



SECTION 3.3.1 INTRODUCTION

3.3.1.1 Overview of the PSR Process and the Changes Since the PDP Submission

The District's PDP submission was filed with the MSBA on November 8, 2021. In the two months since, the District and School Building Committee (SBC) have worked diligently to further investigate and refine the five development options identified in their PDP submission, explore three others, refine their Space Summary, compile cost and other decision-making data, and identify their Preferred Solution for MSBA review and approval.

There have been no changes to the proposed location of the project. After detailed analysis during the PSR phase, the SBC remains committed to building on the Foster site and is confident that its Preferred Solution, the construction of a new school to the rear of the existing Foster School, is the most cost-effective and educationally appropriate choice for the District, and is one that will garner widespread support from the voters. The construction of a new school holds many advantages when compared to a longer, more expensive, and more disruptive addition/renovation project.

The size of its proposed new school has been reduced from 130,784 gross square feet at PDP to 126,434 gross square feet based on the SBC's exhaustive review and discussions around the project's Space Summary during the PSR phase.

The cost of the District's preferred new school solution has risen from \$100+ million at PDP to \$105 million based upon reconciled cost estimates produced by two independent cost estimators engaged by the Designer and the OPM.

The SBC intends to continue its refinement of the both the size and the cost of its proposed new school as it moves into the Schematic Design phase.

3.3.1.2 Narrative of the Updated Project Schedule

The project remains on schedule and the District remains optimistic that it will be moving into its new school in September 2024. The Town intends to seek full project funding at its Annual Town Meeting in late April or early May of 2022, with a debt-exclusion vote shortly thereafter.

The Town intends to submit its Schematic Design Submittal to the MSBA in early May 2022 and to begin Design Development at its own risk, prior to an anticipated approval of its Project Scope and Budget / Project Funding Agreement at the MSBA's August 31, 2022 Board meeting. Schematic Design review comments from the MSBA will be incorporated into the District's Design Development submission to be submitted to the MSBA only after the August Board vote.

Given that the Foster School will remain in full operation while the new school is being constructed, two bid packages are planned. The project anticipates bidding for a Phase 1 Site Contractor to perform enabling earthwork in mid-October 2022, with the start of Phase 1 Site enabling work starting in early January 2023 and finishing by early May 2023, prior to the Phase 2 General Contractor coming on site to construct the building.



Substantial completion of the new school is projected for late July 2024, in time to accommodate the completion of punch list work, commissioning, and outfitting the building with FFE and technology equipment prior to the start of school on the Tuesday after Labor Day, September 3, 2024.

Beginning after school is dismissed for summer break in June 2024, the existing Foster School will be demolished, and the western end of the site will be graded and completed, with the possible exception of final plantings, which may be delayed until the spring of 2025.

The District's Project Schedule can be found at the end of Section 3.3.3 and under Tab 29 of the hardcopy binder.

3.3.1.3 Final Evaluation of Existing Conditions

The SBC had deemed the existing Foster site to be the only appropriate site for a new school as part of its PDP work. MSBA staff expressed concern regarding its location adjacent to the Broad Cove tidal marsh during its PDP review and asked the SBC to review its choice in comparison to another potential playfield parcel located outside the Foster district, but at a higher elevation.

Unfortunately, this alternative parcel is not only considered an inappropriate site for a new school for a number of other reasons, it is located on the site of a former US Naval base and has recorded restrictions that are held by the United States of America acting through the Department of the Interior and National Park Service. These restrictions require that the property be used for public park or public recreational purposes. Attempting to lift these restrictions and then secure legislative approval under Article 97 of the Amendments to the Constitution of the Commonwealth of Massachusetts to use this site for school purposes would be a very long and expensive endeavor that would delay the Foster project for years or even decades, with little chance of success in the end.

As part of its PDP Review Response design team and SBC provided the MSBA with a detailed synopsis of the proactive steps being taken by the Town of Hingham to address future sea-level rise, and by the project team in particular to assure that the entire Foster School site is raised between seven and nine feet above its existing grade to an elevation well above the mean high tide and flood plain elevations projected fifty years out, which in turn are based upon a potential sea-level rise of up to 5.4-feet above today's mean high tide elevation.

Given the extent of earthwork projected for this project, the geotechnical explorations have been robust. A detailed geotechnical report, based on the review of forty borings across the site can be found at the end of Section 3.3.2 and under Tab 5 of the hardcopy binder. It confirms the findings articulated previously as part of a geotechnical memorandum submitted in the District's PDP submission. The glacial till to be excavated can be used to raise the elevation of the site as planned. This will allow the design team to design a 'balanced site' during the Schematic Design phase, avoiding the cost and traffic disruption of exporting unsuitable soils or importing new soils during construction. Additional geotechnical evaluation will continue during the Schematic Design phase, including borings with rock coring to identify potential bedrock in the construction area, and monitoring wells to be located at the high point of proposed retaining walls in the hillside.

The Phase 1 ESA report from the designer's geoenvironmental consultant is expected by late January. Water and soil samples continue to come up clean and, given the historic use of the



site as forested pastureland, there is no reason to believe any environmental soil issues will be encountered during the construction or demolition phases of the project.

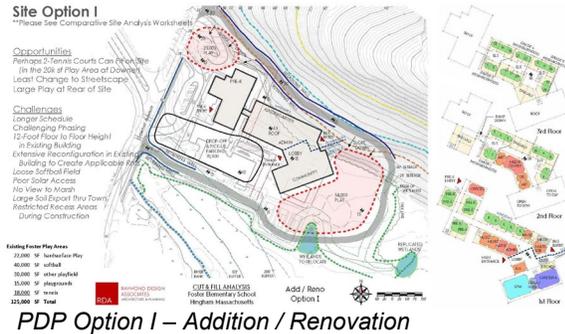
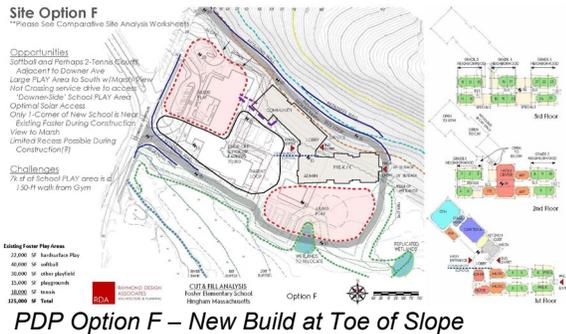
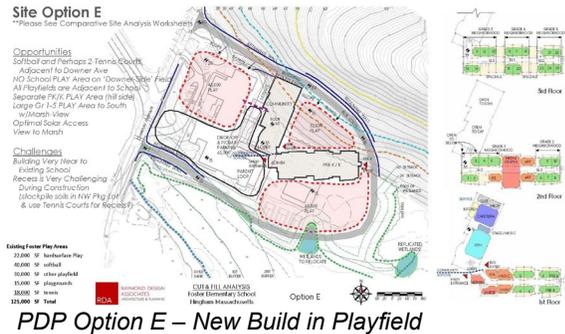
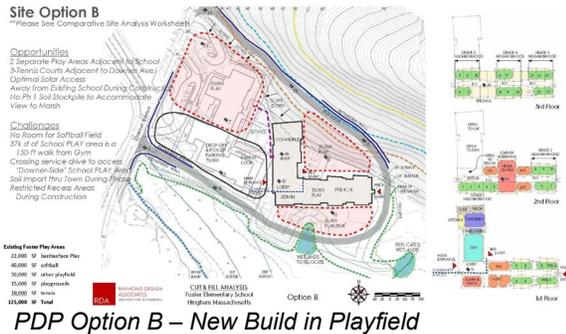
A detailed summary of the District's Evaluation of Existing Conditions can be found in Section 3.3.2, and under Tab 4 of the hardcopy binder.

The District's PDP Review Response follows at the end of this Section and can be found under Tab 3 of the hardcopy binder.

3.3.1.4 Final Evaluation of Alternatives

During the PSR phase, the SBC met six times. At its first meeting, held on November 11, 2021, SBC members began their deliberations by reviewing Options B, E, F, H, and I, all of which had been slated for further review at the conclusion of the PDP phase. Given Foster's abundance of existing play area serving both the school and the community, the quantity and location of play area was to be an important factor in the evaluation of various development options.

In the PDP diagrams below, play areas are shaded in pink. Those options that sited 'community' amenities such as tennis and softball on the western (left) side of the site, abutting Downer Avenue, were considered desirable for safety and security reasons, while 'school' play abutting Downer Avenue was considered a negative attribute. Another important objective for the 'school' play areas was to provide as much contiguous playground, playfield, and hard-surface play area as possible in order to provide a variety of different play choices for students to use during their recess periods as they enjoy outdoor time with their peers. Those options that split play area between the 'front' and 'back' of the school were considered less desirable because they didn't meet this objective and they would require more staff to supervise recess.





Based on play area attributes alone, Options B and E were eliminated from further consideration, with Options F and I seemingly better positioned for further development.

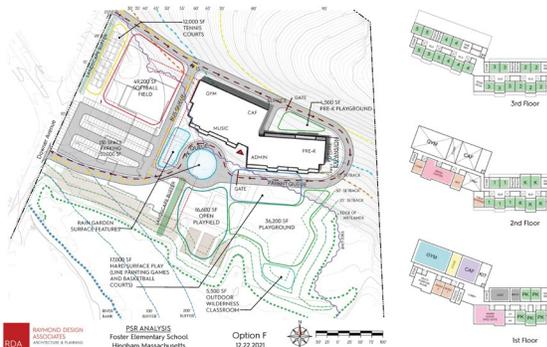
PDP Option H was the only option that was located high up on the hill, abutting Downer Ave to the north of the existing Foster School. Though Option H would provide an abundance of play area, much of it was split apart and was located 'down the hill', far from the school.

In addition, Option H would, by far, have the most deleterious impact on the surrounding neighborhood and streetscape of all the options under consideration. It would require the clear cutting of hillside directly along Downer Avenue and expose neighbors to both the west (left) and north (top) of the site to the sights and sounds of the new school where currently they abut natural forest. Though not immediately eliminated from further consideration at its initial PSR meeting, the SBC had serious concerns about Option H.

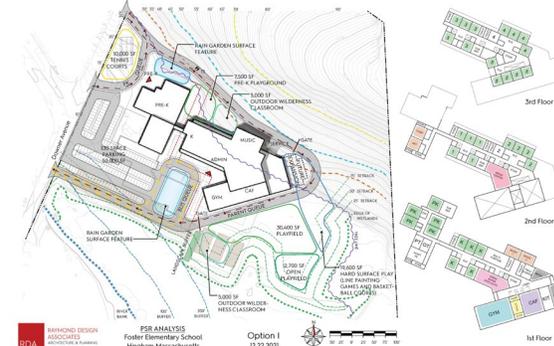


PDP Option H – New School on the Hillside

With this feedback in mind, the design team further developed Options F and I, and suggested that the SBC take another look at Option G because its footprint had been located along the north of the site, leaving a wide expanse of sunny contiguous play area to the south of the new school, overlooking the tidal marsh.



PSR Option F – New Build at Toe of Slope



PSR Option I – Add/Reno

In conjunction with this phase of the SBC's analysis, the design team surveyed the extent and types of play areas at Hingham's three other elementary schools and developed a comparison matrix for review by the SBC. It was determined that a Pre-K playground of approximately 4,500 sf was appropriate for the new Pre-K program at Foster. This would match the size of the Pre-K playground at East Elementary.

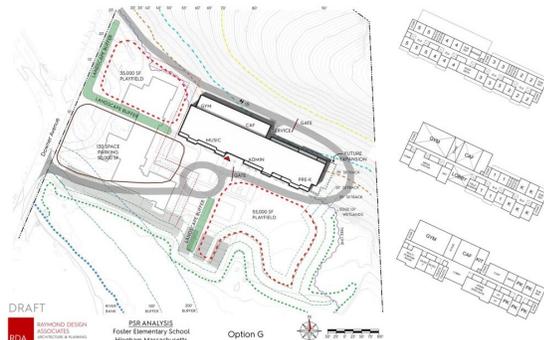
It was also determined that the average square footage of combined K-5 play and outdoor learning spaces at the East, Plymouth River, and Foster elementary schools was approximately 95,000 sf. At 36,000 sf, the outdoor play and learning areas at South Elementary were unusually small in comparison and were not factored into the desired outdoor space programming.



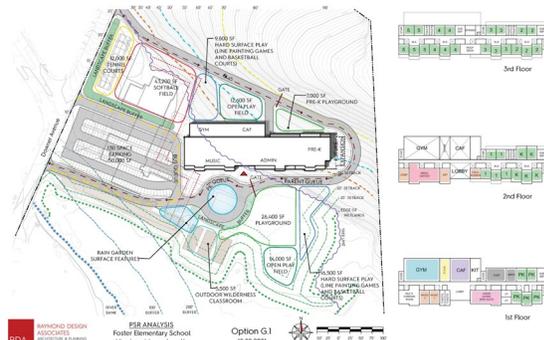
At 75,500 sf and 72,700 sf respectively, it was determined that both Options F and I could provide an adequate amount of school-related play and learning space, though Option F provided all 75,500 sf in one contiguous area to the south of the school, while 5,000 sf of Option I's play and learning space was split off to the north side of the building, reducing its southern contiguous play and learning area to 67,700 sf. It was also noted that Option F provided room for a community softball field and two community tennis courts abutting Downer Avenue, whereas Option I was only able to accommodate a single tennis court abutting Downer Avenue due to its positioning on the site.

Option G had been eliminated from consideration during the PDP phase based more upon its building layout than its position on the site. As a 'bar' building, the preliminary layouts had located the gymnasium and cafetorium in the center of the ground floor, retaining the hillside. This presented after-hours segregation issues and, given that other viable options existed at the time, the SBC had chosen to not pursue it any further.

However, knowing that the position of the Option G building could prove advantageous from a site planning perspective, the design team reconstituted it, moving the location of the gymnasium and cafetorium to one end of the building, solving the community access issue. Two locations for the Option G footprint were then presented for SBC for consideration: G, which remained pushed into the hillside, and G.1, which rotated the building so that it was on a direct east-west axis, with its western end located about 50-feet away from the intersection of the existing school's two wings. This provided some ground-level outdoor space between the Cafetorium and the hillside.



PSR Option G – New Build Into the Slope



PSR Option G.1 – Rotated East-West Axis

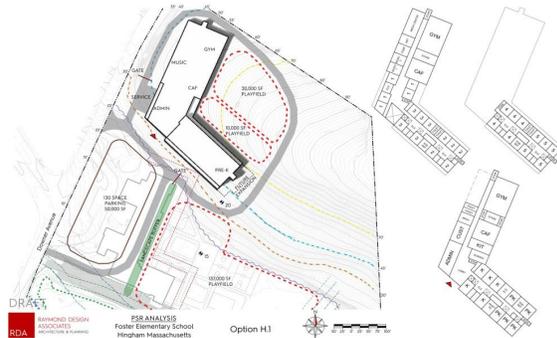
Option G provided 90,000 sf of exterior play and learning space on the site, but it was split between the front of the school and a large area abutting Downer Avenue. Only 55,000 sf of contiguous area was provided at the front of the building, facing the marsh, and appropriate for K-5 play and learning. This compared to 75,500 sf and 67,700 sf respectively in Options F and I. Given its remote location, the remaining 35,000 square feet along Downer Avenue was probably best suited to community amenities such as softball and/or tennis courts.

Option G.1 provided about the same square footage of contiguous exterior play and learning space overlooking the marsh on the south side of the school but, by pulling it out of the hillside, it provided direct views and connections from the Cafetorium to play and/or learning areas to the north and west of the school, as opposed to Option G where the building was jammed in tighter to the hillside and the rear wall of the Gymnasium was retaining earth along the new access road.



The design team also took one more look at the hillside option along Downer Avenue and labeled it Option H.1. This concept lowered the three-story building down into the hillside by 15-feet, reducing the height visible by neighbors to the west and north. This also brought the ground floor of the school more in line with the elevation of the lower playfields to the south.

Unfortunately, this option still required the same, if not more, clear cutting of the site in that the building footprint was pushed closer to the north property line and the need to retain 15-feet more of earth required significantly more horizontal clearing to the east. All of the additional earthwork required to implement this concept drove the cost for Option H.1 up considerably.



PSR Option H.1 – Set Down into the Hillside 15-ft

For all of these reasons, the most important of which was the overwhelmingly negative impact that either of the two “H Options” would have on the abutters and overall neighborhood character, the SBC determined neither Option H nor H.1 were appropriate for further study, especially when Options F, I, and G.1 would meet the programmatic needs of the District and Community with far less impact to the neighborhood, and considerably less controversy that might otherwise be stirred up, negatively impacting the success of the project.

Given the SBC’s expressed desire to construct a Net-Zero-Ready, all-electric school, the design team invited Chris Schaffner from The Green Engineer to make a second presentation to the SBC, this time focused on the multiple options noted above that were under consideration. Though Options F and G.1 were rated slightly higher in terms of optimizing sustainability features, Chris was careful to point out that all of the options under consideration would make use of the same robustly-insulated building envelope and highly-efficient heat pump systems. As such, it was his advice that ‘sustainability’ factors between these options should not be a determining factor for the SBC in selecting a preferred development option.

In terms of compliance with the District’s Space Summary, all the options noted above included conceptual building layouts that closely tracked the District’s Space Summary, which was under constant review by the SBC and evolved in tandem with the progression of the design team’s conceptual PSR development options.

Based upon the SBC’s review of several iterations of the Space Summary Worksheet compiled by the design team, the types of program space and the overall gross square footage of the proposed building varied as the PSR process unfolded. The most significant areas that were a particular focus of the SBC were those that exceeded MSBA Guidelines. These included the District’s Pre-K program, SPED program, ‘Specials’ such as Spanish and Field Science, the Kids-In-Action (KIA) before and after school program, and dedicated spaces for Professional Development and the Foster PTO.

Where the PDP Space Summary totaled 130,784 gross square feet (gsf), the PSR Space Summary that was prepared in advance of sending various development options to the professional cost estimators totaled 127,481 gsf. Reflecting the SBC’s desire to make the most



efficient use flexible space within the new school, additional refinements to the PSR Space Summary were made up until mid-December and the final PSR Space Summary included in this submittal is 126,434 gross square feet.

Significant changes made to the Space Summary since the District’s PDP submission include the elimination of dedicated PTO and Professional Development spaces, an increase in the size of the Gymnasium to accommodate bleachers, and the elimination of a dedicated Field Science classroom. The Field Science program will instead use the KIA multipurpose room during the school day while the KIA program will use the same space before and after school. Professional Development and PTO enrichment programs will make use of either the Cafetorium (with a retractable wall that will be able to split it into two spaces) or the Media Center with its furnishings and bookcases on wheels so they can be easily moved around and out of the way as needed.

Given the choice of all the development options outlined above, the SBC asked that Options F, G.1, and I be evaluated from a detailed cost perspective. Options F and G.1 were new building options while Option I was an addition/renovation. Estimating packages describing the scope of work were sent to the two independent professional cost estimators hired by RDA and PMA. These packages included floor plans and site plans that reflected all the cutting, filling, and associated retaining walls required in each option. In addition, narratives covering all trades, from site, building envelope and finishes, to the various structural and MEP/FP systems required to outfit this net-zero-ready all-electric building, were included in the estimator scope packages.

The two cost estimates were received and reconciled on December 17, 2021 and, using the designer’s reconciled estimate for each option, preliminary MSBA Form 3011 Total Project Budgets were created by PMA in concert with RDA’s input. Using this data, the cost information below was presented to the SBC at its December 22, 2021 meeting.

	<u>Construction Cost</u>	<u>Total Project Cost</u>
• Option F – New Building	\$84,933,989	\$105,258,656
• Option G.1 - New Building	\$87,938,938	\$108,413,853
• Option I - Addition/Renovation	\$91,299,474	\$111,942,416

Having satisfied itself that it had sufficient educational, technical, and budget information, the SBC then deliberated and unanimously approved Option F as its preferred solution with the caveat that the bus loop in Option F be modified to mimic that shown in Option G.1, which exits onto Downer Avenue via a drive located between the parking lot and the softball field. This would eliminate a ‘crossing point’ between exiting busses and incoming parent vehicles on the northern loop road and, by eliminating the bus drive between the western (left) end of the new school and the softball outfield, allow safe access directly to this multipurpose field for PE classes. With those changes to be made, the SBC directed the project team to compile the PSR submission for the MSBA.

Larger scale versions of the conceptual PSR drawings included above can be found at the end of this Section, and under Tab 8 of the hardcopy binder.

The engineering narratives for Options F, G.1, and I referenced above that were sent to the cost estimators follow at the end of this Section, and can also be found under Tabs 9-12, and 17 of the hardcopy binder.



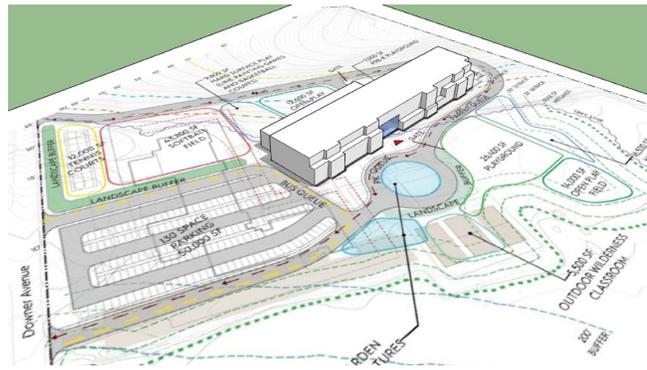
The Designer and OPM Cost Estimates referenced above for Options F, G.1, and I follow at the end of this Section and can also be found under Tabs 13 and 14 of the hardcopy binder. The Form 3011 Total Project Budget forms referenced above for Options F, G.1, and I also follow at the end of this Section and can also be found under Tab 15 of the hardcopy binder.

3.3.1.5 District’s Preferred Solution

Based on its superior attributes, and its ranking as the least expensive of the three final development options under consideration, the SBC voted at its December 22, 2021 meeting to recommend Option F to the MSBA as its preferred solution.

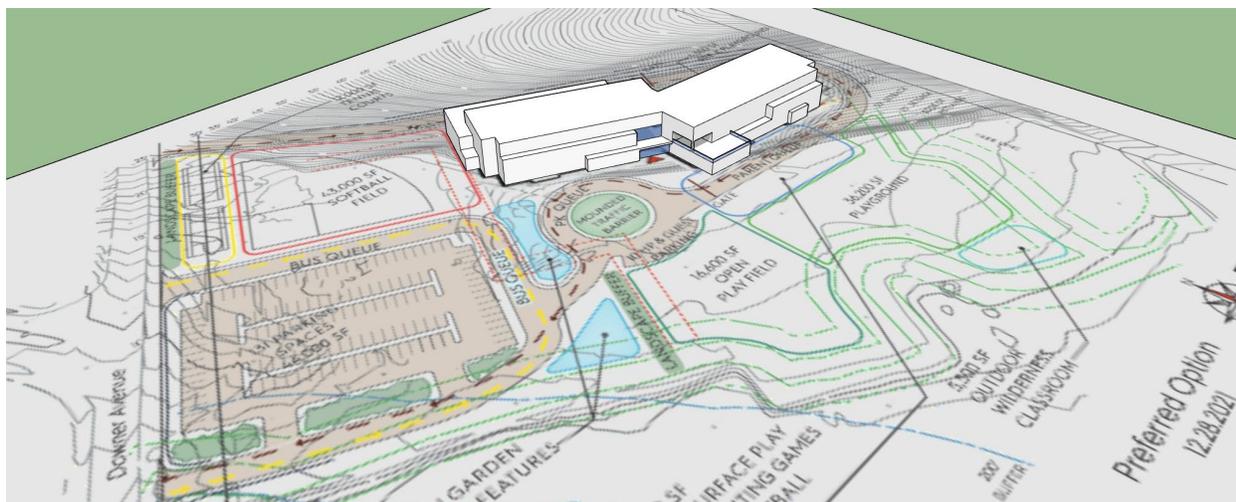
The Option I addition/renovation project had always been a ‘long shot’ given its extended timeline for construction and the amount of disruption it would inflict on the ongoing operations of the Foster School while it was being constructed, including impacts to recess areas. Its ranking as the most expensive option only reinforced the SBC’s decision to not pursue it any further.

Option G.1 was also more expensive than Option F while providing a smaller area of contiguous play and outdoor learning opportunities. Though the SBC understood that the singular massing of this ‘bar’ building would be scaled down by the design team as the project progressed into Schematic Design, concerns were expressed about its massing and how it would fit into the neighborhood, as well as the fact that its front entrance was not clearly visible from the street, with its narrow ‘end’ facing Downer.



Opt G.1 presenting its ‘Narrow End’ to Downer Ave

Option F (below) not only provided the greatest extent of contiguous play and learning area on the south side of the school, but its ‘two-wing’ configuration breaks down the mass of this sizable building into smaller pieces, making it more approachable for the small children who will be attending it, and reducing its perceived scale within the residential neighborhood.





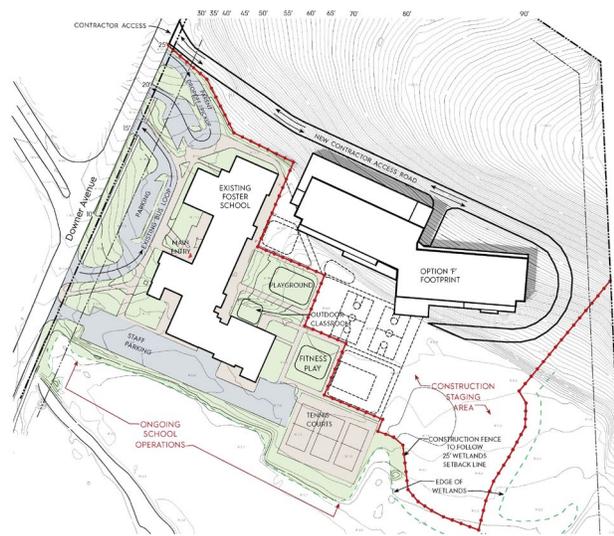
With its main entrance located in-between the two wings of the school, and two of the school's walls defining the entry plaza, it's obvious where the front door to the school is as one approaches the building from Downer Avenue. The addition of a low horizontal canopy running alongside the western (left) wing will only serve to scale down the mass and further highlight the entrance.

Though a portion of its west (left) end is only 50-feet away from the existing Foster School, it was projected to be the least intrusive to the ongoing learning activities in the existing Foster School while being constructed. The school will be able to make use of many of its play areas for recess activities during construction. Siting appropriate areas for recess during construction would not have been as easy to achieve under either Options G.1 or I.

With the construction of the new access drive on the north side of the site, all construction traffic will be completely segregated from that of the ongoing school activities. The existing parking lots, bus loop, and parent loop along Downer Avenue at the front of the existing school will all remain in full operation, completely segregated from, and unimpeded by, the construction activities at the rear of the school.

And finally, Option F also happened to be the least expensive of the three final development options studied by the SBC.

A detailed summary of the District's Preferred Solution can be found under Section 3.3.4, and under Tab 19 of the hardcopy binder.



Segregation of Ongoing School and Construction Activities

3.3.1.6 MSBA PDP Review and District Response

The District received MSBA's review of their PDP submission on December 9, 2021. Among other items, the review touched upon the District's Educational Plan, Space Summary, project schedule, project cost, and site selection.

A video conference was held on December 16th to review the MSBA's concerns. Attendees included SBC members, MSBA staff, and representatives from PMA and RDA. For the most part, the conference focused on the project's schedule, projected cost, and the continued use of the existing Foster site. The issues of schedule and cost were addressed in a straightforward manner, both of which were to be documented in the District's Response and the District's PSR submission. MSBA staff were informed that town leadership is aware of the potential project cost. The project team clarified its proposed project schedule and noted that its Design Development submission will not be made until after the MSBA's August Board meeting. And finally, the SBC acknowledged that its plan to secure project funding at the annual Hingham Town Meeting in late April or early May of 2022, and to then proceed with design work prior to the MSBA's August Board meeting, was entirely at its own risk.



The MSBA's concerns around the viability of the existing Foster site for the construction of a new school were discussed in depth, mostly revolving around the issue of future sea-level rise and related floodplains. The District was asked to provide additional information around both the Foster site and another large site that had been previously ruled out as a non-viable site by the SBC, Carlson Field.

Over the next week, the District/SBC worked diligently with its consultants to provide the MSBA with a detailed explanation addressing how the design team's approach to raising the grade at the Foster site by seven to nine feet directly related to the projected rise in mean high tide and flood plain elevations over the next fifty years, the proactive measures being undertaken by the Town to safeguard the harbor front/downtown corridor (and therefore the Foster site) from future sea-level rise, and additional measures that could be undertaken to protect the Foster site were flood plains to rise faster or higher than expected.

Having satisfied itself that the technical issues around reusing the Foster site were well addressed, the SBC also touched on the reasons why building at the Carlson Field site would put local approval of the entire project at risk, and the daunting legal issues that would have to be resolved were the school to be built at Carlson Field. These included replicating the lost playfields elsewhere in town under Article 97 of the Amendments to the Constitution of the Commonwealth of Massachusetts and removing conveyance restrictions held by the United States of America acting through the Department of the Interior on the former US Navy parcel. These restrictions require the property to be used for public park or public recreational purposes.

In the meantime, the School Department addressed all the review issues related to its Educational Plan and the District's Space Summary.

Having addressed the MSBA's concerns to the best of its ability, the District's response to the MSBA's PDP Review was reviewed and approved at the SBC's meeting on December 22, and was submitted to the MSBA on December 23, 2021. A copy of it follows at the end of this Section and can also be found under Tab 3 of the hardcopy binder.