

February 14, 2018

Fernando Garcia  
Project Manager  
Massachusetts School Building Authority (MSBA)  
40 Broad Street, Fifth Floor  
Boston, Massachusetts 02109

**Re: W. Edward Balmer Elementary School**

**Northbridge, Massachusetts**

*District's Response to the Preferred Schematic Report  
Review Comments of February 1, 2018*

*SMMA No. 17020*

Dear Fernando:

Please find the District's Response to the MSBA's Preferred Schematic Report Review Comments of February 1, 2018.

Very truly yours,

**SMMA**



Joel G. Seeley  
Principal

cc: Joseph Strazzulla, Melissa Walker (MF)

enclosures: District's Response to the Preferred Schematic Report Review Comments of February 1, 2018

**ATTACHMENT A**  
**MODULE 3 – PREFERRED SCHEMATIC REPORT REVIEW COMMENTS**  
**WITH DISTRICT RESPONSES – 2/14/2018**

**District:** Town of Northbridge  
**School:** W. Edward Balmer Elementary School  
**Owner's Project Manager:** SMMA Project Management  
**Designer Firm:** Dore & Whittier Architects  
**Submittal Due Date:** January 3, 2018  
**Submittal Received Date:** January 3, 2018  
**Review Date:** January 3-26, 2018  
**Reviewed by:** K. Brown, F. Garcia, C. Alles, J. Jumpe

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**MSBA REVIEW COMMENTS**

The following comments<sup>1</sup> 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; <i>Refer to comments following each section</i>	Not Provided; <i>Refer to comments following each section</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
OPM Certification of Completeness and Conformity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Table of Contents	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3.1 Introduction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3.2 Evaluation of Existing Conditions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3.3 Final Evaluation of Alternatives	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3.4 Preferred Solution	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3.5 Local Actions and Approval Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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<sup>1</sup> 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; <i>No response required</i>	Provided; <i>District's response required</i>	Not Provided; <i>District's response required</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Summary of updated project schedule, including				
	a) Projected MSBA Board of Directors Meeting for approval of Project Scope and Budget Agreement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Projected Town/City vote for Project Scope and Budget Agreement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Anticipated start of construction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Target move in date	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Summary of the final evaluation of existing conditions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Summary of final evaluation of alternatives	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Summary of District's preferred solution	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	A copy of the MSBA Preliminary Design Program project review and corresponding District response	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### MSBA Review Comments:

*No further review comments for this section.*

### 3.3.2 EVALUATION OF EXISTING CONDITIONS

Provide the following Items		Complete; <i>No response required</i>	Provided; <i>District's response required</i>	Not Provided; <i>District's response required</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### MSBA Review Comments:

*1) The submittal notes potential for zoning variance approvals relating to building height, setbacks and loading zone regulations. In the District's response to this review, describe the extent to which zoning regulations apply to this project as it relates to the MA "Dover" Amendment as reported.*

### **Response:**

**As the MSBA notes in its comments, there are two potentially outstanding issues with the project as related to zoning. To clarify, the proposed building as designed would be in compliance with Zoning for Height and Setbacks, due to its being a Community Facility (see 3.3.2, pp. 4-5). The two remaining issues are:**

- **the required (or allowable) number of parking spaces on site; and**
- **the required number of loading zone spaces.**

**While the "Dover Amendment" could be used as a basis for unilaterally defining these numbers by the District, it is our intention as a goodwill measure with the community to go through the local zoning process and get staff and Zoning Board input and ultimately variances for these two items.**

*As noted above, the submittal describes updated wetlands delineation information that resulted in increased onsite wetlands area. As a consequence, the additional variations of Option C shift the proposed building footprint closer to the existing building and deeper into the sloping area of the site (no response required).*

*No further 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; <i>No response required</i>	Provided; <i>District's response required</i>	Not Provided; <i>District's response required</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
1	An analysis of each prospective site including:				
	a) Natural site limitations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Building footprint(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Athletic fields	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Parking areas and drives	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	e) Bus and parent drop-off areas	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	f) Site access and surrounding site features.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Evaluation of the potential impact that construction of each option will have on students and measures recommended to mitigate impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Conceptual architectural and site drawings that satisfy the requirements of the education program	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	An outline of the major building structural systems	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	The source, capacities, and method of obtaining all utilities	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	A narrative of the major building systems	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Permitting requirements and associated approval schedule	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Proposed project design and construction schedule including consideration of phasing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Completed Table 1 – MSBA Summary of Preliminary Design Pricing spreadsheet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### **MSBA Review Comments:**

10) The studied options noted are summarized as follows:

- *A1 & A2: grades PK-4, capital improvements only, existing Balmer and Northbridge Elementary Schools. Estimated project costs are \$33m for the Balmer School and \$20m for the Northbridge School, totaling an estimated \$53m project cost. The submittal states that this option does not meet the educational needs of the District. The MSBA notes that information provided to the District inaccurately represents MSBA's potential participation in the base repair option which could be eligible for MSBA reimbursement if the District demonstrated that the base repair addresses the major issues identified in its Statement of Interest. Please acknowledge, and confirm that this information does not alter the District's selection of a preferred option.*

#### **Response:**

**The District acknowledges and confirms that the foregoing information does not alter the District's selection of a preferred option.**

- *B2: grades 2-4 (510 enrollment), new construction, rear of the site, 2-story. Estimated project costs total \$67m. Note that this option (in addition to the "code upgrade" options above), is limited to grades 2-4.*
- *C2: grades PK-5 (1,030 enrollment), additions and renovations to the existing building, keep entire existing building, 2-story. Estimated project costs total \$109m.*
- *C3.1a: grades PK-5 (1,030 enrollment), phased take-down, rear of the site, 2-story. Estimated project costs total \$107m.*
- *C3.1b: grades PK-5 (1,030 enrollment), rear of the site, 3-story. Estimated project costs total \$105m.*

- C3.2: grades PK-5 (1,030 enrollment), rear of the site, 3-story. Estimated project costs total \$106m.
- C3.3: grades PK-5 (1,030 enrollment), stepped section, rear/east side of the site, 3-story. Estimated project costs total \$110m.
- C5: grades PK-5 (1,030 enrollment), new construction, front of the site, 3-story. Estimated project costs total \$103m.

*The PSR indicated that eleven members of the District provided a scored/weighted evaluation of these options. Based on this analysis, the District determined that Option C3.1b has the highest score and therefore is the preferred option. Although each option is fully evaluated and the District selected a preferred option based on the evaluation criteria described in the submittal, there is no explanation as to why some options were eliminated for consideration, or how the preferred option compared to the other options, except as determined by the range of scores assigned by the District. The submittal explains advantages of the preferred option, although many of the other options achieve the same goals (for example, Option C5 is very similar to the selected Option C3.1b, it appears to achieve the same goals, and has a lower estimated project cost). In the District's response to this review, please provide a summary regarding the benefits and liabilities of each option that informed the scoring of these eight options.*

#### **Response:**

**The District has included below an narrative to be added to each Option evaluation in PSR Section 3.3.3.1, that details the benefits and liabilities of each option and how and/or why options were eliminated from consideration.**

#### **OPTION A1+A2**

**It was very clear from the start that no members of the School Building Committee were in favor of or supported this option.**

**There were no clear advantages other than perhaps the lowest cost to the taxpayer at the present time, and the re-use of existing school facilities.**

**The list of disadvantages were many:**

- **The end product does not address Educational Program needs and issues**
- **Does not address many missing/inappropriate spaces: size, location, number, relationship or adjacency.**
- **Does not address building or educational deficiencies in grades PK-1 or Grade 5 which are real, present needs in the District**
- **Does not adequately address current, urgent site issues: parking, circulation, pedestrian safety, building safety, site drainage and stormwater management, etc.**
- **Will have very high negative impact on educational quality during an occupied phased construction sequence.**

**Perhaps most importantly, and the strongest argument for most SBC members:**

- The feedback received at community forums and community surveys was overwhelmingly in favor of a district solution that solved needs at all elementary grades PK-5, versus addressing only grades 2-4 in one building and leaving a significant capital project for the town to address in the future, at a greater expense.

*All the following options satisfy all of the deficiencies noted in the District's Statement of Interest. In the discussion that follows we are only listing factors that are distinct advantages or disadvantages that differentiate the options.*

## **OPTION B2**

### **Advantages were:**

- Appearance of the lowest cost of the renovation or new build options to the taxpayer at the present time
- Smaller-sized school with smaller enrollment.
- Site plan yielded additional net gain of playfields over and above minimum program
- The Administration suite has a commanding view of the site, and building is positioned at the rear of the site; both of which members cited as important for safety and security.
- Shorter overall project duration

### **Disadvantages included:**

- Option B2 would not serve the largest number of Northbridge students; that is, it would only address deficient conditions in Balmer school for grades 2-4 and would still leave NES (grades PK-1) as an unresolved liability to the District, and grade 5 still located in the Middle School, counter to the educational vision of the District.
- The grade configuration distributed by floor in the building paired grades 2 and 3 on the first level, isolating grade 4 on the second level. A three-grade school building was not in alignment with the District's educational vision.
- Site development costs were similar for this option as compared to the compact PK-5 three-story options, creating an inefficient ratio of site cost to building gross floor area. In other words, it carried a relatively high site cost for a relatively small building when compared with other options.

### **Perhaps most importantly, and the strongest argument for most SBC members:**

- The feedback received at community forums and community surveys was overwhelmingly in favor of a district solution that solved needs at all elementary grades PK-5, versus addressing only grades 2-4 in one building and leaving a significant capital project for the town to address in the future, at a greater expense.

## **OPTION C2**

**Much like the discussion of Renovation/Addition versus New Construction that occurred in the PDP phase, it was very clear from the start that no members of the School Building Committee were in favor of or supported Option C2.**

**Advantages were:**

- **The existing building structure would be re-used (more environmentally responsible, and some cost savings)**

**Disadvantages included:**

- **Option C2 is estimated to cost \$108.7M – the second most expensive of the C series option. When compared to less expensive new options, there was no contest.**
- **Option C2 is projected to take up to an additional year to complete – 4 years as opposed to most other PK-5 options taking 3 years.**
- **This is a renovation/addition that would certainly present significant planning and design compromises in comparison with new construction, which would be 100% custom to the District’s needs and specifications.**
- **This is a complex, occupied, phased renovation/addition that would have great impact on the quality of student education for the duration of construction.**

**In the words of one SBC member, “Why would we pay more for a building that was not exactly what we wanted, and would disrupt the campus a year longer?” In view of these facts, the SBC did not support this option; especially with much better, less expensive options on the table.**

## **OPTION C3.1A**

**Advantages included:**

- **Compact, logical plan with good adjacencies and excellent wayfinding. This plan was the closest reflection of the idealized spatial diagram generated during the educational visioning exercises.**
- **Extended Learning Area relationship to classrooms: The Designer often referred to the need for classrooms to have relatively equal “frontage” on the Extended Learning Areas in order for them to be effective. This plan was the most successful option on that point.**
- **More interesting, dynamic, and useful extended learning spaces.**



- **More successful in breaking down the scale of the large building by hiding much of the mass of the academic wing behind the stepped masses of the public section of the building.**
- **Excellent solar orientation: the long axis of the academic wing runs almost due east-west, the preferred orientation for daylight harvesting and avoiding late-day glare and overheating. The cafeteria is oriented due south.**
- **Safety: Following CPTED principles, this option was superior to most in terms of its view lanes from the Administrative suite to bus and car drop off curbs, parking lot, and the long view to all three site entry/exit points. It was stressed on a few occasions that this building plan at the back of the site was the best option for safety from traffic on Crescent Street as well as allowing better supervision and policing of Vail Field.**

**Key disadvantages were typically related to the location of the building, and its effect on site planning, phasing, and cost:**

- **C3.1a was the third-most expensive of all the options. It was \$2.09M more expensive than C3.1b, its closest comparator.**
- **This option, when compared with other options, did not have as strong a relationship between PK/K entry and its associated site amenities, and play fields and playgrounds in general were not in optimal locations.**
- **With Option C3.1a being located over top of the existing building, necessitating a phased takedown, the project duration was projected to last 6 months longer, and demolition and construction would be in phases.**

**Based upon these reasons, especially in view of the fact that there was a nearly identical option with a better site plan, that did not have to be phased (C3.1b), Option C3.1a was eliminated.**

### **OPTION C3.1B**

**Advantages included:**

- **Second-lowest cost of the C Series Options**
- **Compact, logical plan with good adjacencies and excellent wayfinding. This plan was the closest reflection of the idealized spatial diagram generated during the educational visioning exercises.**
- **Extended Learning Area relationship to classrooms: The Designer often referred to the need for classrooms to have relatively equal “frontage” on the Extended Learning**

Areas in order for them to be effective. This plan was the most successful option on that point.

- More interesting, dynamic, and useful extended learning spaces.
- More successful in breaking down the scale of the large building by hiding much of the mass of the academic wing behind the stepped masses of the public section of the building.
- Excellent solar orientation: the long axis of the academic wing runs almost due east-west, the preferred orientation for daylight harvesting and avoiding late-day glare and overheating. The cafeteria is oriented due south.
- Clean new construction: this option would not need to be phased.
- Better Site Planning: due to its position on the site, the building location opened up better spaces for PK-2 playground, PK-K drop off, U-6 soccer fields, and better outdoor learning spaces, as well as a better parking layout when compared to other options.
- Safety: Following CPTED principles, this option was superior to most in terms of its view lanes from the Administrative suite to bus and car drop off curbs, parking lot, and the long view to all three site entry/exit points. It was stressed on a few occasions that this building plan at the back of the site was the best option for safety from traffic on Crescent Street as well as allowing better supervision and policing of Vail Field.
- Option C3.1b was the preferred option when presented at public forums and in the community-wide survey.

This option's disadvantages were few:

- It was not the least cost option for the C-Series PK-5 options.
- Of the “clean” new construction options, it was the closest in proximity to the existing building, which would present considerable disturbance to east-facing classrooms. The building is also somewhat close to the east property line (but still well within Zoning guidelines).
- Compared to other C options, some of the play fields are somewhat distant from the building.
- This option has some of the most intensive site work (cut and fill).

**The ultimate reasons for the selection of Option C3.1b as the Preferred Solution are discussed in detail in Section 3.3.4.1 of the PSR Submission.**

**In reference to MSBA’s comment above regarding some options achieving similar aims, the clear winning reasons for this Option were related to its location on the rear of the site:**

- **Massing of building in its neighborhood surroundings**
- **Superior function of site circulation**
- **CPTED site design safety and security features**

**While Option C5 may have at first glance appeared to achieve many of the same goals as Option C3.1b, the preference for locating the school at the rear of the site due to concerns about safety trumped the cost savings garnered by putting the building at the front of the site. This point was discussed in the Programming Working Group, it was mentioned by members of the SBC, and it was passionately spoken to by a member of the community at Forum #5.**

## **OPTION C3.2**

**This option’s advantages included:**

- **Good internal grade-level “neighborhood” feel: this plan was supported by those who enjoyed its clear definition of grade-level small learning communities as clusters around the extended learning areas.**
- **Large mass broken into smaller pods, which mediates scale: the design purposefully stepped the mass of the building back in space to try and break up the length of the building.**
- **Excellent solar orientation: the long axis of the building was nearly due east-west.**
- **Clean new construction: this option does not need to be phased.**
- **The design of the building created a forecourt space where both the upper and lower elementary playground were located, allowing playgrounds activities to be under close supervision.**
- **Safety: like some of the other options, it achieved many CPTED principles. The Administrative suite had good views of the car drop off, some of the bus drop off, and a long view to site entrances and parking.**

**This option’s disadvantages were as follows:**

- **It was not the least cost option for the C-Series PK-5 options.**
- **Not as compact a footprint as some of the other C-series options.**

- Of the “clean” new construction options, this option was close in proximity to the existing building.
- The sitework (cut & fill) for this option was more intensive than Option C3.1b. This actually turned out to be the main reason for the cost difference between the two.
- While some members liked the somewhat informal “ramble” of this plan, other disliked its “frenetic” nature; “too many jigs and jogs” was a common refrain. This also factored into construction costs, which were slightly higher in part due to this factor.
- Scale: the Designers did their best to break down the scale of the building into smaller masses; nonetheless, the sheer length of the building as one unbroken mass would have been imposing, even at the back of the site.
- The travel distances from the most extreme classrooms to the common areas (café, gym, etc.) were daunting.
- Site planning: because of the elongated shape of the building, fields ended up somewhat distant and fragmented. There was a poor relationship between the cafeteria and the playgrounds. There were few opportunities for good outdoor learning spaces well defined by the building. This option had the largest impact on the wetland setback area.
- The gym was located on the south end of the public wing, with the cafeteria in the back, with only east light, very little view, and no good relationship to the playgrounds.

Option C3.2 was eliminated because of complexity of plan, size and mass of building, distance from classrooms to core areas, and the higher cost than some other options.

### **OPTION C3.3**

#### **Discussion of Advantages and Disadvantages, and Reasons for Elimination**

##### **Advantages:**

- Interesting, unconventional, and inventive approach, with its stepped building section and circular courtyard, which attempted to reduce site costs related to cut & fill.

##### **Disadvantages:**

- Option C3.3 was the most expensive option at \$110.1M

- Members, especially the two Principals and the Superintendent, did not like the shape of the ELAs – they felt like residual spaces left over from the overall circular plan figure, not spaces that could be easily inhabited and would feel centered.
- There was very unequal “frontage” of classrooms on the ELAs – some classrooms had great access while others had virtually none.
- Members did not like how the 5<sup>th</sup> grade was isolated, and also had no ELA relationship for half the classrooms.
- The building design did not pay attention to solar orientation – some classrooms had good position while others did not.
- The building was very close to the existing building on its west side, and presented a long, imposing façade to the neighbors on the east side, very close to that property line.

In view of these facts, the SBC did not support this option; especially with much more educationally appropriate, less expensive options on the table.

## **OPTION C5**

**Advantages included the following:**

- Lowest cost option of the C Series (PK – 5)
- Least intense sitework (cut and fill) with a terraced parking scheme at the rear of the site.
- Easiest to build with least impact on the existing school during construction.
- Optimal solar orientation of the academic wing, long axis due east-west.
- Natural sloping hill grass “grandstand” formed at baseball field

**Disadvantages of this option included the following:**

- **Building at front of site:** the majority of SBC members and Public Safety Committee members Police Chief Warchol and Fire Chief White did not prefer the building so close to Crescent Street for the following reasons:
  - Three-story mass of the academic wing so close to the street was a neighborhood scale issue.

- **There were safety concerns with putting play fields dedicated to the school so close to Crescent Street.**
- **Building position placed main entrance on the back of the building, which some felt was awkward and not as welcoming.**
- **The Administrative Suite had no view of either primary site entrances, or the majority of the parking lot areas.**
- **Members, as well as the Safety Committee members who reviewed this option, did not like Vail Field being behind the school—too difficult to supervise and police.**
- **From a safety perspective (CPTED principles), it is preferable to have the building at some distance away from site entry points, with the ability to keep an eye on who is coming and going, and what their disposition might be as they approach the building. If there is an issue, this long view may give administration a few precious seconds to size up a dangerous situation and take action. With no long view of entry points, as is the case with Option C5, reaction time to danger is limited. The other factor discussed was removal of the building from proximity to the street to make it harder to shoot at the building from the street or a car parked on the street. The issue of safety trumping a modest increase in cost was echoed by members of the community who spoke at Forums #4 and #5. (See also Attachment 1 - Fire/Police Meeting #1 Minutes)**
- **Design for bus and car drop-off, car queue did not meet site program requirements:**
  - **The bus queue did not have room for all of the (7) 40' and (3) 30' busses programmed.**
  - **The car queue was circuitous, not intuitive, had dangerous intersections, and conflicted with bus and other circulation paths.**
  - **Bus and car circulation were not separated at the site entrance, which was a stated preference in the site design process.**
- **Most parking was quite remote from the building entrance. The most desirable lot, close to the entrance, was a one-way in/out and would likely back up as people search there first before going to the remote back lots.**
- **Outdoor learning spaces were not ideal, distant from woods and wetland resources.**

- The Pre-K/K drop lot circulation had no overflow option, and would likely block traffic if it backed up outside the lot.

**It was for these reasons that Option C5 was eliminated.**

*The submittal provides minimal information for an addition/renovation option serving 510 students at the existing site. Please provide additional information regarding the feasibility of an addition/renovation option serving 510 students at the existing W. Edward Balmer Elementary School site demonstrating that an addition/renovation option could not meet the District's educational requirements in a more cost effective manner. Please provide the supplemental information as part of the District's response to these review comments.*

**Response:**

**In the PDP phase, the Project Team studied Option B1, Grade 2-4 (510 enrollment) Addition/Renovation. This option was cost-estimated at \$57.1M. It was evaluated and considered in PDP, and was ultimately eliminated and not carried forward to the PSR phase.**

**Reasons include the following:**

- **At a very schematic level, building plan diagrams were developed that showed all the program elements fitting, albeit very tightly, into the existing building. It is likely that if this option were to be further developed, other additional space would be needed to truly fit everything into the project in the ideal or best relationship to serve the educational program. Either compromises would have to be made in room sizes, or more building addition area would have to be added, resulting in cost increases.**
- **The phasing plan for this option was onerous, consisting of several small swing space moves into and out of temp classrooms in the new gymnasium. This would be extremely disruptive to the educational quality in the building for the expected three-year duration of the work.**
- **Option B1 would not serve the largest number of Northbridge students; that is, it would only address deficient conditions in Balmer school for grades 2-4 and would still leave NES (grades PK-1) as an unresolved liability to the District, and grade 5 still located in the Middle School, counter to the educational vision of the District.**
- **Strictly comparing estimated project costs to the other Grade 2-4 Option on the table, B1 the add/reno option was \$57.1M, while B2 the new construction option was \$61.5M. With only 7.7% separating the two, it is wiser to just construct the program in an all-new building.**

**Option B1 was at the time of the PDP, and remains to this day, the least desirable of the renovation or new construction options.**

No further review comments for this section.

### 3.3.4 PREFERRED SOLUTION

Provide the following Items		Complete; <i>No response required</i>	Provided; <i>District's response required</i>	Not Provided; <i>District's response required</i>	Receipt of District's Response; <i>To be filled out by MSBA Staff</i>
1	Educational Program				
	a) Summary of key components and how the preferred solution fulfills the educational program	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Design responses including desired features and/or layout considerations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Proposed variances to, and benefits of, any changes to the current grade configuration (if any) and a related transition plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Preferred Solution Space Summary				
	a) Updated MSBA Space Summary spreadsheet	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Itemization and explanation of variations from the initial space summary (and MSBA review) included in the Preliminary Design Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Preliminary NE-CHPS or LEED-S scorecard	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Conceptual floor plans of the preferred solution, in color that are clearly labeled to identify educational spaces	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Clearly labeled site plans of the preferred solution including, but not limited to:				
	a) Structures and boundaries	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Site access and circulation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Parking and paving	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Zoning setbacks and limitations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	e) Easements and environmental buffers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	f) Emergency vehicle access	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	g) Safety and security features	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	h) Utilities	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	i) Athletic fields and outdoor educational spaces (existing and proposed)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	j) Site orientation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	An overview of the Total Project Budget and local funding including the following:				
	a) Estimated total construction cost	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Estimated total project cost	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



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) Estimated funding capacity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) List of other municipal projects currently planned or in progress	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	e) District's not-to-exceed Total Project Budget	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	f) Brief description of the local process for authorization and funding of the proposed project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	g) Estimated impact to local property tax, if applicable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	h) Completed MSBA Budget Statement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Updated Project Schedule including the following projected dates:				
	a) Massachusetts Historical Commission Project Notification Form	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) MSBA Board of Directors meeting for approval to proceed into Schematic Design	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) MSBA Board of Directors meeting for approval of project scope and budget agreement and project funding agreement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Town/City vote for project scope and budget agreement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	e) Design Development submittal date	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	f) MSBA Design Development Submittal Review (include required 21-day duration)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	g) 60% Construction Documents submittal date	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	h) MSBA 60% Construction Documents Submittal Review (include required 21-day duration)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	i) 90% Construction Documents submittal date	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	j) MSBA 90% Construction Documents Submittal Review (include required 21-day duration)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	k) Anticipated bid date/GMP execution date	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	l) Construction start	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	m) Move-in date	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	n) Substantial completion	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**MSBA Review Comments:**

*1a,b) See the MSBA comment above in 3.3.3 related to the evaluation of alternatives (respond above).*

**Response:** Comment addressed in 3.3.3 above.

2a,b) Refer to Attachment B for detailed review comments.

**Response:** refer to Attachment B for responses to comments (attached).

3) The District has indicated intent to achieve the 2% additional reimbursement through the MSBA Green School Program. The submittal indicates a total goal of 43 points using USGBC LEED-V4, including 8 points in Energy & Atmosphere “Optimize Energy Performance” category. Note that 43 points in LEED-V4 reaches the minimum required for all MSBA core projects. However, in order to receive the additional 2% reimbursement in the current MSBA green policy, the District and design team must also exceed the MA state energy code by at least 20% using the current 2015 International Energy Conservation Code. Eight points in this category exceeds the energy code by approximately 14%. 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, the District must provide a revised scorecard indicating that intent (either in response to this review or in the following submittal). Refer to MSBA Project Advisory #41 “Update to the MSBA’s Sustainable Building Design Policy” for more information. Please 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:** The Design Team has reviewed Advisory #41, and acknowledges its requirements. It is the continued intention of the District to pursue the 2% additional reimbursement through the MSBA Green School Program. The Design team has conferred and formulated their technical approach that will meet or exceed the requirements of Advisory #41. The Designer has attached a revised LEED credit checklist (3.3.4- Item 3) reflecting eleven (11) EAc2 “Optimize Energy” points in lieu of the previously listed eight (8) for that credit. (see Attachment 2)

4) The floor plan indicates a basement that provides spaces for mechanical/boilers, emergency electrical and network/telecom rooms. Given the surrounding wetlands, describe any precautions for flooding in the basement or other potential concerns regarding climate resiliency during the expected life of the building.

**Response:**

The basement indicated in the PSR floor plans has since been removed. The mechanical and electrical rooms are now located on the first level of the building, and the MDF/ telecom and IT rooms are on the second level.

7a) The submitted project schedule includes dates for the Project Notification Form (“PNF”) submittal letter to Massachusetts Historic Commission (“MHC”) and the resulting approval from MHC. Both dates occur in the past. Please confirm approval by MHC by including a copy of these two letters in the District’s response to this review.

**Response:**

The completed and reviewed Project Notification Form from the Mass Historic Commission dated October 2, 2017, was submitted in the PDP submission (Appendix X.07). It is included again here for the convenience of the MSBA (see Attachment 3).

7m,n) Provide an updated project schedule that includes move-in and substantial completions dates for the Preferred Option.

**Response:**

The move-in and substantial completion dates have been added to the attached Project Schedule. (see Attachment 4).

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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Signed Local Actions and Approvals Certification(s):				
	a) Submittal approval certificate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Grade reconfiguration and/or redistricting approval certificate (if applicable)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Provide the following to document approval and public notification of school configuration changes associated with the proposed project:				
	a) A description of the local process required to authorize a change to the existing grade configuration or redistricting in the district	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) A list of associated public meeting dates, agenda, attendees and description of the presentation materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### **MSBA Review Comments:**

*1, 2a, 2b & 3a-d) As noted in the January 11, 2018 Cursory Review email from MSBA, the District has been asked to provide the following items not included in the submittal:*

*Local Actions and Approval Certification:*

- An original version of the December 19, 2017 Local Actions and Approval Certification;*
- An original, certified version of the December 19, 2017 School Building Committee meeting minutes at which it was voted on to submit the PSR submission to the MSBA; and,*

*Grade Reconfiguration and Districting Approval Certification:*

- An original version of the December 21, 2017 Grade Reconfiguration and Districting Approval Certification.*

*Subsequent to receiving the District's preferred schematic submittal, the OPM provided updated signed original copies of the above documents. No further action required.*

### **Additional Comments:**

- Refer to the MSBA/Northbridge: Facilities Assessment Subcommittee Follow Up email sent on January 26, 2018 for topics discussed at the January 24, 2018 FAS Meeting for additional information. The MSBA notes the following as areas of focus in the early stages of schematic design. Consider the benefits of conducting educational activities currently planned for the maker spaces in larger classrooms that are designed to accommodate the materials and activities, particularly for the lower elementary grades and seek opportunities to improve building efficiencies during further development of the design.*

### **Response:**

**The District and Designer acknowledge the comments made at the FAS meeting of 1/24/18. The designer is making every effort to improve building space efficiency as the design progresses. The District is committed to the educational vision they have developed which identifies the benefit to learners of specialized staff leading programs in differentiated, specially-equipped spaces—specifically Extended Learning Areas and Maker Spaces—versus only the use of larger general education classrooms led by general education teachers. We invite the MSBA to review responses to comments regarding the proposed Maker Spaces and Extended Learning Areas in Attachment B (attached).**

- 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:**

**The District confirms that the District's consultants have reviewed and incorporated applicable Project Advisories into the proposed project.**

*No further review comments for this section.*

**End**

**ATTACHMENT B**  
**MODULE 3 – PREFERRED SCHEMATIC SPACE SUMMARY REVIEW**

**District:** Town of Northbridge

**School:** W. Edward Balmer Elementary School

**Owner's Project Manager:** SMMA Project Management

**Designer Firm:** Dore & Whittier Architects

**Submittal Due Date:** January 3, 2018

**Submittal Received Date:** January 3, 2018

**Review Date:** January 17-24, 2018

**Reviewed by:** A. Waldron, F. Garcia, C. Alles, J. Jumpe

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The Massachusetts School Building Authority (the “MSBA”) has completed its review of the proposed space summary of the preferred alternative as produced by Dore & Whittier Architects and its consultants. This review involved evaluating the extent to which the W. Edward Balmer Elementary 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.

The following review is based on the preferred new construction project option with an agreed upon design enrollment of 1,030 students in grades K-5.

**The MSBA review comments are as follows:**

1. **Core Academic** – The District is proposing to provide a total of 65,000 net square feet (nsf) which exceeds the MSBA guidelines by 20,250 nsf. The MSBA notes the following variations to guidelines:
  - a. (4) 1,200 nsf Pre-Kindergarten classrooms totaling 4,800 nsf. This results in (4) classrooms in excess of the MSBA guidelines. Based on the information provided, the proposed number of classrooms supports the delivery of the District’s educational program. The MSBA accepts this variation to the guidelines.
  - b. (9) 1,200 nsf Kindergarten classrooms totaling 10,800 nsf. This results in (1) classroom in excess of the MSBA guidelines. Based on the information provided, the proposed number of classrooms supports the delivery of the District’s educational program. The MSBA accepts this variation to the guidelines.

- c. (40) 900 nsf General Classrooms totaling 36,000 nsf. This results in (3) classrooms in excess of the MSBA guidelines. Based on the information provided, the proposed number of classrooms supports the delivery of the District's educational program. The MSBA does not object to the additional classrooms. In response to these comments please describe the District's rationale for proposing minimum size classrooms and a separate Maker Space, and the benefits this approach has over delivery of project based learning in larger classrooms and adjacent Extended Learning Areas. Provide this information for each of the grade cohorts to be served by the proposed Maker Space/Project Rooms.

**Response:** The district agrees with MSBA in that it seeking to maximize core academic program space, versus oversized public spaces. In an effort to maximize available core academic space as well as to provide flexibility and specialized, differentiated learning environments, the District has proposed repurposing net square footage available within MSBA's space summary guidelines as follows:

***REPURPOSED FLOOR AREA FROM PSR SPACE SUMMARY***

SPACE	QTY	NSF	TOTAL
Gen. Education Classrooms	40	100	4,000 nsf
Art Classroom + Storage	1	1,150	1,150 nsf
Music Classrooms + Practice Rooms	1	1,325	1,325 nsf
<b>TOTAL</b>			<b>6,475 nsf</b>

***ADDITIONAL CORE ACADEMIC PROGRAM***

SPACE	QTY	NSF	TOTAL
Maker Spaces (PK-K, 1-2)	2	1000	2,000 nsf
Maker Space (3-4-5)	1	1,200	1,200 nsf
Extended Learning Areas (K-5)	6	1,000	6,000 nsf
Extended Learning Area (PK)	1	400	400 nsf
<b>TOTAL</b>			<b>9,600 nsf</b>

***SUMMARY ARITHMETIC***

Added Core Academic Program	9,600 nsf
Repurposed Spaces/ Floor area	- 6,475 nsf
Additional program area not available in Space Summary	3,125 nsf

**Discussion of benefits of providing project-based learning in proposed Maker Space/STEAM Labs, versus larger general classrooms:**

The District refers to and amplifies its previous Response to PDP comments, which summed up benefits and necessity of Maker/ STEAM Labs for all grade levels in the PK-5 configuration:

The important distinction between Maker/ STEAM Lab spaces and conventional classroom spaces are contained in the following factors:

- **Time:** Maker Spaces/STEAM labs can accommodate projects that are designed to run over multiple days or even weeks, and provide tools, specialized work surfaces, materials, and project storage—all at the ready—so the classroom does not need to be reconfigured to work on a project, then configured back to work on more conventional studies. Students enter the room, grab their project containers (trays, totes, or other storage that will be on wheeled racks or in slots in casework) and pick up where they left off.
- **Space:** Maker Spaces provide the necessary space for students to spread out, work on larger-scale projects or constructions, or to gather together for demonstrations and team discussions that require the specialized equipment of the room that would not be present in a conventional classroom.
- **Specialization:** Maker spaces are innovation labs with finishes designed for wet, messy projects, wall surfaces with marker board for brainstorming, and furniture designed for collaboration in many different forms and configurations. There are cabinets for elementary science lab equipment, tools, materials, bins and racks for project storage, none of which are present in a conventional classroom. It would not make sense to duplicate this specialized equipment and environment in every classroom. Much like an Art room is equipped specially to handle art media projects that happen over time, a STEAM lab is specially-equipped to handle projects that integrate multi-disciplinary elements of an education topic over time.

**Example 1: Grades Pre-K/K:** The District currently provides an interdisciplinary, thematic approach to learning in its Pre-K and Kindergarten programs. With a daily routine that includes large group presentation/instruction, followed by personalized learning time that includes small group instruction and learning center-based activities, this format provides a strong foundation for project-based learning. Students are familiar with the routine of moving from center to center to complete their projects; moving from the classroom to the maker space will be one of these transitions.

Currently teaching assistants spend significant time with setup and cleanup in the classroom space, which wastes valuable instruction time. This barrier limits the types of activities due to time and preparation. Projects that would be enhanced by extended time or require materials that may be “messy” (paint, glue, bubbles, ink) are not feasible with limited space and difficult clean-up, storage, and display.



An example of this can be seen in the photos included (Figure 1).



**Figure 1: Northbridge Kindergarten students utilizing classroom space to design and build beaver dams.**

Kindergarten students were studying the motion and movement of water, a complex topic that lends itself to multiple learning opportunities. Students decided that they wanted to use natural seasonal materials to build “beaver dams”. Limited work space inhibited this project from being a long-term, complex experiment. If this project was conducted in a maker space, students would have the opportunity to plan and build their beaver dams over a longer period of time with the guidance and assistance of the Media Specialist. The results and outcome would have been much better, and more meaningful: longer time begets more insight,

more cross-pollination, more “happy accidents”, more experimentation, failure, and refinement that spark deeper learning.

Additional pictures include examples of specialized tools areas, equipment, and furniture that could be provided for children to access in a safe, creative work space (Figure 2).



Figure 2: Example Pre-K/Kindergarten-level Maker Space equipment and activities

The important distinction between using the Pre-K/K classroom for STEAM projects and using the dedicated maker space is that the classroom has to be all-things-to-all-functions and constant compromises of space and time must be made to make it all work; whereas the STEAM lab is just that: a dedicated space that honors the act of creativity where projects take place using “soft” materials like paper, cardboard, natural materials, wood, cloth, felt, craft items, or repurposed household items.

The Pre-K/K Maker/ STEAM Lab is envisioned to be on the ground floor, directly adjacent to an Outdoor Learning area, accessed via double doors. This outdoor space extends classroom learning outside and brings



natural instruction into the lab, helping forge the link between scientific and creative learning, observation and interpretation. Current ideas under study for the outdoor learning space include butterfly garden, stormwater rain garden, and outdoor classroom.

The wetland immediately to the north of the school site would be accessed via a trail from this outdoor learning space. What anchors its relationship to the Maker/STEAM Lab is that direct access to the outdoors cannot be accomplished from each ground-level PK/K classroom; due to security concerns as well as site topography, this is the only access point contemplated. This is another example of the specialization of the Maker/ STEAM Lab that avoids unnecessary duplication in classrooms.

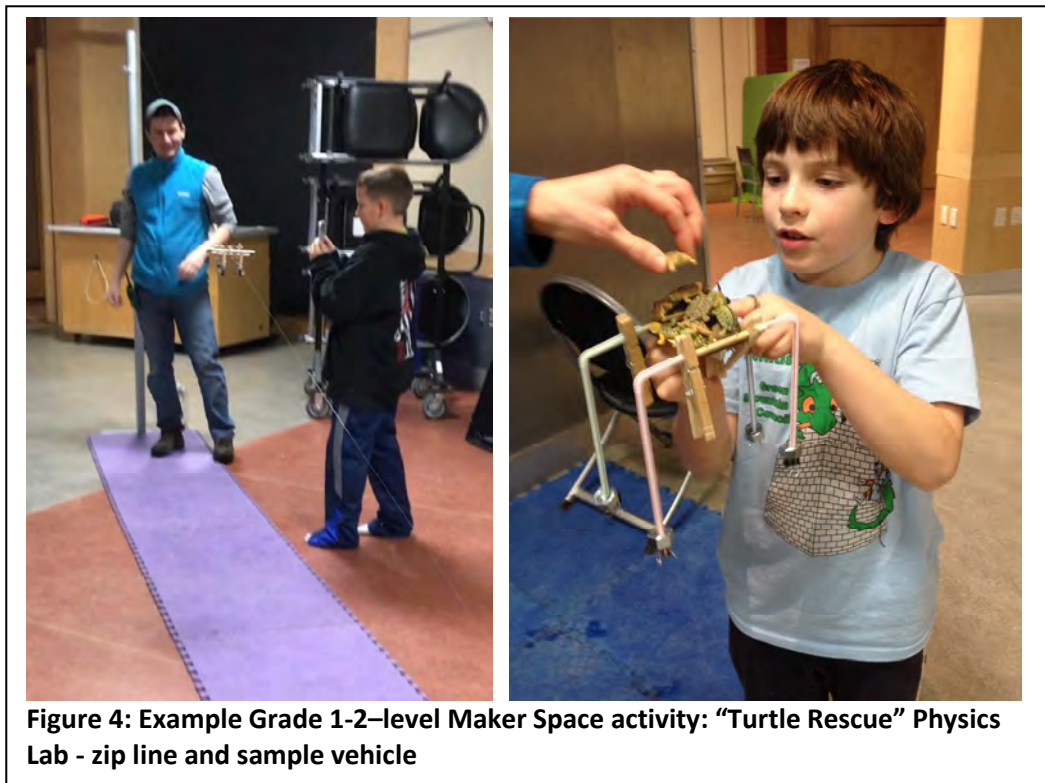
**Example 2 – Grade 1-2:** The Maker/ STEAM Lab for grades 1-2 would continue the programming that the District has established for Pre-K and Kindergarten, with introduction of more elements of hard science, information technology, experimentation, logic, and creative expression as ways of documenting and interpreting learning. As students progress through the grade levels, integrated units of study and performance assessments will continue in the maker spaces, which will be staffed with a full time Technology/Media Specialist. The collaborative teaching model that includes the classroom teacher and specialist will ensure that this learning area is utilized for students to fully engage in such key concepts as the scientific method, engineering design process, or expository writing and demonstration skills for all projects.

The example below (not Northbridge students) shows second graders collaborating to design a machine using a kit of parts that will lift an object. It illustrates architectural lab requirements such as need for open space in a room where the creative process can happen undisturbed, ready access to materials, and writing surfaces to sketch ideas. (Figure 3).



**Figure 3: Example Grade 1-2–level Maker Space activity: team-designed and built physical machine**

Another example grade 1-2 project (not Northbridge students) is a “Turtle Rescue Device” physics lab. Each team of two or three students is given a kit of small parts they can use to assemble a “rescue vehicle” that will carry small plastic turtles on a 20-foot-long inclined “zip line” (wire) to return them to their habitat. The lab requires space to set up the zip line wire, tables for rescue vehicle assembly and testing, and a segregated environment to allow experimentation to happen uninterrupted by other classes. (Figure 4)



The Maker/STEAM Lab will be staffed with a full time Media Specialist. Classes will be scheduled so that the classroom teacher and the media specialist will co-facilitate a structured, project-based learning lesson over 60-90 minutes. Students can access materials not typically stored or utilized in the general education classroom. Ongoing projects can be stored for future lessons. Proximity to the extended learning areas allows for presentations, demonstrations, and models to remain intact for display.

**Example 3, Grade 3-4-5:** Northbridge 4<sup>th</sup> graders recently worked on an interdisciplinary unit involving acceptance. The students were placed in cooperative groups and provided with a description of an individual who had very specific physical conditions and need a device for improved mobility. Based upon this description, each group was given two weeks to develop a device for the individual that would assist them in becoming more mobile. Students developed prototypes, wrote explanations as to

why the design decisions were made, and wrote a set of directions for use and care. Students then created the device. Each group presented the device and explained their design process and decisions on materials.

If the students had the opportunity to utilize a Maker/STEAM lab for such a project, work could be kept collected and documented, set-up and take-down time would be minimized, tools and materials would be at the ready, and the prototypes could be kept safely on display for other classes. A wider range of materials and more in-depth development could have been integrated. (Figure 5)



Figure 5: Northbridge 4<sup>th</sup> grade student projects crowd classroom work space

Grade 5 students participated in the BSCES (Boston Society of Civil Engineers Section) bridge design/build challenge. They typically used an academic classroom for such work. This required that the materials be stored and set up at least twice each week. This set-up wasted at least 20 minutes of valuable time each class. (Figure 6)

While a maker space still needs set-up and clean-up, the process is greatly streamlined when materials are close at hand and storage is designed, not compromised or hacked together in an adaptation. The STEAM Lab would include the appropriate tools, conveniently available, with space for storage and display, and would enhance this learning experience for all students by validating this as a meaningful, integral learning design area for our young inventors and engineers.

The bridge demonstration event was held in the Balmer School cafeteria at an event to which families were invited. As the new school is envisioned, prototype testing and the demonstration could be held in the extended learning spaces directly adjacent to the maker space.





**Figure 6: Northbridge 5<sup>th</sup> grade students working on the BSCES bridge challenge**

- d. (7) 500 nsf Teacher Planning areas totaling 3,500 nsf.; (6) 1,000 nsf K-5 Extended Learning area and (1) 400 nsf PK Extended Learning areas totaling 6,400 nsf; in response to these comments, please consider how the square footage associated with the Extended Learning areas could be included as part of the total gross square footage of the building.

**Response:** From the beginning of this project, in the Space Summary, Extended Learning Areas (ELAs) have been accounted for as program spaces with attributed net SF area. This does two things: first, it demonstrates the arithmetic or accounting documented in comment 1.c (page 2) above, that shows where the area came from; and secondly, it creates a place-holder in the program for this space so that it cannot be whittled away to the point where it would not serve its intended purposes. This often occurs in the design process when ELAs are included in the gross SF of the building.

- e. (3) Maker Spaces/Project Rooms and associated storage areas totaling 3,500 nsf. Please describe why the proposed learning activities are better delivered in a separate, shared space rather than from within the academic classrooms or adjacent Extended Learning Areas for all grades with particular emphasis on the need for grades K-3. Explain why additional Maker Space/Project Rooms

are required in addition to the Extended Learning Areas. Explain how these areas differ, how the activities in the spaces differ, how they could potentially overlap, how they are scheduled, staffed, and maintained.

**Response:**

- i. For the discussion of why learning activities are better suited in a specially-equipped, shared Maker/STEAM Lab, the District refers the MSBA to the narrative provided in Section C of this submission.
- ii. Discussion of activities best suited for Maker/STEAM labs versus Extended Learning Areas, with supporting reasons:

**Primary Maker/STEAM Lab activities include:**

- Building/ Constructing
- Experimenting
- Painting
- Modeling and prototyping
- Discussing and collaborating in groups
- Using technology to test/monitor/ operate on a project
- Cutting and assembling
- Project Storage
- Display of work in progress

These activities are best suited to the maker space because of the presence of specialized tools and materials ready at hand to accomplish them, and the protected nature of the room – projects are safe from damage, and in some cases can be displayed in progress, an important aspect of the learning process. It is also important for the lab activity to happen in an area not exposed to other distractions in order to maintain focus. (Figure 7)



**Figure 7: Example Maker Space for Grade 3-4-5**

**Learning Areas (ELAs) activities include:**

- **Break-out space from classroom learning**
- **Spread-out space for larger academic projects or activities**
- **Multi-classroom assemblies, demonstrations, presentations such as:**
  - **School safety**
  - **Personal health & safety**
  - **Anti- Bullying training**
  - **Student Work**
  - **Enrichment topics**
- **Visits from outside subject matter experts & speakers**
- **Informal reading**
- **Collaboration**
- **Technology access (Chromebook Cart)**
- **Distributed Library Reading Nook**
- **Sink area for messy/wet project work and cleanup**
- **Display of finished work**

**These activities are best suited to the ELAs because they typically involve either larger, unencumbered open space, informal furniture or soft seating, or space best suited for academic work or activities most related to the classroom that spill out into the ELA. Because the ELA is also the circulation system and a student locker storage area, it is not well-suited for secure in-progress project storage, but could have casework or built-in display cases for finished work.**

**This common area supports the belief that learning is continuous throughout the school day. Learning can be supported by all teachers, and we learn from all individuals. This space supports the District’s philosophy of inclusion and differentiation, as students can be grouped more flexibly with students from other classes, avoiding a stigma of being “pulled out” of class.**

**iii. Discussion of differences in the functions/activities of the Maker/STEAM lab vs. Extended Learning Areas (ELAs):**

**Primary differences or distinctions between the Maker/STEAM Labs and the ELAs as conceived in this project can best be characterized as follows:**

- **Specialized versus General:** The maker space is specially-equipped with features like materials storage, age-appropriate tool storage analogous to a shop or lab, and flexible furniture and surfaces designed to encourage collaboration as well as serve as a large work surface. The ELA is a more generic environment that has many functions: circulation, cubbie/locker storage, break-out space from classrooms, medium-sized assembly space, demonstration/practice



presentation area, reading area, to name a few. To add maker functions on top of that would result in compromises that would defeat the purpose of the maker space as a dedicated lab.

- **Focused versus Dispersed:** Lab activities that happen in a maker space have defined objectives, specific or special tools and materials, and need uninterrupted focus and no competing uses of the space. It is scheduled space. The ELA, by contrast, hosts small group activities as-needed when the need for focus in the entire space is not so great. For larger groups of a singular purpose, a faculty-coordinated schedule (using scheduling software) is employed. It is teacher-coordinated shared-use space where activities may be diverse and dispersed in the space, or used in a single large-group presentation mode.

In addition to its function as a classroom break out space, ELAs are analogous to the neighborhood square and students are citizens. From time to time larger groups assemble, coming together as a community to hear important messages, receive large group instruction, or participate in student presentations. These are incredibly important activities that foster a sense of community, help each child feel a part of a greater whole, give them a forum to participate and be heard, and articulate the sense of small learning community so important to breaking down the scale of a large school. (Figure 8)



Figure 8: Example Extended Learning Area for Grade 3-4-5. This example is Grade 6, but ideas and fit-out are similar.

Without this space, there is no Neighborhood, only “houses on a street” where what happens in each classroom is a mystery, nobody really gets to know anybody, and learning activities happen in opaque silos.

It has been shown that key drivers of behavioral issues in schools are a lack of a sense of belonging, lack of voice, lack of feeling listened to, or feeling small in a big place. All these conditions lead to alienation, the root cause of many of society’s ills. The ELA as a school community space is a cornerstone in reimagining primary education to move away from this pervasive malaise in our society.

**iv. Discussion of potential overlap of functions of Maker/STEAM Labs vs. ELAs:**

Education for the next generation must take place outside the traditional four walls of the primary classroom. The overlap in the function of academic classrooms, Maker/STEAM Labs, and ELAs is complementary and by design. All settings and spaces are key to supporting the programming and philosophy of collaboration and design thinking. The three spaces support each other in the following ways:

- Classroom work often consists of a group lesson or presentation followed by students breaking out into small groups. If the particular needs of the classroom require—due to differentiation, sheer numbers, or physical need for more “spread out” space—the ELA is there as a resource to support the classroom with a variety of environments as noted above.
- Balmer classrooms will be organized into pairs with teachers sometimes team-teaching, or bringing in outside resources to present. At times when two or even three classrooms need to assemble together, the large open space of the ELA is available for a quick transition to a meeting (as opposed to dragging everyone halfway across the school to a large assembly space).
- The Library Media Specialist will bring literacy to the students by using the distributed library Reading Nook as a neighborhood base for literacy instruction, storytelling, or resource access. Materials on wheeled shelving units kept in the nooks will be rotated in close coordination with lesson plans, and can be accessed by learners during free work time.
- Maker/STEAM Labs will be scheduled and run as “specials” and as such will be somewhat separate but still local to a small learning community. The Media Specialists whose home-rooms are the Maker Spaces will team-teach and closely

coordinate with the Teachers to provide programs and lab activities that are a seamless part of the overall curriculum.

- Occasionally there will be activities that need more open space than what is available in the Maker Space. The ELA is available as a backup resource. Maker activities—if appropriate to the lesson plan and with less need for focus—can spill out into the common spaces

**v. Discussion of Maker/ STEAM Labs scheduling, staffing and maintenance:**

**Proposed Schedule:** The attached schedules show the planned programming/scheduling of the Maker Spaces for the three grade level pairings: PK/K, 1-2, and 3-4-5. These are the room schedules, analogous to the schedule of the Media Specialists who will be operating the Maker Spaces to fully support their integration as a “special” and as an added resource in the school’s repertoire. (See Attachment 5)

**Staffing:** The three Maker/STEAM Labs will be staffed full-time with three identified staff member currently employed by the District, who have already begun to transition from their current assignments:

- the current Technology teacher from the Balmer School
- the current Technology/Media teacher from NES
- the District’s Elementary instructional technology specialist

This transformation is already in progress. The technology teacher, who is very excited and motivated about this opportunity, will be attending seminars and is becoming educated on how to fit out and operate a maker space, and will be the designated leader for the new school. The other identified staff will be supported in this same path.

These teachers will be planning for curriculum, equipment, and fit-out of their lab spaces in collaboration with fellow teachers and administrators. They will be skilled in working with classroom teachers to develop and provide integrated learning experiences for all students, even our youngest learners. Classes will be scheduled for 44 or 90 minute blocks each week (see attached schedules) to support the development of projects that enable students to demonstrate their learning. Double blocks may be supported by the students’ home room teacher in a team mode with the technology specialist.

The ELA will be completely supervised by teachers facilitating small work groups, special educators working with small groups of students from various classes, instructional assistants assigned to facilitate project-based work with groups of students from different classes, and the Librarian who will bring books and resources to the satellite areas including relevant materials for current topics and units.

**Maintenance:** While the “ownership” and responsibility for maintenance of the Maker Spaces is not in question and rests with those teachers who operate the rooms, the daily maintenance of common areas like the ELAs will be structured using mutually agreed-upon rules of use. Used as a learning opportunity for cooperative living, students will be responsible for clean-up of materials as part of their use of common space. A “carry in/carry out” rule will be in place for items brought from the classroom. Obviously larger accidents or more pervasive use will require teacher and custodial staff help.

One of the attractions of the ELA is its flexibility. Furniture will be lightweight with wheels to allow easy movement. The design team is currently researching student locker units with kid-standing-height table tops on wheels as flexible elements in the space that will normally be set in a neutral position but can be moved for exceptional events where a lot of open floor space is needed. Furniture arrangements will generally be maintained by the custodial staff.

- f. The MSBA encourages the District to find efficiencies in this category. In order for the MSBA to determine eligibility of the proposed spaces a better understanding of how the proposed classroom sizes, Maker Space/Project Rooms and Extended Learning Areas, best meet the educational needs. Please acknowledge.

**Response:** The District acknowledges the need to find efficiencies in the building design, while at the same time meeting the needs of its Education Program.

2. **Special Education** – The District is proposing to provide a total of 13,415 net square feet (nsf) which exceeds the MSBA guidelines by 2,345 nsf. 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 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.

3. **Art and Music** – The District is proposing to provide a total of 5,150 nsf which is 2,425 nsf below the MSBA guidelines. This is a result of (1) 1,000 nsf Art Classroom, (1) 150 nsf Art Workroom, (1) 1,200 nsf Music Classroom and (5) 75 nsf Music Practice rooms below MSBA guidelines. Based on the information provided, the proposed number of classrooms supports the delivery of the District’s educational program. The MSBA accepts this variation to the guidelines.
4. **Health and Physical Education** – The District is proposing to provide a total of 6,300 nsf which meets the MSBA guidelines. No further action required.
5. **Media Center** – The District is proposing to provide a total of 5,303 nsf which meets the MSBA guidelines. No further action required.
6. **Dining and Food Service** – The District is proposing to provide a total of 11,955 nsf which meets the MSBA guidelines. No further action required.
7. **Medical** – The District is proposing to provide a total of 810 nsf which meets the MSBA guidelines. No further action required.
8. **Administration and Guidance** – The District is proposing to provide a total of 3,290 nsf which exceeds the MSBA guidelines by 125 nsf. Based on the information provided, please move 250 net square feet associated with the Team Chair to the Special Education category to better reflect the programmatic utilization of the space.

**Response: The District acknowledges that this program has been moved to the Special Education category on the Space Summary, which will be reflected in the SD submission.**

9. **Custodial and Maintenance** – The District is proposing to provide a total of 2,630 nsf which meets the MSBA guidelines. No further action required.
10. **Other** - The District is proposing to provide a total of 500 nsf for a Family and Community Resource Center. As previously noted, the MSBA does not object to including this space in the proposed project, however, it will be considered ineligible for reimbursement unless the District is able to provide this space within the grossing factor. No further action required.

**Response: The District acknowledges that this program element has been removed from the Space Summary, which will be reflected in the SD submission.**

11. **Total Building Net Floor Area** – The District is proposing to provide a total of 114,353 nsf which exceeds the MSBA guidelines by 20,792 nsf. The proposed area has increased by 123 nsf since the Preliminary Design Program submittal. Please address the comments provided in the categories above as part of the District’s response to these comments in order for the MSBA to establish an allowable net square footage.

12. **Total Building Gross Floor Area** – The District is proposing to provide a total of 171,530 gsf which exceeds the MSBA guidelines by 22,180 gsf. The proposed area has increased by 185 gsf since the Preliminary Design Program submittal. Please address the comments provided in the categories above as part of the District's response to these review comments in order for the MSBA to establish an allowable square footage.

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.

## MEETING MINUTES – Public Safety 1



DORE & WHITTIER  
ARCHITECTS, INC.

**DATE OF MEETING:** September 19, 2017

**PROJECT:** W. EDWARD BALMER ES FEASIBILITY STUDY

**PROJECT NO.:** 17-0759

**SUBJECT:** Meeting with Northbridge Fire and Police Chiefs

**ATTENDING:** Walter Warchol – NPD Chief  
Dave White – NFD Chief  
Catherine Stickney – Superintendent, NPS (partial)  
Lee Dore – PIC, DWA  
Tom Hengelsberg – PM, DWA  
Joel Seeley – SMMA (OPM)

ITEM	MINUTES	ACTION/ WHO	STATUS/ DATE
01-1	This meeting was intended to be a meet-and-greet with Chief Warchol and Chief White to introduce them to the team, get them up to speed on the project, open lines of communication, and get their initial reactions to the preliminary planning and Options underway.		Closed
01-2	Joel explained to the chiefs where the project is in the process, that the Balmer site had been chosen as the primary study site, and what is coming next in the process, generally. The two study enrollments are grades 2-4 (510) and PK-5 (1030).		Closed
01-3	It was noted that the Balmer School was originally built as an Upper Elementary/ Middle School.		Closed
01-4	Some present features and constraints of the Balmer site were noted: <ul style="list-style-type: none"> <li>• One way in/out for vehicles</li> <li>• Not full perimeter access around the building for emergency vehicles</li> <li>• Building is located in the center/rear of the site – neither good nor bad</li> </ul>		Closed
01-5	Lee and Tom presented the five site plan options under consideration, and pointed out the major features of each.		Closed
01-6	The chiefs made the following observations: <ul style="list-style-type: none"> <li>• Connection to North Main seen as a potential liability <ul style="list-style-type: none"> <li>○ Policing difficulties: even if lit, it might be hard to supervise, might attract underage drinking crowd.</li> <li>○ Steep grade is difficult</li> </ul> </li> </ul>	DWA to continue study of N Main connection and grades, incorporate lighting, and	Open

ARCHITECTS  
PROJECT MANAGERS

260 Merrimac Street Bldg 7  
Newburyport, MA 01950  
978.499.2999 ph  
978.499.2944 fax

212 Battery Street  
Burlington, VT 05401  
802.863.1428 ph  
802.863.6955

www.doreandwhittier.com

	<ul style="list-style-type: none"> <li>○ Tight squeeze between existing houses</li> <li>○ Exiting onto N Main could be hazardous – limited sight distance?</li> <li>● Loop road around school is a must-have</li> <li>● Front options are generally less preferred due to: <ul style="list-style-type: none"> <li>○ lack of complete circulation around the building</li> <li>○ lack of ability to see the whole site and approaches from the admin office suite</li> <li>○ proximity of play fields to Crescent Street – exposure of children to activities on the street</li> </ul> </li> </ul>	include loop road going forward. Grades, turning radii, and turning movements of access will be studied.	
01-7	Cathy pointed out importance of loop road design in some options to drop-off queue length. There was discussion about avoiding queues that extend off the property into Crescent Street, which apparently has happened on occasion. Later it was again stressed that queue length is critical.	DWA to continue study of drop-off queue lines going forward.	Open
01-8	Chief White stated the height of the FD's tallest ladder truck is 48 feet, which must be able to access the roof of a new school. This will be a factor in the final permitting of the allowable height of the building. DWA and Nitsch (civil engineer) will obtain apparatus dimensions and run turning radii models as site plan develops.	Design team to consider these factors in further design.	Open
01-9	Chief Warchol mentioned that there is a Town Safety Committee which meets monthly, which has representatives from all town committees, and it would be a good idea to bring the project for review before this committee at a next logical juncture in the schedule.	DWA agrees and will set up meeting with Safety Comm.	Open
01-10	Water pressure should be good in the street – Chief White thought it was around 120 PSI with sufficient volume.	DWA will set up flow test with FP engineer witnessing.	Open
01-11	Chief Warchol suggested lighting and cameras covering all site walks will be a good idea.	DWA to incorporate to extent possible.	Open
01-12	Chief Warchol will be very interested to review interior safety measures as the design develops.		Open
01-13	Chief White will be interested to see development of exit routes for children onto fields for fire drills and real events. There needs to be a clear, safe circulation route to the designated secondary emergency shelter, which is the Armory on Lake Street.	Design team to consider these factors in further design.	Open
01-14	Both chiefs prefer the site design feature where the proposed secondary entrance drive is lined up with Lake Street, not pushed over to the east property line and misaligned with that intersection.	DWA to incorporate.	Open
01-15	Traffic volume vis-à-vis front of site options B3 and C5 were discussed. Crescent Street is a commuter cut-through and can be busy. The larger enrollment will only increase traffic. Cathy observed that there may be some doubling-up of car trips, as	Design team to further study traffic in next phases of the project	Open



	parents who drop at both schools now will only be making one trip to one consolidated school.	with detailed counts.	
01-16	Active Shooter scenarios briefly discussed. Armory would be safe location for evacuation scenario—this would not change with 1,030 enrollment. Chief Warchol likes compartmentalized design for lockdown scenario, as already shown in all options. Warchol liked the sally-port entrance design into the building. Lee Dore explained that with electronic locking controls, a Panic mode and Alarm mode would be possible to incorporate. All agreed it will be important to build these devices and features into the project from the start as opposed to trying to add them in later.	DWA to continue development of security protocol with building design development.	Open
01-17	Public Safety Committee meeting will be next stop to continue discussion of public safety issues.	DWA to set up mtg.	Open

The above is intended to be an accurate summation of this meeting. Please contact me with any additions, deletions, and/or corrections, for incorporation into these minutes. After 10 days, we will accept these minutes as an accurate summary of our discussion and enter them into the permanent record of the project.

Sincerely,

**DORE & WHITTIER ARCHITECTS, INC.**  
Architects ■ Project Managers

Tom Hengelsberg, AIA  
Project Manager

**c:** Attendees  
File



D		1	
C			2
D		3	
D		1	
C		2	

		Yes	No	
		4	4	5
D	Y			
C	Y			
C			3	2
C	1			1
C	1			1
C	1			1
C	1	1		

	Yes	No
D	8	7
D	Y	1
D	Y	
D	Y	
D	2	
C	1	2

C	1		
C	2		
D		1	
D	1	1	
D		3	
D	1		
D			1

	Yes	No
	5	1
D	1	
D	1	
D	1	
C		1
C	1	
C	1	

	Yes	No
2	2	0
1		
1		
	1	
	1	

Yes	No	
45	31	34



## **The Commonwealth of Massachusetts**

William Francis Galvin, Secretary of the Commonwealth  
Massachusetts Historical Commission

October 2, 2017

Dr. Catherine Stickney  
Superintendent of Northbridge Public Schools  
87 Linwood Avenue  
Whitinsville, MA 01588

RE: W. Edward Balmer Elementary School, 21 Crescent Street, Northbridge, MA; MHC# RC.63063

Dear Dr. Stickney:

The Massachusetts Historical Commission (MHC) is in receipt of a Project Notification Form (PNF) for the project referenced above, which was submitted by Dore & Whittier Architects and was received at this office on September 5, 2017. The staff of the MHC have reviewed the information submitted and have the following comments.

The proposed project consists of either the partial demolition and renovation of the existing demolition of the existing W. Edward Balmer Elementary School or the complete demolition of the existing school and the construction of a new school building at 21 Crescent Street in Northbridge. The information provided indicates that the project will use funding from the Massachusetts School Building Authority

Review of MHC's files indicates that the W. Edward Balmer Elementary School is not included in MHC's Inventory of Historic and Archaeological Assets of the Commonwealth, nor listed in the National and State Registers of Historic Places. No further review by the MHC is required for the MSBA-funded project.

These comments are offered to assist in compliance with Massachusetts General Laws, Chapter 9, Sections 26-27C, as amended by Chapter 254 of the Acts of 1988 (950 CMR 71.00). Please do not hesitate to contact Linda Santoro of my staff, should you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Brona Simon".

Brona Simon  
State Historic Preservation Officer  
Executive Director  
Massachusetts Historical Commission

xc: MSBA

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION

220 MORRISSEY BOULEVARD

BOSTON, MASS. 02125

617-727-8470, FAX: 617-727-5128

**PROJECT NOTIFICATION FORM**

Project Name: W. Edward Balmer Elementary School

Location / Address: 21 Crescent Street

City / Town: Whitinsville, MA 01588

Project Proponent

Name: Dr. Catherine Stickney, Superintendent of Northbridge Public Schools

Address: 87 Linwood Avenue

City/Town/Zip/Telephone: Whitinsville, MA 01588 (508) 234-8156

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

<u>Agency Name</u>	<u>Type of License or funding (specify)</u>
Massachusetts School Building Authority	Project Funding - ±57.11% of eligible costs
Town of Northbridge	Project Funding - Remaining cost of project
Mass DEP - ANRAD (resource delineation)	Resource Delineation
US EPA – NPDES	Notice of Intent for General Construction Permit
Northbridge Conservation Commission	Notice of Intent
Northbridge Building Inspector	Approval of proposed site plan
Northbridge Planning Board	Approval of proposed site plan
Northbridge DPW	Approval of site plan and wastewater design
Whitinsville Water Company	Water Service Permit for any new services
Northbridge Board of Health Inspector	Approval of food service operation

APPENDIX A (continued)

Northbridge Fire Department

Approval of site and building plans

Northbridge Building Department

Building permit

**Project Description (narrative):**

The Town of Northbridge and the Northbridge Public School District are participating in a Feasibility Study / Schematic Design study with the Massachusetts School Building Authority (MSBA). The Study is focused on the development of a solution to resolve the educational space needs for the children of the W. Edward Balmer and Northbridge Elementary Schools.

The original Balmer school building was constructed in 1967 and opened in 1968 with no major renovations or additions. The current facility has 70,857 SF and serves approximately 512 students in grades 2-4.

A proposed project will potentially involve the renovation, partial demolition, or full demolition of the Balmer Elementary School. Northbridge Elementary School will not be renovated or demolished as part of this project. The Feasibility Study is exploring several options that include additions and/or renovations to the Balmer Elementary School or construction of a new elementary school on the Balmer School site with plans to combine enrollments from both Balmer and Northbridge Elementary Schools into one school. The 5<sup>th</sup> grade, currently housed at the Northbridge Middle School, would also join the new elementary configuration. Should new construction be selected by the Town of Northbridge as their preferred solution, the result would be full demolition of the Balmer Elementary School, and the closing of the Northbridge Elementary School, which would be turned over to the Town, presumably for other public uses.

**Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.**

A proposed project will potentially involve the partial demolition or full demolition of the Balmer Elementary School.

Under a renovation project the existing facility will receive building envelope upgrades, including insulation, curtain wall, window system and roof replacement. Interior finishes will be repaired and upgraded with replacement of gym and stage flooring, repainting of walls, replacement of ceiling systems, updating fixtures and equipment where warranted. Accessibility and MEP/FP code requirements would be addressed.

Under an addition / renovation project the proposed option would potentially retain some core areas (gym, cafeteria, library) All other portions of the building would potentially be demolished to provide new classrooms and educational spaces to meet the needs of 510 grade 2-4 students or 1030 PK-grade 5 students. The 1030 student population reflects a combination of the Northbridge Elementary School, the current Balmer student population and the current 5<sup>th</sup> grade from Northbridge Middle School.

APPENDIX A (continued)

The third option explores the construction of a new school on the existing site. This option would propose the demolition of the existing facility in its entirety. A new facility for grades 2-4 will be approximately 87,000 SF. A new facility for grades PK-5 will be approximately 173,000 SF.

**Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.**

Under both the renovation and addition / renovation projects the entire facility would undergo rehabilitation to bring the building up to current codes. These renovations would include the installation of a fully automatic fire suppression system (sprinklers), installation of elevators in each of the classrooms wings, seismic upgrades to the existing partition walls, renovations of all areas to assure ADA / MAAB requirements are met, and renovation to heating, plumbing and electrical systems, and renovation to the exterior walls to meet current energy codes including the replacement of the curtain wall systems that currently exist in the 1954 classroom wing.

**Does the project include new construction? If so, describe (attach plans and elevations if necessary).**

The project would include new construction under the second and third options. Under option two additions to the existing building would be required to serve the increased student population. Under the third option an entirely new building would be constructed on the existing site and the existing facility would be demolished to provide space on the site for parking, vehicular circulation, outdoor learning areas, and play space.

**To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.**

There are no known archeological properties within the Project's boundary.

**What is the total acreage of the project area?**

Woodland	17.46 ± acres	Productive Resources:	
Wetland	0.92 ± acres	Agriculture	0 acres
Floodplain	0 acres	Forestry	7.18 ± acres
Open space	6.90 ± acres (includes playfields)	Mining/Extraction	0 acres
Developed	4.8 ± acres (includes parking areas)	Total Project Acreage:	30.08 acres

APPENDIX A (continued)

**What is the acreage of the proposed new construction?**

21.04 acres (Balmer Site) + 9.04 acres (Vail Site) = 30.08 acres

**What is the present land use of the project area?**

The existing land use is for elementary school use within a residential zoning district. This land use will not change.

**Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.**

USGS quadrangle map attached.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: \_\_\_\_\_

Date: 9/1/2017

Name: Thomas Hengelsberg, AIA, LEED AP, NCARB, MCPPO

Address: 260 Merrimac Street, Building 7

City/Town/Zip: Newburyport, MA 01950

Telephone: 978.499.2999

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

7/1/93 950 CMR - 276

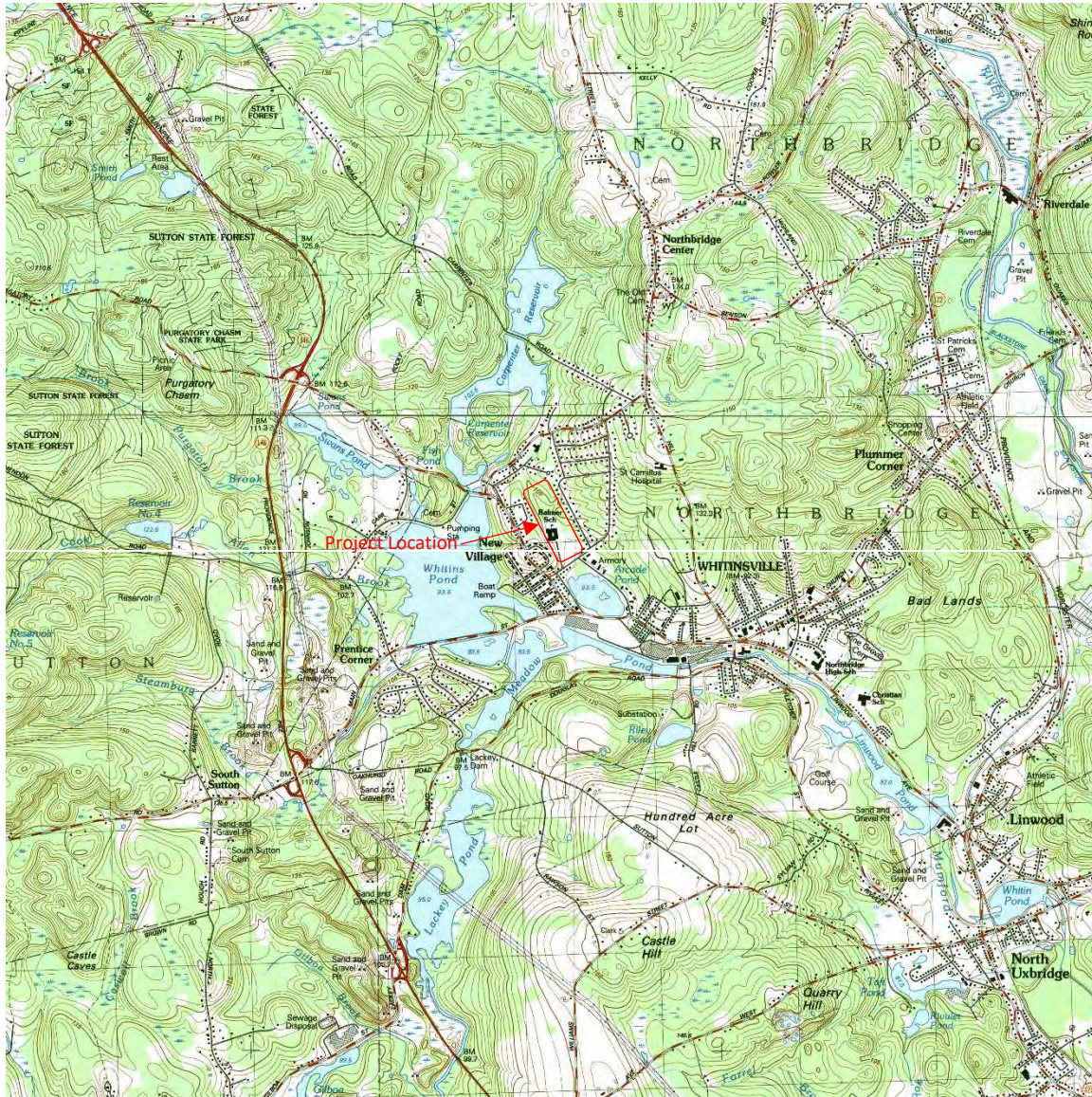


# W. Edward Balmer Elementary School

21 Crescent Street, Whitinsville, MA 01588

## USGS quadrangle maps

\*The site is located at the intersection of 4 USGS Quadrangle Maps combined below.





W. Edward Balmer Elementary School

The image below is zoomed in to the site.





## **W. Edward Balmer Elementary School**

21 Crescent Street, Whitinsville, MA 01588



**Main Entrance**

## W. Edward Balmer Elementary School



## South Elevation



## East Elevation



## W. Edward Balmer Elementary School



**North Elevation**



**West Elevation**



## W. Edward Balmer Elementary School

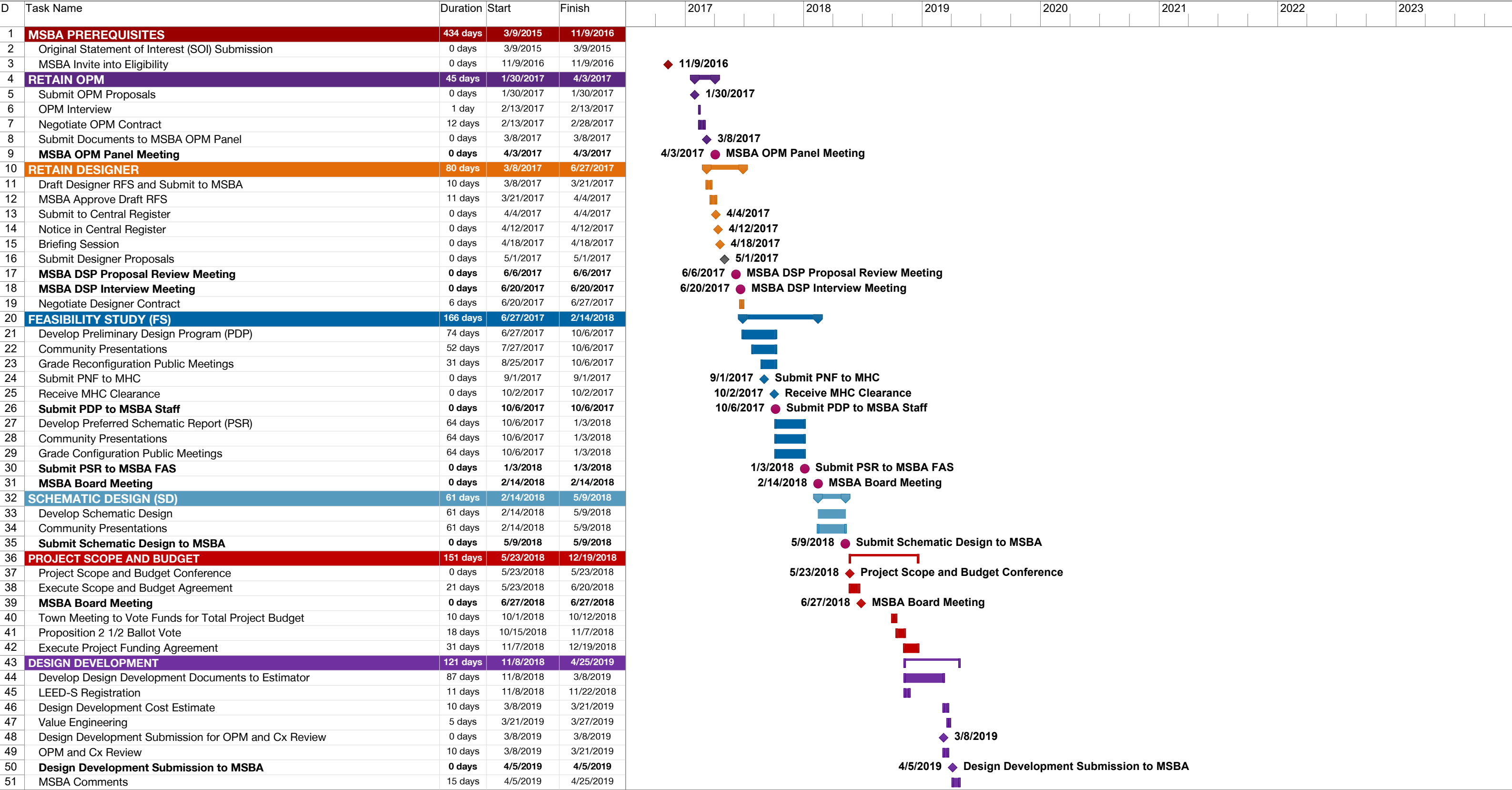


**Roof and Courtyard**



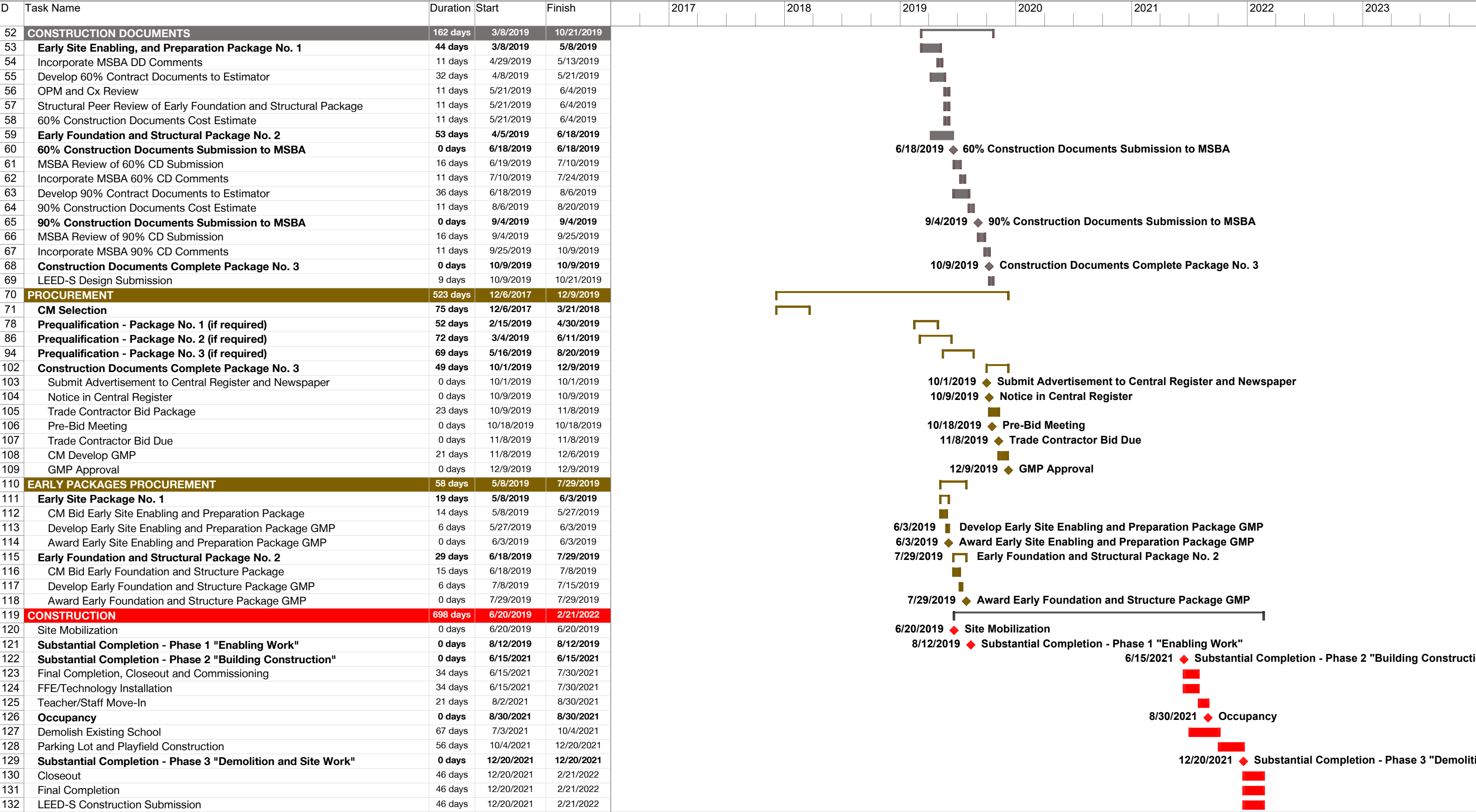
**Playgrounds and Fields**

W. Edward Balmer Elementary School  
Feasibility Study  
Preliminary Project Schedule  
Preliminary Project Schedule - PSR Submission





W. Edward Balmer Elementary School  
Feasibility Study  
Preliminary Project Schedule  
Preliminary Project Schedule - PSR Submission





**ATTACHMENT 5**

**W. Edward Balmer Elementary School**  
**Northbridge, MA**

**Proposed PK/K Maker/STEAM Lab Weekly Schedule**

MSBA PSR Comments

2/14/2018

Pre-K/ Kindergarten Maker Space		Scheduled Room Use/By Class Section				
Current Schedule	Proposed Schedule	Monday	Tuesday	Wednesday	Thursday	Friday
8:38 - 9:22	8:38 - 9:22	PREP	PREP	PREP	PREP	PREP
9:22 - 10:06	9:22 - 10:06	PK AM, C1	PK AM, C2	PK AM, C3	PK AM, C4	PK AM, C5 (Sp. Ed.)
10:08- 10:52	10:08- 10:52	KINDER, C1	KINDER, C2	KINDER, C3	KINDER, C4	KINDER, C5
10:54 - 11:38	10:54 - 11:38	KINDER, C1	KINDER, C2	KINDER, C3	KINDER, C4	KINDER, C5
11:40 - 12:24	11:40 - 12:24	lunch	lunch	lunch	lunch	lunch
12:24 - 12:54	12:24 - 12:54	KINDER, C6	KINDER, C7	KINDER, C8	KINDER, C9	PREP
12:56 - 1:40	12:56 - 1:40	KINDER, C6	KINDER, C7	KINDER, C8	KINDER, C9	PREP
1:42 - 2:26	1:42 - 2:26	PK PM, C1	PK PM, C2	PK PM, C3	PK PM, C4	PK PM, C5 (Sp. Ed.)

Grades 1 and 2 Maker Space		Scheduled Room Use/By Class Section (Grades 1-2 run on 4-day rotation)				
Current Schedule	Proposed Schedule	DAY 1	DAY 2	DAY 3	DAY 4	DAY 1
8:38 - 9:22	8:38 - 9:22	PREP	PREP	PREP	PREP	PREP
9:22 - 10:06	9:22 - 10:06	GRADE 2, C 1	GRADE 2, C 2	GRADE 2, C 3	GRADE 2, C 4	GRADE 2, C 1
10:08- 10:52	10:08- 10:52	GRADE 2, C 1	GRADE 2, C 2	GRADE 2, C 3	GRADE 2, C 4	GRADE 2, C 1
10:54 - 11:38	10:54 - 11:38	GRADE 2, C 5	GRADE 2, C 6	GRADE 2, C 7	GRADE 2, C 8	GRADE 2, C 5
11:40 - 12:24	11:40 - 12:24	GRADE 2, C 5	GRADE 2, C 6	GRADE 2, C 7	GRADE 2, C 8	GRADE 2, C 5
12:24 - 12:54	12:24 - 12:54	lunch	lunch	lunch	lunch	lunch
12:56 - 1:40	12:56 - 1:40	GRADE 1, C1	GRADE 1, C2	GRADE 1, C3	GRADE 1, C4	GRADE 1, C1
1:42 - 2:26	1:42 - 2:26	GRADE 1, C1	GRADE 1, C2	GRADE 1, C3	GRADE 1, C4	GRADE 1, C1

Grades 3 - 4 - 5 Maker Space		Scheduled Room Use/By Class Section (Grades 3-5 run on 4-day rotation)				
Current Schedule	Proposed Schedule	DAY 1	DAY 2	DAY 3	DAY 4	DAY 1
8:38 - 9:22	8:38 - 9:22	PREP	PREP	PREP	PREP	PREP
9:22 - 10:06	9:22 - 10:06	GRADE 5, C 1	GRADE 5, C 2	GRADE 5, C 3	GRADE 5, C 4	GRADE 5, C 1
10:08- 10:52	10:08- 10:52	GRADE 5, C 5	GRADE 5, C 6	GRADE 5, C 7	GRADE 5, C 8	GRADE 5, C 5
10:54 - 11:38	10:54 - 11:38	GRADE 3, C 1	GRADE 3, C 2	GRADE 3, C 3	GRADE 3, C 4	GRADE 3, C 1
11:40 - 12:24	11:40 - 12:24	GRADE 3, C 5	GRADE 3, C 6	GRADE 3, C 7	GRADE 3, C 8	GRADE 3, C 5
12:24 - 12:54	12:24 - 12:54	lunch	lunch	lunch	lunch	lunch
12:56 - 1:40	12:56 - 1:40	GRADE 4, C1	GRADE 4, C2	GRADE 4, C3	GRADE 4, C4	GRADE 4, C1
1:42 - 2:26	1:42 - 2:26	GRADE 4, C5	GRADE 4, C6	GRADE 4, C7	GRADE 4, C8	GRADE 4, C5