340
Double Door	10	EA	305.00	3,050
Int. HM Frame 8' 6"H:				
Single Door	108	EA	320.00	34,560
Barn Door Single	24	EA	400.00	9,600
081416 WOOD AND PLASTIC DOORS				
Birch Full Lite Solid Core Wood Door - Prefinished 36"x8'x6":				
Classroom & Admin- sgl	54	EA	720.00	38,880
Music classroom -sgl	4	EA	720.00	2,880
Interconnecting class / teach prep rm - sgl	39	EA	720.00	28,080
Music Intercon class / teach prep rm - sgl	2	EA	720.00	1,440
Media ctr- sgl	1	EA	720.00	720
Breakout room - sgl	9	EA	720.00	6,480
Teacher planning room - sgl barn dr	24	EA	850.00	20,400
Birch SC Wood Door - Prefinished 7'H:				
Storage Rm- sgl	8	EA	465.00	3,720
Storage Rm - dbl	2	EA	930.00	1,860
Mech/elec. Rm- sgl	9	EA	495.00	4,455
Mech/elec. Rm - dbl	4	EA	930.00	3,720
Stairhall - sgl	6	EA	1,500.00	9,000
Back of house corridor - dbl	1	EA	1,500.00	1,500
Sgl user toilet rm	14	EA	495.00	6,930
Multi user toilet / locker rm	4	EA	495.00	1,980
Kitchen/servery - sgl	3	EA	525.00	1,575
Classroom closet - sgl	34	EA	1,350.00	45,900
Interconnecting Class - sgl	8	EA	465.00	3,720
Interconnecting Sci Prep room - sgl	6	EA	465.00	2,790
Office - sgl	24	EA	675.00	16,200
Gym - dbl	1	EA	1,500.00	1,500
Aud- dbl	2	EA	1,500.00	3,000
Stage - sgl	3	EA	650.00	1,950
Music Practice rm - sgl	2	EA	495.00	990
Media Center - sgl	1	EA	675.00	675
Dressing rm - sgl	2	EA	465.00	930
080002 GLASS AND GLAZING*				
Glass & Glazing @ Interior Door				
*inc. w/ door cost				
087100 DOOR HARDWARE				
Interior Finish Hardware Set @ Birch Full Lite Solid Core Wood Door - Prefinished 36"x102" Door:				
Classroom & Admin- sgl	54	EA	850.00	45,900
Music classroom -sgl	4	EA	1,500.00	6,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Interconnecting class / teach prep rm - sgl	39	EA	600.00	23,400
Music Intercon class / teach prep rm - sgl	2	EA	600.00	1,200
Media ctr- sgl	1	EA	850.00	850
Breakout room - sgl	9	EA	850.00	7,650
Teacher planning room - sgl barn dr	24	EA	900.00	21,600
Interior Finish Hardware Set @ Birch SC Wood Door - Prefinished 7'H:				
Storage Rm- sgl	8	EA	450.00	3,600
Storage Rm - dbl	2	EA	650.00	1,300
Mech/elec. Rm- sgl	9	EA	650.00	5,850
Mech/elec. Rm - dbl	4	EA	950.00	3,800
Stairhall - sgl	6	EA	4,000.00	24,000
Back of house corridor - dbl	1	EA	4,000.00	4,000
Sgl user toilet rm	14	EA	950.00	13,300
Multi user toilet / locker rm	4	EA	950.00	3,800
Kitchen/servery - sgl	3	EA	1,200.00	3,600
Classroom closet - sgl	34	EA	450.00	15,300
Interconnecting Class - sgl	8	EA	450.00	3,600
Interconnecting Sci Prep room - sgl	6	EA	450.00	2,700
Office - sgl	24	EA	850.00	20,400
Gym - dbl	1	EA	3,500.00	3,500
Aud- dbl	2	EA	3,500.00	7,000
Stage - sgl	3	EA	1,500.00	4,500
Music Practice rm - sgl	2	EA	1,500.00	3,000
Media Center - sgl	1	EA	850.00	850
Dressing rm - sgl	2	EA	850.00	1,700
080001 METAL WINDOWS*				
8' Aluminum (Frame, Door, Glass, Glazing and Hdw):				
1st Flr Entry Vestibule - dbl	2	PR	8,300.00	16,600
2nd Flr Entry Vestibule- sgl	1	EA	4,200.00	4,200
2nd Flr Entry Vestibule- dbl	1	PR	8,300.00	8,300
083323 SPECIAL DOORS		W/ Partitions		
090007 PAINTING*				
Paint Int HM door frame:				
7' HM door frame - sgl	124	EA	100.00	12,400
7' HM door frame - dbl	10	EA	135.00	1,350
8' 6" HM door frame - sgl	109	EA	120.00	13,080
8' 6" HM pocket door frame - sgl	24	EA	150.00	3,600
				585,755
C1030 FITTINGS				
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Auditorium:				
Guard rail @ seating aisle	91	LF	265.00	24,115

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Auditorium equip. supports	1	LS	15,000.00	15,000
Stage front access stair & rails		NIC		
Interior Metals:				
Lobby guard rail	208	LF	400.00	83,200
OT/PT equip support-allow	1	RM	2,500.00	2,500
Gym equip supports	1	LS	10,000.00	10,000
Concealed stl angle @ corr built-in bench		W/ Unit Cost		
Concealed stl angle @ casework ctr		W/ Unit Cost		
Misc. metals	136,790	GSF	0.50	68,395
Atrium Vertical Duct Enclosure	4,200	SF	90.00	378,000
Exterior Rails:				
Loading dock stair/ramp guardrail	15	LF	265.00	3,975
Loading dock stair/ramp wall rail	15	LF	150.00	2,250
2nd flr entry terrace guardrail	30	LF	500.00	15,000
2nd & 3rd flr Terrace rail	59	LF	500.00	29,500
High roof rails		NIC		
*Interior Rails are also included w/ C2010				
*Exterior Rails are also included w/ G2010				
062000 FINISH CARPENTRY				
Utility & closet shelving	1	LS	10,000.00	10,000
Typ Window sill		nic		
Gym clerestory window sill	87	LF	55.00	4,758
Aud clerestory window sill	79	LF	55.00	4,345
Custom Casework:				
Corridor Locker Enclosure (nic mtl locker) - allow:				
1st flr freestanding	270	LF	480.00	129,600
2nd & 3rd flr freestanding -guardrail	634	LF	480.00	304,320
Main Office 2nd Floor:				
Radial Reception counters	15	LF	650.00	9,750
Allow- Library / Media Center (1 EA):				
Circulation desk	20	LF	1,200.00	24,000
Book shelving sys		NIC		
Allowance:				
Display Cases	1	LS	20,000.00	20,000
Trash/ recycle ctr	1	EA	10,000.00	10,000
*Balance of casework is included w/ E2010				
102113 COMPARTMENTS & CUBICLES				
Solid Plastic Toilet Partitions:				
Std. partition	20	EA	1,220.00	24,400
HC partition	14	EA	1,430.00	20,020
Urinal screen	13	EA	310.00	4,030

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
102813 TOILET ACCESSORIES				
SGL User Toilet Rm Accessories (14 ea):				
Tilt mirror @ wall hung lav	14	EA	220.00	3,080
Soap dispenser	14	EA	45.00	630
Toilet tissue dispenser	14	EA	48.00	672
San. prod. disposal	14	EA	60.00	840
Toilet grab bars	28	EA	85.00	2,380
Paper towel dispenser-allow	14	EA	135.00	1,890
Waste receptacle - allow	14	EA	150.00	2,100
Elec hand dryer - allow		NIC		
Coat hook -allow	14	EA	25.00	350
Public Fixed diaper changing sta - allow	2	EA	550.00	1,100
ADA SHW accessories -allow	1	EA	550.00	550
Multi User Toilet & Locker Rm Accessories (14 ea):				
3'H mirror lav ctr	750	SF	38.00	28,500
Soap dispenser	54	EA	45.00	2,430
Toilet tissue dispenser	34	EA	48.00	1,632
San. prod. disposal	34	EA	60.00	2,040
Toilet grab bars	28	EA	85.00	2,380
Paper towel dispenser-allow	40	EA	135.00	5,400
Waste receptacle - allow	40	EA	150.00	6,000
Elec hand dryer - allow		NIC		
Coat hook -allow	34	EA	25.00	850
Locker rm accessories	2	EA	1,000.00	2,000
Janitor shelf	7	EA	200.00	1,400
*Excludes classroom and workroom accessories				
101100 MARKERBOARDS & TACKBOARDS				
Allow:				
4'H Tack Board	30	EA	400.00	12,000
*Dry-erase wall covering is included in C3010				
*Classroom folding panel partition include white bd finish				
109000 MISCELLANEOUS SPECIALTIES				
Allow:				
Building directory	1	EA	5,000.00	5,000
Dedication plaque	1	EA	3,800.00	3,800
Room ID sign	136,790	GSF	0.22	30,094
Misc Int. ADA signage	136,790	GSF	0.12	16,415
Phenolic Locker:				
15" wx12"dx36"H Student corridor (nic enclosure)	723	EA	350.00	253,050
Metal Locker- allow:				
15"wx15"dx30"H PE student 2 tiered (50/RM)	100	EA	215.00	21,500
12" PE staff	4	EA	265.00	1,060
12" Custodian staff	4	EA	265.00	1,060
12" Kitchen staff	4	EA	265.00	1,060

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Locker base @ :				
Student corridor		W /Enclosure		
PE student	62.5	LF	36.00	2,250
PE staff	4	LF	36.00	144
Custodian staff	4	LF	36.00	144
Kitchen staff	4	LF	36.00	144
Allow Free Standing Wood Bench:				
PE locker rm (12LF/EA)	24	LF	50.00	1,200
Health office cubicle track w/ curtain	3	EA	1,325.00	3,975
Fire extinguisher and cab	20	EA	475.00	9,500
AED cabinets	4	EA	750.00	3,000
Secure wall panels:				
OT/PT rm (ea)	320	SF	15.00	4,800
Observ. / therapy rm (ea)	320	SF	15.00	4,800
Padded athletic flr tiles:				
OT/PT rm (ea)	100	SF	15.00	1,500
Observ. / therapy rm (ea)	100	SF	15.00	1,500
Misc wall & corner guards - allow	1	LS	7,500.00	7,500
Misc specialties	136,790	GSF	0.25	34,198
				1,683,075
TOTAL C10 - INTERIOR CONSTRUCTION				5,592,481

C20 - STAIRS

C2010 STAIR CONSTRUCTION

050001 MISCELLANEOUS & ORNAMENTAL IRON*

5' W Metal Pan Stair @ Learning Commons 1st- 2nd (1 FLT):				
Metal pan stair treads/risers	120	LFR	85.00	10,200
Metal pan landing	30	SF	55.00	1,650
Guardrail	66	LF	400.00	26,400
8' W Metal Pan Stair @ Learning Commons 1st- 2nd (1 FLT):				
Metal pan stair treads/risers	192	LFR	85.00	16,320
Metal pan landing	48	SF	55.00	2,640
Guardrail	66	LF	400.00	26,400
5' W Metal Pan Stair @ Learning Commons 2nd - 3rd(1 FLT):				
Metal pan stair treads/risers	120	LFR	85.00	10,200
Metal pan landing	30	SF	55.00	1,650
Guardrail	66	LF	400.00	26,400
13' 6"W Metal Pan Stair @ Learning Commons 2nd - 3rd(1 FLT):				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Metal pan stair treads/risers	324	LFR	85.00	27,540
Metal pan landing	68	SF	55.00	3,713
Guardrail	66	LF	400.00	26,400
6'6" W Metal Pan Stair Hall (2 loc 1st - 3rd 4 FLT):				
Metal pan stair treads/risers	624	LFR	85.00	53,040
Metal pan landing	352	SF	55.00	19,360
Wall rail	128	LF	165.00	21,120
Guardrail	128	LF	400.00	51,200
Guardrail flr open	12	LF	400.00	4,800
Cane rail	2	EA	1,350.00	2,700
6'6" W Metal Pan Stair @ Penthouse (1 FLT):				
Metal pan stair treads/risers	156	LFR	85.00	13,260
Metal pan landing	88	SF	55.00	4,840
Wall rail	32	LF	165.00	5,280
Guardrail	32	LF	400.00	12,800
Access gate	1	EA	1,800.00	1,800
Aud Rails & Stairs		W/ C1030		
Lobby rails		W/ C1030		
033000 CAST IN PLACE CONCRETE				
Conc stair pan fill :				
Metal pan stair treads and risers	1,536	LFR	22.00	33,792
Metal pan landing	616	SF	18.00	11,079
				414,584

C2020 STAIR FINISHES

090005 RESILIENT FLOORING*				
Metal Pan Stair Learning Commons Stair (4 FLT):				
Rubber treads and risers	756	LFR	14.25	10,773
Rubber tile landing	176	SF	12.50	2,194
Metal Pan Stair Hall (5 FLT):				
Rubber treads and risers	780	LFR	14.25	11,115
Rubber tile landing	440	SF	12.50	5,500
Aud Stair Finish		W/ C1030		
090007 PAINTING*				
Paint Metal Pan Stair & Rail:				
5' W @ Learning Commons 1st- 3rd	2	FLTS	2,500.00	5,000
8' W @ Learning Commons 1st- 2nd	1	FLTS	2,750.00	2,750
13' 6"W @ Learning Commons 1st- 2nd - 3rd	1	FLTS	4,500.00	4,500
6'6" W @ Stair Hall	5	FLTS	2,500.00	12,500

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL

				54,332
TOTAL C20 - STAIRS				468,915
C30 - INTERIOR FINISHES				
C3010 WALL FINISHES				
040001 MASONRY*				
Auditorium-28'H:				
GF block veneer 50% wall fin	3,460	SF	33.00	114,180
Entry Vestibule:				
Ext brick veneer wall fin -allow		NIC		
062000 FINISH CARPENTRY				
Learning Commons/ Corridors Full Ht P Lam Wall Panel & Trim- Allow :				
1st Flr	750	SF	40.00	30,000
2nd Flr	750	SF	40.00	30,000
3rd Flr	750	SF	40.00	30,000
Misc Wood Wall Panel & Trim- Allow :				
Media ctr	500	SF	55.00	27,500
Gym	500	SF	55.00	27,500
Auditorium 50% wall fin	3,460	SF	55.00	190,300
Science Lab Classroom (6 EA):	600	SF	55.00	33,000
Tech-Makerspace (1 EA):	100	SF	55.00	5,500
Fab-lab (1 EA):	100	SF	55.00	5,500
Art Class Room (1 EA):	100	SF	55.00	5,500
Teacher Prep Room (24 EA):	2,400	SF	55.00	132,000
Typ, SPED & ELL Classroom (33 EA):	3,300	SF	55.00	181,500
Music Classroom (2 EA):	200	SF	55.00	11,000
097200 DRY-ERASE WALL COVERING				
Dry Erase Curved wall (sf/loc):				
Typ, SPED & ELL Classroom (33 EA):	1,056	SF	25.00	26,400
Music Classroom (2 EA):	200	SF	25.00	5,000
097600 FIBERGLASS REINF. PLASTIC WALL PANELS				
8' FRP Wall Panel -allow:				
Main Kitchen	1,200	SF	11.00	13,200
Janitor closet	3,080	SF	11.00	33,880
097000 ACOUSTICAL ROOM COMPONENTS				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Tectum Wall Panel- Allow:				
Gymnasium	1,800	SF	19.00	34,200
Allow Fabric Wrapped Acoustical Panels :				
4'H Band Rm (1 ea)	450	SF	36.00	16,200
4' H Chorus Rm (1 ea)	450	SF	36.00	16,200
2'H Music practice rm (2 EA)	224	SF	36.00	8,064
Media center	200	SF	36.00	7,200
Auditorium	500	SF	36.00	18,000
Café / Learning commons	250	SF	36.00	9,000
*Includes sections 097112 & 097713				
090002 TILE*				
Tile backer bd prem		w/092116		
Ceramic Wall Tile 98"H :				
Locker rm		NIC		
ADA SHW (3' x 3')		W / Plumbing		
Multi user toilet rm	9,621	SF	18.00	173,178
Single user toilet rm	3,660	SF	18.00	65,880
Porcelain Wall Tile - Allow :				
Learning Commons & corridors		NIC		
Aud & Gym Corridor		NIC		
Servery		NIC		
Stair hall		NIC		
090007 PAINTING*				
Interior painting- walls	136,790	GSF	1.90	259,901
Vinyl wall covering		NIC		
				1,509,783
C3020 FLOOR FINISHES				
033000 CAST IN PLACE CONCRETE				
Sealed Concrete:				
Auditorium seating	2,265	SF	1.30	2,945
Mech & elec rm	1,058	SF	1.30	1,375
Receiving back of house	2,069	SF	1.30	2,690
Custodian Closet(6 EA)	876	SF	1.30	1,139
093000 TILE				
SGL User Toilet Room (14 EA) :				
Porcelain flr tile	968	SF	25.50	24,684
ADA SHW (3' x 3')		W / Plumbing		
Metal wall base	428	LF	15.00	6,420

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Threshold	14	EA	95.00	1,330
WPG @ membrane upper lvl	562	SF	8.75	4,918
Multi User Toilet Room(14 EA):				
Porcelain flr tile	3,313	SF	25.50	84,482
Metal wall base	1,147	LF	15.00	17,205
Threshold	14	EA	95.00	1,330
WPG @ membrane upper lvl	1,994	SF	8.75	17,448
Quarry Tile:				
Kitchen / servery	1,940	SF	16.50	32,010
Wall base & transitions		inc.		
090005 RESILIENT FLOORING*				
Moisture mitigation -allow	45,000	SF	1.00	45,000
VCT - typ	100,855	SF	4.50	453,848
Wall base 12" VCT w/ Schluter top edge where exp	28,500	LF	7.50	213,750
*Includes sections 0965000 & 096513				
095000 WOOD & ATHLETIC FLOOR				
Moisture mitigation -allow	8,281	SF	4.75	39,335
Stage Flooring	1,881	SF	14.00	26,334
Stage nosing	63	LF	38.00	2,394
Stage wall base	172	LF	9.85	1,694
Gym Hardwood Flooring	8,281	SF	19.75	163,550
Vented wall base Gym	365	LF	9.85	3,595
096800 CARPET				
Moisture mitigation -allow		N/A		
Media center	1,904	SF	5.00	9,520
Auditorium aisles	1,750	SF	6.00	10,500
Admin suite		N/A		
124813 MATS				
Walk off mat - allow (4 loc)	400	SF	22.00	8,800
Exterior entrance grate		NIC		
				1,176,293
C3030 CEILING FINISHES				
062000 FINISH CARPENTRY				
Typ, Sci, Art, Music, SPED & ELL Classroom:				
P Lam Summer Beam Cladding	672	LF	230.00	154,560
092116 GYPSUM WALLBOARD				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Soffits @:				
OP partition Typ classroom (14 EA)	224	LF	95.00	21,280
OP partition Music classroom (1 EA)	16	LF	95.00	1,520
OP partition SPED suite (3 EA)	84	LF	95.00	7,980
Folding Grille Café/Learning common (1 EA)	69	LF	125.00	8,625
Class rm angled soffit	42	RM	1,500.00	63,000
Dome Skylight 3'H	171	SF	18.00	3,078
Pyramid Skylight 5'H	2,865	SF	18.00	51,570
Lobby floor opening - 3'H	2,934	SF	18.00	52,812
Corridor locker		NIC		
Casework		NIC		
Misc gyp soffits	136,790	GSF	0.50	68,395
Gyp Ceiling System :				
SGL User Toilet Room	977	SF	10.25	10,014
Multi User Toilet Room	3,313	SF	10.25	33,958
1 HR Mech / elec rm	472	SF	10.25	4,838
2 HR Mech / elec rm	586	SF	10.25	6,007
Stair hall -allow 50%	1,130	SF	10.25	11,583
Monumental Stair		NIC		
090003 ACOUSTICAL TILE*				
ACT Ceiling System @ :				
Kitchen / servery	1,940	SF	5.70	11,058
Receiving back of house	2,069	SF	5.00	10,345
Custodian Closet(6 EA)	876	SF	5.00	4,380
Media center	1,904	SF	15.00	28,560
Admin, workroom & storage	14,616	SF	5.00	73,080
Classroom - 1/3 rm	14,878	SF	5.50	81,829
Breakout rooms	2,808	SF	5.00	14,040
Specialty Ceiling:				
Commons /corr 1st flr -Exp mtl tile	8,943	SF	15.00	134,145
Commons /corr 1st floor -Opt plank	1,667	SF	8.25	13,753
Commons /corr 2nd flr -Exp mtl tile	7,409	SF	15.00	111,135
Commons /corr 2nd floor -Opt plank	1,331	SF	8.25	10,981
Commons /corr 3rd flr -Exp mtl tile	5,127	SF	15.00	76,905
Commons /corr 3rd floor -Opt plank	1,641	SF	8.25	13,538
Music class - metal panel (2 EA)	1,902	SF	45.00	85,590
Music practice rm (2 EA)	408	SF	45.00	18,360
Main gym Tectum plank -50%	4,141	SF	20.00	82,820
Allow -Stage reflector Auditorium	1	LS	75,000.00	75,000
Auditorium Wd panel clg- 50%	2,167	SF	75.00	162,525
Exterior Soffit panel		W /Ext Wall		
090007 PAINTING*				
Paint gyp ceiling	6,478	SF	1.00	6,478
Paint gyp soffits	1	LS	25,000.00	25,000
Paint exposed structure- 100%:				
Stage	2,108	SF	2.00	4,216

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Paint Exposed Structure:				
Classroom - exp deck 2/3 rm	29,756	SF	2.00	59,512
Atrium 3rd flr	4,503	SF	2.00	9,006
Auditorium - 50%	2,167	SF	2.00	4,334
Main gym -50%	4,141	SF	2.00	8,282
				1,624,091
TOTAL C30 - INTERIOR FINISHES				4,310,168
D. SERVICES				
D10 - CONVEYING				
D1010 ELEVATORS & LIFTS				
140001 ELEVATORS & LIFTS*				
Passenger elevator (1 door) *Includes roof level stop	4	STOP	53,000.00	212,000
Stage lift		N/A		
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Elev. framing	1	EA	3,000.00	3,000
Elev. pit ladder	1	EA	1,537.00	1,537
Elev. sump grate	1	EA	1,500.00	1,500
				218,037
TOTAL D10 - CONVEYING				218,037
D20 - PLUMBING				
D2010 PLUMBING				
220001 PLUMBING*				
Plumbing Fixtures:				
Water closet	20	EA	1,850.00	37,000
ADA water closet	28	EA	1,850.00	51,800
Urinal	20	EA	1,650.00	33,000
Wall hung lavatory	14	EA	1,375.00	19,250
Ctr top lavatory	54	EA	1,100.00	59,400
Corridor drinking fountain	6	EA	3,150.00	18,900
Staff lunch room sink	1	EA	1,550.00	1,550
Music room sink	2	EA	1,550.00	3,100
Art room sink	3	EA	2,100.00	6,300

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Health office sink	1	EA	1,550.00	1,550
Typ classroom sink		N/A		
Typ classroom TP sink		N/A		
Media TP sink		N/A		
Tech-Makerspace sink	1	EA	1,550.00	1,550
Fab-lab sink	1	EA	1,550.00	1,550
Aud Dressing room sink (2 EA)	2	EA	1,550.00	3,100
ADA shower	1	EA	2,500.00	2,500
Mop service basin	6	EA	1,400.00	8,400
Kitchen mop service basin	1	EA	1,400.00	1,400
Fix Connection	161	EA	450.00	72,450
Sanitary and Vent Piping	6,200	LF	39.00	241,800
Domestic Piping	8,855	LF	44.50	394,048
FPSC wall hydrant	1	LS	10,000.00	10,000
HB hose bibb	1	LS	10,000.00	10,000
Floor Drains	1	LS	25,000.00	25,000
Science Class Room Equipment(6 EA):				
L-1 Student Lab Sink	18	EA	1,775.00	31,950
L-3 demonstration table (1-faucet)	6	EA	1,775.00	10,650
Emergency eye wash/shower (inc fd)	6	EA	3,100.00	18,600
Prep room sink	3	EA	1,775.00	5,325
Fix Connection	33	EA	350.00	11,550
Sanitary and Vent Piping	1,600	LF	49.00	78,400
Domestic Piping	1,980	LF	41.00	81,180
Acid Neutralization system	1	LS	22,500.00	22,500
Mixing Valve:				
MV-1	1	EA	7,500.00	7,500
MV-2 - science room	6	EA	1,250.00	7,500
Misc. Mix valve	2	EA	450.00	900
Pumps:				
RP-1 & RP-2	2	EA	15,000.00	30,000
RP-3	1	EA	4,500.00	4,500
RP-4	1	EA	4,500.00	4,500
Science Room Gas Fired Hot Water Heater:				
GWH-1	1	EA	25,000.00	25,000
Gas Fire Hot Water Supply Boiler:				
BLR-1, 2 (Lochinvar - Armor X2 -				
Gas Fired Water Heater	1	LS	55,000.00	55,000
hw Storage Tank	2	EA	18,000.00	36,000
Boiler Valve and Trim	1	LS	30,000.00	30,000
Interior Grease Interceptor:				
GI-1 & GI-2	2	EA	8,500.00	17,000
Exterior Grease Interceptor:				
EGI-1	1	EA	12,500.00	12,500
Auto Sensor (hard wire):				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Flush valve	68	EA	520.00	35,360
Lav Sensor	68	EA	495.00	33,660
Main Kitchen equipment hookup	1	LS	50,000.00	50,000
Roof/Storm Drain System				
Underground D/W/V Pipe:				
5"	510	LF	48.00	24,480
6"	900	LF	61.00	54,900
8"	200	LF	96.00	19,200
10"	50	LF	110.00	5,500
12"	20	LF	132.00	2,640
FCO	15	LF	425.00	6,375
Above Ground D/W/V Pipe:				
4"-10"	2,200	LF	60.00	132,000
CO	25	EA	400.00	10,000
Roof drain	55	EA	1,450.00	79,750
Overflow Nozzle	10	EA	1,650.00	16,500
Insulate leader	1,375	LF	13.00	17,875
Sanitary System				
Underground D/W/V Pipe:				
3"	300	LF	38.00	11,400
4"	1,500	LF	44.00	66,000
8"	500	LF	95.00	47,500
FCO	20	EA	425.00	8,500
Gas Pipe:				
2" - 6" Main	250	LF	80.00	20,000
1" - 1/2' lab connection		NIC		
Kitchen Piping	1	LS	15,000.00	15,000
Boiler Room Connections	1	LS	15,000.00	15,000
Science room shut off		NIC		
Gas turret		NIC		
Kitchen Master Shut off	1	LS	4,000.00	4,000
Underground Water Service:				
6"	10	LF	150.00	1,500
Meter Install	1	EA	1,200.00	1,200
6" BFP	1	EA	12,500.00	12,500
Test , permit misc gc	1	LS	50,000.00	50,000
General Requirement Temp Gas and Water	1	LS	35,000.00	35,000
				2,270,043
TOTAL D20 - PLUMBING	$16.60	/SF		2,270,043

D30 - HVAC

D3010 HVAC

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
230001 HVAC*				
Prefab Roof top mechanical rm	821	GSF	75.00	61,575
Packaged Rooftop Unit:				
RTU- Classroom (4 total)	88,000	CFM	13.50	1,188,000
RTU- Gym (1 total)	15,000	CFM	13.50	202,500
RTU- Locker Rm. (1 total)	3,500	CFM	15.00	52,500
RTU- Auditorium. (1 total)	12,000	CFM	13.50	162,000
RTU- Admin. (1 total)	6,000	CFM	11.00	66,000
Sound Attenuation	249,000	CFM	0.65	161,850
HW System:				
HWB-1 (FBN-2000)	1	EA	35,000.00	35,000
HWB-2 (FBN-2000)	1	EA	35,000.00	35,000
HWB-3 (FBN-2000)	1	EA	35,000.00	35,000
HWB-4 (FBN-2000)	1	EA	35,000.00	35,000
HWP-1,2	4	EA	15,000.00	60,000
BP 1-4	4	EA	2,250.00	9,000
VFD	4	EA	3,200.00	12,800
Chemical feed	1	LS	40,000.00	40,000
Air separator	2	EA	2,800.00	5,600
Expansion tank	2	EA	3,200.00	6,400
8" Feed Manifold	50	LF	350.00	17,500
6" Manifold S&R	100	LF	225.00	22,500
Boiler piping trim and valves	1	LS	30,000.00	30,000
12" Flue	240	LF	220.00	52,800
Flue Roof Term and Mast	4	EA	1,500.00	6,000
PH Tank	1	LS	1,500.00	1,500
Intake Louver and Damper	1	LS	6,000.00	6,000
Exhaust Louver and Damper	1	LS	6,000.00	6,000
Elec Room Exhaust fan and Louver	1	LS	3,500.00	3,500
Elec Room Exhaust and Intake louver damper	1	EA	3,500.00	3,500
Air-Cooled Chiller:				
ACC - 1 (175 ton)	2	EA	175,000.00	350,000
Chiller rough in, valve and trim	1	LS	20,000.00	20,000
Glycol	1	LS	18,500.00	18,500
Air separator	2	EA	3,500.00	7,000
100 Gal expansion tank	3	EA	4,000.00	12,000
500 Gal buffer tank	1	EA	7,500.00	7,500
CW Pump	2	EA	8,500.00	17,000
AC Split System:				
ACCU	11	EA	4,200.00	46,200
HP	11	EA	3,850.00	42,350
Line set	11	EA	1,500.00	16,500
Air Distribution:				
Auto Damper	16	EA	1,400.00	22,400
Fire damper	30	EA	550.00	16,500

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Galvanized ductwork	125,000	LBS	9.35	1,168,750
Decorative Atrium Ductwork	25,000	LBS	10.00	250,000
1" Duct insul	110,000	SF	3.90	429,000
EPDM wrap	3,000	SF	12.00	36,000
Kitchen hood exhaust duct - welded	1,250	LBS	17.50	21,875
Alum. dishwasher ductwork	500	LBS	12.00	6,000
Fire wrap at duct	400	SF	9.00	3,600
Displacement Box, Grills and Registers	136,790	GSF	0.85	116,272
VAV Box	55	EA	1,120.00	61,600
Distraction fan	3	EA	8,500.00	25,500
Terminal box	3	EA	850.00	2,550
Kitchen Exhaust	1	EA	5,500.00	5,500
Melink hood control	1	LS	12,500.00	12,500
Dish Washer Exhaust	1	EA	4,200.00	4,200
Bathroom Exhaust	2	EA	3,500.00	7,000
General Exhaust Fan	4	EA	3,500.00	14,000
MAU - 1	1	LS	30,000.00	30,000
Atrium Smoke Exhaust system	1	LS	145,000.00	145,000
Hydraunic Heater:				
Cab heater	9	EA	2,650.00	23,850
Convector	20	EA	1,400.00	28,000
Perimeter Radiant Heat	1,200	LF	165.00	198,000
Modulating Valve	68	EA	285.00	19,380
Isolation valve	136	EA	92.00	12,512
Mechanical Piping:				
AHU Valving	8	EA	3,500.00	28,000
Misc. Control Valve	8	EA	2,500.00	20,000
HVAC Pipe	136,790	GSF	7.25	991,728
Temperature Control:				
AHU/ERV	8	EA	25,000.00	200,000
Chiller and Cooling Equipment	1	LS	30,000.00	30,000
Boiler and Heating	1	LS	20,000.00	20,000
Pump	6	EA	1,800.00	10,800
FCU	1	EA	1,500.00	1,500
Hydronic point	40	EA	1,500.00	60,000
Exhaust Fan	8	EA	1,500.00	12,000
CO2 Sensor	45	EA	1,250.00	56,250
Misc. temp control	1	LS	75,000.00	75,000
Seismic & vibrator control	1	LS	35,000.00	35,000
Test and balance	136,790	GSF	0.65	88,914
Commission coordination	1	LS	25,000.00	25,000
GC & misc.	1	LS	25,000.00	25,000
*Fire safing carried w/ fittings				
*excludes temporary heat and ventilation				----------
				7,193,755

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
TOTAL D30 - HVAC	$52.59	/sf		7,193,755
D40 - FIRE PROTECTION				
D4010 SPRINKLERS				
210001 FIRE SUPPRESSION*				
Sprinkler System	136,790	GSF	4.75	649,753
Fire Pump (room shown on archi)	1	EA	95,000.00	95,000
				744,753
TOTAL D40 - FIRE PROTECTION	$5.44	/sf		744,753
D50 - ELECTRICAL				
D5010 ELECTRICAL SERVICE & DISTRIBUTION				
260001 ELECTRICAL*				
3,000 AMP Service, Panels and Feeders	1	LS	80,000.00	80,000
Panels and Feeders	136,790	SF	4.35	595,037
Transformer	4	EA	8,000.00	32,000
Digital metering	1	LS	35,000.00	35,000
250 kw Emergency Power	1	EA	165,000.00	165,000
General Power Devices	136,790	SF	2.30	314,617
24kw UPS	2	EA	17,500.00	35,000
Mechanical Wiring	136,790	SF	1.75	239,383
PV Rough-in	1	LS	25,000.00	25,000
				1,521,036
D5020 LIGHTING & BRANCH WIRING				
Interior Lighting	136,790	SF	8.50	1,162,715
Lighting Control	136,790	SF	2.00	273,580
				1,436,295
D5030 COMMUNICATION & SECURITY				
Division 27:				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Section 271100 - Communications Equipment Rm Fittings:				
Allow for idf/mdf Fitout	1	LS	75,000.00	75,000
Section 271500 - Communications Horizontal Cabling:				
Tele/data wiring, box and data port	136,790	SF	4.75	649,753
Section 272100 - Data Communications Network Equip - LAN/Wi-Fi Equip:				
Equipment total includes:		w/ff&e		
Server rack				
Phone system rack				
Public address rack				
Video surv. rack				
Media dist. rack				
Telecom rack				
Fiber dist. rack				
Section 273100 - Voice Communication Equipment (Avaya):				
Phone System		nic		
Section 274100 - Cafeteria Sound System	1	LS	50,000.00	50,000
Section 274100 - Gym Sound System	1	LS	50,000.00	50,000
Section 274100 - Media Center Sound System	1	LS	50,000.00	50,000
Section 274100 - Band	1	LS	35,000.00	35,000
Section 274110 Media Distribution System (IPTV):		nic		
Section 274120 Speech Reinforcement Systems:				
Classroom Reinforcement		nic		
Section 275116 - Public Address System:				
PA and Clock System	136,790	SF	0.95	129,951
Scoreboard and shot clock	1	LS	25,000.00	25,000
Section 275319 Bi-Directional Amplification System (DAS):				
DAS System	1	LS	110,000.00	110,000
Division 28:				
Section 281300 - Access Control and				
Section 281600 - Intrusion Detection Systems:				
Access Control	136,790	SF	2.50	341,975
Section 282000 - Video Surveillance CCTV System:				
Head end rack w/equip & poe ethernet sw	1	LS	85,000.00	85,000
Interior dome camera	35	EA	1,850.00	64,750
Ext. WP - exterior bkt mtd	20	EA	2,200.00	44,000
Section 282000 - Door Intercom/Video System (A1 phone):				
Master station - video	1	EA	1,650.00	1,650
Door entrance sta - video UP	2	EA	1,250.00	2,500
PS power supply	1	EA	500.00	500
System cabling	1	LS	10,000.00	10,000
Central controller w/program	1	LS	10,000.00	10,000
Area of refuge system	1	LS	45,000.00	45,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
				1,780,078
D5090 OTHER ELECTRICAL SYSTEMS				
Fire Alarm	136,790	SF	3.00	410,370
Mass notification	136,700	SF	1.25	170,875
Lightning Protection	1	LS	65,000.00	65,000
				646,245
TOTAL D50 - ELECTRICAL	$39.36	/sf		5,383,654
E. EQUIPMENT & FURNISHINGS				
E10 - EQUIPMENT				
E1010 COMMERCIAL EQUIPMENT				
114000 FOOD SERVICE EQUIPMENT				
Kitchen equipment & casework *Kitchen equipment & casework Quote 8/9/2018	1	LS	398,115.00	398,115
				398,115
E1090 OTHER EQUIPMENT				
113100 APPLIANCES (No Spec)				
Staff Dinning Rm (1 ea):				
Refrigerator -full size	1	EA	1,400.00	1,400
Microwave	1	EA	500.00	500
Dishwasher		N/A		
Teacher Planning Rm		NIC		
Medical Suite :				
Refrigerator -full size	1	EA	1,400.00	1,400
SPED Learning Ctr :		N/A		
Kitchen washer and dryer	W / Kitchen Equipment			
Science rm appliance	W / Science Equipment			
116600 ATHLETIC & SPORTS EQUIPMENT				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Main Gym:				
Basketball backstops - electric	6	EA	9,500.00	57,000
8' 8" H Wall padding -allow	1,176	SF	17.00	19,992
Motor op divider curtain (62'x28')-allow	1,736	SF	16.00	27,776
Volley ball court equip.	2	PR	700.00	1,400
Tennis court equip.	2	PR	700.00	1,400
Scoreboard		W / Electrical		
Wall Mtd Motor op Bleacher	640	SEAT	85.00	54,400
Additional Wall Mtd Motor op Bleacher	120	SEAT	85.00	10,200
116143 THEATRICAL EQUIPMENT(No Spec)				
Auditorium - Allow:				
Aud. Motorized stage rigging and curtain	1	LS	160,000.00	160,000
Lighting and Dimming System	1	LS	195,000.00	195,000
Aud Audio Visual System	1	LS	185,000.00	185,000
Auditorium fixed seat	420	EA	295.00	123,900
115213 PROJECTION SCREENS				
Projection screen - elec op-Allow:				
Auditorium	1	EA	15,000.00	15,000
Café/Learning commons	1	EA	15,000.00	15,000
Gym	1	EA	10,000.00	10,000
Media center	1	EA	10,000.00	10,000
119000 MISC. EQUIPMENT				
Science Lab Classroom Equipment (6 EA):				
Safety glasses monitor case	1	EA	1,000.00	1,000
Glassware pegboards (1/RM)	6	EA	350.00	2,100
Fume hood	6	nic		
First aid kit	6	EA	300.00	1,800
OH track - equip support	6	EA	2,500.00	15,000
Safety SHW		w/ plumbing		
Fire blanket	6	EA	500.00	3,000
Fire ext & cab (1/RM)	6	EA	425.00	2,550
Misc equipment	6	RM	500.00	3,000
Science Shared Prep Room Equipment (3 EA):				
Refrigerator - full size	3	EA	750.00	2,250
Dishwasher - under -counter	3	EA	1,100.00	3,300
Ice maker - under -counter	3	EA	1,100.00	3,300
Glassware pegboards (1/RM)	1	EA	350.00	350
Acid storage cabinets	3	EA	1,000.00	3,000
Flammable material storage cab.	3	EA	2,500.00	7,500

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Misc equipment	3	RM	500.00	1,500
Additional Science Lab Equipment - Allow:				
Water distiller		NIC		
Autoclave sterilizer		NIC		
Steam table		NIC		
Robotics equip		NIC		
Allow:				
Loading dock bumpers	1	LS	3,500.00	3,500
Kiln	1	EA	4,000.00	4,000
Metal storage shelving		NIC		
Library equipment		NIC		
Loading dock trash compactor		NIC		
Loading dock dumpster		NIC		
Power op changing table- Hoyer lift		NIC		
Vault main office		NIC		
				946,518
TOTAL E10 - EQUIPMENT				1,344,633
E20 - FURNISHINGS				
E 2010 FIXED FURNISHINGS				
122413 WINDOW TREATMENT				
Allow:				
Exterior Manual op Window Shade	15,166	SF	8.00	121,328
Exterior Motor Op Shade:				
Aud clerestory	711	SF	28.00	19,908
Gym clerestory		NIC		
Interior Specialty Shade:				
P lam bifold screen @ corr window(7'w x 8' Hx2")	45	EA	1,500.00	67,500
123550 CASEWORK				
Corridor built-in bench 7'w	315	LF	400.00	126,000
Solid surface lav ctr	250	LF	265.00	66,250
5 tier 4'W shelving @ class closet-34 loc	680	LF	28.00	19,040
Science Lab Classroom (6 EA):				
Sink		w/ plumbing		
Epoxy ctr w/ 24" backsplash(no base cab 44 LF/RM)	264	LF	285.00	75,240
Mobile storage cab (36"wx27"h 6/RM)	36	EA	750.00	27,000
P lam Wall cab (44 LF/RM)	264	LF	210.00	55,440
Teachers demo table		NIC		
Student table		NIC		
Science Shared Prep Room (3 EA):				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Sink			w/ plumbing	
Epoxy ctr w/ 24" backsplash(no base cab 10.5 LF/RM)	32	LF	285.00	8,978
P lam Wall cab (10.5 LF/RM)	31.5	LF	210.00	6,615
Tech-Makerspace (1 EA):				
Counter w/ backsplash(no base cab)	20	LF	230.00	4,600
P lam Wall cab	20	LF	210.00	4,200
Fab-lab (1 EA):				
Counter w/ backsplash(no base cab)	68	LF	230.00	15,640
P lam Wall cab	68	LF	210.00	14,280
Art Class Room (1 EA):				
Counter w/ backsplash(no base cab)	25	LF	230.00	5,750
P lam Wall cab	25	LF	210.00	5,250
Teacher Prep Room (24 EA):				
P Lam ctr w/ wd edge (11'/loc)	264	LF	230.00	60,720
12" Shelving (5 tier- 42' 6"/loc)	1020	LF	45.00	45,900
Typ, SPED & ELL Classroom (33 EA):				
Ext wall 30" P Lam ctr w/ wd edge (12' 6"/loc)	412.5	LF	265.00	109,313
Ext wall 30" P Lam flip top ctr w/ wd edge (3'/loc)	99	LF	325.00	32,175
Mobile storage cab (36"wx27"h 4/RM)	132	EA	750.00	99,000
Ext wall 4 tier shelving unit (10' /loc)	330	LF	400.00	132,000
Music Classroom (2 EA):				
Ext wall 30" P Lam ctr w/ wd edge (20'/loc)	40	LF	265.00	10,600
Ext wall 30" P Lam flip top ctr w/ wd edge (3'/loc)	6	LF	325.00	1,950
Mobile storage cab (36"wx27"h 4/RM)	8	EA	750.00	6,000
Ext wall 4 tier shelving unit (14' /loc)	28	LF	400.00	11,200
Allow-Staff Lunch Room (1 EA):				
Base cab w/ SS ctr	10	LF	425.00	4,250
Wall cab	10	LF	200.00	2,000
Allow-Medical Suite:				
Base cab w/ ctr	6	LF	425.00	2,550
Wall cab	6	LF	200.00	1,200
Aud Dressing room (2 EA):				
Allow- Counter w/ backsplash(no base cab)	26	LF	300.00	7,800
Allow-Main Admin Suite:				
Work ctr	10	LF	245.00	2,450
Base cab w/ ctr	10	LF	350.00	3,500
Wall cab	10	LF	220.00	2,200
Mail box unit w/ base cab	10	LF	850.00	8,500
Reception desk		W / C1030		
Misc. Casework Allowance:				
Media Center (1 EA):		W / C1030		
Cafeteria /Learning Commons		NIC		
Common cohort Area 260		NIC		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Common cohort Area 310		NIC		
Music Practice rooms		NIC		
Music storage		NIC		
Gymnasium		NIC		
Auditorium		NIC		
Kitchen & Serving area		NIC		
Guidance suite (3 loc)		NIC		
SPED suite (3 loc)		NIC		
15'x15' Breakout Room (1 EA)		NIC		
18'x18' Breakout Room (2 EA)		NIC		
26'x14' Breakout Room (1 EA)		NIC		
20' Dia. Breakout Room (5 EA)		NIC		
Mobile Student table		NIC		
Art storage rm (1 EA):				
Auditorium millwork	1	LS	125,000.00	125,000
129000 MISCELLANEOUS FURNISHING				
Choral classroom risers		W/FFE		
Band classroom risers		W/FFE		
Stage risers		W/FFE		
				1,311,326
E2020 MOVABLE FURNISHINGS		NIC		
				0
TOTAL E20 - FURNISHINGS				1,311,326
F. SPECIAL CONSTRUCTION & DEMOLITION				
F10 - SPECIAL CONSTRUCTION				
F1010 SPECIAL STRUCTURES		N/A		
				0
TOTAL F10 - SPECIAL CONSTRUCTION				0
F20 - SELECTIVE BUILDING DEMOLITION				
F2010 BUILDING ELEMENTS DEMOLITION		See Grand Summary		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
				0
F2020 HAZARDOUS COMPONENTS ABATEMENT	See Grand Summary			
				0
TOTAL F20 - SELECTIVE BUILDING DEMOLITION				0

G. BUILDING SITEWORK

G10 - SITE PREPARATION

G1010 SITE CLEARING

311000 SITE PREPARATION & CLEARING

Construction entrance	1	EA	7,500.00	7,500
Construction fence	4,000	LF	12.00	48,000
Erosion control	3,200	LF	4.50	14,400
Drain inlet protection	25	EA	50.00	1,250
Erosion control maintenance	1	LS	15,000.00	15,000
Strip & stack top soil - 6"	5,900	CY	9.25	54,575
Selective Clear and Grub	1	LS	20,000.00	20,000
Saw cut walk	25	LF	5.00	125
Saw cut drive	25	LF	5.00	125
Protection:				
Plywood Protection Fence at Existing Building	250	LF	225.00	56,250
Site - Remove Existing:				
Cut and Cap	1	LS	5,000.00	5,000
Sanitary and Drain pipe	1,435	LF	35.00	50,225
Water Line	900	LF	31.00	27,900
Utility structures	10	EA	425.00	4,250
Wood guardrail	300	LF	15.00	4,500
Bit walk	201,786	SF	0.85	171,518
Conc. walk	14,967	SF	1.00	14,967
Bit Walkway	8,874	SF	0.90	7,987
Misc. site demolition	1	LS	25,000.00	25,000
Ground improvements	16,500	SF	10.50	173,250
				701,822

G1020 SITE DEMOLITION & RELOCATIONS

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Building Removal	SEE GRAND SUMMARY			
				0
G1030 SITE EARTHWORK				
310000 EARTHWORK				
Site Cut and Fill to Rough Grade:				
Site Cut	12,095	CY	10.25	123,974
Site Fill - reuse mat'l	17,349	CY	11.00	190,839
Site Fill - supply	24,320	CY	19.75	480,320
Site Rough Grading	101,781	SY	2.30	234,096
Layout, Mobilization, Supervision	1	LS	300,000.00	300,000
Temporary Access Road and Phasing Logistics:				
Temporary Parking (90 spaces)	89,000	SF	4.75	422,750
Temp Draiange		N/A		
Dust Control	1	LS	10,000.00	10,000
Street Sweeping	1	LS	10,000.00	10,000
				1,771,979
G1040 HAZARDOUS WASTE REMEDIATION				
		NIC		
				0
TOTAL G10 - SITE PREPARATION				2,473,801
G20 - SITE IMPROVEMENTS				
G2010 ROADWAYS				
321000 PAVING AND CURBING				
Bituminous Pavement (1 1/2" Wear & 2 1/2" Base):				
Bit Pavement - parking and road	18,983	SY	27.00	512,541
12" Gravel base @ bit drive	6,327	CY	31.50	199,301
Bituminous Pavement (1 1/2" Wear & 2 1/2" Base):				
Bit Pavement - fire lane	1,294	SY	27.00	34,938
12" Gravel base @ bit drive	432	CY	31.50	13,608
Curbing:				
Granite curb - straight	2,898	LF	41.50	120,267
Granite curb - radial	1,267	LF	45.50	57,649
Granite curb - sloped	55	LF	39.75	2,186

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Precast Concrete - straight		N/A		
Precast Concrete - radial		N/A		
Bit Berm Curb	2,000	LF	4.25	8,500
Street Patch at New Curb	1,154	LF	50.00	57,700
Parking striping	1	LS	15,000.00	15,000
Pavement patch @ utilities	1	LS	15,000.00	15,000
				1,036,689

G2020 PARKING LOTS

*Included with G2010

0

G2030 PEDESTRIAN PAVING

321000 PAVING AND CURBING

Bituminous Walks:				
Bituminous pavement - per civil	516	SY	25.45	13,132
Bituminous pavement - per landscape	182	SY	25.45	4,632
8" Gravel @ bit walk	155	CY	33.00	5,115
Concrete Walk:				
5" Concrete Pavement - per civil	17,774	SF	7.35	130,639
5" Concrete Pavement - per landscape	11,082	SF	7.35	81,453
8" Gravel @ conc. walks	714	CY	34.00	24,276
Add for Colored Concrete	1	LS	75,000.00	75,000
Concrete Unit Pavers - Patio (per archi drwgs):				
Unit paver	1,315	SF	20.00	26,300
8" Gravel @ paver	49	CY	34.00	1,666
HC tactile paver	10	EA	365.00	3,650
				365,863

G2040 SITE DEVELOPMENT

323100 SITE IMPROVEMENTS

Gateway and Bandstand	1	LS	100,000.00	100,000
Front Entry:				
Concrete Stair and Railing	4	LOC	10,000.00	40,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
050001 MISCELLANEOUS & ORNAMENTAL IRON*				
Steel Guard Rail:				
Entry Ramp Guard railing	115	LF	350.00	40,250
Bollards:				
6" Galv. Metal bollard @ equip pads	20	EA	950.00	19,000
323100 SITE IMPROVEMENTS				
Allowance:				
Wood Guard rail	251	LF	65.00	16,315
Trash/recycle receptacle	10	EA	2,000.00	20,000
Bike loops	20	EA	450.00	9,000
Entry sign	1	LS	30,000.00	30,000
Electronic school zone signals		NIC		
Parking/traffic signage	1	LS	7,500.00	7,500
Bench	10	EA	2,500.00	25,000
Dumpster pad	200	SF	16.00	3,200
Flag pole w/base	1	EA	7,200.00	7,200
				317,465
G2050 LANDSCAPING				
329000 PLANTING				
Trees:				
Tree - 3 1/2" cal	142	EA	900.00	127,800
Evergreen/screen trees (8-10' ht)	1	LS	30,000.00	30,000
Ornamental trees (8-10' ht)	1	LS	30,000.00	30,000
Shrubs & Perennials	1	LS	75,000.00	75,000
Mulch - allowance	200	CY	65.00	13,000
Lawn:				
Sod lawn	15,495	SF	1.00	15,495
Low mow fescue hydroseed lawn	435,679	SF	0.35	152,488
Meadow Mix	180,619	SF	0.35	63,217
12" Soil @ plant bed	438	CY	48.00	21,024
6" Loam - Lawn (inc.'s 8" at sports field)	12,710	CY	48.00	610,080
Credit to amend existing soil	-5,900	CY	35.00	-206,500
Irrigation System- Repair/Replace	82,800	SF	1.00	82,800
				1,014,403
TOTAL G20 - SITE IMPROVEMENTS				2,734,420

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
G30 - SITE MECHANICAL UTILITIES				
G3010 WATER SUPPLY				
330000 UTILITIES				
Site Connection	1	LOC	7,500.00	7,500
4" Domestic	30	LF	69.50	2,085
6" Domestic	125	LF	77.00	9,625
8" Main	1,500	LF	95.00	142,500
6" Fire hydrant service line	30	LF	85.00	2,550
Hydrant	3	EA	2,350.00	7,050
8" Gate valve	2	EA	1,650.00	3,300
6" Gate valve	4	EA	1,400.00	5,600
Temporary Construction Water Service	1	LS	25,000.00	25,000
				205,210
G3020 SANITARY SEWER				
330000 UTILITIES				
Grease trap W/ BLDG Conn	INC. W/ PLUMBING			
8" PVC	425	LF	85.00	36,125
Sanitary manhole	1	EA	4,100.00	4,100
Exist. sanitary manhole - site conn.	1	EA	7,500.00	7,500
				47,725
G3030 STORM SEWER				
330000 UTILITIES				
Site Drainage :				
Area drain	1	LS	25,000.00	25,000
Catch basin	18	EA	4,500.00	81,000
Drain Manhole	7	EA	4,500.00	31,500
Treatment chamber	4	EA	12,500.00	50,000
Head wall and Outfall	4	EA	10,000.00	40,000
Loading dock trench drain	20	LF	95.00	1,900
Bio retention basin	1	LS	100,000.00	100,000
Piping and Trenching:				
12" HDPE	2,089	LF	21.00	43,869
24" HDPE	550	LF	33.00	18,150
				391,419

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
G3060 FUEL DISTRIBUTION				
330000 UTILITIES				
Gas Service:				
Gas Pipe		By utility		
Trench excavation & backfill	750	LF	48.00	36,000
Service Meter Pad	1	EA	2,500.00	2,500
				38,500
G3090 OTHER SITE MECHANICAL UTILITIES		N/A		
				0
TOTAL G30 - SITE MECHANICAL UTILITIES				682,854
G40 - SITE ELECTRICAL UTILITIES				
G4010 ELECTRICAL DISTRIBUTION				
330000 UTILITIES				
Generator Pad	200	SF	25.00	5,000
Transformer pad	200	SF	25.00	5,000
Trench, Backfill and Concrete:				
Primary Ductbank	1,000	LF	70.00	70,000
Secondary ductbank	200	LF	85.00	17,000
Entrance Sign Power Feed (no concrete)	1,500	LF	22.00	33,000
Entrance Sign T/D Feed (no concrete)	1,500	LF	22.00	33,000
260001 ELECTRICAL*				
D&R all secondary feeders from xfmr in vault	1	LS	4,970.00	4,970
Co-ord PRI service removal	1	LS	1,704.00	1,704
Co-ord communication serv removal	1	LS	426.00	426
Exist. gen/set D&R complete	1	LS	9,030.00	9,030
Exist. gen/set wiring complete	1	LS	1,420.00	1,420
Co-rod removal of O/H service thru wood pole to modulars	1	LS	1,704.00	1,704
D&R exist. O/H sec service from modulars to pole xfmrs (bucket truck)	1	LS	2,652.00	2,652

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Ductbank				
Pole dressing - PRI	1	EA	684.00	684
AA				
PVC-4"C-w/PS	4,000	LF	5.65	22,600
BB				
PVC-4"C-w/PS	800	LF	5.65	4,520
CC				
Site Sign Feed:				
PVC-1"C-single mode fiber	1,500	LF	4.13	6,195
PVC-1"C-3#8 $ 1#10	1,500	LF	4.75	7,125
Xfmr pad grounding	1	EA	859.00	859
Gen/set pad grounding	1	EA	588.00	588
Xfmr pad 90 deg & sleeves	1	EA	608.00	608
Gen/set 90 Deg & sleeves	1	EA	488.00	488
				228,573
G4020 SITE LIGHTING				
330000 UTILITIES				
Site light trenching	2,500	LF	18.50	46,250
Light Pole base - 12' Precast	29	EA	1,500.00	43,500
260001 ELECTRICAL*				
Lighting Fixtures:				
ZF - Flag pole light	1	EA	763.00	763
ZT22-20'alum w/twin head	29	EA	3,368.00	97,672
Pedestrian lighting	1	LS	25,000.00	25,000
Pole base anchor bolts setups	29	EA	53.25	1,544
Pole base grounding w/elbow	29	EA	186.50	5,409
Pole base sleeves & nipples	29	EA	181.50	5,264
PVC-1 1/4"C-2#8 & 1#10	2,500	LF	3.33	8,325
				233,726
TOTAL G40 - SITE ELECTRICAL UTILITIES				462,299

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
ALTERNATE NO. 1 - ADD IRRIGATION SYSTEM (82,800 SF)				
Add:				
Irrigation System	82800	SF	1.00	82,800
Irrigation bfp	1	EA	1,600.00	1,600
Meter and Irrigation feed	1	LS	5,000.00	5,000

SUBTOTAL				89,400
DESIGN CONTINGENCY		10	%	8,940

SUBTOTAL				98,340
CM CONTINGENCY		3	%	2,950

SUBTOTAL				101,290
ESCALATION (winter 2019)		6	%	6,077

SUBTOTAL				107,368
GENERAL CONDITIONS		7	%	7,516

SUBTOTAL				114,883
GENERAL REQUIREMENTS		2.5	%	2,872

SUBTOTAL				117,755
BUILDING PERMIT		0	%	0

SUBTOTAL				117,755
P&P BOND		0.85	%	1,001

SUBTOTAL				118,756
GENERAL LIABILITY INSURANCE		1.35	%	1,603

SUBTOTAL				120,360
FEE		2.5	%	3,009

TOTAL ALTERNATE NO. 1				123,369

Fuller School Cost per Residential Taxpayer

Total Project Cost as of 8/24/2018	$98,276,878
MSBA Estimated Grant	$39,483,593
Estimated Cost to City	$58,793,285
Reduced by Appropriation of Capital Stabilization funds	-$8,000,000
Net Estimated Cost to the City	$50,793,285

Total Cost to Average Residential Taxpayer	$2,116	*includes condos and multi unit dwellings*
Average Annual Cost to Average Residential Taxpayer	$101	

Total Cost to Average Single Family Homeowner	$2,229	*single family homes only, not condos and multi unit dwellings*
Average Annual Cost to the Average Single Family Homeowner	$111	

Average Annual Impact on the Tax Rate (per Thousand in Value)	$0.29

29 Cents

Bulletin 08-02
Local Votes by communities who have been invited to enter into a Project Scope and Budget Agreement with the Massachusetts School Building Authority

Requirements for Warrant Articles, Motions, Orders and Votes

Pursuant to G.L. c. 70B and 963 CMR 2.10, the Massachusetts School Building Authority ("MSBA") issues this Bulletin to inform cities, towns, and regional school districts that have been invited to enter into a Project Scope and Budget Agreement with the MSBA of the requirements for warrant articles, motions, orders, and votes related to any potential projects that may be eligible for MSBA funding (collectively, "Projects")..

**** Please note that only those communities who have been invited by the MSBA to enter into a project scope and budget agreement with the MSBA should vote to authorize a project, and such vote should not occur until after the project scope and budget have been approved by the MSBA. Communities are urged to contact the MSBA before finalizing an article, motion, resolution, ballot question or other vote because there may be additional requirements depending on the particulars of your project. If a city, town or regional school district already has voted to authorize a project, please contact the MSBA immediately. The MSBA may require clarification of the vote or a new vote that meets the MSBA's requirements. Communities who have not been invited by the MSBA to enter into a project scope and budget agreement should not be voting to authorize a construction or renovation project at this time.**

Cities, towns and regional school districts that proceed with studying, planning, designing, renovating or constructing a school facility without the collaboration and approval of the MSBA will not be eligible for MSBA funding.

****Communities should consult with their local counsel and bond counsel to ensure that all warrant articles, motions, orders, and votes otherwise comply with municipal finance law and all other applicable laws, regulations, local bylaws, and ordinances.**

All articles, motions, resolutions, orders, Proposition two and one-half ballot questions, and any other votes of a city, town or regional school district related to the approval, funding, and/or debt authorization for a Project shall be a **separate, stand-alone vote, solely for purposes of the one Project**. The article, motion, resolution, order, vote and/or ballot question related to the Project must not pertain to or be bundled with any other school or municipal project. The article, motion, resolution, order, vote must be project specific and must include specific information about the project location and scope.

A city, town or regional school district must vote to appropriate and authorize the **full amount** of a Project's cost, including both the local share and the MSBA's share, if any. The total project budget amount must be authorized and approved.

All warrant articles, motions, resolutions, orders and votes, with the exception of a Proposition two and one-half ballot question (see below), must include the following provisions:

- A description of the site of the project, including the address of the school building and a description of the parcel.

- If a proposed renovation, addition, or new construction project, "the school facility shall have an anticipated useful life as an educational facility for the instruction of school children for at least 50 years, and for which the Town may be eligible for a school construction grant from the Massachusetts School Building Authority."

- If a proposed repair project, "The proposed repair project would materially extend the useful life of the school and preserve an asset that otherwise is capable of supporting the required educational program."

- "The MSBA's grant program is a non-entitlement, discretionary program based on need, as determined by the MSBA, and any project costs that the [City/Town/Regional School District] incurs in excess of any grant that may be received from the MSBA shall be the sole responsibility of the [City/Town/Regional School District]."

- For the debt authorization provision, the following language must be included: "the amount of borrowing authorized pursuant to the vote shall be reduced by any amounts received or expected to be received from the MSBA prior to the issuance of any bonds or notes under this vote."

A form of article, motion, order, vote is attached as "Attachment A," and a city, town or regional school district must use this form to qualify for MSBA funding.

Proposition Two and One-Half Ballot Questions

- All ballot questions for a Project must be solely related to that Project. One Project per vote. The ballot question related to the Project must not pertain to or be bundled with any other school or municipal projects.

A form of ballot question is attached as "Attachment B," and a city or town must use this form to qualify for MSBA funding.

Attachment A

ARTICLE

To see if the Town will vote to appropriate, borrow or transfer from available funds, a sum of money to be expended under the direction of the School Building Committee for [*Insert description of Project, including name of school, description of location, address*], which school facility shall have an anticipated useful life as an educational facility for the instruction of school children of at least 50 years, and for which the Town may be eligible for a school construction grant from the Massachusetts School Building Authority ("MSBA"). [*Alternatively, if a repair project*: The proposed repair project would materially extend the useful life of the school and preserve an asset that otherwise is capable of supporting the required educational program.] The MSBA's grant program is a non-entitlement, discretionary program based on need, as determined by the MSBA, and any project costs the Town incurs in excess of any grant approved by and received from the MSBA shall be the sole responsibility of the Town. Any grant that [*City/Town/Regional School District*] may receive from the MSBA for the Project shall not exceed the lesser of (1) _____ percent (%) of eligible, approved project costs, as determined by the MSBA, or (2) the total maximum grant amount determined by the MSBA.

MOTION/VOTE/ORDER

That the [*City/Town/Regional School District*] appropriate the sum of _____ ($_____) Dollars for [*Insert a description of the Project, including school name and location, scope of project*], which school facility shall have an anticipated useful life as an educational facility for the instruction of school children for at least 50 years [*Alternatively, if a repair project*: which proposed repair project would materially extend the useful life of the school and preserve an asset that otherwise is capable of supporting the required educational program.], said sum to be expended under the direction of the School Building Committee, and to meet said appropriation the [*Insert the appropriate local official or Board*], is authorized to borrow said sum under M.G.L. Chapter 44, or any other enabling authority; that the [*City/Town/Regional School District*] acknowledges that the Massachusetts School Building Authority's ("MSBA") grant program is a non-entitlement, discretionary program based on need, as determined by the MSBA, and any project costs the [*City/Town/Regional School District*] incurs in excess of any grant approved by and received from the MSBA shall be the sole responsibility of the [*City/Town/Regional School District*]; provided further that any grant that [*City/Town/Regional School District*] may receive from the MSBA for the Project shall not exceed the lesser of (1) _____ percent (%) of eligible, approved project costs, as determined by the MSBA, or (2) the total maximum grant amount determined by the MSBA; [provided that any appropriation hereunder shall be subject to and contingent upon an affirmative vote of the Town to exempt the amounts required for the payment of interest and principal on said borrowing from the limitations on taxes imposed by M.G.L. 59, Section 21C (Proposition 2½)]; and that the amount of borrowing authorized pursuant to this vote shall be reduced by any grant amount set forth in the Project Funding Agreement that may be executed between the [*City/Town/Regional School District*] and the MSBA.

Attachment B

BALLOT QUESTION

Shall the (City/Town) of _____ be allowed to exempt from the provisions of Proposition two-and-one-half, so called, the amounts required to pay for the bonds issued in order to [*Insert description of the Project*]?

REQUEST FOR APPROPRIATION

Pursuant to Article VI, Section 6 of the Framingham Home Rule Charter, the Mayor hereby requests that the City Council vote to appropriate, borrow or transfer from available funds, an amount of money to be expended under the direction of the School Building Committee for the new Fuller Middle School, serving grades 6-8 and located at 31 Flagg Drive, Framingham, MA, which school facility shall have an anticipated useful life as an educational facility for the instruction of school children of at least 50 years and for which the City may be eligible for a school construction grant from the Massachusetts School Building Authority ("MSBA"). The City acknowledges that the MSBA's grant program is a non-entitlement, discretionary program based on need, as determined by the MSBA, and any project costs the City incurs in excess of any grant approved by and received from the MSBA shall be the sole responsibility of the City. Any grant that the City may receive from the MSBA for the Project shall not exceed the lesser of (1) sixty two point thirty-one percent (62.31%) of eligible, approved project costs, as determined by the MSBA, or (2) the total maximum grant amount determined by the MSBA.

MOTION/VOTE/ORDER

That the City appropriate the amount of _____ ($_____) Dollars for the purpose of paying costs of the new Fuller Middle School, serving grades 6-8 and located at 31 Flagg Drive, Framingham, MA, including the payment of all costs incidental or related thereto (the "Project"), which school facility shall have an anticipated useful life as an educational facility for the instruction of school children for at least 50 years, and for which the City may be eligible for a grant from the Massachusetts School Building Authority ("MSBA"), said amount to be expended under the direction of the School Building Committee. To meet this appropriation the City Council is authorized to borrow said amount under M.G.L. Chapter 44, or pursuant to any other enabling authority. The City acknowledges that the MSBA's grant program is a non-entitlement, discretionary program based on need, as determined by the MSBA, and any project costs the City incurs in excess of any grant approved by and received from the MSBA shall be the sole responsibility of the City; provided further that any grant that the City may receive from the MSBA for the Project shall not exceed the lesser of (1) sixty two point thirty-one percent (62.31%) of eligible, approved project costs, as determined by the MSBA, or (2) the total maximum grant amount determined by the MSBA; provided that any appropriation hereunder shall be subject to and contingent upon an affirmative vote of the City to exempt the amounts required for the payment of interest and principal on said borrowing from the limitations on taxes imposed by M.G.L. 59, Section 21C (Proposition 2½); and that the amount of borrowing authorized pursuant to this vote shall be reduced by any grant amount set forth in the Project Funding Agreement that may be executed between the City and the MSBA.

BALLOT QUESTION

Shall the City of Framingham be allowed to exempt from the provisions of Proposition two-and-one-half, so called, the amounts required to pay for the bonds issued in order to fund all costs, all incidental and related to, for the planning, constructing, originally equipping and furnishing of the new Fuller Middle School, serving grades 6-8 and located at 31 Flagg Drive, Framingham, MA?

SCHOOL BUILDING COMMITTEE
FULLER MIDDLE SCHOOL FEASIBILITY STUDY

All meetings held at the
Fuller Middle School Library at 7:00 PM
unless otherwise noted

MEETINGS SCHEDULE AND AGENDAS
August 22, 2018

DATE	AGENDA
Post-Schematic Design	
September 24, 2018	SCHOOL BUILDING COMMITTEE MEETING
	Review Post Schematic Design Schedule
	Discuss Community Outreach Plan
	Prepare for Community Forum No. 8
October 1, 2018	COMMUNITY FORUM NO. 8 - 6:00 to 8:00 PM - FULLER MIDDLE SCHOOL LIBRARY
October 9, 2018	SCHOOL BUILDING COMMITTEE MEETING (TUESDAY)
	Review MSBA Comments
October 22, 2018	SCHOOL BUILDING COMMITTEE MEETING
	Prepare for MSBA Board Meeting
	Prepare for Community Forum No. 9
October 31, 2018	*MSBA BOARD MEETING*
November 1, 2018	COMMUNITY FORUM NO. 9 - 6:00 to 8:00 PM - FULLER MIDDLE SCHOOL LIBRARY
November 5, 2018	SCHOOL BUILDING COMMITTEE MEETING
	Recap MSBA Board Meeting
November 19, 2018	SCHOOL BUILDING COMMITTEE MEETING
	Check-in Meeting
	Prepare for Community Forum No. 10
November 28, 2018	COMMUNITY FORUM NO. 10 - 6:00 to 8:00 PM - FULLER MIDDLE SCHOOL LIBRARY
December 4, 2018	SCHOOL BUILDING COMMITTEE MEETING (TUESDAY)
	Check-in Meeting
December 11, 2018	*BALLOT VOTE*
	ADDITIONAL MEETINGS TO BE SCHEDULED

Back To School Family Picnic

It has been a very busy summer planning for the 2018 - 2019 school year and the District is looking forward to bringing our plans and lessons to life and reconnecting with our students. We also look forward to connecting with you, sharing inspiring and positive stories from our classrooms, cafeterias, athletic fields, stages, clubs, and more.

One of the four standards in the District's Strategic Plan includes Family and Community Engagement. We are always happy to provide more information on this, but for context the goals associated with this standard are driving us to foster *community, family, and business partnerships* that further *support and engage our relationships and encourage collaboration* - both internally and externally.

We've identified 4 dates for the 2018-2019 school year which will (to the best of our ability) be held for family and community engagement. Our goal is to limit these Family, Friends, and Neighbor Days from having homework, sports, arts, and/or other commitments, as we want families to be able to engage with us at the District level OR with themselves without having multiple commitments to juggle.

The first of these days is **Thursday August 30th**. We are gathering from **4:30pm - 7:30pm** at **Farm Pond Park** and we would love for you to join us, our families, and our community partners to the First Annual **Back To School Family Picnic**. The District will provide shuttle transportation, activities, and access to the FPS and community resources that will be helpful for our families throughout the school year. The rain date is Thursday, September 6, 2018 - same time and location.

We've had an incredible amount of support from the City, especially from Parks and Recreation. It's taken a huge level of effort to plan this event and we are grateful for our growing partnership with different City departments. The Back To School Family Picnic is free and open to all Framingham Public School students, families, staff, and community partners. Families are encouraged to bring a blanket and food. We hope to see you there!

Learn more: www.framingham.k12.ma.us

Back To School Family Picnic

Incentivizing Family and Community Engagement

FPS will provide raffle tickets to the different Schools, Departments, and Community Partners - each of whom will be hosting some interactive activity. For every successful interaction at the various tables, families will receive one raffle ticket. Families will then submit raffle tickets for specific items of interest on-site at the Back To School Family Picnic. All raffles are free, but a 'winner' must be on-site to claim their prize at either or both of the raffle times.

Exciting Raffles

Through generous donations from local businesses and service providers, various raffle items will be available for families to win. The more families interact and engage, the more tickets they receive - the more chances they have to win!

Event Schedule (Subject to change)

Raffles and Performances will take place intermittently throughout the event.

- 4:30pm: Event opens, Picnic (Families bring their own food), Event Activities & Games
- 5:15pm: Event Kick off by Superintendent Dr. Robert Tremblay
- 5:30pm: Remarks from Mayor Spicer
- 7:30pm: Event ends

Additional Information

There are more than **75** organizations scheduled to attend including FPS Schools / PTOs, FPS Departments, and Community Partners. As of Friday 8/24/18, there are more than **940 Framingham residents / teachers registered** to attend.




Learn more: www.framingham.k12.ma.us

City of Framingham | Framingham Public Schools
Fuller Middle School Building Project

Promotional Opportunities for Community Outreach

Date	Time	Location	Event	Volunteer
August 28	1:00 PM	Framingham Callahan Center	Council on Aging	
August 29	5-8 PM	Depot 417	XChange Depot Public Market Series	
August 30	4:30 PM-7:30 PM	Farm Pond Park	Back to School Picnic	
August 30	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market	
September 5	6:30 PM - 7:30 PM	Framingham Public Library	Summer Campeones	
September 6	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market	
September 6	6-7:45 PM	Walsh Middle School	Curriculum Night	
September 12	5-8 PM	Depot 417	XChange Depot Public Market Series	
September 13	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market	
September 14	6-9 PM	Saxonsonville Mills	Gallery Reception and Open Studios The Mill Contemporary Art	
September 19	6:30 PM - 7:30 PM	Framingham Public Library	Summer Campeones	
September 20	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market	
September 26	5-8 PM	Depot 417	XChange Depot Public Market Series	
September 27	12:00-5:30 PM	Framingham Centre Common	Weekly Farmer's Market	
October 3	6:30 PM - 7:30 PM	Framingham Public Library	Summer Campeones	
October 17	6:30 PM - 7:30 PM	Framingham Public Library	Summer Campeones	
Additional Upcoming Promotional Activities				
September 5	*7:30 - 9:00 PM*	*BLOCKS*	*BLOCKS PTO Meeting*	
September 5	*6:30 - 8:30 PM*	*Hemenway ES*	*PTO Meeting*	
September 5	*5:30 - 8:00 PM*	*Potter Road ES*	*Welcome Back Picnic*	
September 6	*6:00 - 8:00 PM*	*Fuller Middle School Library*	*Community Forum No. 7*	
September 8	*2:00 - 4:00 PM*	*Framingham Public Library - Main Library*	*End of Summer Ice Cream / Rock Band Party*	
September 8	*3:00 - 7:00 PM*	*Butterworth Park*	*Lokerville Lookouts Block Party*	
September 12	*6:30 - 8:00 PM*	*Woodrow Wilson ES*	*Open House (K, 1, 2)*	
September 13	*6:30 - 8:30 PM*	*Barbieri ES*	*PTO Meeting & Social*	
September 14	*6:30 - 8:30 PM*	*Brophy ES*	*PTO Meeting: Pizza & Movie*	
September 20	*6:30 - 7:30 PM*	*Barbieri ES*	*Curriculum Night (Grades K-2)*	
September 22	*7:00 AM - 12:00 PM*	*South Middlesex Opportunity Council*	*Purple Passion 5K Run/Walk - Voices Against Violence*	
September 26	*6:30 - 8:00 PM*	*Woodrow Wilson ES*	*Open House (3, 4, 5)*	
September 27	*TBD*	*Hemenway ES*	*Fun Run Kickoff*	
September 27	*7:00 - 8:30 PM*	*Hemenway ES*	*Curriculum Night (K, 1, 2)*	
September 27	*6:00 - 8:30 PM*	*Brophy ES*	*Curriculum Night*	
October 1	*6:30 - 8:00 PM*	*Brophy ES*	*School Council*	
October 3	*6:30 - 8:30 PM*	*Hemenway ES*	*PTO Meeting*	
October 4	*7:00 - 8:30 PM*	*Hemenway ES*	*Curriculum Night (3, 4, 5)*	
October 10	*TBD*	*Hemenway ES*	*Fun Run Kickoff*	
October 21	*1:00 - 3:00 PM*	*Brophy ES*	*Multicultural Fair*	
October 26	*6:30 - 8:00 PM*	*Brophy ES*	*Freaky Friday*	
November 8		*Brophy ES*	*Evening Conferences*	
November 9	*6:30 - 8:30 PM*	*Brophy ES*	*PTO Meeting: Pizza & Movie*	

FULLER MIDDLE SCHOOL FEASIBILITY STUDY

School Building Committee
August 27, 2018

PROJECT MANAGEMENT
SMMA

Fuller Middle School Traffic Study

Prepared by:

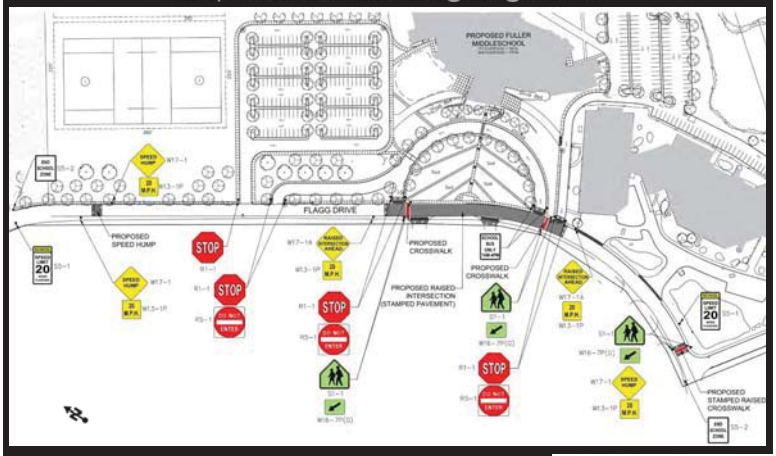
Vanasse & Associates, Inc.
Transportation Engineers & Planners

August 2018

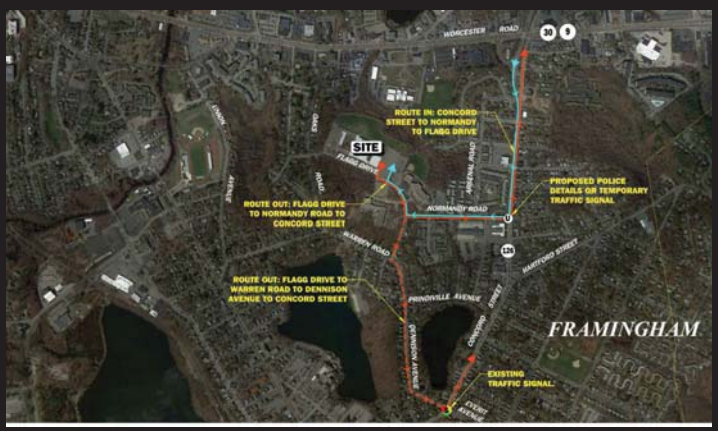
Fuller Middle School Traffic Volume Increase

Time Period	Existing	Projected	Increase
Weekday Morning Peak Hour			
Entering	207	246	39
Exiting	113	134	21
Total	320	380	60
Weekday Afternoon Peak Hour			
Entering	124	144	23
Exiting	162	193	31
Total	286	340	54

Proposed School Signage Plan



Construction Routes



Approximate Cost to City

Total Project Cost	$ 98,276,878
Approximate Ineligible Costs	$ 34,910,495
Eligible Costs	$ 63,366,383
Eligible Costs	$ 63,366,383
Reimbursement Rate	62.31%
Approximate MSBA Grant	$ 39,483,593
Total Project Cost	$ 98,276,878
Approximate MSBA Grant	$ 39,483,593
Approximate Cost to the City	$ 58,793,285

List of Approximate Ineligible Costs for State Funding

Legal fees	$ 80,000
OPM fee associated with Ineligible Spaces	$ 286,361
Architect fee associated with Ineligible Spaces	$ 837,936
Asbestos flooring abatement	$ 388,936
Site costs over 8%	$ 4,162,845
Building costs over $333/s.f.	$16,912,791
Auditorium ineligible space	$ 5,823,829
Gymnasium ineligible space over 6,500 s.f.	$ 1,440,421
Administration ineligible space over MSBA Guideline	$ 904,095
Furnishings and equipment over $1,200/student	$ 378,000
Educational technology over $1,200/student	$ 378,000
Moving expenses	$ 200,000
Construction contingency over 1%	$ 3,117,417
Total Approximate Ineligible Costs	$34,910,495

Fuller School Cost per Residential Taxpayer

Total Project Cost as of 8/24/2018	$98,276,878	
MSBA Estimated Grant	$39,483,593	
Estimated Cost to City	$58,793,285	
Reduced by Appropriation of Capital Stabilization funds	-$8,000,000	
Net Estimated Cost to the City	$50,793,285	
Total Cost to Average Residential Taxpayer	$2,116	*includes condos and multi unit dwellings*
Average Annual Cost to Average Residential Taxpayer	$101	
Average Annual Impact on the Tax Rate (per Thousand in Value)	$0.29	*29 Cents*

Voting Process

City Council Vote on Request for Appropriation from Mayor

- **September 2018** City Solicitor approves Request Language
  - ➢ After August 27, 2018 SBC Project Budget Vote
- **Mid-September 2018** MSBA approves Request Language
- **October 2018** Finance Subcommittee reviews Request
  - ➢ 1st and 3rd Tuesday Meetings
- **October 2018** Request posted on Municipal Bulletin Board
  - ➢ Posted for minimum of 10 days
- **October 2018** City Council Public Hearing concerning the Request
- **October 31, 2018** MSBA Board of Directors approves Project
- **Early November 2018** City Council Vote on Request for Appropriation

Voting Process

Debt Exclusion Ballot Vote

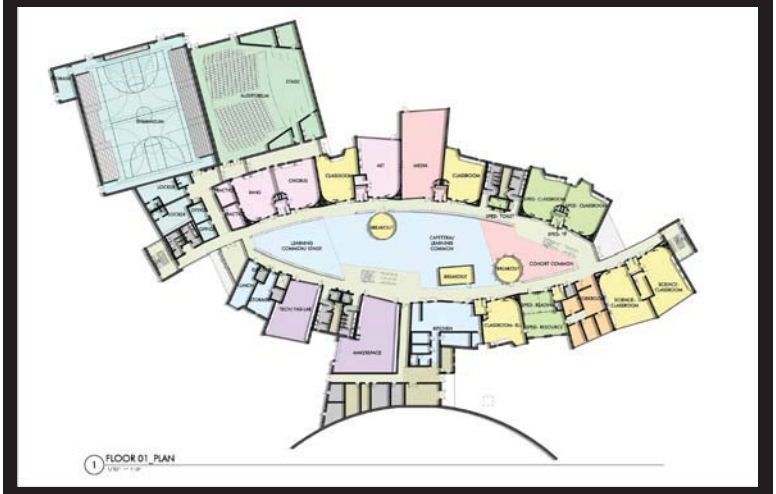
- **August 2018** City Solicitor approves Ballot Language
- **September 2018** MSBA approves Ballot Language
- **October 2018** City Council Vote to approve Ballot Question to Submit to Voters
- **October 31, 2018** MSBA Board of Directors approves Project
- **November 6, 2018** **(latest date)** Provide Ballot Question to City Clerk
  - ➢ At least 35 days prior to Ballot date
- **December 11, 2018** Ballot Vote

FULLER MIDDLE SCHOOL FEASIBILITY STUDY

School Building Committee
September 11, 2018

PROJECT MANAGEMENT SMMA

SCHEMATIC DESIGN SUMMARY - FIRST FLOOR PLAN



BENEFITS TO THE STUDENTS AND COMMUNITY

Benefits for the Students:

- Appropriate classroom sizes and relationships according to contemporary educational standards.
- Collaboration spaces that support project based learning - preparing students for the contemporary workforce.
- Natural daylighting and healthy ventilation for improved educational outcomes.
- Full range of special education spaces to support individual student needs.
- STEM (science, technology, engineering and mathematics) instruction spaces to fulfill district's elementary feeder school commitment to STEM curricula.
- Spaces that facilitate teacher collaboration toward improved teaching practices.

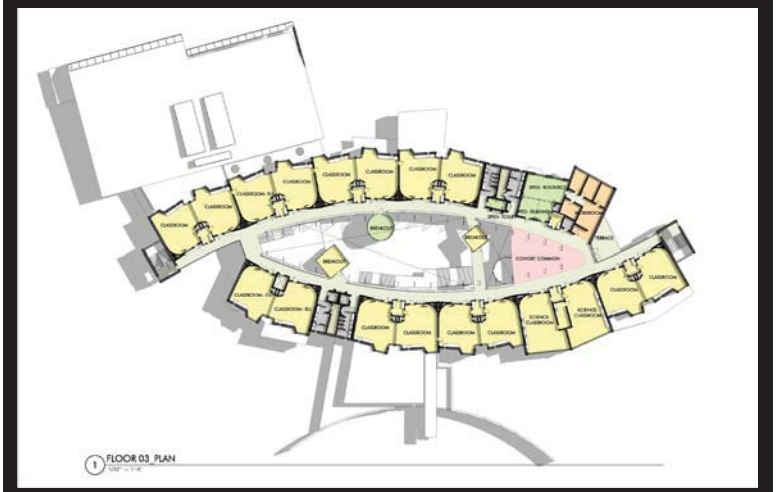
SCHEMATIC DESIGN SUMMARY - SECOND FLOOR PLAN

BENEFITS TO THE STUDENTS AND COMMUNITY

Benefits for the Community:

- Replacement of decaying, inefficient facility with ever increasing maintenance and operation cost burden to the City. Reduced building size, modern materials, and far more energy efficient HVAC systems will increase operating efficiency over the next 70 years.
- Reduced building footprint yields increased City open space and playfield space, and improves impact to adjacent conservation lands.
- Traffic calming measures improve public safety.
- Renewal of community access athletic and performance facilities for future use.

SCHEMATIC DESIGN SUMMARY - THIRD FLOOR PLAN



SCHEMATIC DESIGN SUMMARY - FRONT VIEW

SCHEMATIC DESIGN SUMMARY – REAR VIEW

FULLER MIDDLE SCHOOL FEASIBILITY STUDY

Community Forum 5
June 11, 2018

PROJECT MANAGEMENT
SMMA

Agenda

Brief Recap from Community Meetings 1- 4
1. Introductions
2. Scope, Process, and Schedule
3. Existing School Conditions
4. Educational Programming

New Information:
1. Preferred Design Option
2. Preliminary Cost Analysis
3. Timeline and Next Steps
4. Questions

PROJECT MANAGEMENT
SMMA

Introductions

PROJECT MANAGEMENT
SMMA

School Building Committee Members

Dr. Yvonne Spicer	Mayor
David Miles	Co-Chair, Resident with Finance Experience
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PROJECT MANAGEMENT
SMMA

School Building Committee Members (continued)

Jose Duarte	Principal, Fuller Middle School
Caitlin Stempleski	Teacher, Fuller School Middle
Patrick Johnson	Principal, Walsh Middle School
John Haidemenos	Principal, Woodrow Wilson School
Michael Tusino	Building Commissioner
Richard Weader II	Member
Michael Grilli	Member
Dr. Jennifer Krusinger Martin	Member
Donald Taggart III	Member
David Panich	Member
Thomas Barbieri	Member
Dr. Dale Hamel	Member

PROJECT MANAGEMENT
SMMA

Architect

Jonathan Levi Architects

Owner's Project Manager (OPM)

Symmes Maini and McKee Associates

PROJECT MANAGEMENT
SMMA

Feasibility Study Scope, Process and Schedule

PROJECT MANAGEMENT SMMA

Feasibility Study Scope

- **MSBA** is an independent public authority that administers and funds a program for grants to eligible cities, towns, and regional school districts for school construction and renovation projects.
- **MSBA** mandates a multi-step rigorous study and approval process
- **MSBA** requires formation of a School Building Committee to oversee the study and project on behalf of the community

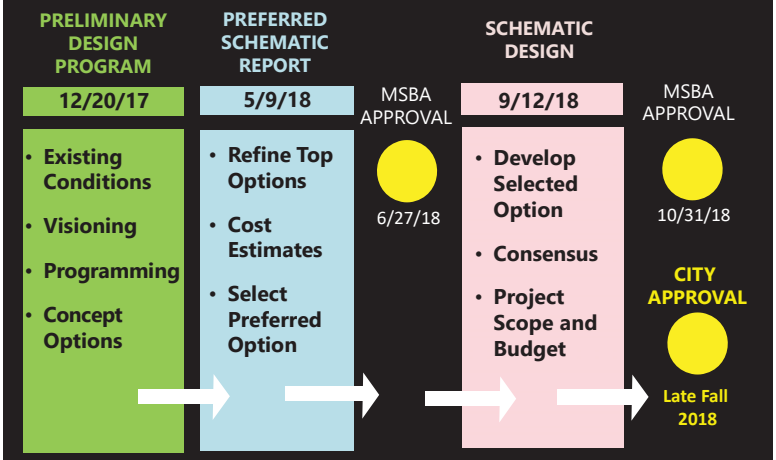
Feasibility Study Scope

The MSBA has agreed to participate with Framingham in a feasibility study for a 630 Student Middle School for Grades 6-8.

Study Scope includes:

- Existing Conditions Review
- Educational Program
- Design Alternatives
  - Renovation
  - Renovation / Addition
  - All New Construction
- Cost Estimates

MSBA Feasibility Study Process and Schedule



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PROJECT MANAGEMENT SMMA

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February 12, 2018	Community Forum No. 3
March 12, 2018	Presentation to School Committee
April 2, 2018	Community Forum No. 4

PROJECT MANAGEMENT SMMA

Completed Project Milestones

April 7, 2018	Neighborhood Meeting
April 7, 2018	ZBA Grants Height Variance
April 17, 2018	Presentation to City Council
April 25, 2018	Presentation to School Committee
April 30, 2018	School Building Committee Selects Preferred Option
May 9, 2018	Preferred Schematic Report Submitted to MSBA
May 23, 2018	MSBA FAS Meeting

Questions

Defining the Need

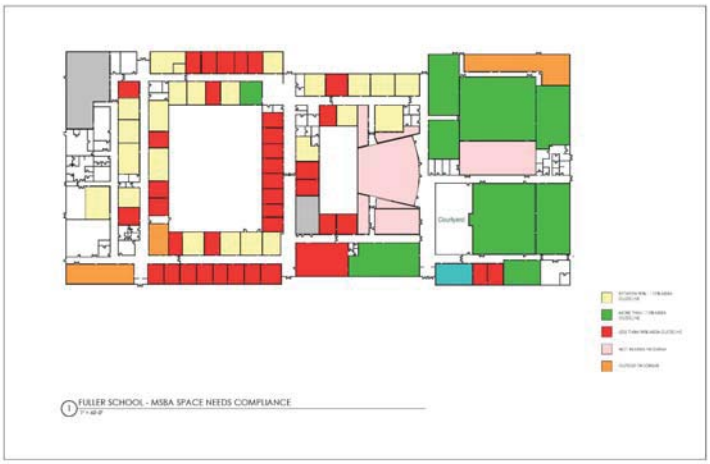
The Need:

- Need a long-term solution to resolve deteriorating school building
- Provide educational spaces to meet MSBA standards
- Update the layout to meet 21st century Visioning Session goals

The Goal

- Cost Effective, Sustainable and Educational Appropriate School with the least impact to the ongoing education of the students

EDUCATIONAL DEFICIENCIES



PHYSICAL BUILDING DEFICIENCIES

Energy Code

Envelope

Accessibility

Structural

Mechanical, Electrical and Plumbing Systems

Hazardous Materials

Educational Programming

DESIGN PRINCIPALS

Fuller Middle School is in its fourth year of STEAM (Science, Technology, Engineering, Arts and Mathematics)

- Transdisciplinary Instruction – Connect multiple content areas by linking concepts and skills with a real-world context. Encourage and support Inquiry.
- Personalized and Collaborative Learning – Teach students to take charge of their own learning with "hands-on" projects that can correspond with their interests and needs.
- Whole Child, Whole Community – Actively support emotional and social foundations to improve academic success.

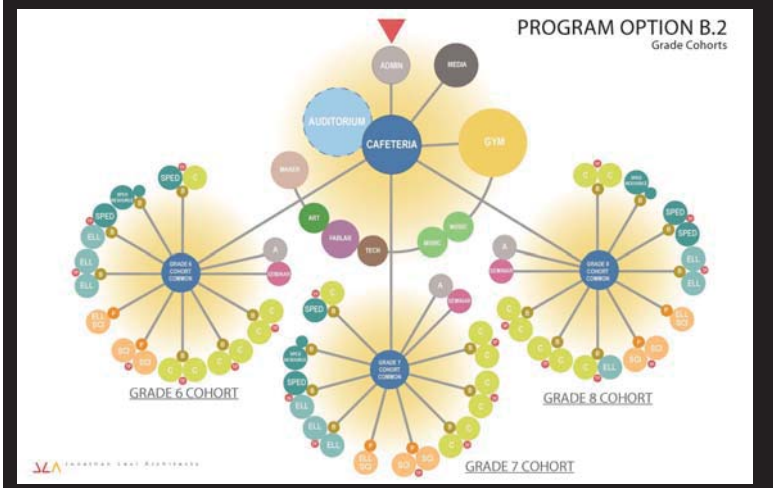
DESIGN PRINCIPALS

- Visible Learning – Inspire students to learn from each other through student collaboration, presentations, demonstrations, and ongoing works-in-progress.
- Community and Civic Hub – Continue existing use as central location for meetings, adult learning, school productions and recreational activities.
- Adaptability – This building will need to meet Framingham's future needs, so must be versatile enough to accommodate different teaching methods, including traditional ones.

Questions

Preferred Design Option

Educational Program Diagram



Pre-Concept Alternatives

Pre-Concept Alternatives Evaluation Matrix

RATINGS:
+ Advantageous
-0- Neutral
- Disadvantageous
-- Very Disadvantageous

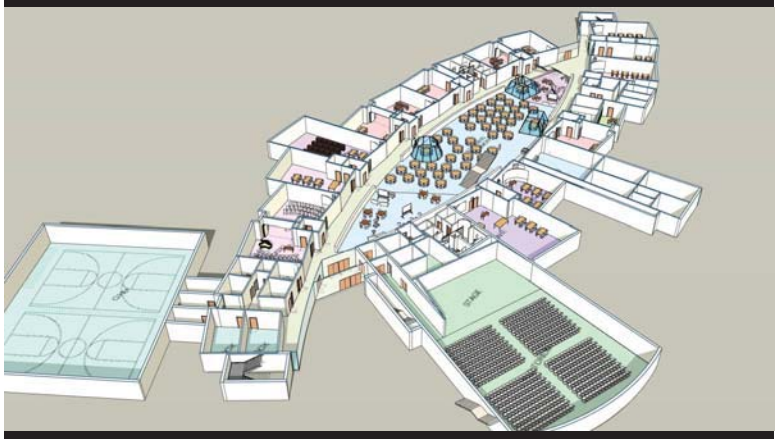
	Option 0 Repair to Code Baseline	Option A Add / Reno	Option B Tree Branch New Constr.	Option C Folded Hands New Constr.	Option D Butterfly New Constr.	Comments
PROJECT EVALUATION CRITERIA						
1 Total Project Cost	--	-	+	+	+	See costs below
2 Schedule	--	-	+	+	+	Renovation options will require phasing and additional construction time. Swing space requires additional time.
3 Construction Impact to Education	--	-	+	-0-	+	Swing space will be disruptive and smaller than current Fuller use
4 Construction Impact to Campus and Neighbors	-0-	-	-	+	-	Swing space / trailers will be disruptive to neighbors. Options A, B and D close to Flagg Drive as potentially disruptive
5 Educational Program Accommodation	--	-0-	+	+	+	Options vary on ability to provide 3 appropriate cohort locations and identity
6 Flexibility-Fixed Classroom Count per Cohort	-0-	-	-	+	-	Option C allows each cohort to increase or decrease the number of SPED and general classrooms because they are not aggregated in a defined wing or floor
7 STEM Enhancement-Visible learning	--	-	-0-	+	-0-	Open atrium has greatest visibility within and between cohorts. All options to facilitate project based learning
8 Flexibility-Building Systems	--	-	+	+	+	New construction would be designed for flexible use and improved MEP accessibility
9 Open Space /Building Massing / Footprint	--	-	-0-	+	-0-	3 story Option C has smallest footprint, resulting in largest open area.
10 Security	--	-0-	+	+	+	All options A-D would be substantially more secure than existing
11 Community Use	-0-	-	+	+	+	All alternatives allow community use. New Construction options allow increased access to playfields
12 Academic Campus	-	-	-0-	+	-0-	Locating Fuller closer to Farley and McCarthy improves ability to create identifiable campus. Option C most successful.
13 Outdoor Theater	-0-	-0-	-0-	+	-0-	South-facing sloped outdoor space inherent in Option C design
14 Natural Light and Views	--	-0-	+	+	+	one-story "Pancake" massing creates interior rooms with limited access to windows
15 LEED / Sustainability	-	-0-	-0-	+	-0-	Option C has best solar orientation
16 Risk	--	--	+	+	+	Options requiring renovation and/or swing space have more inherent risk due to unforeseen conditions
17 Long Term Maintenance and Repair Costs	-	-0-	+	+	+	3 story Option C has smallest roof area.
18 Operating Costs	-	-0-	+	+	+	Solar orientation and ext skin quantity impact energy loads
19 Design Scope Flexibility	--	--	+	+	-	Options B and C would most readily allow a modification to the Auditorium and/or Gym size in upcoming Schematic Design phase
Total GSF	196,000	167,000	154,000	154,000	154,000	

FIRST FLOOR PROGRESS PLAN

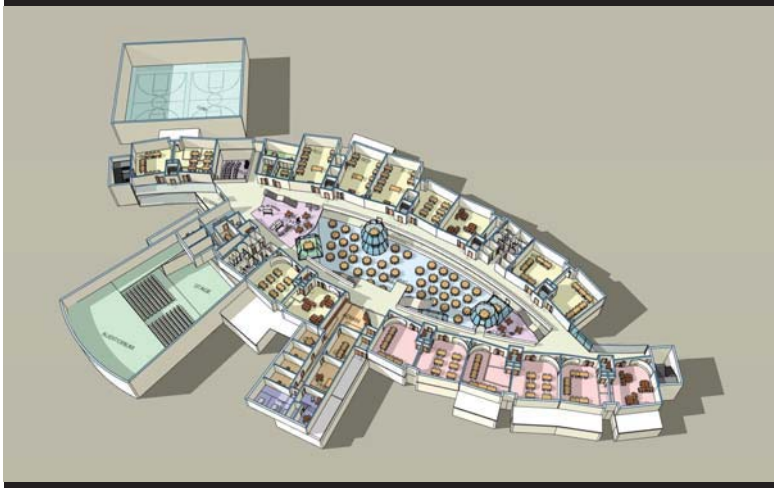
SECOND FLOOR PROGRESS PLAN

THIRD FLOOR PROGRESS PLAN

FIRST FLOOR PLAN PERSPECTIVE



SECOND FLOOR PLAN PERSPECTIVE



Questions

Preliminary Cost Analysis

State Reimbursement

- **MSBA** will reimburse all Eligible Costs, at a Base Rate of **57.05%** plus incentive points for an approved project if accepted by the voters of Framingham
- Example of Ineligible Costs include:
  - Site Costs over 8%
  - Building Costs over $333/SF
  - Asbestos Flooring abatement
  - FF&E/Technology costs over $2,400 per student
  - Legal Fees, Moving Expenses, construction contingencies over 1% for new construction or 2% for renovation
  - Temporary Swing space
  - Auditoriums in Middle Schools

State Reimbursement Incentives

The MSBA provides incentives to reimburse up to an estimated additional **4.48%** of eligible costs. The incentives fall under the following categories:

- Energy Efficiency (2%)
- Maintenance Programs (1.48%)
- CM at Risk project delivery (1%)

Preliminary Cost Analysis

Total Project Cost	$110.5M
MSBA Share	$ 44.0M
Framingham Share	$ 66.5M

Estimated Average Cost/Year
Average Residential Taxpayer $ 116/Year*

*Based on 20 year bond utilizing $8M of Capital Stabilization Funds

Costs are preliminary and subject to change

Preliminary Timeline

PRELIMINARY TIMELINE

Construction would start summer 2019, with the new school completed for summer 2021 and then the demo/parking lot work completed December 2021

NEXT STEPS

School Building Committee to continue to refine the Design Options and Costs. The SBC meetings are every two weeks. Meetings and agendas are posted on the FPS website.

- June 19, 2018 – Presentation to City Council
- June 20, 2018 – Presentation to School Committee
- July 23, 2018 – Community Forum No. 6
- September 6, 2018 - Community Forum No. 7
- September 12, 2018 - Submit Schematic Report (SD) to MSBA
- October 31, 2018 - MSBA board meeting to approve project
- Late Fall 2018 – City appropriation voting

Questions

NEXT STEPS

Community Resources

Project Website:
www.fullerbuildingproject.com

To receive information on the Fuller Middle School Building Project, please subscribe to the City's "Notify Me" system

ELEMENTARY ENROLLMENTS BY SCHOOL 2103-2017

School - Classrooms/Rooms	SIZE - SF	NUMBER OF STUDENTS						PROJECTED CLASSROOM COUNT
		Design capacity	2013-14	2104-15	2015-16	2016-17	2017-18	2018-19
Barbieri - 31/64	112,000	748	632	661	690	692	681	32
Brophy - 26/41	68,000 (with 2 modulars)	600	513	509	508	516	475	25
Dunning - 24/37	61,500	580	488	499	489	479	472	23
Hemenway - 28/39	61,500 (with 4 modulars)	672	588	571	562	574	568	26
King - 24/33	50,000	576		83	153	253	283	16
McCarthy - 29/68	94,936	696	591	605	585	557	565	26
Potter Road - 24/39	63,600	550	517	503	501	504	513	24
Stapelton - 23/39	59,600	500	429	432	432	393	369	18
Wilson - 31/73	100,695	774	559	545	567	578	563	26
		5,696	4,317	4,408	4,487	4,546	4,489	216
								20.7 avg. class size

PROJECT MANAGEMENT SMMA
Fuller Middle School Feasibility Study
Community Forum 5
June 11, 2018

Comparison to Natick JFK Middle School

Building

Fuller has 33% more square feet per student than JFK

- 39% more Core Academic Space
- 20% more Arts and Music Space
- 36% more Physical Education Space
- An Auditorium seating 750 versus 400

Site

Fuller site development area is 20.3 acres, which is 38% larger than JFK

Fuller site cost is $10.8 million, 25% more than JFK

PROJECT MANAGEMENT SMMA
Fuller Middle School Feasibility Study
Community Forum 5
June 11, 2018

Comparison to Natick JFK Middle School

Demolition and Asbestos Abatement

Fuller existing building is 195,400 square feet, which is 70% larger than JFK

Fuller demolition and abatement cost is $4.2 million, 61% more than JFK

Escalation

Fuller is 10 months behind JFK

PROJECT MANAGEMENT SMMA
Fuller Middle School Feasibility Study
Community Forum 5
June 11, 2018

Comparison to Marlborough Richer Elementary School

Building

Fuller is a Middle School, Richer is an Elementary School

Fuller is 42,468 square feet larger than Richer

- 27% more Core Academic Space
- 53% more Physical Education Space
- Cohort Collaboration Spaces
- Fabrication and Maker Space Labs
- A 750 seat Auditorium

Site

Fuller site development area is 20.3 acres, which is 170% larger than Richer

Fuller site cost is $10.8 million, 140% more than Richer

PROJECT MANAGEMENT SMMA
Fuller Middle School Feasibility Study
Community Forum 5
June 11, 2018

Comparison to Marlborough Richer Elementary School

Demolition and Asbestos Abatement

Fuller existing building is 195,400 square feet, Richer has no demolition

Fuller demolition and abatement cost is $4.2 million, Richer has no demolition or abatement cost

Escalation

Fuller is 7 months behind Richer

PROJECT MANAGEMENT SMMA
Fuller Middle School Feasibility Study
Community Forum 5
June 11, 2018

FULLER MIDDLE SCHOOL FEASIBILITY STUDY

Community Forum 6
July 23, 2018

PROJECT MANAGEMENT SMMA

Agenda

Brief Recap from Community Meetings 1- 5

1. Introductions
2. Scope, Process, and Schedule
3. Existing School Conditions
4. Educational Programming

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2. Preliminary Cost Analysis
3. Timeline and Next Steps
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PROJECT MANAGEMENT SMMA

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Feasibility Study Scope, Process and Schedule

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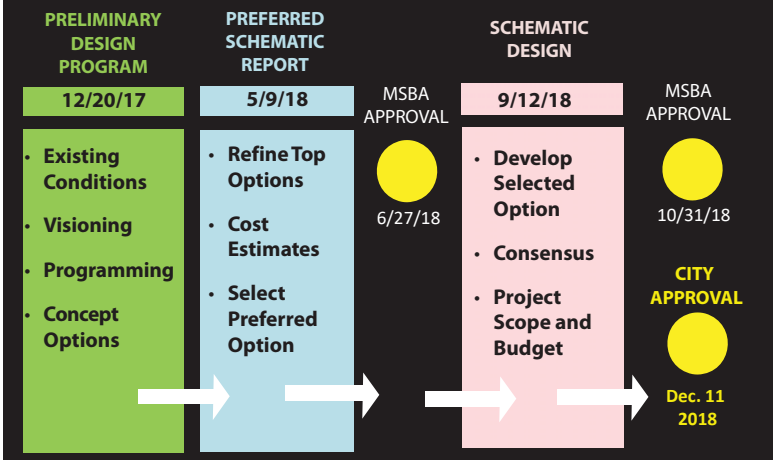

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April 7, 2018	ZBA Grants Height Variance
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April 25, 2018	Presentation to School Committee
April 30, 2018	School Building Committee Selects Preferred Option
May 9, 2018	Preferred Schematic Report Submitted to MSBA
May 23, 2018	MSBA FAS Meeting
June 11, 2018	Community Forum No. 5
June 27, 2018	MSBA Board of Directors Meeting

MSBA Board of Directors Approval

Massachusetts School Building Authority

Deborah B. Goldberg, *Chairman, State Treasurer* | James A. MacDonald, *Chief Executive Officer* | John K. McCarthy, *Executive Director / Deputy CEO*

June 27, 2018

The Honorable Dr. Yvonne M. Spicer
Mayor, City of Framingham
150 Concord Street, Room 121
Framingham, MA 01702

Re: City of Framingham, Fuller Middle School

Dear Mayor Spicer:

I am pleased to report that the Board of the Massachusetts School Building Authority (the "MSBA") has voted to approve the City of Framingham (the "City") as part of its invitation for Feasibility Study, to proceed into schematic design to replace the existing Fuller Middle School with a new facility serving grades 6-8 on the existing site (the "proposed project").

Questions

Defining the Need

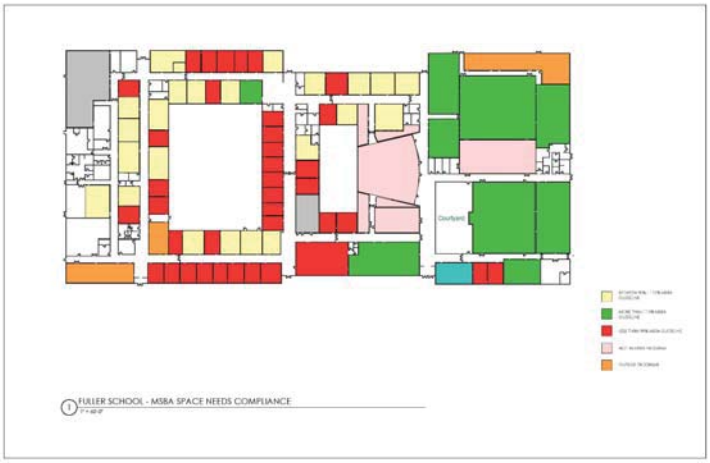
The Need:

- Need a long-term solution to resolve deteriorating school building
- Provide educational spaces to meet MSBA standards
- Update the layout to meet 21st century Visioning Session goals

The Goal

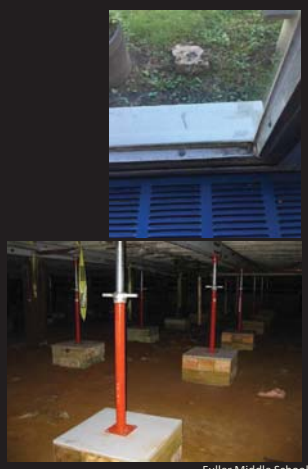
- Cost Effective, Sustainable and Educational Appropriate School with the least impact to the ongoing education of the students

EDUCATIONAL DEFICIENCIES



PHYSICAL BUILDING DEFICIENCIES

- Energy Code
- Envelope
- Accessibility
- Structural
- Mechanical, Electrical and Plumbing Systems
- Hazardous Materials



Educational Programming

DESIGN PRINCIPALS

Fuller Middle School is in its fourth year of STEAM (Science, Technology, Engineering, Arts and Mathematics)

- Transdisciplinary Instruction – Connect multiple content areas by linking concepts and skills with a real-world context. Encourage and support Inquiry.
- Personalized and Collaborative Learning – Teach students to take charge of their own learning with "hands-on" projects that can correspond with their interests and needs.
- Whole Child, Whole Community – Actively support emotional and social foundations to improve academic success.

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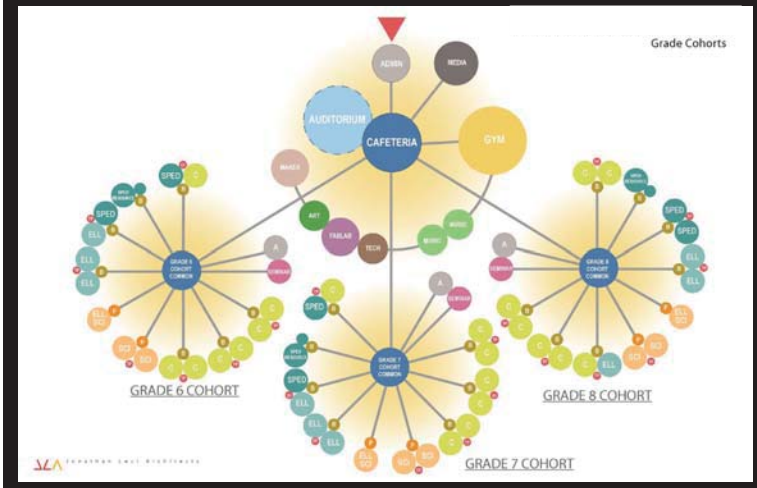
- Community and Civic Hub – Continue existing use as central location for meetings, adult learning, school productions and recreational activities.
- Adaptability – This building will need to meet Framingham's future needs, so must be versatile enough to accommodate different teaching methods, including traditional ones.

Questions

Design Update

Educational Program Diagram



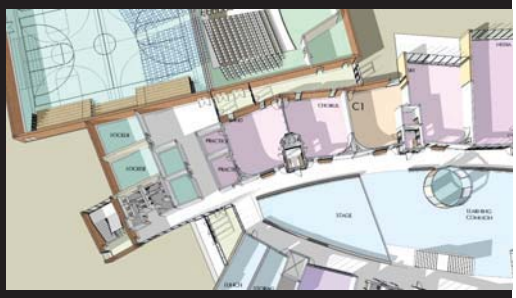
FIRST FLOOR PROGRESS PLAN

SECOND FLOOR PROGRESS PLAN

THIRD FLOOR PROGRESS PLAN

Classroom Suite 'Building Block'

SD Design Refinement – Performing Arts Suite

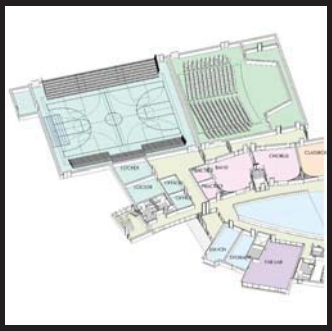


Front View

Rear View

Why a 8,300 SF Gymnasium?

- Allows 2 classes to be taught simultaneously, independently, and safely
- Allows for bleacher seating for full school
- Includes High School standard size basketball court for student and community use



Scope Reductions

- Reduce 30 Classrooms to 27
- Reduce 9 Science Classrooms to 6
- Combine Tech Classroom with Fabrication Lab
- Combine Small Group Seminar with Teacher Work Rooms
- Reduce Auditorium to 420 seats

Combined total reduction of 17,115 GSF, representing a savings of approximately $9.2M in total project costs.

Why Full Air Conditioning?

- Accommodate summertime use
- Simplifies and facilitates district-wide summertime service

Questions

Preliminary Cost Analysis

State Reimbursement

- **MSBA** will reimburse all Eligible Costs, at a Base Rate of **57.05%** plus incentive points for an approved project if accepted by the voters of Framingham
- Example of Ineligible Costs include:
  - Site Costs over 8%
  - Building Costs over $333/SF
  - Asbestos Flooring abatement
  - FF&E/Technology costs over $2,400 per student
  - Legal Fees, Moving Expenses, construction contingencies over 1% for new construction or 2% for renovation
  - Temporary Swing space
  - Auditoriums in Middle Schools

State Reimbursement Incentives

The MSBA provides incentives to reimburse up to an estimated additional **4.48%** of eligible costs. The incentives fall under the following categories:

- Energy Efficiency (2%)
- Maintenance Programs (1.48%)
- CM at Risk project delivery (1%)

Preliminary Cost Analysis

Total Project Cost Forum No. 5	$110.5M
Cost Reduction Strategies	($ 9.2M)
Total Project Cost	$101.3M
MSBA Share	$ 39.9M
Framingham Share	$ 61.4M
Estimated Average Cost/Year Average Residential Taxpayer	$ 106/Year*

*Based on 20 year bond utilizing $8M of Capital Stabilization Funds

Costs are preliminary and subject to change

Preliminary Timeline

PRELIMINARY TIMELINE

Construction would start summer 2019, with the new school completed for summer 2021 and then the demo/parking lot work completed December 2021

NEXT STEPS

School Building Committee to continue to refine the Design Options and Costs. The SBC meetings are every two weeks. Meetings and agendas are posted on the FPS website.

- August 1 – School Committee Presentation
- August 21 – City Council Presentation
- September 6, 2018 - Community Forum No. 7
- September 12, 2018 - Submit Schematic Report (SD) to MSBA
- October 31, 2018 - MSBA board meeting to approve project
- Late Fall 2018 – City appropriation voting
- December 11 – Debt Exclusion Ballot Vote

Questions

NEXT STEPS

Community Resources

Project Website:
www.fullerbuildingproject.com

To receive information on the Fuller Middle School Building Project, please subscribe to the City's "Notify Me" system

FULLER MIDDLE SCHOOL FEASIBILITY STUDY

Community Forum 7
September 6, 2018

PROJECT MANAGEMENT SMMA

Agenda

1. Introduction and Project Need
2. The Design: Site and Building
3. Benefits to the Students and Community
4. Schedule and Cost
5. Next Steps
6. Questions

PROJECT MANAGEMENT SMMA

Introductions

PROJECT MANAGEMENT SMMA

School Building Committee Members

Dr. Yvonne Spicer	Mayor
David Miles	Co-Chair, Resident with Finance Experience
Dr. Edward Gotgart	Co-Chair, Chief Operating Officer, FPS
Thatcher Kezer, III	Chief Operating Officer
Adam Freudberg	School Committee Chair
Dr. Robert Tremblay	Superintendent of Schools
Charlie Sisitsky	City Council Member
Richard Finlay	School Committee Member and Convenor
Noval Alexander	School Committee Member
Mary Ellen Kelley	Chief Financial Officer
Jennifer Pratt	Chief Procurement Officer
Heather Connolly	Former School Committee Chair
Matt Torti	Director of Buildings and Grounds, FPS
Anne Ludes	Director of Secondary Education

PROJECT MANAGEMENT SMMA

School Building Committee Members (continued)

Jose Duarte	Principal, Fuller Middle School
Caitlin Stempleski	Teacher, Fuller School Middle
Patrick Johnson	Principal, Walsh Middle School
John Haidemenos	Principal, Woodrow Wilson School
Michael Tusino	Building Commissioner
Richard Weader II	Member
Michael Grilli	Member
Dr. Jennifer Krusinger Martin	Member
Donald Taggart III	Member
David Panich	Member
Thomas Barbieri	Member
Dr. Dale Hamel	Member

PROJECT MANAGEMENT SMMA

Architect

Jonathan Levi Architects

Owner's Project Manager (OPM)

Symmes Maini and McKee Associates

PROJECT MANAGEMENT SMMA

Why do we need a new Fuller Middle School?

- The Fuller Middle School is an aged facility that requires significant upkeep, spending which will not result in long-term educational benefits.
- Framingham submitted its initial application to MSBA for a grant in November 2013.
- The MSBA receives approximately 120 grant applications for capital projects annually, of which approximately 10 are approved annually.
- Framingham residents voted to approve the Feasibility Study funding at its October 18, 2016 Special Town Meeting.
- The MSBA grant is estimated to be approximately $39.5 million.

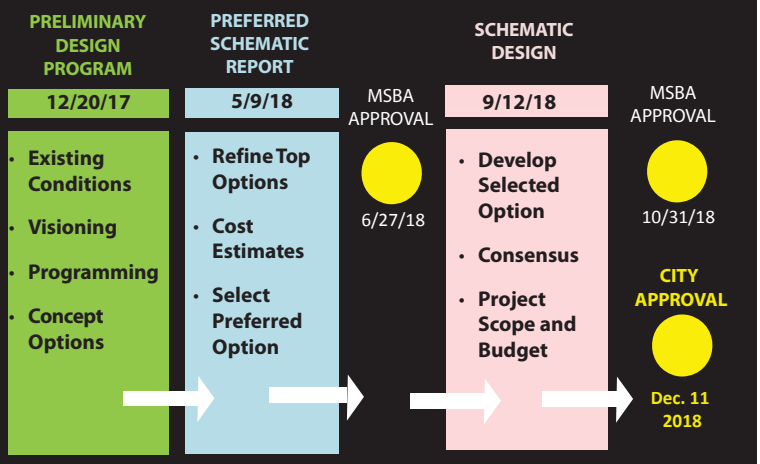
Feasibility Study Scope

Framingham and MSBA agreed to perform the feasibility study for a 630 Student Middle School for Grades 6-8.

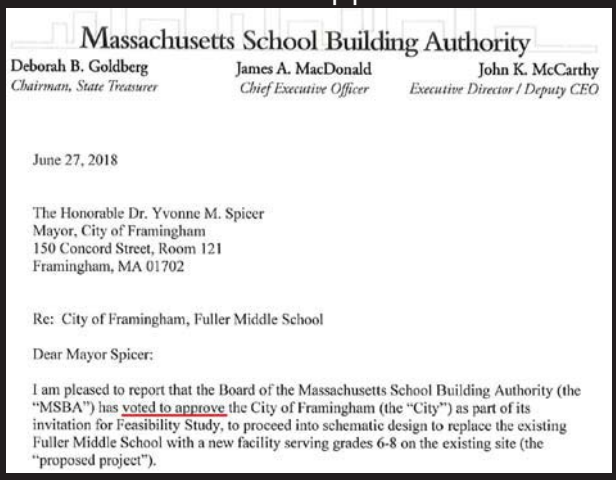
Study Scope included:

- Existing Conditions Review
- Educational Program
- Design Alternatives
  - Renovation
  - Renovation / Addition
  - All New Construction
- Cost Estimates

MSBA Feasibility Study Process and Schedule



MSBA Board of Directors Approval



Massachusetts School Building Authority

Deborah B. Goldberg, *Chairman, State Treasurer*
James A. MacDonald, *Chief Executive Officer*
John K. McCarthy, *Executive Director / Deputy CEO*

June 27, 2018

The Honorable Dr. Yvonne M. Spicer
Mayor, City of Framingham
150 Concord Street, Room 121
Framingham, MA 01702

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Public Process

Since May 2017, advertised and televised public meetings on the Fuller Middle School Project have included:

- **24 Regular Bi-weekly School Building Committee Meetings**
- **6 Community Meetings**
- **4 City Council Meetings**
- **4 School Committee Meetings**

Questions

Defining the Need

The Need:

- Need a long-term solution to resolve deteriorating school building
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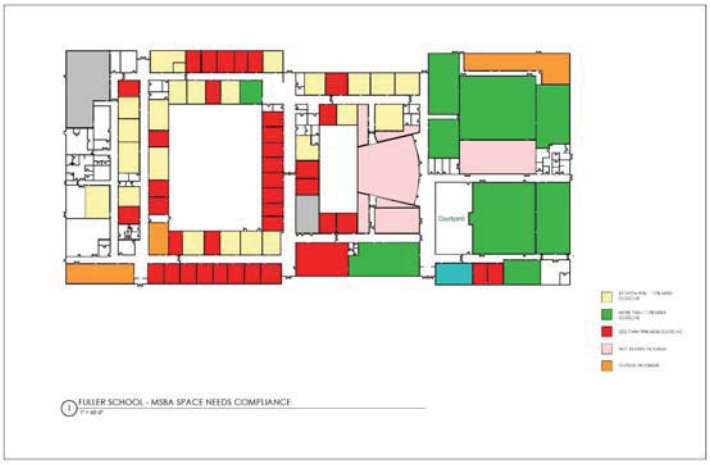

PHYSICAL BUILDING DEFICIENCIES

Energy Code

Envelope

Accessibility

Structural

Mechanical, Electrical and Plumbing Systems

Hazardous Materials

COST OF REPAIRING

The Cost of only Repairing the existing Fuller Middle School is estimated to be $131 million dollars with no educational improvements or MSBA reimbursement.

Educational Programming

DESIGN PRINCIPALS

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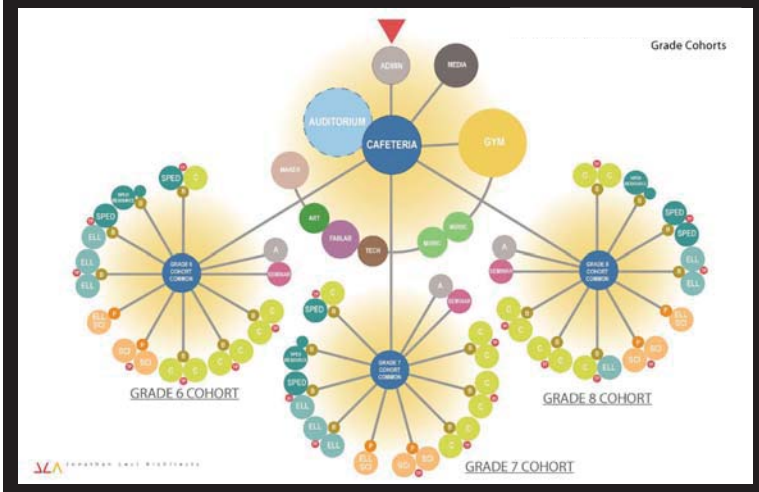

Questions

Design Update

SD Refinement – Landscape

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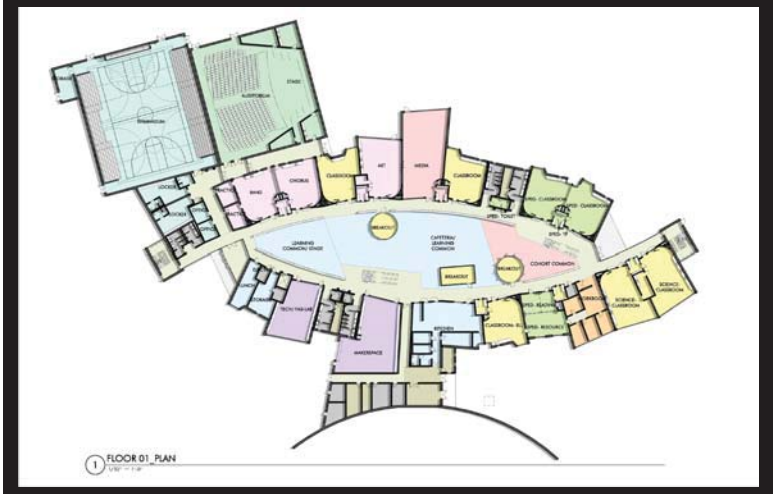

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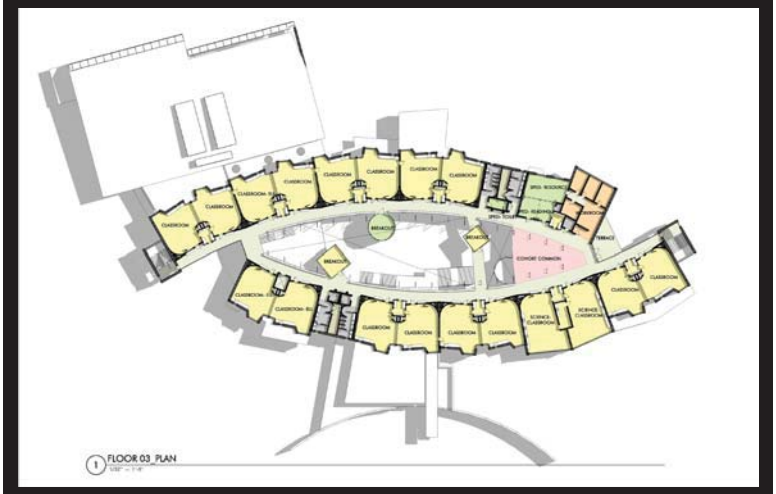

Classroom Suite 'Building Block'

Maker Space

Fabrication Lab

Front View

Rear View

Benefits to the Students and Community

BENEFITS TO THE STUDENTS AND COMMUNITY

Benefits for the Students:

- Appropriate classroom sizes and relationships according to contemporary educational standards.
- Collaboration spaces that support project based learning - preparing students for the contemporary workforce.
- Natural daylighting and healthy ventilation for improved educational outcomes.
- Full range of special education spaces to support individual student needs.
- STEM (science, technology, engineering and mathematics) instruction spaces to fulfill district's elementary feeder school commitment to STEM curricula.
- Spaces that facilitate teacher collaboration toward improved teaching practices.

BENEFITS TO THE STUDENTS AND COMMUNITY

Benefits for the Community:

- Replacement of decaying, inefficient facility with ever increasing maintenance and operation cost burden to the City. Reduced building size, modern materials, and far more energy efficient HVAC systems will increase operating efficiency over the next 70 years.
- Reduced building footprint yields increased City open space and playfield space, and improves impact to adjacent conservation lands.
- Traffic calming measures improve public safety.
- Renewal of community access athletic and performance facilities for future use.

Project Cost

TOTAL PROJECT COST

CONSTRUCTION COST (BUILDING + SITE WORK+ MARK-UPS)	$77.9M
FEES & EXPENSES	$12.6M
FURNITURE, FIXTURES & EQUIPMENT	$2.3M
CONTINGENCIES	$5.5M
TOTAL	$98.3M

WHAT WILL BE FRAMINGHAM'S SHARE?

PROJECT COST	$98.3M
APPROXIMATE MSBA GRANT	$39.5M
APPROXIMATE COST TO FRAMINGHAM	$58.8M

WHAT DOES THIS MEAN TO THE AVERAGE TAXPAYER?

29 Cents annual tax increase per $1,000 valuation

$101 per year, OR

$8.41 per month, OR

28 Cents per day

Based on a 20-year bond utilizing $8 million of the Capital Stabilization Fund

Project Timeline

PROJECT MANAGEMENT SMMA

PROJECT TIMELINE

December 2018 - Detailed Design Commences

Summer 2019 - Construction Commences

Summer 2021 – New Building is Completed

December 2021 – Demolition and Sitework Completed

PROJECT MANAGEMENT SMMA

NEXT STEPS

School Building Committee (SBC) meetings are every two weeks. Meetings and agendas are posted on the FPS website.

- September 11, 2018 – SBC votes to approve Schematic Design
- September 12, 2018 – Submit Schematic Design to MSBA
- October 1, 2018 – Community Forum No. 8
- October 31, 2018 – MSBA Board Meeting to approve project
- November 1, 2018 – Community Forum No. 9
- November 28, 2018 – Community Forum No. 10
- Fall 2018 – City Council votes to appropriate total project cost, approve ballot question and schedule ballot vote
- December 11, 2018 – Debt Exclusion Ballot Vote

PROJECT MANAGEMENT | SMMA

Community Resources

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