

Options Summary

Together, Dore & Whittier and the Working Group developed two sets of options. The first set of options focused on solutions that would allow the District to implement universal full-day kindergarten in the fall of 2017, a plan that would serve the District for six to ten years – until the first major project of long term master plan could be executed. A second set of options focused on a comprehensive list of long term master planning pathways, plans that would not only provide a permanent solution to universal full-day kindergarten, but also to several other identified concerns. Both sets of options are high-level conceptual explorations that include the sequence of possible building projects, grade reconfiguration, consolidation, and shifts in facility design to better support educational delivery. Each long-term option highlights a priority building project and assumes that the District will re-visit the master plan after completion of the first building project to ensure that the plan is still aligned with District goals. The Project Team developed options which, at a minimum, addressed the key issues listed below.

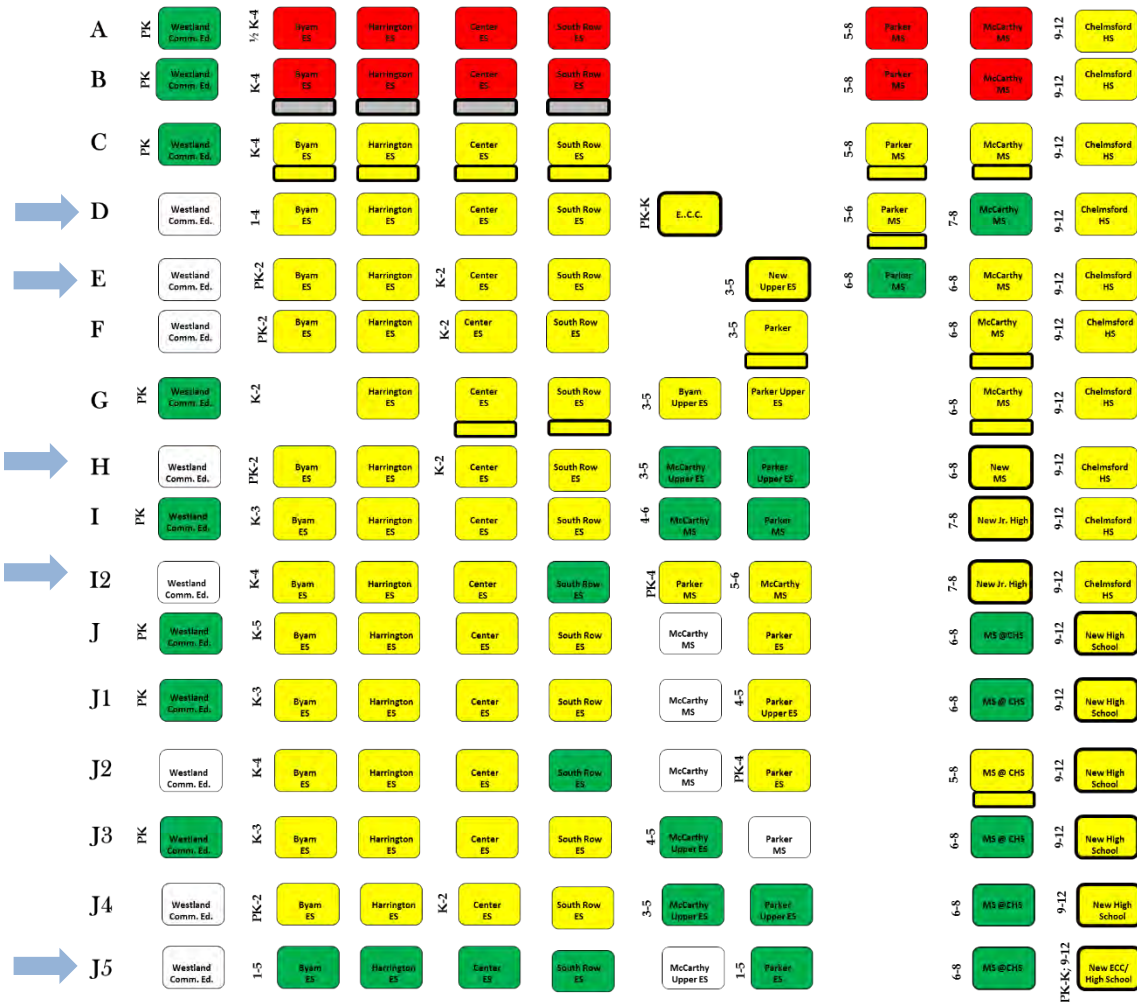
- Accommodates full day kindergarten
- Co-locates pre-kindergarten with another school
- Relieves all overcrowding across the District
- Addresses missing or inadequate spaces
- Eliminates the need for temporary construction
- Addresses all physical building conditions

In total, twenty-three options were developed, discussed, and evaluated – 16 long-term master plan options and five options associated with the implementation of immediate universal full-day kindergarten. In October 2016, the School Committee voted to pursue placing modular classrooms at each of the elementary schools to allow them to implement full-day kindergarten in the fall of 2017. In November of 2016, the citizens of Chelmsford voted to approve the funding for those modular classrooms at Fall Town Meeting.

Concurrently, members of the Working Group developed a set of evaluation criteria and a scoring matrix as a tool for evaluating the long-term master plan options. Upon completing its evaluation, the Working Group made a recommendation to the School Committee to eliminate most of the options from further consideration and identified five options as a short list worthy of more discussion. In December of 2016, the School Committee voted to accept that recommendation and reduce the total number of master plan options down to the short list of five. The School Committee expects to continue a dialogue with the citizens of Chelmsford about the remaining master plan options under consideration before identifying a single master plan option.

As part of the master plan exploration, the Project Team tested the feasibility of executing each of the five short-listed options on various sites and prepared conceptual level cost estimates for each of those options. What follows is a series of narrative a graphic descriptions of all the options explored. In broad terms, costs associated with the five short-listed options range from approximately \$133M to \$280 M, some of which would be offset should the District be successful in engaging the Massachusetts School Building Authority and its grant program.

The illustration below summarizes the major projects associated with each option. Those with an arrow were selected by the Working Group as the short list of preferred master plan options. Conceptual cost estimates were developed and are provided for each of the short-listed master plan options.



The table on the following page summarizes all the costs for all the options. The *CIP Only Projects* column represents the sum of all the capital improvement costs across the entire district. The *Major Project #1* column represents the total cost for the first major project executed as part of the option. *Major Project #2* represents the total cost for the second major project executed as part of the option. The *Total Master Plan Cost* column represents the sum of all the costs (major project and capital improvement) for each option.

OPTION	CIP Only Projects (Entire District)	Major Project #1	Major Project #2	Total Master Plan Cost
OPTION A - CIP ONLY	\$61.5 M	-	-	\$61.5 M
OPTION D - NEW ECC	\$48.2 M	\$47.4 M	\$56.1 M	\$151.7 M
OPTION E - NEW 3-5 SCHOOL	\$65.3 M	\$92.8 M	-	\$158.1 M
OPTION H - NEW 6-8 SCHOOL	\$65.3 M	\$102.5 M	-	\$167.8 M
OPTION I2 - NEW 7-8 SCHOOL	\$42.4 M	\$74.9 M	\$46.8 M	\$169.9 M
OPTION J5 - NEW HS + ECC	\$42.2 M	\$203.4 M	\$80.0 M	\$325.7 M

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Immediate Full-Day Kindergarten Options

Overview

In addition to exploring long term master plan options, the District expressed a desire to implement universal full-day kindergarten by the fall of 2017. Based on our capacity analysis, each of the District's elementary schools are already overcrowded. Target enrollment projections suggest that the District needs 20 total kindergarten classrooms to provide universal full-day kindergarten. Currently it has only eight. Similarly, there is not sufficient space in Chelmsford High School nor in McCarthy Middle School nor Parker Middle School to execute a grade reconfiguration in order to free up space. As a result, the Project Team explored seven different strategies to allow the District to implement universal full-day kindergarten. Some of the strategies relied on placing modular in various locations, while others relied on returning existing spaces in the Westlands School to classroom uses. Our Project Team tested the feasibility of each of these strategies on their respective sites and prepared cost estimates for each. Cost estimates for these options ranged from approximately \$2.6M to \$58M. The biggest contributing factor to the wide range was whether accessibility and other Code-required work to the existing buildings would be triggered should modular classrooms be physically attached to adjacent buildings. In October 2016, the School Committee voted to pursue an option that placed modular classrooms at each of the existing elementary schools. In November of 2016, citizens of Chelmsford voted to approve approximately \$7.9M to fund that option. What follows is a narrative and graphic description of each of the options explored.

Option	Number of Modulares	Existing Building Upgrades Req'd	Cost Estimate
Option A (Connected)	12	√	\$58M
Option A (Disconnected)	12		\$7.9M
Option B (Center School)	4		\$2.6M
Option B (Westlands School, Connected)	4	√	\$13.7M
Option B (Westlands School, Disconnected)	4		\$2.9M
Option C (Rental)			NA
Option D2 (Extra mods for Comm Ed)	10		\$5.5M

Grade Reconfiguration Exploration

Before any formal options for immediate universal full-day kindergarten, the Project Team explored the feasibility of altering the District's grade configuration to free up enough space to execute full-day kindergarten without the need to make a capital investment.

PK, K-3rd, 4th-5th, 6th-7th, 8th-12th

The first reconfiguration explored the possibility of moving the 8th grade into the high school and housing two grades each at both Parker and McCarthy Middle Schools. Parker Middle School would become a 4th-5th intermediate school. McCarthy Middle School would become a 6th-7th Middle School. Doing so would remove 4th grade from the elementary schools, theoretically opening enough space for full-day kindergarten. It would also eliminate the need for modulars at both Parker and McCarthy Middle Schools. The table on the following page communicates the numbers of existing and proposed classrooms in this reconfiguration. Our analysis revealed that the existing Chelmsford High School is not large enough to accommodate all of the projected 8th grade. Eight additional classrooms would be necessary to do so. Our analysis also revealed that there would be sufficient room at both Parker and McCarthy to execute this strategy, but increasing the utilization rate to 85% would likely reduce the opportunities for specialty courses like band and chorus. Finally, the analysis concluded that although space could be freed up at the elementary schools, South Row would need to retain one modular classroom and programs housed in inappropriate spaces would need to continue to do so.

K Schedule and Grade Reorganization*	Existing					Proposed						
	2015-2016 Enrollment	# of PK Classrooms	# of K Classrooms	# of 1st-4th Classrooms	# Modulars	Target Enrollment	Grade Configuration	# of PK Classrooms Needed	# of K Classrooms Needed	# of Classrooms Needed	# Modulars Needed	GSF Addition Needed
Byam Elementary	473	0	2	17	0	387	K-3		5	13	0	0
Center Elementary	430	0	2	16	0	387	K-3		5	13	0	0
Harrington Elementary	465	0	2	18	0	428	K-3		6	14	0	0
South Row Elementary	392	0	2	14	2	369	K-3		4	13	1	0
Westlands School	132	8	0	0	0	142	PK	8		0	0	0
	2015-2016 Enrollment			# of Teaching Stations	# Modulars	Target Enrollment	Grade Configuration			# of Teaching Stations Needed	# Additional Modulars Needed	GSF Addition Needed
McCarthy Middle School	864			49	4	-	6th-7th			49	0	0
Parker Middle School	717			35	12	759	4th-5th			33	0	0
Chelmsford High School	1508			90	0	1760	8th-12th			98	8	0

* Assumes that 6th & 7th grade operate on the existing schedule and the high school shifts to an 85% utilization rate.

PK, K-3rd, 4th-8th, 4th-8th, 9th-12th

The second reconfiguration explored the possibility of moving the 4th grade into the each of the existing middle schools. Both Parker Middle School and McCarthy Middle School would become 4th-8th grade, creating a hybrid elementary/middle school. The table on the following page communicates the numbers of existing and proposed classrooms in this reconfiguration. Assuming the middle school grades could alter their schedule to achieve an 85% utilization rate, and assuming the continued use of the existing modular classrooms, it appears to be possible to move all of fourth grade into the two facilities. It would, however, not eliminate the need for modular at the middle schools. It would also mean that two schedules were operating simultaneously in both Parker and McCarthy, one for 4th and 5th graders and one for 6th-8th graders. Finally, although such a strategy frees up space at the existing elementary schools, South Row would need to continue its use of one modular classrooms. Programs in inappropriate spaces would need to continue to do so. Those programs without dedicated space, would need to continue without dedicated space. After careful consideration, neither of these two grade reconfigurations were attractive solutions and were not pursued any further.

K Schedule and Grade Reorganization*	Existing					Proposed						
	2015-2016 Enrollment	# of PK Classrooms	# of K Classrooms	# of 1st-4th Classrooms	# Modulars	Target Enrollment	Grade Configuration	# of PK Classroom s Needed	# of K Classrooms Needed	# of Classrooms Needed	# Modulars Needed	GSF Addition Needed
Byam Elementary	473	0	2	17	0	387	K-3		5	13	0	0
Center Elementary	430	0	2	16	0	387	K-3		5	13	0	0
Harrington Elementary	465	0	2	18	0	428	K-3		6	14	0	0
South Row Elementary	392	0	2	14	2	369	K-3		4	13	1	0
Westlands School	132	8	0	0	0	142	PK	8		0	0	0
	2015-2016 Enrollment			# of Teaching Stations	# Modulars	Target Enrollment	Grade Configuration			# of Teaching Stations Needed	# Modulars Needed	GSF Addition Needed
McCarthy Middle School	864			49	4	-	4th-8th			49	4	0
Parker Middle School	717			35	12	805	4th-8th			35	12	0
Chelmsford High School	1508			90	0	1760	9th-12th			92	0	0

* Assumes that Parker and McCarthy change their schedules to an 85% utilization rate. CHS schedule remains the same.

Option A, Connected

The connected version of Option A places three modular at each of the four existing elementary schools by physically attaching them. Doing so allows children housed in the modular access to all the other educational spaces without the need to go outside. Building codes and the age of the facilities would require that all of the existing elementary schools be brought into compliance with at least the codes for fire protection and regulations for handicapped accessibility. As a result, the cost to implement this option was approximately \$58M. The illustrations on the following pages depict conceptual locations where these modular units might be located.



Byam Elementary School



Harrington Elementary School



South Row Elementary School



Center School

Option A, Disconnected

The disconnected version of Option A places three modular at each of the four existing elementary schools but does not physically attaching them. Doing so will require children housed in the modular access to all the other educational spaces by going outside. In conversations with local building officials, this could be mitigated by constructing covered walkways between the modular and the existing building. The key advantage of this strategy is that there would be no requirement to bring the existing building into compliance for fire protection or regulations for handicapped accessibility. As a result, the cost to implement this option was approximately \$7.9M. The illustrations on the following pages depict conceptual locations where these modular units might be located.



Byam Elementary School



Harrington Elementary School



South Row Elementary School



Center School

Option B, Connected at Center School

The connected version of Option B at the Center School also reclaims eight of the existing spaces at the Westlands School for kindergarten, but places the four needed modulars by physically attaching them to Center School. Because a recent renovation occurred at the Center School, the building code upgrades required to the existing building would be minimal, thereby reducing the total cost relative to Option A. As a result, the cost to implement this option was approximately \$2.6M. Although this is the most cost-effective strategy of the options explored, it creates a potential equity issue among the elementary schools. Not only would the District face the challenge of redistricting with the reuse of the Westlands School and the difficulty of determining who attends Westlands, but the District would also have more kindergarten sections at the Center School than its upper grades could accommodate. This condition would mean some students would attend Center School for their kindergarten year but the transition to their neighborhood school in first grade. The illustration on the following page depicts where modulars could be added at the Center School.



Option B, Connected at Westlands

The connected version of Option B at the Westlands School reclaims eight of the existing spaces at the Westlands for kindergarten and places four modulares by physically attaching them. Doing so positions the Westlands School facility as an early childhood center because Pre-Kindergarten would remain in the building. It would, however, displace all the spaces currently associated with the Town's Community Education program without identifying an alternative home. Similarly, this option creates potential redistricting challenges and equity of experience challenges. How would the District determine which children would attend Westlands? Since Westlands classrooms are 75% smaller than most of the other kindergarten classrooms in the District, does this create inequities? As an advantage, attaching modulares to this building allows children housed in the modular access to all the other educational spaces without the need to go outside. Building codes and the age of the facility, however, would require that the existing facilities be brought into compliance with at least the codes for fire protection and regulations for handicapped accessibility. As a result, the cost to implement this option was approximately \$13.7M. The illustrations on the following pages depict conceptual locations where these modular units might be located.



Westlands School

Option B, Disconnected at Westlands

The disconnected version of Option B at the Westlands School is identical to the connected version, except that the modular classrooms would not be physically connected to the existing building. Doing so would eliminate the need to bring the existing building into compliance with the codes for fire protection and regulations for handicapped accessibility. The illustration on the following page depicts where these modular classrooms could be located. The total estimated cost for this option is approximately \$2.9M.



Westlands School

Option C, Rental Space

Option C explored the possibility of renting commercial space to accommodate the additional kindergarten classrooms needed to implement universal full-day kindergarten. The advantages of such an option are that there is no long term capital obligation for the District. However, some of the disadvantages include finding appropriate space at a rental rate that is cost-effective for the District. Even though only 12 additional classrooms are needed, renting space would also require the facility to have office space, a kitchen, a cafeteria, art room, music room, and a multi-purpose room. In total, the estimated square footage needed in a rental environment would be approximately 40,000 gross square feet. Members of the Working Group did explore the market and found that the cheapest rates would be approximately five to eight dollars per square foot per year. Given that a long term master plan project could not be completed in less than six years, the minimum possible expense for a rental solution was approximately \$1.2M ($\$5/\text{SF}/\text{YR} \times 40,000 \text{ SF} \times 6 \text{ Years}$). This cost did not include the potential costs to fit out the rental space in order to be furnished appropriately as a learning environment, which could be extensive. Conservative estimates to outfit a basic warehouse space were estimated at \$100/SF minimum, adding at least \$4M to the possibility of renting space. Members of Working Group quickly eliminated this option from further consideration.

Option D, Relocating Community Education

Option D explored the possibility placing modulares either at Chelmsford High School or at the Westlands School to house the Town's Community Education program when it is displaced by kindergarten classrooms at the Westlands School.

Based on conversations with Community Education administrators, it is believed that the program would require the equivalent of six modular classrooms to effectively house its programming. Although land is available and some infrastructure exists at Chelmsford High School that could serve these modulares, the Community Education administration reported that its geographic location is undesirable. Members of the Working Group eliminated Chelmsford High School as a potential location as a result of this feedback. If six modulares were placed at the Westlands School, it would necessitate that four modulares be placed at the Center School to serve kindergarten, similar to the strategy in Option B. Since Community Education programming is unrelated to Pre-kindergarten and Kindergarten instruction, it would not be necessary to connect these modulares to the existing building, thereby reducing cost. The total cost to execute this option is approximately \$5.5M.

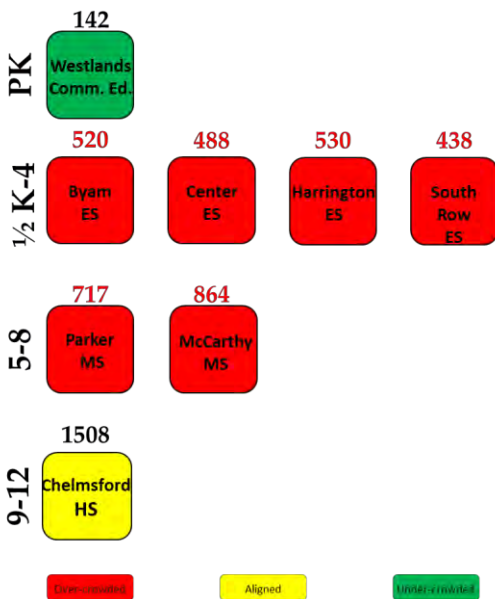
Master Plan Options Descriptions

Option A – Capital Improvements Only

This option reflects the scope of work necessary to position each of the existing buildings to extend their useful life another fifty years. It does not address any of the overcrowding issues identified in this study. It does not include additional space to address missing or inappropriate educational spaces. It does not allow the District to implement universal full-day kindergarten. It was prepared primarily to help the District understand the scope and scale of financial investment necessary in each facility over the next ten or so years should they not be the focus of a major capital project in partnership with the Massachusetts School Building Authority (MSBA). In addition, this options serves as a baseline cost estimate to which other master plan options could be compared. Given the possibility for partial reimbursement should the District pursue the MSBA’s grant program, it is often more cost-effective to undertake a major capital project that does resolve all the issues identified and not just those associated with deferred maintenance.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION A



EXISTING CONDITION OPTION

Repair Existing Facilities - Capital Improvements Only

Option A is a *de minimus* project that addresses immediate capital needs, largely focusing on systems that are at the end of their useful life. It does not address full-day kindergarten, any overcrowding, or the location of pre-kindergarten.

Identified Needs

- ☐ Full Day K
- ☐ Co-located Pre-K
- ☐ Solves over crowding issues at :
 - ☐ Elementary schools
 - ☐ Middle Schools
- ☐ Addresses inadequate program space
 - ☐ Special education space
 - ☐ Space for specials
 - ☐ MS science rooms
- ☐ Removes temporary construction at schools
- ☒ Addresses physical building conditions

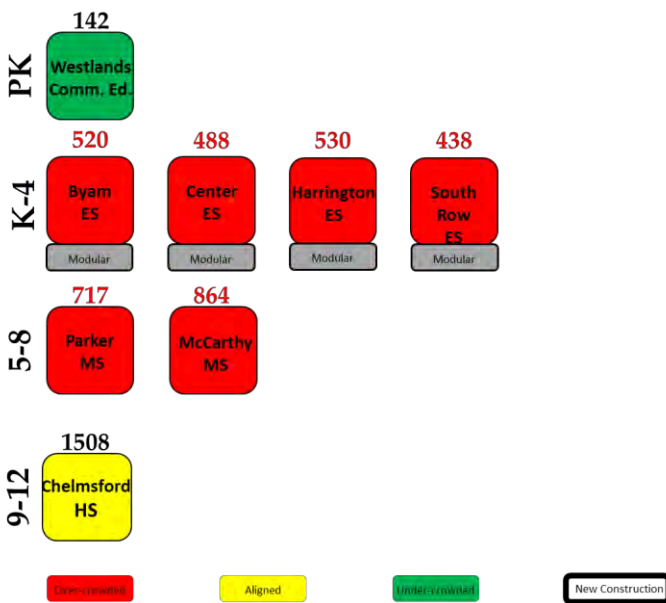
Option B – Modular Classroom Addition

This option reflects the scope of work necessary to position each of the existing buildings to extend their useful life another fifty years. It also places additional modulares in the District to allow the District to implement universal full-day kindergarten as a long term solution. It does not, however, place enough additional modulares to address other educational space needs associated with missing or inappropriate spaces. Parker Middle School and McCarthy Middle School would continue to be overcrowded and require their existing modulares to remain.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION B

MODULAR ADDITIONS TO ALL SCHOOLS



Option B adds modular additions to all schools that are experiencing overcrowding and accommodates full-day K.

	Existing Modulares	Add'l Modulares
Byam ES		5
Center ES		5
Harrington ES		4
South Row ES	2	2
Parker MS	12	
McCarthy MS	4	
Chelmsford HS		0

Identified Needs

- ✓ Full Day K
- ☐ Co-located Pre-K
- ✓ Temporarily solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ☐ Addresses inadequate program space
 - ☐ Special education space
 - ☐ Space for specials
 - ☐ MS science rooms
- ☐ Removes temporary construction at schools
- ✓ Addresses physical building conditions

Option C – Permanent Addition

This option reflects the scope of work necessary to position each of the existing buildings to extend their useful life another fifty years. It also places permanent additions at each of the existing elementary schools, Parker Middle School, and McCarthy Middle School to implement universal full-day kindergarten and resolve not only the overcrowding issues that exist, but also to address missing and/or inadequate spaces in the District. It does not, however, resolve the District's desire to co-locate the Pre-Kindergarten program with another facility. This option has many advantages:

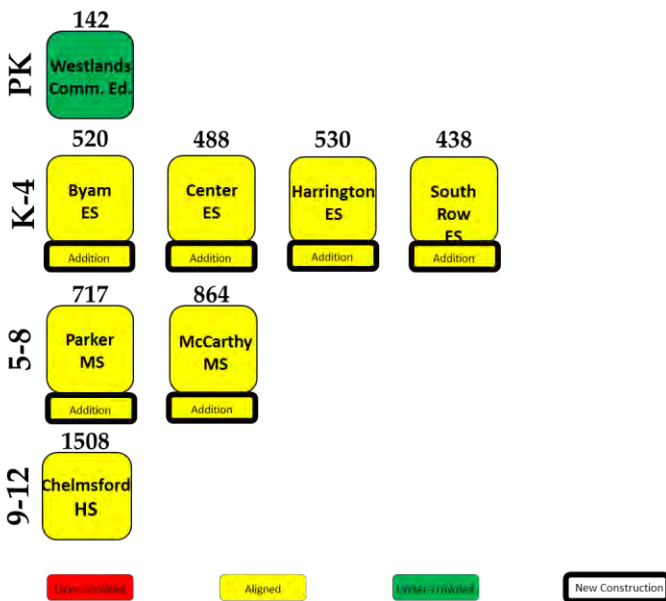
- There is no redistricting required,
- The existing grade configuration remains intact,
-

However, there are several disadvantages. Major additions to each school will require that they are brought into compliance with all current building codes and accessibility regulations. Because the MSBA historically only allows districts to execute a single project at a time, either this options requires thirty to forty years to fully execute, or the District will be required to execute some projects without participation with the MSBA.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION C

ADDITIONS TO ALL SCHOOLS



Option C maintains the way the schools are currently operating if full-day K were to be implemented and adds permanent construction additions at schools with overcrowding. Byam, Center, Harrington, South Row, Parker, and McCarthy receive major additions. This option removes existing modular classrooms at South Row, Parker, and McCarthy. Additions would likely trigger code upgrades and require full renovations of all buildings receiving additions.

Identified Needs

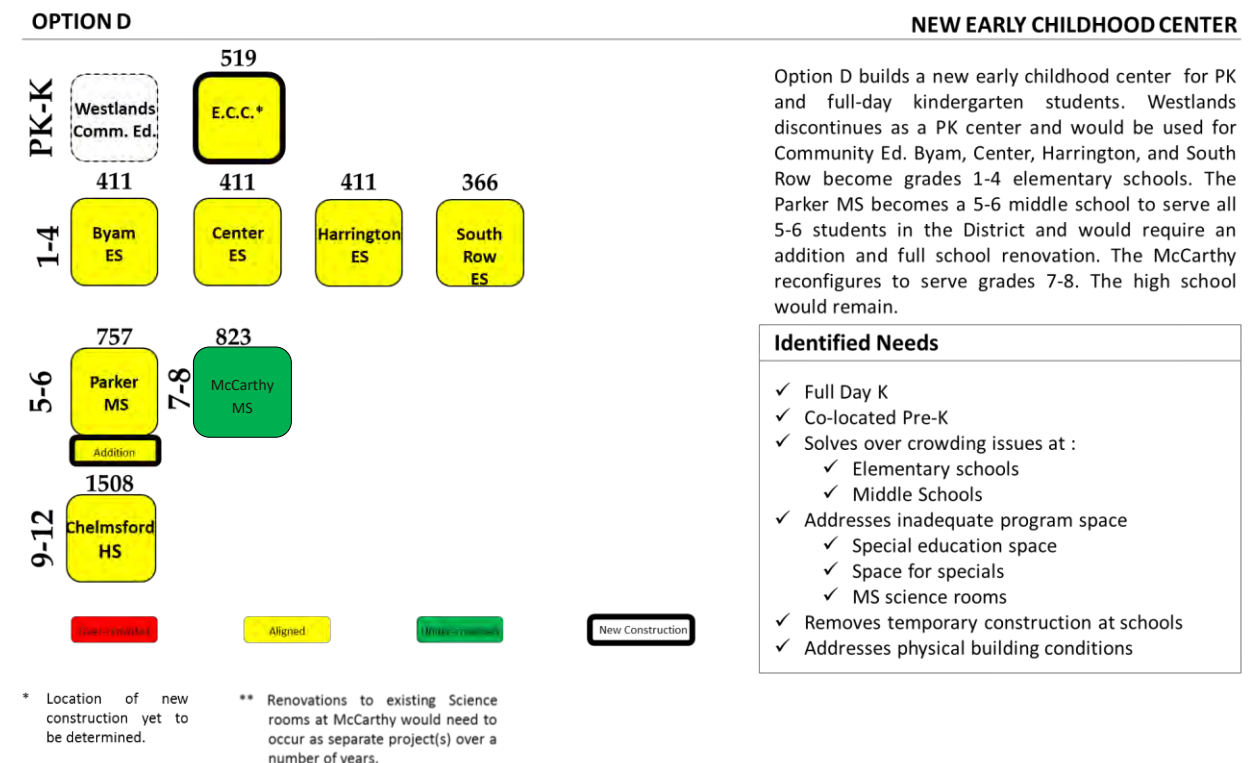
- ✓ Full Day K
- ☐ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ✓ Special education space
 - ✓ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

Option D – New Early Childhood Center

This option reflects the scope of work necessary to position each of the existing buildings to extend their useful life another fifty years, but adds to the District's building inventory by constructing a new, free-standing early childhood center. The new Early Childhood Center would house all the District's Pre-kindergarten and kindergarten students, thereby allowing the District to both implement universal full-day kindergarten and eliminate the overcrowding conditions at the existing elementary schools. As a result, the existing four elementary schools would experience a grade reconfiguration housing only grades 1st through 4th. The Westlands School would be discontinued as an educational facility, but would be retained to continue to serve the Community Education program.

In a second major capital project, Parker Middle School would undergo a major renovation and have an addition placed to resolve both its and McCarthy Middle School's overcrowding issues. Simultaneously, or in a third project, the McCarthy Middle School would undergo a more minor renovation to improve its existing science spaces. At the conclusion of this master plan, all the District major identified needs would be addressed. Since this option requires at least two major steps in the sequence, its time to completion is longer than other options and, therefore, more expensive.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.



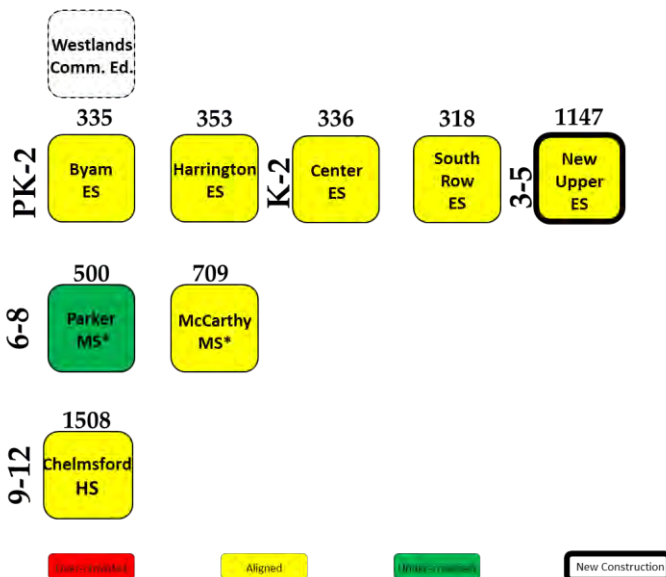
Option E – New Upper Elementary School

This option reflects the scope of work necessary to position each of the existing buildings to extend their useful life another fifty years, but adds to the District's building inventory by constructing a new, free-standing upper elementary school. Doing so would significantly alter the District's grade configuration. It would become a PK-2nd, 3rd-5th, 6th-8th, 9th-12th configuration, creating an additional transition to the upper elementary school and creating a conventional middle school model at both Parker and McCarthy Middle Schools. This new upper elementary school would house all the District's Pre-3rd through 5th graders. Housing approximately 1150 students, the project would not only resolve the District's overcrowding issues, but also address their desire to co-locate Pre-kindergarten with an elementary school. It would also make it unnecessary to continue using modular classrooms. Additionally, it would free-up enough space at the existing four elementary schools to address any missing or inadequate instructional spaces. This option does discontinue the use of the Westlands School for educational purposes, but retains the building to continue to serve the Town's Community Education program. Of all the options, it is also one of the few that address all of the District's needs in a single major capital project. A major disadvantage of this option, however, is that Parker Middle School becomes underutilized and has excess capacity, even without its existing modulars.

The graphic below communicates the projected enrollment for each of the existing facilities the major identified needs which are addressed in this option.

OPTION E

NEW UPPER ELEMENTARY SCHOOL



Option E builds a new upper elementary school for all grade 3-5 students in the District. Westlands discontinues as a PK center and would be used for Community Ed. Byam and Harrington reconfigure to become PK-2 elementary schools and Center and South Row become K-2 elementary schools. The Parker and McCarthy Middle Schools reconfigure to serve grades 6-8. Chelmsford High School would remain.

Identified Needs

- ✓ Full Day K
- ✓ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ✓ Special education space
 - ✓ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

* Renovations to existing Science rooms at McCarthy would need to occur as separate project(s) over a number of years.

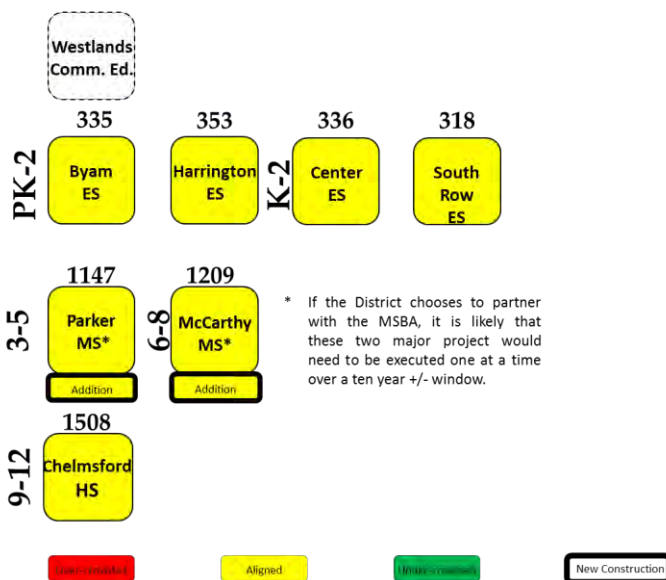
Option F – Major Additions to Schools

This option reflects the scope of work necessary to position each of the existing buildings to extend their useful life another fifty years and addresses the District identified needs by executing a grade reconfiguration and placing major additions at both Parker and McCarthy Middle Schools. The new grade configuration would be PK-2, 3rd-5th, 6th-8th, and 9th-12th – identical to Option E. Rather than building a new, free-standing upper elementary school, this option places a large enough addition to the Parker Middle School to serve as all the District's 3rd-5th graders in a first major project. Then as a second project this option envisions a major addition at the McCarthy Middle School to house all of the District's 6th-8th graders. The Westlands School would be discontinued for educational use, but would be retained to continue to serve the Town's Community Education program.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION F

RECONFIGURE AND ADD



Option F reconfigures grades at the elementary and middle schools. Westlands discontinues as a PK center and could serve community ed. Byam and Harrington become PK-2 elementary schools and Center and South Row become K-2 elementary schools. Parker becomes a 3-5 upper-elementary and McCarthy becomes a 6-8 middle school. Both the Parker and McCarthy require major additions and full school renovations. Chelmsford High School remains.

Identified Needs

- ✓ Full Day K
- ✓ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ✓ Special education space
 - ✓ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

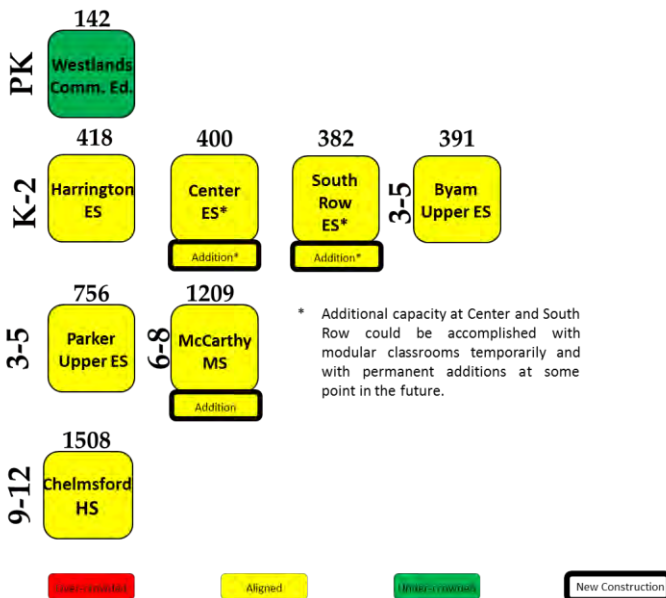
Option G – Major Addition to Center, South Row and McCarthy Schools

This option reflects the scope of work necessary to position each of the existing buildings to extend their useful life another fifty years and addresses the District identified needs by executing a grade reconfiguration and placing additions at McCarthy Middle School, Center School, and South Row School. The new grade configuration would be PK, K-2, 3rd-5th, 6th-8th, and 9th-12th – similar in concept to Option E. This option was born out of a recognition that both options E and F created large upper elementary schools of more than one thousand students. Option G attempts to improve those sizes by creating two upper elementary schools, one at Byam and one at Parker Middle School. In order to achieve that goal, a major addition must be placed at McCarthy Middle School to house all of the District's 6th-8th graders in a first major capital project. In a second step, an addition would be placed at the Center School to house grades K-2nd. Finally, in a third step, a similar addition would be placed at the South Row School to house the balance of the District's K-2nd graders. The Westlands School would continue serving both the District's Pre-kindergarten population and the Town's Community Education program.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION G

CONVENTIONAL MIDDLE SCHOOL



Option G reconfigures grades at the elementary and middle schools. PK remains at Westlands. Harrington, Center, and South Row become K-2 elementary schools. Byam and Parker become 3-5 upper-elementary schools. McCarthy becomes a 6-8 middle school. McCarthy requires a major addition and full school renovations. Chelmsford High School remains.

Identified Needs

- ✓ Full Day K
- ☐ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ✓ Special education space
 - ✓ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

Option H – New Middle School

This option addresses the scope of work necessary to position each of the existing buildings to extend their useful life for another fifty years and addresses the District's identified needs by executing a grade reconfiguration and constructing a new, free-standing middle school to house the District's 6th-8th graders. This option results in a grade reconfiguration. The new configuration would be a Pk-2nd, 3rd-5th, 6th-8th, 9th-12th. Both Parker Middle School and McCarthy Middle School would be converted to upper elementary schools. Advantages of this option include:

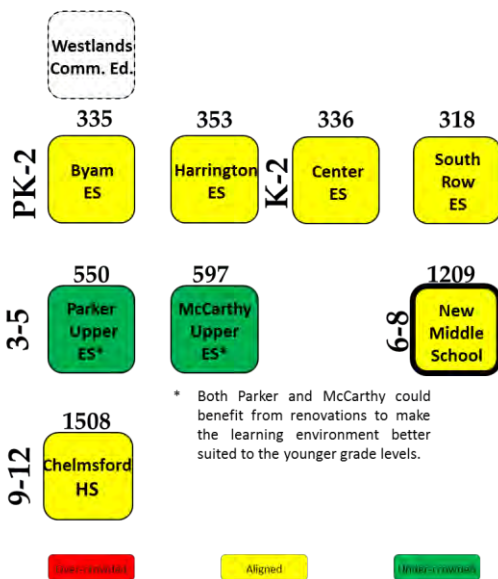
- All major District identified needs addressed with a single major capital project
- Parity among the lower elementary schools
- Parity among the two upper elementary schools

The major disadvantage associated with this option is that both the Parker Middle School and the McCarthy Middle School would have significant excess capacity, even without their existing modular classrooms. In essence, the District would be overbuilding its capacity, over and above even the enrollment targets established for this study. Westlands would be discontinued for educational use, but would be retained to continue to serve the Town's Community Education program.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION H

NEW MIDDLE SCHOOL



Option H builds a new 6-8 middle school and reconfigures grades at the elementary level. Westlands discontinues as PK and Would serve community ed. Byam and Harrington become PK-2 elementary schools and Center and South Row become K-2 elementary schools. Both Parker and McCarthy become 3-5 upper-elementary schools. The District builds a new middle school to serve grades 6-8. Chelmsford High School remains.

Identified Needs

- ✓ Full Day K
- ✓ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ✓ Special education space
 - ✓ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

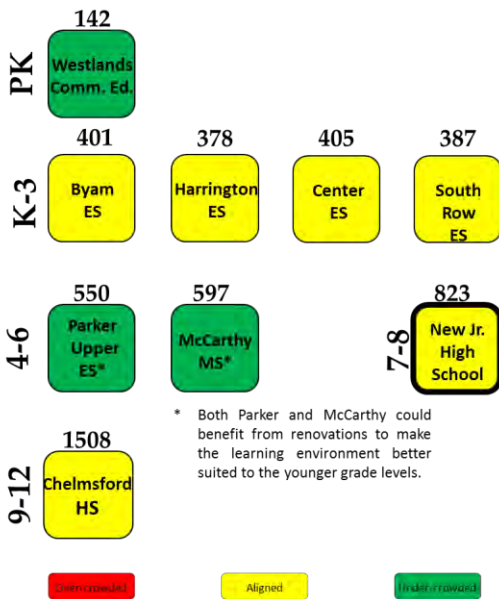
Option I – New Jr. High School

This option reflects the scope of work necessary to position each of the existing buildings to extend their useful life for another fifty years and addresses the District identified needs by constructing a new Jr High. This options also proposes a reconfiguration of grades. Westlands continues to house the District's Pre-kindergarten. Each of the four existing elementary schools are reconfigured to house grades K-3rd. Both Parker Middle School and McCarthy Middle School are reconfigured to house grades 4th-6th. The newly constructed Jr. High School would house grades 7th and 8th. Chelmsford High School would continue to house grades 9th-12th. While this option would address all of the District's identified needs in a single major capital project, the end result would create excess capacity, above and beyond what would be necessary according the District's enrollment projections. Both Parker Middle School and McCarthy Middle School, as upper elementary schools for approximately 550 and 600 students respectively, would have significant excess capacity. In addition, both of these facilities were designed for older students. Simply moving younger children into these facilities without at least some renovation would likely result in some features, like plumbing fixtures, being unusable for this younger age group.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION I

NEW JR. HIGH SCHOOL



Option I builds a new Jr. high school and reconfigures grades at the elementary level. Westlands remains a PK center. Byam, Harrington, Center, and South Row become K-3 elementary schools. Both Parker and McCarthy become 4-6 upper-elementary schools. The District builds a new jr. high school to serve grades 7-8. Chelmsford High School remains.

Identified Needs

- ✓ Full Day K
- ☐ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ✓ Special education space
 - ✓ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

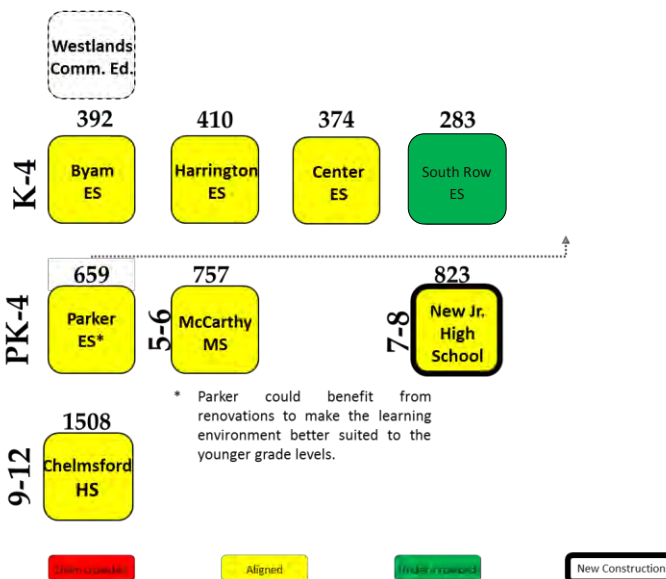
Option I2 – New Jr. High School, Variation

This option is a variation of Option I. It attempts to eliminate the excess capacity created in Option I by exploring an alternative grade configuration. Option I2 also explores the construction of a new Jr. High School to house the District's 7th-8th grades. Rather than create two upper elementary schools at Parker and McCarthy Middle Schools, it positions the existing four elementary schools are K-4th grade and reconfigures Parker Middle School to be PK-4 elementary School. In this variation, the Westlands School comes offline as an educational facility, but remains to serve the Town's Community Education program; Chelmsford High School remains unchanged. While this variation does accomplish the goal of eliminating the excess capacity created in Option I, it places the District's youngest children in a facility designed as a middle school. Pre-kindergarten students and Kindergarten students will not have direct access to toilet rooms from within their classrooms. Travel distances and mounting heights may not align with this younger age group without at least minor renovations.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION I2

NEW JR. HIGH SCHOOL



Option I2 builds a new Jr. high school and reconfigures Parker and McCarthy. Byam, Harrington, Center, and South Row remain K-4 elementary schools. Parker becomes a Pk-4 elementary school. McCarthy becomes a 5-6 upper-elementary school. The District builds a new jr. high school to serve grades 7-8. Westlands comes offline as a school building and Chelmsford High School remains.

Identified Needs

- ✓ Full Day K
- ✓ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ✓ Special education space
 - ✓ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

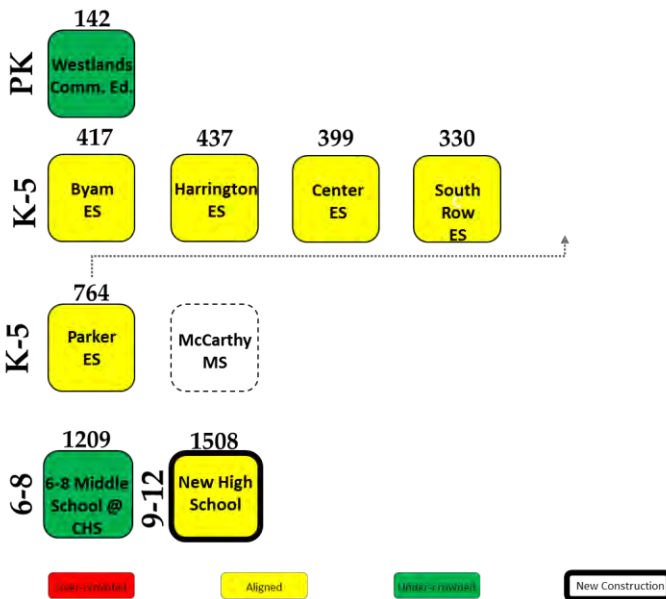
Option J – New High School

This option reflects the scope of work necessary to position each of the existing buildings to extend their useful life another fifty years and addresses the District identified needs by constructing a new High School and repurposing the existing high school to serve as a conventional 6th-8th middle school. This options also proposes a reconfiguring the existing elementary schools to house grades K-5th and reconfigures the existing Parker Middle School as a fifth K-5th elementary school. Doing so eliminates the overcrowding conditions at each of the existing elementary schools and frees up enough space to address the missing and inappropriate educational space needs. In this option Westlands continues to house the District's Pre-kindergarten and the Town's Community Education program. One key advantage of this option is the District's ability to discontinue the McCarthy Middle School as an educational facility and potentially making it available for commercial development. The major disadvantage of this option, like some of the others, is that the existing Chelmsford High School is too large for only three grade levels and would, therefore, have excess capacity. In essence, the District would be over building the District, over and above the peak identified in the District's enrollment projections.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION J

NEW HIGH SCHOOL



Option J builds a new high school, takes McCarthy offline, and reconfigures grades at the elementary and middle school level. Westlands remains a PK center. Grades 6-8 move into the existing high school. Byam, Harrington, Center, South Row, and Parker become K-5 elementary schools. McCarthy is discontinued as a school building.

Identified Needs

- ✓ Full Day K
- ☐ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ☐ Special education space
 - ☐ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

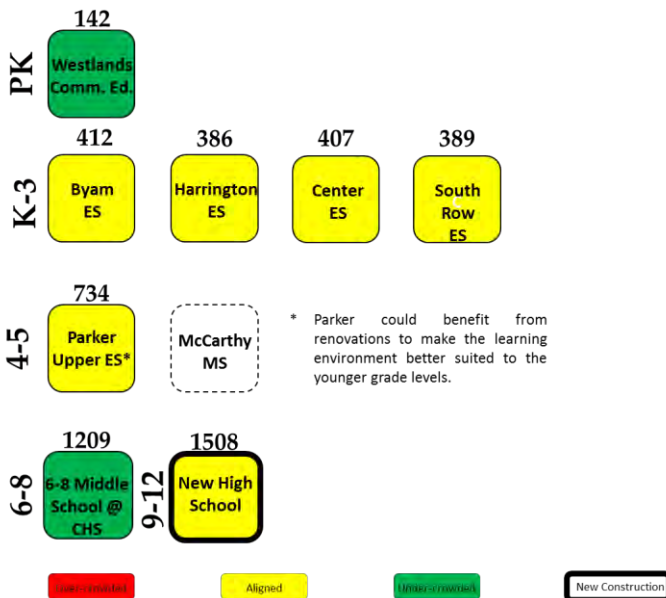
Option J1 – New High School, Variation A

This option is a variation of Option J. This first variation is in response to a recognition that converting Parker Middle School to a conventional K-5th elementary school may require renovations to accommodate a younger age group. Option J1, therefore, still proposes a new 9th-12th high school, reconfiguring the existing Chelmsford high school to serve the District's 6th-8th grades, but reconfigures the existing for elementary schools to serve only grades K-3rd. Parker Middle School would be reconfigured to house only the upper elementary grades – 4th & 5th, presumably a better fit for the existing facility. This variation also takes McCarthy Middle School offline as an educational facility and retains Westlands School as the location for both the District's Pre-kindergarten program and the Town's Community Education program. While this variation of Option J improves the alignment of age groups with the Parker Middle School facility, it still results in excess capacity at the existing Chelmsford High School because it has ore capacity than would be required to house only grades 6th-8th.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION J1

NEW HIGH SCHOOL



Option J1 builds a new high school, takes McCarthy offline, and reconfigures grades at the elementary and middle school level. Westlands remains a PK center. Grades 6-8 move into the existing high school. Byam, Harrington, Center, and South Row become k-3 elementary schools. Additions would be required at both Center and South Row. Parker becomes a 4-5 upper elementary school. McCarthy is discontinued as a school building.

Identified Needs

- ✓ Full Day K
- ☐ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ☐ Special education space
 - ☐ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

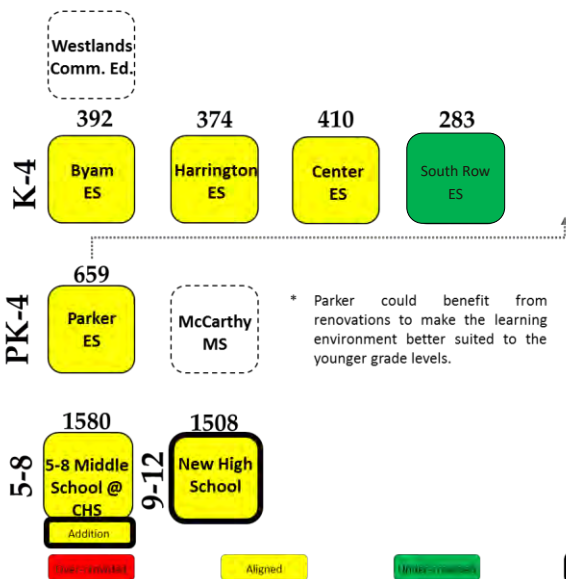
Option J2 – New High School, Variation B

This option is a variation of Option J. This second variation is in response to a recognition that converting the existing Chelmsford High School to house only grades 6th-8th creates excess capacity. Option J2 explores the possibility of moving the 5th grade into the existing Chelmsford High School. As a consequence of this reconfiguration, the existing four elementary schools would house grades K-4th. The existing Parker Middle School would be reconfigured to house grades PK-4th so as to not simply shift the excess capacity there. Doing so would allow the District to not only better align the projected enrollment with the capacity and allow the District to discontinue McCarthy Middle School as an educational facility, but would allow the District to discontinue the Westlands School for educational use, but retain it to continue to serve the Town's Community education Program. Unfortunately, this exploration demonstrated that there are more students projected for grades 5th-8th than in 9th-twelvth, even though they both represent four grade levels. As a result, an addition would be required at the existing Chelmsford High School to house grades 5th-8th.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION J2

NEW HIGH SCHOOL



Option J2 builds a new high school, places an addition at the existing high school to serve as a 5-8 middle school, takes McCarthy offline, and converts the Parker school to be a PK-4 elementary school. Westlands is discontinued as a PK center. Byam, Harrington, Center, and South Row remain k-4 elementary schools. McCarthy is discontinued as a school building.

Identified Needs

- ✓ Full Day K
- ✓ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ✓ Special education space
 - ✓ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

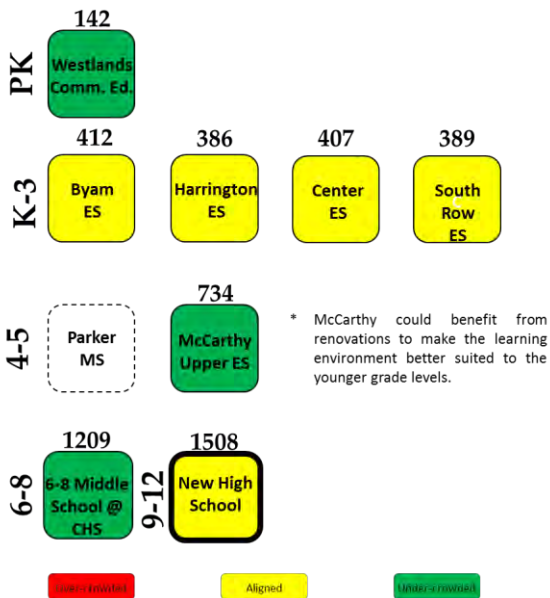
Option J3 – New High School, Variation C

This is a third variation of Option J1 and explores the possibility of reconfiguring the existing McCarthy Middle School to house grades 4th-5th instead of the existing Parker Middle School. The end result overall is that the District would be able to take Parker Middle School offline as an educational facility, but would be creating even more excess capacity than in Option J1, as McCarthy Middle School is the larger of the two facilities.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION J3

NEW HIGH SCHOOL



Option J3 builds a new high school, takes Parker offline, and reconfigures grades at the elementary and middle school level. Westlands remains a PK center. Grades 6-8 move into the existing high school. Byam, Harrington, Center, and South Row become k-3 elementary schools. Additions would be required at both Center and South Row. McCarthy becomes a 4-5 upper elementary school. Parker is discontinued as a school building.

Identified Needs

- ✓ Full Day K
- ☐ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ☐ Special education space
 - ☐ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

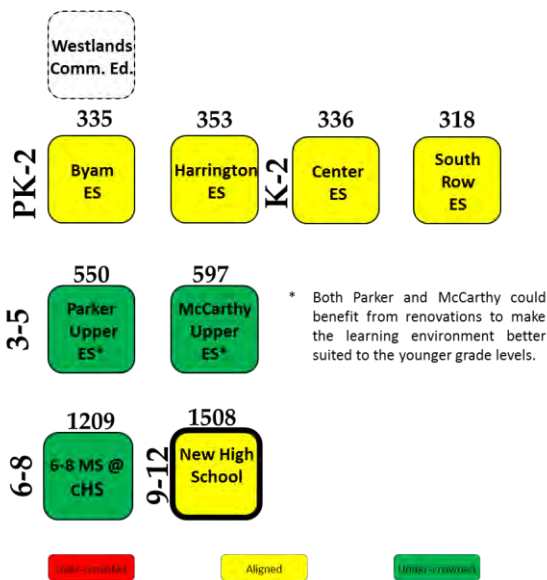
Option J4 – New High School, Variation D

This option is another variation of Option J exploring the possibility of retaining both the Parker and McCarthy Middle Schools, but reconfiguring them to serve grades 3rd-5th. A new high school would be constructed to house grades 9th-12th. The existing Chelmsford High School would be reconfigured to serve grades 6th-8th. While this variation would allow the District to achieve the preferred grade configurations from the visioning sessions and discontinue the use of the Westlands School as an educational facility, this option results in the most significant overbuilding for the District. The existing Chelmsford High School (as a 6th-8th middle school), Parker Middle School (as a 3rd-5th elementary school), and McCarthy Middle School (as a 3rd-5th elementary school) would all have significant excess capacity.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION J4

NEW HIGH SCHOOL



Option J4 builds a new 9th-12th high school and reconfigures grades at the elementary level. Westlands discontinues as PK and would serve community ed. Byam and Harrington become PK-2 elementary schools and Center and South Row become K-2 elementary schools. Both Parker and McCarthy become 3-5 upper-elementary schools. The existing Chelmsford High School becomes a 6th-8th middle school.

Identified Needs

- ✓ Full Day K
- ✓ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ✓ Special education space
 - ✓ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

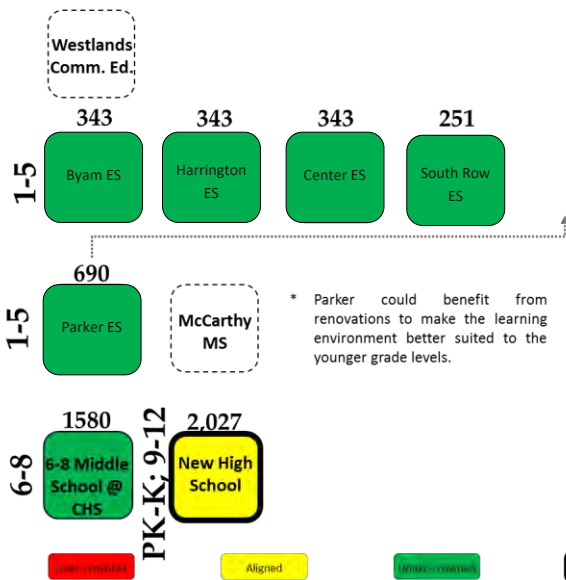
Option J5 – New High School, Variation E

This last variation of Option J explores the possibility of constructing a facility to house both a district-wide early childhood center serving grades PK & K and a conventional 9th-12th high school. The existing Chelmsford High School would be reconfigured to serve grades 6th-8th. McCarthy Middle School and the Westlands School would both be discontinued as educational facilities. Westlands School would continue to house the Town's Community Education program. Each of the four existing elementary schools would be reconfigured to house grades 1st-5th. The existing Parker Middle School would be reconfigured to serve as a fifth 1st-5th grade elementary school. This option would result in excess capacity at every school facility in the District with the exception of the newly constructed high school. It would position the greatest number of students in all new construction, some of which are the District's youngest children. One key disadvantage is that this option represents the single largest major capital project explored during the study.

The graphic below communicates the projected enrollment for each of the existing facilities and the major identified needs which are addressed in this option.

OPTION J5

NEW HIGH SCHOOL



Option J5 builds a new high school and early childhood center under one roof. The high school becomes a 6-8 middle school. Parker becomes a 1-5 elementary school and Byam, Harrington, Center, and South Row reconfigure to be 1-5 elementary schools. Both Westlands and McCarthy are discontinued as school buildings.

Identified Needs

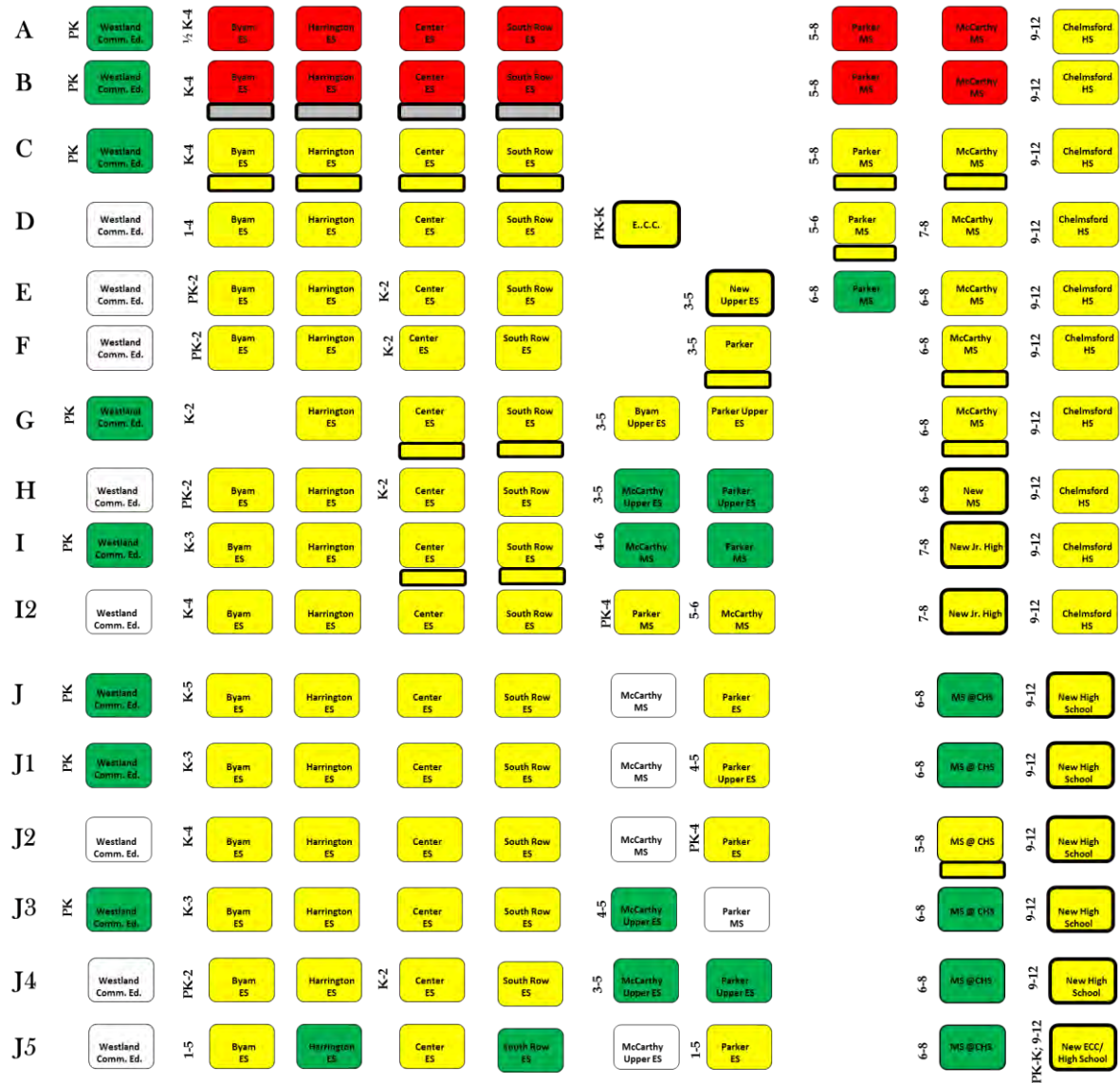
- ✓ Full Day K
- ✓ Co-located Pre-K
- ✓ Solves over crowding issues at :
 - ✓ Elementary schools
 - ✓ Middle Schools
- ✓ Addresses inadequate program space
 - ✓ Special education space
 - ✓ Space for specials
 - ✓ MS science rooms
- ✓ Removes temporary construction at schools
- ✓ Addresses physical building conditions

Summary of Explorations

Dore & Whittier, in collaboration with the Working Group, developed and explored a total of sixteen district-wide master plan options. Options varied by grade configuration, school size, and school count. Each option attempted to address all of the District's identified needs. Some options addressed those needs in a single major project. Others addressed those needs in as many as four major capital projects. All options assumed the end result would be an inventory of school facilities with an extended useful life of another fifty years.

The tile diagrams below graphically depict the major components of each of the options explored. Each tile represents a school facility. White tiles represent facilities that will be discontinued for educational uses. Red tiles represent facilities that will remain overcrowded at the conclusion of the master plan. Yellow tiles represent facilities that will be approximately right-sized at the conclusion of the master plan. Green tiles represent facilities that possess significant excess capacity at the conclusion of the master plan. Tiles with heavy black borders represent major capital projects, either additions to existing facilities (little tiles) or newly constructed facilities (large tiles). Small grey tiles represent additional modulars placed at existing facilities.

GRAPHIC SUMMARY OF MASTER PLAN OPTIONS



Sequencing of Major Projects

In addition to describing the major projects in each option, Dore & Whittier documented the potential sequence of projects in each master plan option. The table below identifies the timing and scope on a timeline. The timing communicated is based on best case scenarios and represents several assumptions about participation by the MSBA in the major projects identified:

- Each major project must follow the prescribed MSBA process in order to be eligible for reimbursement.
- The current average timeline from submission of a Statement of Interest to occupancy of a completed project is approximately 6 ½ years.
- Historically, the MSBA has not permitted districts to execute more than one project at a time.
- There may be opportunities to submit a Statement Of Interest for the next major project in sequence near the end of completion of the previous project, which may save a couple of months in the timeline.

MASTER PLAN SEQUENCE

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
D	Fall: approve funds for full-day K	Spring: submit SOI for ECC Fall: Occupy mods for full-day K	Fall: Begin feasibility for ECC	Fall: Town vote for ECC project	Detailed Design and Construct. Docs	Revisit Master Plan Construct. Start for ECC	Spring: Submit SOI for Parker grades 5-6 renovation Project	Occupy ECC Start feasibility for Parker 5-6	Town vote for Parker 5-6	Detailed Design and Construct. Docs	Revisit Master Plan Start construct. at Parker	Submit SOI for priority #3: Elementary School	Occupy Parker as Grades 5-6
E	Fall: approve funds for full-day K	Spring: submit SOI for 3-5 ES Fall: Occupy mods for full-day K	Fall: Begin feasibility for 3-5 ES	Fall: Town vote for 3-5 ES project	Detailed Design and Construct. Docs	Revisit Master Plan Construct. start for 3-5 ES	Spring: Submit SOI for Priority #2: Elem school project	Occupy 3-5 ES			Revisit Master Plan	Submit SOI for priority #3	
H	Fall: approve funds for full-day K	Spring: submit SOI for Middle School Fall: Occupy mods for full-day K	Fall: Begin feasibility for Middle School	Fall: Town vote for MS project	Detailed Design and Construct. Docs	Revisit Master Plan Construct. start for MS	Spring: Submit SOI for Priority #2: Elem school project	Occupy MS			Revisit Master Plan	Submit SOI for priority #3:	
I2	Fall: approve funds for full-day K	Spring: submit SOI for Jr. High Fall: Occupy mods for full-day K	Fall: Begin feasibility for Jr. High	Fall: Town vote for Jr. High project	Detailed Design and Construct. Docs	Revisit Master Plan Start Construct. for Jr. High	Spring: Submit SOI for Parker ES renovation Project	Occupy Jr. High Start feasibility for Parker ES	Town vote for Parker ES	Detailed Design and Construct. Docs	Revisit Master Plan Start construction at Parker	Submit SOI for priority #3: Elementary School	Occupy Parker as ES
J5	Fall: approve funds for full-day K	Spring: submit SOI for HS ECC Fall: Occupy mods for full-day K	Fall: Begin feasibility for HS/ ECC	Fall: Town vote for HS/ ECC project	Detailed Design and Construct. Docs	Revisit Master Plan Construct. start for HS/ ECC	Spring: Submit SOI for Priority #2: Elem school project	Occupy HS & ECC Recon-figure District			Revisit Master Plan	Submit SOI for priority #3	

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Evaluation of Master Plan Options

Our Project Team, in collaboration with members of the Working Group, developed eight criteria against which each option would be evaluated. Each criterion was weighted to reflect its importance to the District.

1) Ability to provide full-day kindergarten	20 pts
2) Location of Pre-K with another program / school	11 pts
3) Ability to reduce / eliminate overcrowding	20 pts
4) Provide a building that is not too large for the population "Under crowding"	4 pts
5) Associating Grade Five with the and elementary school	10 pts
6) Provide the missing or educationally inappropriate spaces. These spaces were noted as	
a) Special Education spaces,	
b) Middle School Science Labs,	
c) Elementary School specials (ie. art, music, gym, technology, library).	20 pts
7) Eliminate temporary construction	10 pts
8) Time to completion	5 pts
SUB-TOTAL	100 points

Although not part of the formal Master Plan Study, the Working Group developed a second set of criteria associated with cost were scored using and additional 100 points. As discussions continue with the members of the School Committee and the general public, the expectation is to use these additional evaluation criteria to identify the single, preferred master plan option in the upcoming months.

1) Construction	75 pts
2) Continued Capital Investment Needs	10 pts
3) Staffing and Administration Cost (more cost = less points)	5 pts
4) Transportation (greater transportation cost or distance = less points)	10 pts
SUB-TOTAL	100 points

Members of the Working Group collectively scored each criterion for each option on a range from 1 to five. One being the worst score (least favorable). Five being the best score (most favorable). Total scores for each option were tallied in real time based on the established weights for each criterion.

Members of the Working Group discussed the outcomes and chose to identify five options for continued consideration.

- Option D – New Early Childhood Center
- Option E – New Upper Elementary School
- Option H – New Middle School
- Option I2 – New Jr. High School
- Option J5 – New Early Childhood Center & High School

The table below communicates the actual scores for each of the criteria and the total scores of the options. Those options identified for the short list are highlighted in green.

OPTIONS EVALUTION MATRIX

Weight	20	11	20	4	10	20 Missing/ Inappropriate Spaces		10	5	Totals
Criterion	Full Day Kindergarten	Location of Pre-K	Over Crowding	Under- crowding	Grade 5 @ Elementary	Special Education	MS Science Labs	Permanent Construction	Time to Completion	
Option A: CIP Only	0	2	0	0	0	0	0	0	2	6
Option B: Add modular classrooms to Byam, Center, Harrington, South Row, and McCarthy	3	2	2	0	0	0	0	0	5	29
Option C: Add permanent additions at Byam, Center, Harrington, South Row, and McCarthy	4	2	5	5	0	0	3	5	0	60
Option D: New Early Childhood Center, reconfigure grades 1-8	5	4	5	5	2	1	3	5	3	78
Option E: New 3-5 upper elementary school, Reconfigure PK-8	4	3	5	4	5	5	3	5	4	86
Option F: Major Additions at Parker and McCarthy, reconfigure PK-8.	4	3	5	4	5	4	5	5	3	87
Option G: Major additions at Center, South Row, and McCarthy, reconfigure K-8	4	2	5	5	5	2	5	5	2	80
Option H: New Middle School, reconfigure PK-8	4	3	5	2	5	5	5	5	4	88
Option I: New Jr. High School, reconfigure K-8	4	2	5	2	3	2	4	5	3	73
Option I2: New Jr. High School, PK-4 @ Parker, 5-6 @ McCarthy	4	5	5	5	2	5	4	5	4	87
Option J: New High School, reconfigure K-8, discontinue McCarthy	4	2	5	4	5	1	3	5	4	76
Option J1: New High School, reconfigure K-8, discontinue McCarthy	4	2	5	4	5	1	3	5	3	75
Option J2: New High School, reconfigure Parker PK- 4, discontinue Westlands & McCarthy	4	5	5	5	0	5	3	5	3	80
Option J3: New High School, reconfigure K-8, discontinue Parker	4	2	5	2	5	1	3	5	3	73
Option J4: New High School, reconfigure K-8, discontinue Westlands & McCarthy	4	3	5	1	5	5	3	5	4	83
Option J5: New ECC/ High School, reconfigure K-8, discontinue Westlands & McCarthy	5	4	5	2	5	5	3	5	4	90

Feasibility of Short List

Overview

For the five options identified for further consideration, Dore & Whittier tested the conceptual feasibility of each of the major capital projects by preparing conceptual site plans. While our Project Team performed a preliminary review of site restrictions (property boundaries, presences of wetlands, river front, and topography), no sub-surface investigation was undertaken. No site surveys were performed. Our Project Team relied on the documentation available from District and Town records. Once a preferred project is determined, additional study will be required to confirm the feasibility of these projects.

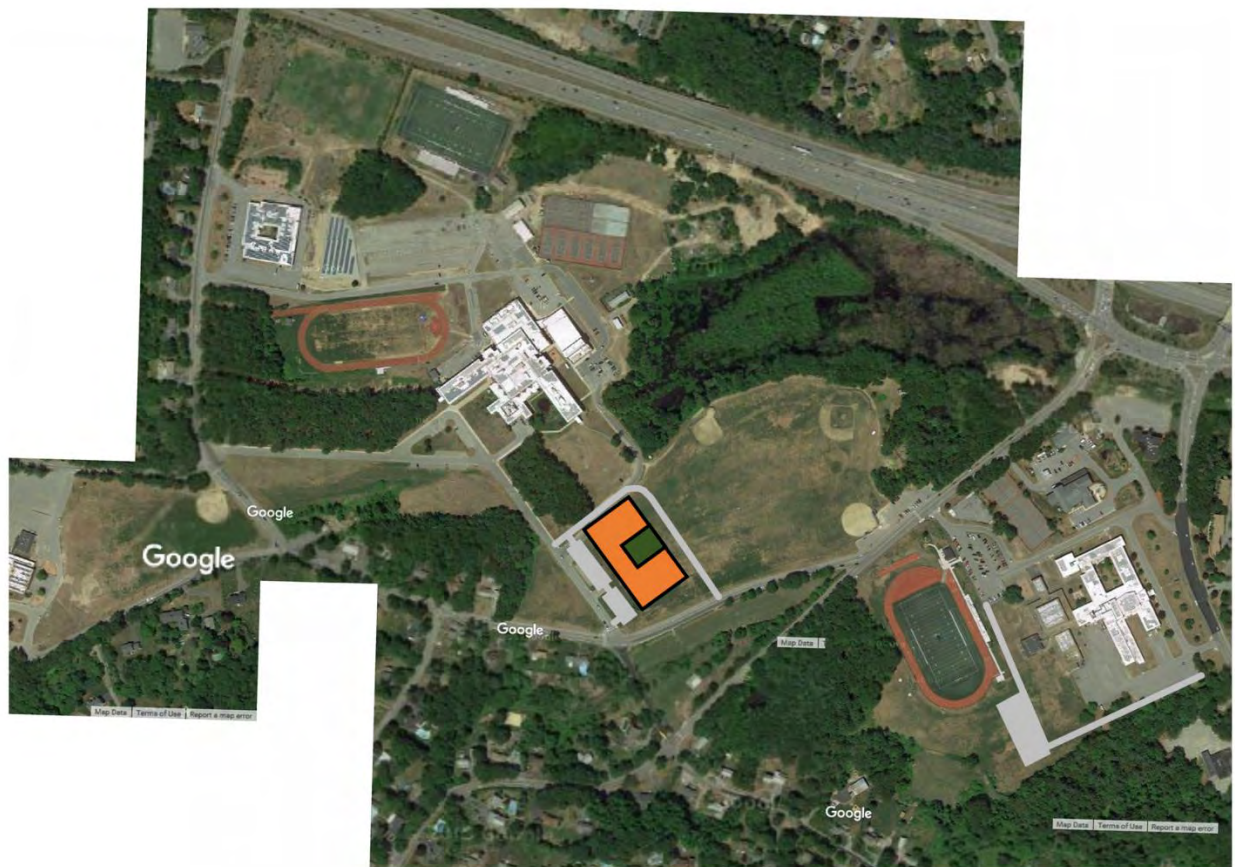
Similarly, our Project Team prepared conceptual level cost estimates for each of these short-listed options. These preliminary estimates were derived from a dollars per square foot methodology where the square footage was estimated based on programmatic needs identified earlier in the study. What follows are brief narrative and graphic descriptions for each option. Based on these explorations, it appears that each major project is at least theoretically feasible.

Available Buildable Area

Several of the short-listed options identify the need to construct a new, free-standing facility to serve a specific population. While buildable area exists on all the existing school sites, the most likely candidate for one of these new, free-standing facilities is the area currently occupied by Chelmsford High School practice fields along Graniteville Road, southeast of the existing Chelmsford High School.

Option D – New Early Childhood Center

Option identifies a new, free-standing Early Childhood Center serving the District's Pre-kindergarten and Kindergarten programs as the priority project. Ideally, a new facility serving this age group would be entirely one story. Our test of feasibility assumes a one-story structure. The image below tests the feasibility of constructing that project on the Chelmsford High School practice fields. Doing so would result in the loss of several practice fields. However, of all the options tested on this site, the Early Childhood Center would be among the smallest.



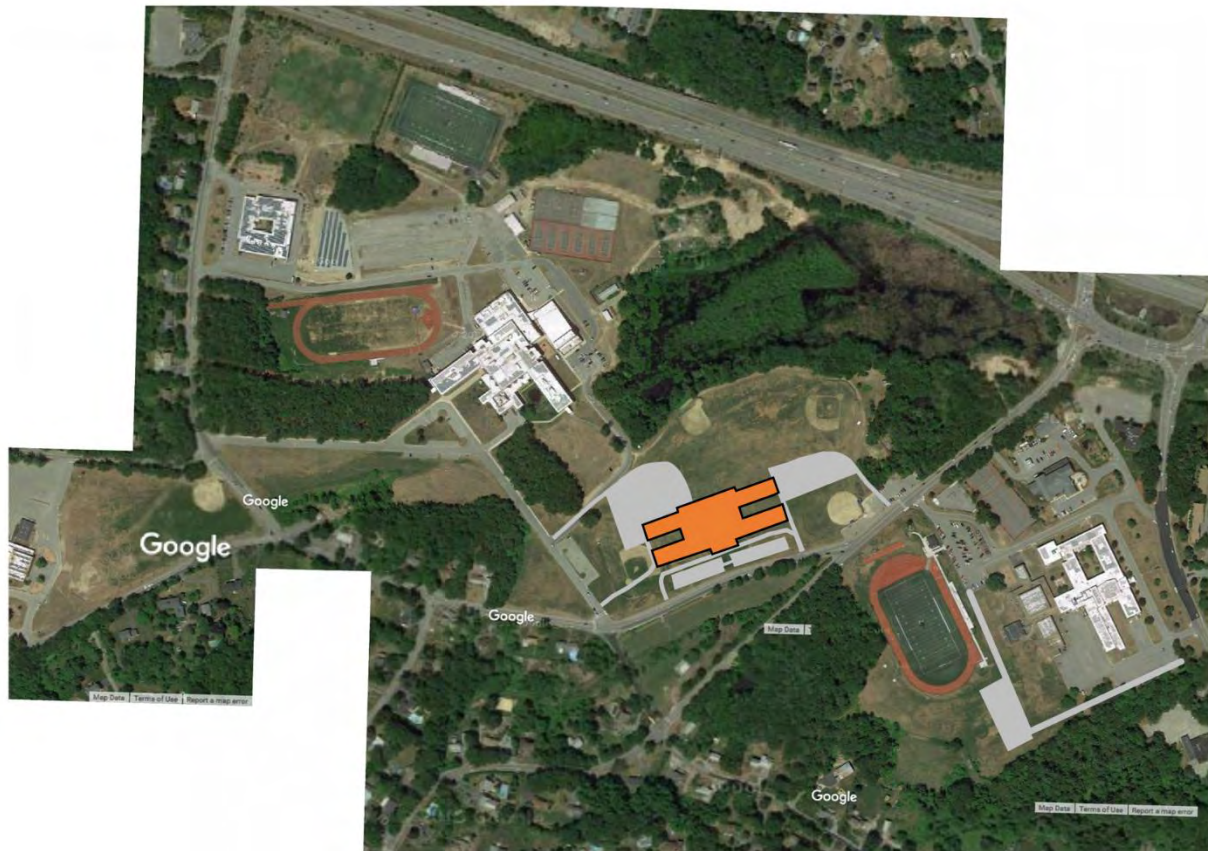
Option E – New Upper Elementary School

Option identifies a new, free-standing Upper Elementary School serving the District's 3rd-5th programs as the priority project. The image below tests the feasibility of constructing that project in two stories on the Chelmsford High School practice fields. Doing so would result in the loss of several practice fields.



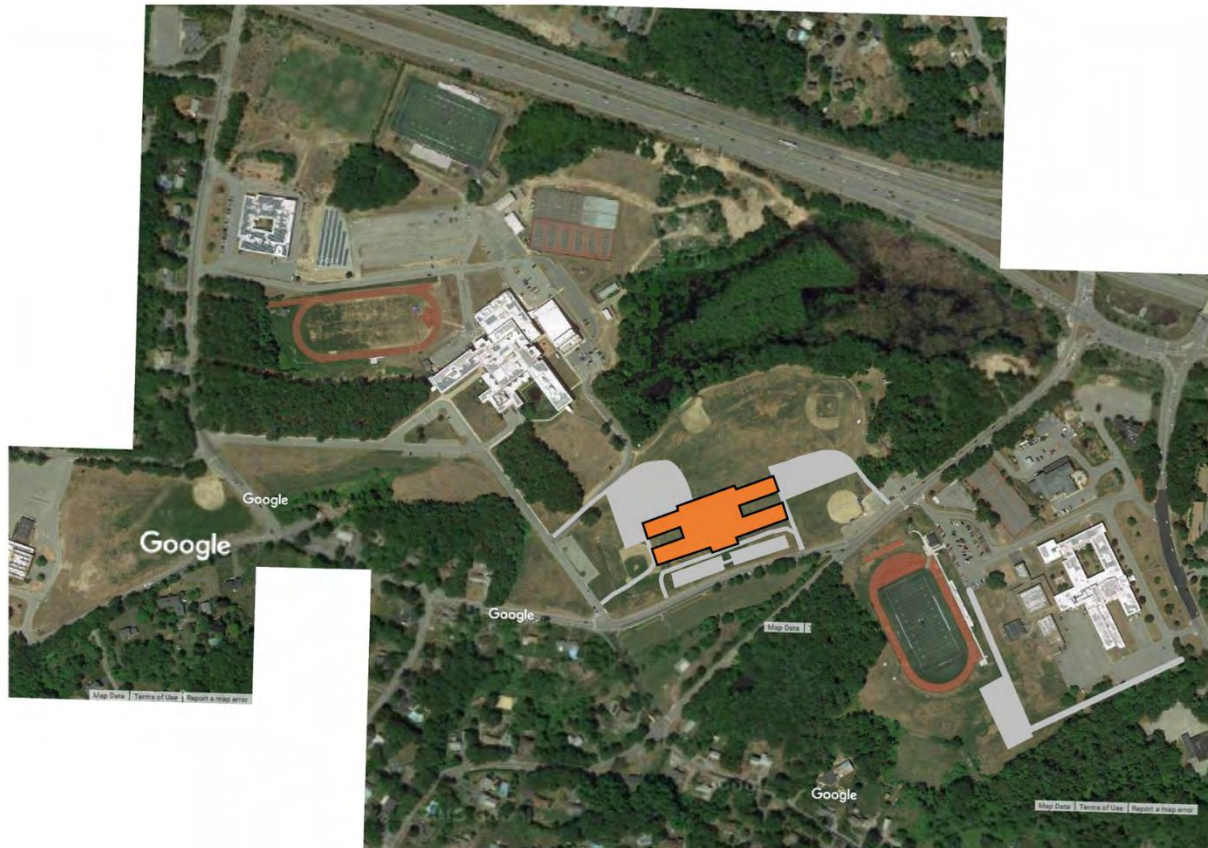
Option H – New Middle School

Option identifies a new, free-standing Upper Elementary School serving the District's 6th-8th programs as the priority project. Similar is total gross square footage to the free-standing 3rd-5th, the same illustration demonstrates the theoretical feasibility of this project as well. The major difference is that at least a portion of the academic wings would likely need to be three stories to use the site efficiently.



Option I2 – New Jr. High School

Option identifies a new, free-standing Jr. High School serving the District's 7th-8th programs as the priority project. Similar is total gross square footage to the free-standing 3rd-5th but slightly smaller, the same illustration demonstrates the feasibility of this project on the practice fields of the Chelmsford High School site. The key difference from Option D is that only a portion of the academic wings would need to be two stories. The remainder could likely be only a single story.



Option J5 – New High School & Early Childhood Center

Option identifies a new, free-standing facility housing both the District's 9th-12th programs and grades Pre-kindergarten and Kindergarten as the priority project. As the largest major capital project explored, this project occupies the greatest site area and would result in the loss of nearly all the practice fields along Graniteville Road. However, since McCarthy Middle School could be taken off-line as an educational facility, there may be an opportunity to demolish that facility in order to recreate practice fields on that site. This illustration below depicts a new, three-story high school attached to a single story early childhood center on the existing practice fields of the Chelmsford High School. In the diagram, the high school portion occupies the first floor to the East and all upper floors, including those over the top of the early childhood center. The early childhood center occupies the first floor to the west and none of the upper floors. Additionally, the conceptual site plan depicts dedicated parking for each entity, dedicated parent drop offs, and dedicated bus drop offs. While physically under the same roof, best practices would be to create two operationally separate entities, each with their own dedicated spaces and to limit the accidental contact between the two age groups.



Cost Estimates

Overview

Our Project Team prepared conceptual level cost estimates for each of the five short-listed options. These costs are based on a basic dollars per square foot cost (based on today's market conditions) methodology multiplied by the total gross square footage of each project. Different dollars per square foot benchmarks were used for differing levels of construction.

- Light Renovation – interior finishes & code upgrades
- Medium Renovation – All systems replacement, code upgrades, interior finishes, and some interior reconfiguration of space
- Heavy Renovation – Gut renovation including major reconfiguration of interior layout, all systems replacement, exterior wall and roof improvements, interior finishes, and code upgrades.
- New Construction

The total cost of each master plan option is comprised of several components:

- Total project costs associated with individual major projects (i.e. New, free-standing facilities)
- Total project costs associated with individual major renovation/addition projects
- Total project costs associated with on-going capital improvement projects (e.g. roofs, windows, accessibility upgrades, etc.)

Our total master plan costs are nuanced based on how major projects impact other existing buildings in the District. For example, Option J5 allows the District to discontinue the use of McCarthy Middle School as an educational facility. As a result, no capital improvement projects nor costs associated with McCarthy Middle School are included in the total master plan cost for Option J5.

All costs are reported in total project costs which not only include the basic cost of construction, but also include all soft costs: Design and engineering professional fees, permitting, furniture/fixtures/equipment, and certain contingencies. Costs are reported in 2016 dollars. Should the District execute a project several years from now, approximately 4% per annum should be added to our baseline costs to project them into the future.

Conceptual Cost Estimates

The bulleted lists below communicate the component parts of each master plan cost estimate. Major projects that may be eligible for MSBA participation are highlighted in bold.

OPTION D – NEW EARLY CHILDHOOD CENTER

• Byam Elementary, CIP Only	\$8.9 M
• Center Elementary, CIP Only	\$0.25 M
• Harrington Elementary, CIP Only	\$10.3 M
• South Row Elementary, CIP Only	\$5.8 M
• Westlands School, CIP Only	N/A
• Early Childhood Center, New Construction	\$47.4 M
• McCarthy Middle School, CIP Only	\$10.8 M
• Parker Middle School, Renovation/Addition	\$56.1 M
• <u>Chelmsford High School, CIP Only</u>	<u>\$12.2 M</u>
GRAND TOTAL	\$151.7 M

OPTION E – NEW UPPER ELEMENTARY SCHOOL

• Byam Elementary, CIP Only	\$8.9 M
• Center Elementary, CIP Only	\$0.25 M
• Harrington Elementary, CIP Only	\$10.3 M
• South Row Elementary, CIP Only	\$5.8 M
• Westlands School, CIP Only	N/A
• Upper Elementary School, New Construction	\$92.8 M
• McCarthy Middle School, CIP Only	\$10.8 M
• Parker Middle School, CIP Only	\$17.1 M
• <u>Chelmsford High School, CIP Only</u>	<u>\$12.2 M</u>
GRAND TOTAL	\$158.1 M

OPTION H – NEW MIDDLE SCHOOL

• Byam Elementary, CIP Only	\$8.9 M
• Center Elementary, CIP Only	\$0.25 M
• Harrington Elementary, CIP Only	\$10.3 M
• South Row Elementary, CIP Only	\$5.8 M
• Westlands School, CIP Only	N/A
• Middle School, New Construction	\$102.5 M
• McCarthy Middle School, CIP Only	\$10.8 M
• Parker Middle School, CIP Only	\$17.1 M
• <u>Chelmsford High School, CIP Only</u>	<u>\$12.2 M</u>
GRAND TOTAL	\$167.8 M

OPTION I2 – NEW JR. HIGH SCHOOL

• Byam Elementary, CIP Only	\$8.9 M
• Center Elementary, CIP Only	\$0.25 M
• Harrington Elementary, CIP Only	\$10.3 M
• South Row Elementary, CIP Only	\$5.8 M
• Westlands School, CIP Only	N/A
• Jr. High School, New Construction	\$74.9 M
• McCarthy Middle School, CIP Only	\$10.8 M
• Parker Middle School, Renovations/Addition	\$46.8 M
• <u>Chelmsford High School, CIP Only</u>	<u>\$12.2 M</u>
GRAND TOTAL	\$169.9 M

OPTION J5 – NEW HIGH SCHOOL & EARLY CHILDHOOD CENTER

• Byam Elementary, CIP Only	\$8.9 M
• Center Elementary, CIP Only	\$ ¼ M
• Harrington Elementary, CIP Only	\$10.3 M
• South Row Elementary, CIP Only	\$5.8 M
• Westlands School, CIP Only	N/A
• High School, New Construction	\$203.4 M
• McCarthy Middle School, Taken Off-line	N/A
• Parker Middle School, CIP Only	\$17.1 M
• <u>Chelmsford High School, Renovations</u>	<u>\$80.0 M</u>
GRAND TOTAL	\$325.7 M

The table below summarizes all the costs for all the options. CIP Only Projects column represents the sum of all the capital improvement costs across the entire district. Major Project #1 represents the total cost for the first major project executed as part of the option. Major Project #2 represents the total cost for the second major project executed as part of the option. The Total Master Plan Cost represents the sum of all the costs (major project and capital improvement) for the option.

OPTION	CIP Only Projects (Entire District)	Major Project #1	Major Project #2	Total Master Plan Cost
OPTION A - CIP ONLY	\$61.5 M	-	-	\$61.5 M
OPTION D - NEW ECC	\$48.2 M	\$47.4 M	\$56.1 M	\$151.7 M
OPTION E - NEW 3-5 SCHOOL	\$65.3 M	\$92.8 M	-	\$158.1 M
OPTION H - NEW 6-8 SCHOOL	\$65.3 M	\$102.5 M	-	\$167.8 M
OPTION I2 - NEW 7-8 SCHOOL	\$42.4 M	\$74.9 M	\$46.8 M	\$169.9 M
OPTION J5 - NEW HS + ECC	\$42.2 M	\$203.4 M	\$80.0 M	\$325.7 M

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