



## SECTION 3.3.4 PREFERRED SOLUTION

### 3.3.4.1 Educational Program

The District's Educational Program can be found at the end of this Section and also under Tab 19 of the hard copy binder.

As stated in the Preliminary Design Program submittal, the Foster-specific goals for this project placed a strong emphasis on classroom neighborhoods to support the collaboration and teamwork that are central to Foster's culture. The proposed layout of Option F, the District's preferred option addresses this goal by grouping five general classrooms for each grade level around a shared common space, visible and accessible from all the classrooms surrounding it.

As the District shifts to a Phenomenon-Based learning method, the need for these shared common spaces outside the grade-level classrooms is even more critical. The Educational Plan specifically references the need for these spaces to be available for use by any members of the grade-level team for use as break-out space, small group learning space, or larger grade-level presentation space. While the classrooms will be used regularly for similar activities, the shared common space will allow for collaboration across classrooms and greater opportunities for common experiences shared among students within a grade. Because they are physically separated from the classrooms, transparency between the classrooms and the grade-level common spaces is critical so educators can monitor activities in the commons. This will have the added benefit of making learning in either space visible and providing a common purpose and agency among staff and students alike.

Option F also provides other large open spaces within the school for interactions within and across grade levels. These spaces exist on each floor, at the knuckle between the two main wings, a natural place to intermingle, collaborate and/or make presentations. Being the busy communal spaces they are, these spaces also lend themselves to the display of student work.

The Foster Ed Plan also requests a gathering/meeting space that can accommodate the entire student body and staff at once. By placing a two-sided stage between the Cafetorium and Gymnasium, the school will have spaces to accommodate not only the entire student body and staff (Cafetorium) but a larger space to accommodate the entire Foster community, parents included (Gymnasium).

There was an emphasis on abundant internal daylighting with break-out/pull over space in the Ed Plan and Visioning document, stating that it is critical for the emotional health and overall well-being of students and staff alike. The layout of Option F arranges the six (K-5) grade level common areas along double-loaded corridors with intermittent lightwells serving all three floor levels. This accommodates the desire for both natural lighting and break-out/pull over space.

Calming Spaces are provided on each floor level in accordance with the Ed Plan. These are essential to giving children a break given the District's dedication to social and emotional well-being. These spaces will be located along common corridors so they will be available to all.



The integration of Phenomenon-Based learning will require an increase in collaboration and a move to co-teaching models to allow for this multidisciplinary approach. Training teachers on instructional strategies and how to facilitate student-driven learning will be required. As such, the need for Professional Development (PD) is critical. Training is scheduled to commence during the 2022-23 school year and will be ongoing over the years. The SBC eliminated a dedicated Professional Development Room that had been carried in the PDP Space Summary, however only after it was determined that flexible space could be created in the Cafetorium by installing an acoustically-rated folding partition that could divide the room into two one-third and two-thirds size spaces. Subject to scheduling, the Cafetorium will be able to support robust professional development activities even if they coincide with the District's Kids-In-Action before and after school program. Should this prove untenable at certain times, the Media Center will be equipped with movable furnishings and this large space could also be used for PD. Both the Cafetorium and the Media Center will be equipped with adequate furnishings, teaching surfaces, and robust audio-visual systems to accommodate PD activities.

Sustainability and strong indoor-outdoor connections that take advantage of Foster's biologically, environmentally, and geologically natural setting were also emphasized. It is the District's wish to take advantage of this rich resource to accommodate outdoor learning spaces and activities. These included covered outdoor play and learning areas that would allow for learning in all types of weather. As the District's preferred solution, Option F was chosen by the SBC because its position on the site provides the largest amount of contiguous play and learning area on the southern side of the building, overlooking the tidal marsh to the south and wetlands to the east. In particular, the site plan locates an outdoor wilderness classroom right at the edge of the tidal marsh.

Science is an integral part of the elementary curriculum in Hingham. Two spaces inside the building are directly related to supporting this mission. The first is a second STE space to support the Field Science program. The second is a large south-facing outdoor learning deck located off the large common space at the knuckle where the two classroom wings come together on the second floor, overlooking the salt marsh and wetlands. The Field Science program will be housed in the before and after school program's Kids-In-Action Multi-Purpose Room. It is south facing and perfect for activities such as hydroponic gardening as is called for in the Ed Plan. It will be outfitted in accordance with the MSBA's STE Guidelines. It also has a direct connection to the natural features of the site, including the outdoor Wilderness Classroom at the edge of the marsh. The outdoor leaning deck is a protected/controlled environment perfect for delicate equipment or long term experiments.

And finally, there was a strong emphasis on strong community connections and safe community access to the school and its site after-hours. The layout of Option F allows for a separate community wing on the first floor of the building, with the remainder of the building made inaccessible by locked doors. The community wing is easily accessible from the main entrance lobby and includes the Cafetorium, Stage, Gymnasium, and Kids-In-Action Multipurpose Room. All of these spaces will be used outside of school hours.

#### **3.3.4.2 Preferred Solution Space Summary**

The design team compiled an Initial Space Summary for the Foster project based upon the visions articulated in the PDP visioning workshops and the District's Initial Educational Program.



The Initial Space Summary has been updated based on SBC and District deliberations during the PSR phase of the project. The PSR Space Summary can be found at the end of this Section, as well as under Tab 20 of the hardcopy binder. It should be noted that the latest changes to the PSR Space Summary were formalized by the SBC at its December 29, 2021 meeting, after reviewing the December 18, 2021 cost estimates. As such, the gross square footage in the PSR Space Summary (126,434 sf) is slightly less than the 127,481 gross square footage accounted for in the cost estimates.

The changes between the District's Initial PDP Space Summary and its PSR Space Summary are accounted for in a worksheet titled 'Space Summary Comparison PDP to PSR' that is attached at the end of this Section but can also be found under Tab 21 of the hardcopy binder. The significant changes are as follows:

- The Core Academic category is now 1,670 sf smaller than it was in the Initial PDP Space Summary. This is because two PK support spaces were moved to the Administration & Guidance category and the Field Science classroom was eliminated from the program. Field Science activities will take place in the Kids-In-Action (KIA) Multipurpose Room which will be outfitted with appropriate storage, counters, sinks, etc. to support both the Field Science program during the school day and the KIA before and after school program outside the school day.
- The Special Education category is now 1,130 sf smaller than it was in the Initial PDP Space Summary. This is because five SPED support spaces were moved to the Administration & Guidance category.
- There were no changes to the Art & Music category.
- The Health & Physical Fitness category is 1,000 sf larger than it was in the Initial PDP Space Summary. This is because the District wishes to enlarge the Gymnasium in order to provide bleacher seating. The lack of bleacher seating springs from complaints about the lack of seating at the East School gymnasium.
- There were no changes to the Media Center category.
- There were no changes to the Dining & Food Service category.
- There were no changes to the Medical category.
- The Administration & Guidance category is 1,600 sf larger than it was in the Initial PDP Space Summary. This is due to the relocation of Pre-K and SPED support spaces to the Administration & Guidance category as had been requested by the MSBA as part of its PDP submission review. The District requests that the overage in the Administration & Guidance category be considered reimbursable given that these spaces directly related to the Pre-K and SPED programs.
- There were no changes to the Custodial & Maintenance category.
- The Other category is now 2,700 sf smaller than it was in the Initial PDP Space Summary. This is because the District reviewed its ability to share flexible spaces within the program and satisfied itself that PTO and Professional Development activities could take place in spaces such as the Media Center and/or a portion of the Cafetorium as scheduling



permits. Storage Rooms for Kids-In-Action and PTO were moved to the Non-Programmed Space (grossing factor) category.

The PSR Space Summary contains a wide variety of differences when compared to the MSBA Guidelines for an elementary school of 605 K-5 pupils. These differences are also highlighted in the 'Space Summary Comparison PDP to PSR' worksheet and include the following:

- The Core Academic category is 12,930 sf above MSBA Guidelines, almost 60% of which is due to the District's Pre-K program. Some of this overage has been accepted by the MSBA, such as the difference in K-5 classrooms, the STE/Computer Classroom, and the Spanish Classroom. As part of its PDP submission review, the MSBA requested additional information on the District's plans for shared common space at each K through 5 classroom neighborhood, its Pre-K program, and its ELL room. This information was provided to the MSBA as part of the District's PDP Review Response which can be found at the end of Section 3.3.1 and in Tab 3 of the hardcopy binder.
- The Special Education category is 2,145 sf above MSBA Guidelines. This overage is the result of the programs that the District plans to provide at Foster. The District understands that DESE must approve these spaces and their locations within the proposed Schematic Design floor plan.
- The Art & Music category is in line with MSBA Guidelines.
- The Health & Physical Fitness category exceeds MSBA Guidelines by 1,000 sf in order to accommodate bleacher seating.
- The Media Center category is in line with MSBA Guidelines.
- The Dining & Food Service category is in line with MSBA Guidelines.
- The Medical category is in line with MSBA Guidelines.
- The Administrative & Guidance category is 1,600 sf above MSBA Guidelines. This is because Pre-K and SPED support spaces were moved to the Administrative & Guidance category in accordance with the MSBA's request in its PDP Review. As noted above, the District requests that the overage in the Administration & Guidance category be considered reimbursable given that these spaces directly related to the Pre-K and SPED programs.
- The Custodial & Maintenance category is in line with MSBA Guidelines.
- The Other category is 2,930 sf above MSBA Guidelines. This is because the District is planning to provide a Multi-Purpose Room (which will be used by Field Science during the school day) and an Office for its before and after school program, as well as a Lactation Room for its staff, and an Office for its METCO coordinator. The District is hoping that the design team will find space within the maximum 1.50 net to gross square footage factor to fit these into the school building and that the MSBA will consider categorizing them as reimbursable space



The overall Net Square Footage of the District's PSR Space Summary is 20,446 sf above MSBA Guidelines, most of which the District assumes will be considered as reimbursable, though it understands that this determination is to be made by the MSBA in accordance with its policies.

The overall Gross Square Footage of the District's PSR Space Summary is 38,709 sf above MSBA Guidelines, however, it should be noted that the MSBA Guidelines do not take into account net square footage that varies from the Guidelines but that the MSBA might determine is in fact reimbursable. Examples of these types of spaces would be the STE/Computer Classroom, the variations in the number and size of Classrooms, and perhaps 'overages' in the Special Education category. It is also noted that the MSBA Guidelines are based on a 1.37 net to gross ratio, and it is the District's understanding that a net to gross ratio of up to 1.50 is allowable.

A Space Summary Worksheet was prepared by the design team to help the SBC understand not only programming notes or how many staff may be in the building when completed, but also how spaces that fall outside of MSBA Guidelines, whether approved or not approved as part of the Feasibility Study process, can impact the amount of reimbursement the District might expect. The SBC's Space Summary Worksheet can be found at the end of this Section, as well as under Tab 22 of the hardcopy binder.

#### **3.3.4.3 Preliminary LEED-S Scorecard**

The Hingham Public School District and the design team identified sustainability as an important goal for the project early-on in the process and have developed the design with sustainability best practices in mind, including a commitment to designing a net-zero-ready school using all-electrical heating and cooling. The project is following Advisory 61, dated November 2019 and intends to pursue a minimum LEED for Schools v4 'Certified' level of certification for MSBA compliance and will be designed to exceed the energy code baseline by 20% (the LEED-S v4 Scorecard is anticipating 14-points for the EAc2 Optimize Energy Performance category) as is required to qualify for the 2 additional reimbursement points through the MSBA Sustainable Building Design Green Schools Policy.

Making sustainable choices for the built environment requires the intense collaboration of all design disciplines in an integrated process – not only with the architect, but also involve the client, consultants and needs of the end users, the students and teachers. To that end the team conducted an initial workshop to help expand on these goals and to outline tasks and responsibilities going forward.

The goals for a sustainable project include designing a low impact site and energy-efficient building that serves as an educational tool for staff, students and visitors. Daylighting and acoustics will be key design elements to improve the interior environmental quality. Sustainable features will be further reviewed as the design develops. To the extent possible, the design team will seek to select building materials and furniture that are low-emitting and have a reduced environmental impact. Per MSBA requirements, the building systems, including the envelope and HVAC systems will be commissioned to ensure they operate efficiently and as designed.

The project must achieve a minimum of 40-49 points to be LEED for Schools 'Certified'. Currently, the project is tracking 48 points as 'Yes' and another 53 identified as 'Maybe'. See below for a summary of the credits being targeted as 'Yes'. Note that the USGBC recently released the beta version of the LEEDv4.1 rating system which is intended to serve as an update to (and



improvement upon) LEEDv4. Recent guidance issued by the USGBC allows LEEDv4 projects to substitute any prerequisite or targeted credit for the LEEDv4.1 equivalent. Credits this project intends to pursue using the LEED v4.1 criterion have been denoted with (v4.1) adjacent to the credit name below.

#### Location & Transportation

- LTc3 High Priority Site: Project is located in a HUD-classified Difficult Development Area.
- LTc4 Surrounding Density & Diverse Uses: Project is located within ½ mile walking distance of 8+ diverse uses.
- LTc7 Reduced Parking Footprint (v4.1): The proposed parking plan will result in at least a 30% reduction compared to the calculated ITE base ratio.

#### Sustainable Sites

- SSc1 Site Assessment: Early analysis was completed to assess the impacts of the site topography, hydrology, climate, vegetation, soils, human use, and potential human health effects.
- SSc6 Light Pollution Reduction: Exterior lighting will meet the backlight, uplight, and glare requirements of Lighting Zone 2.
- SSc8 Joint Use of Facilities: The project will include spaces that are designated for joint use.

#### Water Efficiency

- WEc1 Outdoor Water Use Reduction: The project's landscape water requirement will be reduced by at least 50% from the calculated baseline for the site's peak watering month.
- WEc2 Indoor Water Use Reduction: Potable water use will be reduced by at least 25% compared to the baseline for indoor plumbing fixtures and all applicable commercial kitchen equipment will meet the prescriptive performance criteria outlined in the LEED BD+C v4 Reference Guide.
- WEc4 Water Metering: Submeters will be provided for two or more of the following water subsystems, as applicable: irrigation, indoor plumbing fixtures and fittings, domestic hot water, boiler, reclaimed water, and/or other process water.

#### Energy & Atmosphere

- EAc1 Enhanced Commissioning: As required by the MSBA, a third-party commissioning agent will be brought on board to perform enhanced building systems commissioning, building envelope commissioning, and monitoring-based commissioning services.
- EAc2 Optimize Energy Performance: As required by the MSBA, the project will be designed to exceed the current Massachusetts Energy base code by 20%. Early energy analysis is being performed by the design team to identify energy conservation measures to implement in the project.



## Materials & Resources

- MRc1 Building Life-Cycle Impact Reduction (v4.1): A life cycle analysis is being performed for the building's structure and enclosure to determine the impact that the specified materials have on the following categories: global warming potential, depletion of stratospheric ozone layer, acidification of land water and water sources, eutrophication, formation of tropospheric ozone, and depletion of nonrenewable energy resources.
- MRc2 Building Product Disclosure & Optimization – EPDs (v4.1): The project manual will be developed to include language for environmental product declarations for at least 20 different, permanently installed products.
- MRc2 Building Product Disclosure & Optimization – Material Ingredients (v4.1): The project manual will be developed to include language for healthy materials with disclosure documentation in the form of health product declarations, Declare Labels, Cradle-to-Cradle Certification, or Product Lens certification for at least 20 different, permanently installed products.
- MRc5 Construction and Demolition Waste Management (v4.1): Project will divert at least 75% of the total construction and demolition material using at least 4 different waste streams.

## Indoor Environmental Quality

- EQc1 Enhanced IAQ Strategies: MERV 13+ filtration media will be installed for all units delivering supply air. Cross-contamination measures (i.e. negative pressure, automatic door closers, etc.) will be provided for all hazardous chemical storage areas. Walk-off mats will be provided at all regularly used entrances. All densely occupied spaces will be provided with CO2 monitoring.
- EQc2 Low-Emitting Materials (v4.1): The project manual will be developed to include language for low-emitting materials for project finishes such as adhesives & sealants, paints & coatings, flooring, ceilings, insulation, and composite wood.
- EQc3.1 Construction IAQ Management Plan: The project will require the contractor to develop and implement an IAQ management plan that requires compliance with all applicable control measures of the SMACNA IAQ Guidelines for Occupied Buildings under Construction, 2nd edition, 2007, ANSI/SMACNA 008–2008, Chapter 3.
- EQc6 Interior Lighting: At least 90% of individual occupant spaces and all multi-occupant spaces will be equipped with lighting controls.

## Innovation

- INc1.1 Purchasing - Lamps: The lighting design will be 100% LED.
- INc1.2 O&M Starter Kit: The project will develop and implement compliant green cleaning and integrated pest management plans.



- INc1.3 Exemplary Performance – EPDs (v4.1): The project manual will be developed to include language for environmental product declarations for at least 40 different, permanently installed products.
- INc1.4 Exemplary Performance – Material Ingredients (v4.1): The project manual will be developed to include language for healthy materials with disclosure documentation in the form of health product declarations, Declare Labels, Cradle-to-Cradle Certification, or Product Lens certification for at least 40 different, permanently installed products.
- INc1.5 Integrative Analysis of Building Materials: The project will use at least 3 different permanently installed products that have a documented qualitative analysis of the potential health, safety and environmental impacts of the product in five stages of the product's life cycle (product assembly/manufacturing, building product installation, product use product maintenance, end of product life/reuse).
- INc2 LEED Accredited Professional: Multiple principal project participants are LEED Accredited Professionals.

The team will continue to evaluate design options against LEED requirements with the goal to design and construct a building which minimizes its impact on the environment, creates an engaging and healthy space for occupants and reduces operating costs. While the project seeks to achieve certification under LEED for Schools v4, our approach is not one of “point chasing” to maximize a LEED score. Rather, we will use LEED as a validation tool to check our performance, but in general will not base design decisions strictly on achieving LEED certification.

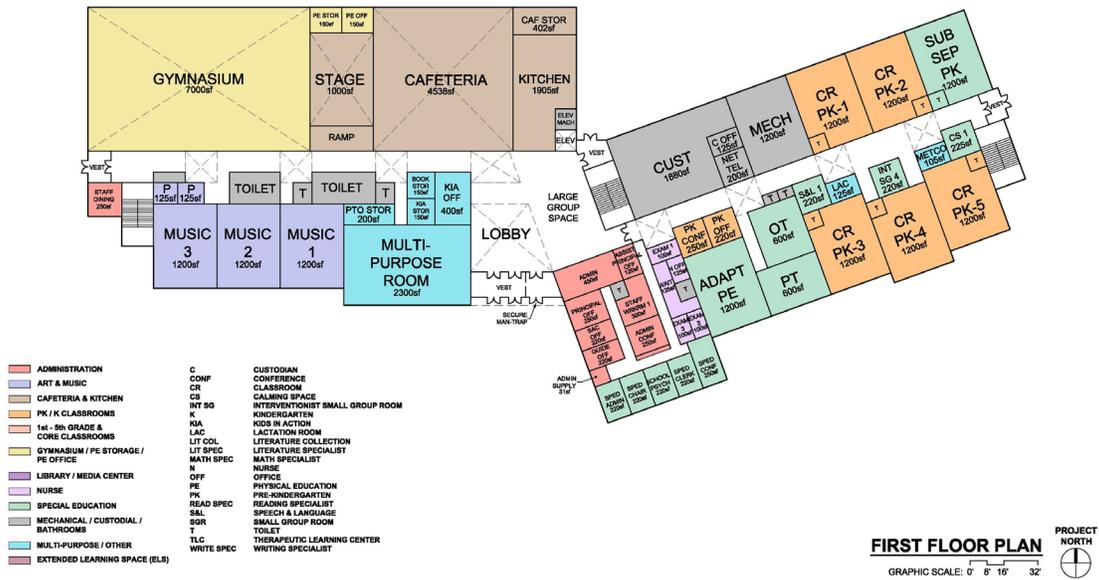
Refer to the attached LEED-S v4 scorecard that represents the preliminary assessment against the LEED for Schools v4 requirements. Several credits remain designated as ‘Maybe’ due to the uncertainty of future design decisions, which is common at this phase of the project.

A preliminary version of the project's LEED-S v4 Scorecard can be found at the end of this Section, as well as under Tab 23 of the hardcopy binder.

#### **3.3.4.4 Color-Coded Conceptual Floor Plans**

The proposed Foster School will be three stories in height and will be all new construction. The school is organized around two wings, each connected to a central hub that will serve double duty as a large group meeting space. The internal spaces along the corridors on all three levels will be daylit from above. This includes all six grade-level neighborhoods/common spaces and various offices.

At the Ground Floor (see 1<sup>st</sup> floor plan on the following page), this central hub is the main entrance lobby. It is a two-story high space that will serve as the primary entrance and exit for parents and visitors during the school day. It will be directly controlled by the Administrative Suite, including the provision of a ‘Man-Trap’ when school is in session. A rear vestibule is provided and may see use from some students getting dropped off or picked up from the parent queue on the driveway loop at the rear of the school before their family vehicle makes its way around the building to the front entrance.

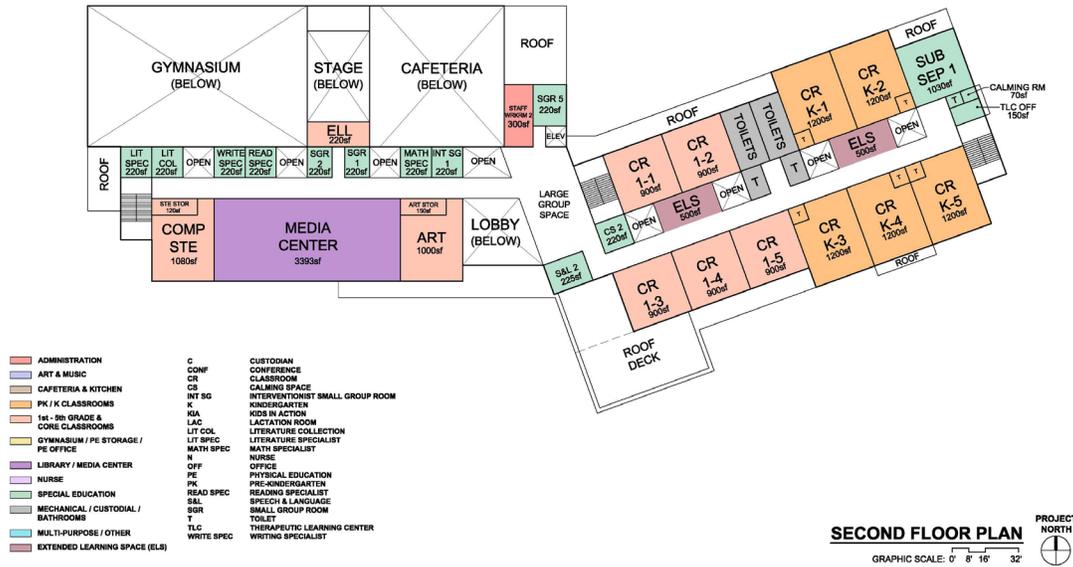


The wing to the left (west) of the Lobby is dedicated to community and after-school use. When open to use after hours, access will not be possible to the remainder of the school. This community wing will include the Gymnasium, Cafetorium, Stage, Kitchen, three Music classrooms (for access to the Stage), and the Kids-In-Action (KIA) before and after school program Multipurpose Room that will double as the Field Science Classroom during the school day. The positioning of the KIA Multipurpose/Field Science Room on the southern-facing exterior façade of the Ground Floor makes it easily accessible to the outdoor learning environment along the tidal marsh and will allow various indoor horticultural activities all year long. Its location adjacent to the Cafetorium and Gymnasium is perfect for the KIA after and before school activities.

The wing to the right (east) of the Lobby is dedicated to the Administrative Suite and the Pre-Kindergarten Program. The location of the Pre-K program on the Ground Floor allows for ease of access by families dropping off or picking up their child during the morning, mid-day, or afternoon arrivals and dismissals. The District has requested that PT and Adaptive PE be located in close proximity to its Pre-K program since those programs serve their younger learners.

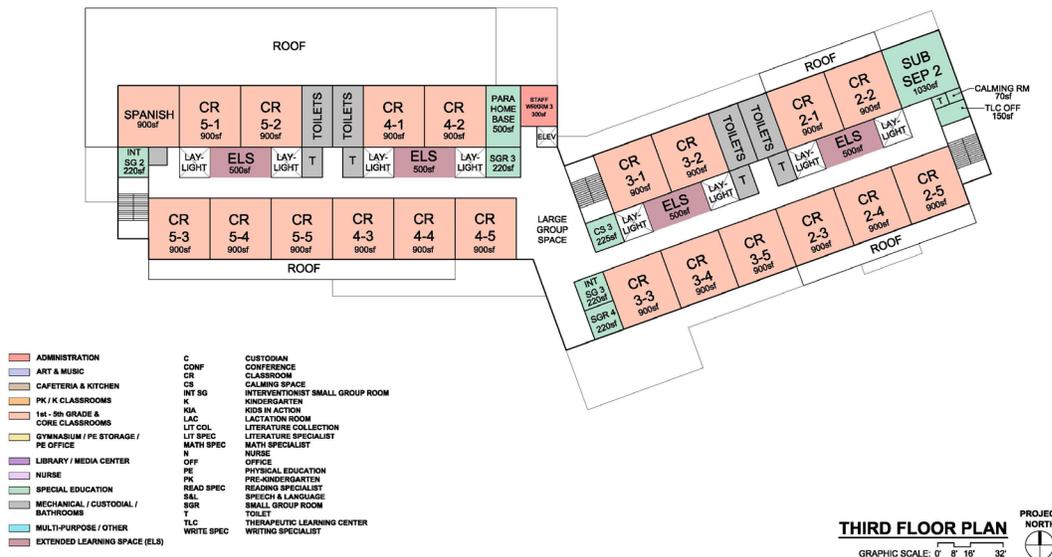
The Second Floor (see floor plan on the following page) is split into two wings by the upper level of the two-story main Lobby. The Media Center, STE/Computer classroom, and Art classroom occupy the majority of the western wing, with various staff and support spaces running along the length of the double-height Gymnasium, Cafetorium, and Stage.

The Kindergarten and 1st Grade ‘neighborhoods’ are located in the eastern wing. Each grade-level neighborhood is organized around a common space which all five classrooms face. Transparency in the classroom walls is a desire of the District in order to reinforce the connection between classrooms and their grade-level common space. As noted previously, the common spaces will have access to abundant natural light from above.



Given the Districts desire to integrate natural studies into their program, and the unique access the building will have to the Broad Cove tidal marsh, a Roof Deck is proposed on the southern façade of the building, accessible from the second floor level of the Lobby, and overlooking the marsh. While a ground-level outdoor classroom will be provided as part of the site development, this deck will serve as second outdoor learning environment, one that is easily accessible and controllable, allowing for the implementation of expensive equipment and/or long term experiments in a secure setting.

The Third Floor of the school (see plan below) will house the 2<sup>nd</sup> through 5<sup>th</sup> Grade 'neighborhoods', along with various support spaces. The eastern wing will be home to the 2<sup>nd</sup> and 3<sup>rd</sup> grades, while the western wing will be home to the 4<sup>th</sup> and 5<sup>th</sup> grades. Again, a south-facing common space divides the two wings and the internal spaces in the classroom neighborhoods will be brightly lit from above. Laylights will allow natural light transmission to reach the floors below, while avoiding the need for an expensive smoke evacuation system were all three floors to be connected by floor openings.



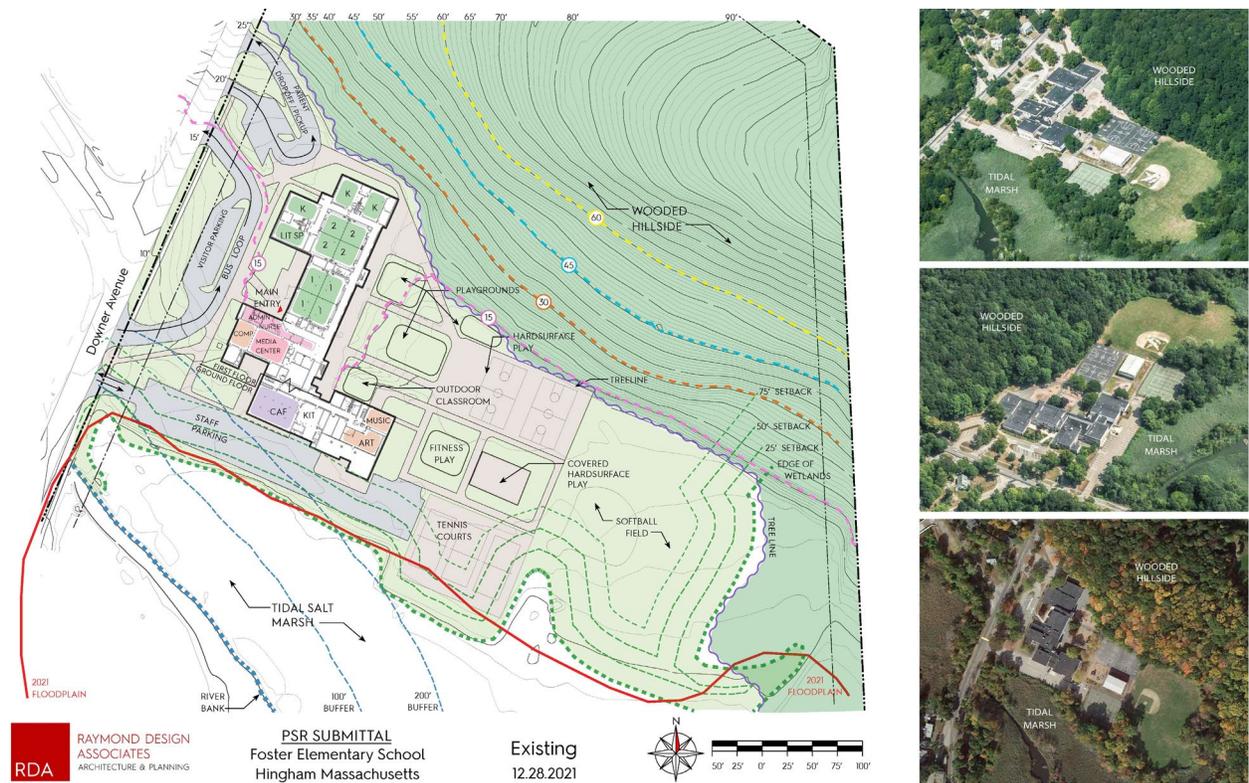


Given where the District and design team are in the planning process, these floor plans will be subject to a great deal of refinement as they move into the Schematic Design phase. That said, the overall organization of the school and its placement on this unique site bodes well for its future development.

Larger scale copies of the floor plans for Preferred Option F are attached at the end of this Section but can also be found under Tab 24 of the hardcopy binder.

**3.3.4.5 Preferred Solution Site Plan**

The existing William L. Foster Elementary School is located on a 39.75-acre lot at 55 Downer Avenue in Hingham, MA. The southern side of the site borders a tidal marsh, and the northern portion of the site is a wooded hillside.



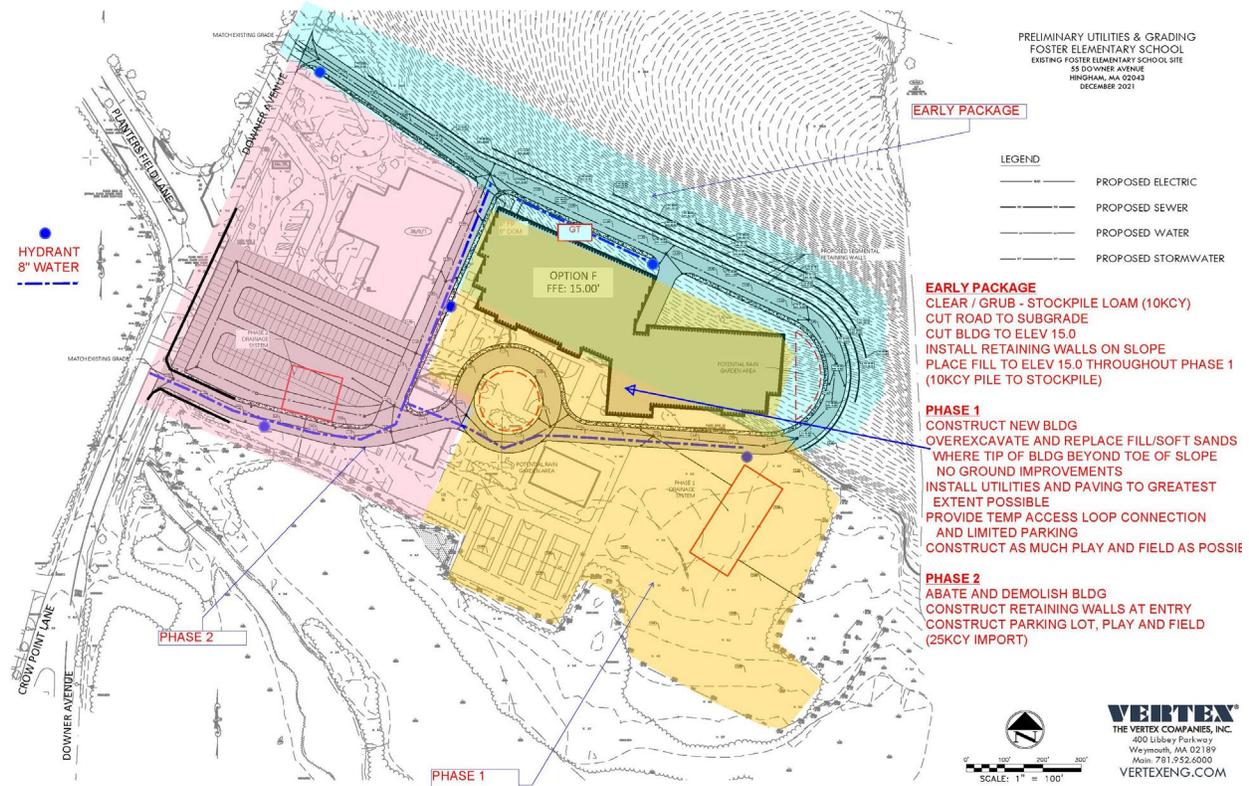
Given the need to deal with the projected 2070 floodplain and to create segregated construction access and staging areas while the existing Foster School remains in operation, the Phasing Plan for Option F includes the construction of a new access road dug into the hillside to the north of the existing Foster School. An early Site Enabling Package (“Early Package”) will include cutting the new road to subgrade and filling the building footprint to Elevation 15.00 or higher (depending on the fill requirements for ‘balancing’ the cuts and fills), as well as the construction of retaining walls to the north of the proposed new school and placing fill throughout whatever area of the site is to be used by the contractor for staging and parking.



Depending on how the logistics for recess play out while the existing school remains in session, the extent of fill to be placed within the “yellow” area on the Phasing Diagram below will be adjusted during the Schematic Design phase. By the end of the project, the spoils from all this excavation will have been used to raise the building, parking, and play areas throughout the entire site up from existing low points at Elevation 6.00 to 8.00 along the southern tidal marsh to Elevation 15.00 (or higher as may be required for a balanced site), above the projected 2070 floodplain elevation of 14.00

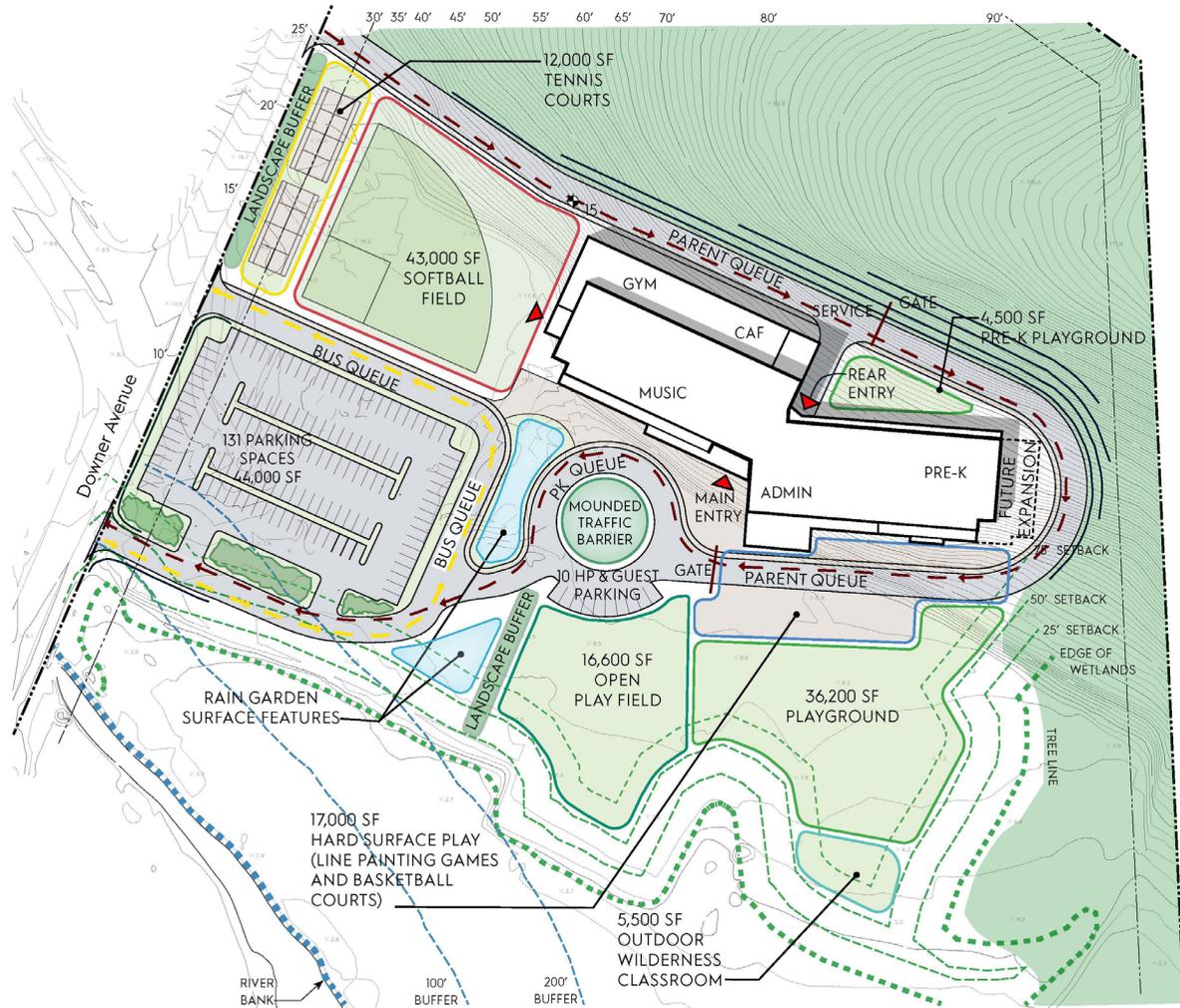
What is listed as “Phase 1” on the Phasing Drawing includes filling the appropriate portion of the existing site to the south of the new school (see above) and constructing the new school. Contractor access into and out of the site will be restricted to the new access road cut into the hillside, while the existing curb cuts and parking lots serving the existing school along Downer Ave remain in service. New stormwater, sewage, and water utilities running from Downer Ave to the new school will be installed under the existing parking lot during the Summer of 2023 and the existing parking lot will be patched and ready for use for the 2023/24 school year.

After the completion of the new school in “Phase 1”, what is labeled as “Phase 2” (in pink) along the western edge of the site will commence. “Phase 2” includes the demolition of the existing Foster School, raising the grade to Elevation 15.00 (or higher as may be required for a balanced site), and constructing the new driveways, parking, and playfields on the western side of the site. This will overlap with “Phase 1” in that it will start in July 2024 while the new school is being outfitted.



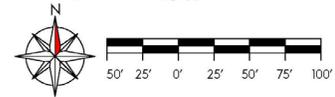


Given the limited playfield area to the rear of the existing school, the new school has been set into the hillside, as far away from the existing school as possible, maximizing the potential for continued use of existing play areas while the existing school remains in use during the construction of the new school. Due to its location tucked into the hillside, Option F provides the largest contiguous play and learning area of all the final options considered. There is a spacious area for play and learning on the south side of the school with views and connections to the unique and varied ecosystems surrounding the school. These include not only the tidal marsh, but wetlands and forests.



**PSR SUBMITTAL**  
Foster Elementary School  
Hingham Massachusetts

Preferred Option  
12.28.2021



The building itself is oriented on an east-west axis to the extent possible, maximizing its ability to control daylighting and avoid glare from eastern and western exposures.

The finished site plan for the new school will provide close to 70,000 sf of contiguous play area divided between hard surface play, play structures, and open playfield. This area will connect to a 5,500 sf Outdoor Wilderness Classroom at the edge of the tidal marsh.



A separate and protected 4,500 sf Pre-K playground is provided to the rear of the Pre-K wing on the first floor. Community amenities such as replacement tennis courts and a softball field are placed at the northwest corner of the site, accessible from Downer Ave without having to traverse through the site to make use of them, as is required at the existing site. The softball outfield is another multi-purpose playfield accessible to the school given that it is located directly adjacent to the Gymnasium. *It will be used for PE classes.* When taken as a whole, the site plan will provide +/- 130,000 sf of play area, approximating the square footage of similar play areas at the existing Foster School and Plymouth River schools, and far exceeding those at the South and East schools.

Parent and bus loops are separate from each other. The bus loop will accommodate the ten busses projected to service the school, while the parent loop *on the new access drive to the north of the school* will accommodate approximately 60 vehicles in a two-lane one-way drive that allows vehicles to pull out and leave the site while other vehicles are parked, waiting to drop off or pick up their kids. The parent loop goes all the way around the building. It will only be operational during morning drop off and afternoon pick up. Otherwise, gates will prevent vehicular access around to the front of the building while allowing access to the Kitchen and Custodial areas at the rear of the school.

There will be three curb cuts along Downer Avenue, providing multiple access points in the case of a public safety emergency. *Both the main entrance adjacent to the parking lot and the parent loop on the north side of the building* will provide complete access to all sides of the building for emergency vehicles.

Parking is provided for 141 vehicles in the conceptual site plan. Most are accommodated in a large parking field, with 10 accessible and visitor spaces located at the entrance circle. During the Schematic Design phase, attention will be given to appropriate tree cover in order to minimize the "heat island effect" from a sea of asphalt.

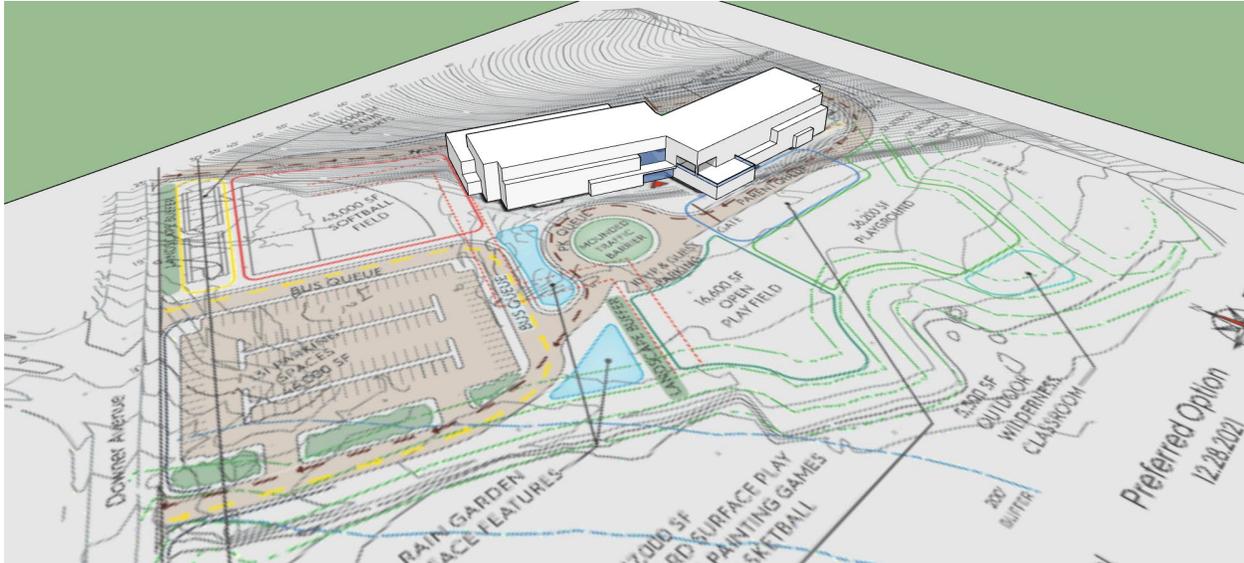
Riverfront and wetland setbacks are shown with blue dashed lines and green dashed lines respectively, running along the southern (bottom) end of the site plan. The existing site has many impervious surfaces within the wetlands and riverfront setbacks. This provides several potential areas suitable for buffer zone mitigation, including along the existing driveway, parking lot, and tennis courts. Their impervious surfaces will be removed and/or modified as part of the current development plan. Another portion of the delineated wetland area is also currently part of a grass field. This area is not part of the current development footprint and will be restored as wetlands.

In terms of the Hingham Zoning Ordinance, the building footprint is well within the 40-setback line for front, side, and rear yards. The site vastly exceeds the minimum 20-foot street frontage, and the building footprint is well below the maximum 10% coverage allowed on this 40-acre site. Accommodations will be required for the 45-foot height of the proposed building, but there are no limits to the number of stories in the Ordinance.

The circle at the front entrance will be mounded and planted with trees as a passive feature protecting the front entrance of the school and surrounding gathering spaces along the front of the building from run-away vehicles.



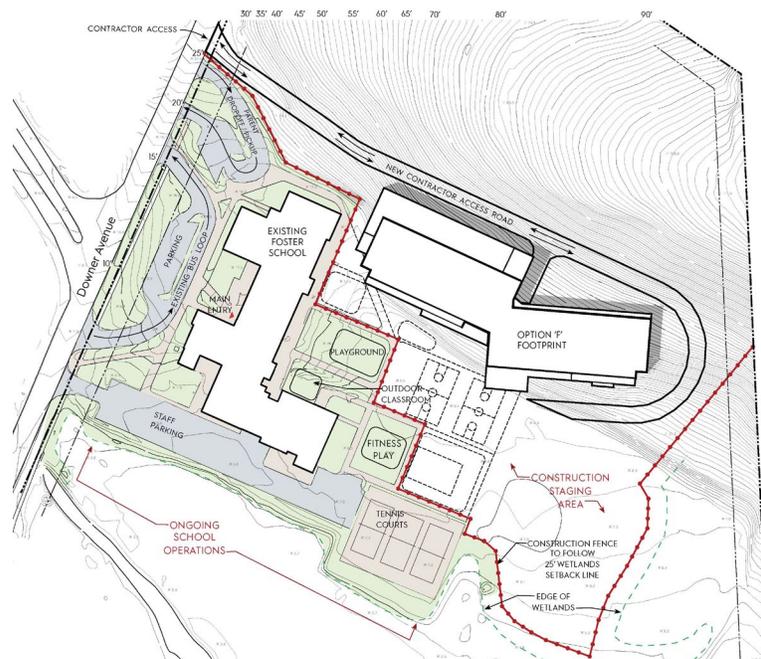
Option F's 'two-wing' configuration breaks down the mass of this sizable building into smaller pieces, making it more approachable for the small children who will be attending it, and reducing its perceived scale within the residential neighborhood.



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 and further highlight the entrance.

With its west (left) end only 50-feet away from the existing Foster School, the location of this new building on the site will not impede the ongoing operations of the existing Foster School while being constructed. The existing Foster will be able to make use of its outdoor classroom, a significant portion of its playgrounds, and its tennis courts for use as hard-surface recess during construction.

And 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 site circulation. The existing parking lots, bus loop, and parent loop along Downer Ave will be completely segregated from, and unimpeded by



*Segregation of Ongoing School and Construction Activities*



the construction activities at the rear of the school.

A larger scale site plan for Preferred Option F is attached at the end of this Section but can also be found under Tab 25 of the hardcopy binder.

### 3.3.4.6 Total Project Budget and Funding

Estimated Construction Cost: \$84,933,989 per the MSBA Form 3011 Total Project Budget for Option F that follows at the end of this Section and under Tab 27.

Estimated Total Project Cost: \$105,258,656 per the MSBA Form 3011 Total Project Budget for Option F that follows at the end of this Section and under Tab 27.

#### Estimated Funding Capacity:

With this submission of the PSR and as the schematic design progresses over the next 3-4 months, the SBC and design team will continue their work to refine the scope and design of the project and seek opportunities to value engineer and identify other potential savings to reduce the ultimate cost of the project. In addition to an element of good luck during the bidding process, careful project management will play a key role in helping to keep costs that are ineligible for reimbursement under the MSBA grant program to a minimum while maximizing value to accommodate a robust educational plan for the new school. Hingham relies on its various boards, commissions, and committees to oversee and manage the responsibilities with which those bodies are charged. Hingham Town Meeting has endorsed this project unanimously on three prior occasions, initially approving and subsequently increasing feasibility appropriations, and establishing a school building committee. With a transparent approach and active communication and engagement with the community throughout the process the SBC has and will continue to position this project for successful approvals in the coming months.

Hingham's inclination and capacity to fund capital projects is determined in part by its financial policy, which is reviewed and updated every 3 years and addresses areas such as budget forecasting, debt capacity, annual and longer-term capital expenditures, guidelines for fund balance or free cash maintenance thresholds and allocation, and other financial metrics. Based on SBC discussions with the Town Administrator, Select Board and Advisory (Finance) Committee, the funding of Hingham's share of the cost of the Foster project is anticipated through a debt exclusion. As a AAA bond-rated community, Hingham has two borrowing options for this project. The first option involves proceeding prior to MSBA grant approval and borrowing under M.G.L. c. 44, § 7(1). Under this option, the estimated \$105 million in debt would be counted toward the Town's debt limit and would significantly decrease Hingham's debt capacity. The second option is under M.G.L. c. 70B, § 6(d) and is available to the Town once it receives notice of approval of an MSBA grant. Under this second option, the Town can borrow its share of the project cost outside of its debt limit. No Town Meeting vote has been taken to date as to which option the Town will utilize. As outlined below, the Town is planning significant new investments in capital infrastructure through additional debt exclusions over the next few years. Although the Town has approximately \$111 million in outstanding water system acquisition bonds, repayment of that debt is self-supporting through water rates and does not affect property tax rates. In addition, the anticipated borrowing for the Hingham Municipal Lighting Plant (HMLP) outlined below is also anticipated to be self-supporting through electric rates and not property tax rates.



According to the Massachusetts Department of Revenue, the Town's 2020 debt limit was approximately \$397 million. The Town has sufficient capacity to borrow for this project.

Other Municipal Projects Currently Planned or in Progress:

As of January 2022, the Town anticipates the following new large capital projects in the short term:

- Plymouth River Elementary School window and door replacement project as part of the MSBA Accelerated Repair Program. Funding for this project in the amount of \$3,993,600 was approved at the 2021 annual Town Meeting.
- The second project involves the construction of a new public safety building intended to house the police headquarters and a fire station to serve the north section of Hingham. Funding for design was approved at the 2020 annual Town Meeting and design development is ongoing and a request to approve construction costs is anticipated either at the annual 2022 Town Meeting or at a Special Town Meeting thereafter. The estimated cost of the public safety building project is anticipated to be between \$40-50 million.
- \$7 million for new pool and associated amenities at South Shore Country Club – 2022 Town Meeting request
- \$5 million for harbor wharf wall resiliency – 2022 Town Meeting request
- \$60 million for a Hingham Municipal Lighting Plant substation – Town Meeting request likely in 2022/23 (Note: This debt service will be paid by electric rates, not property taxes)
- \$10 million for Senior Center renovations – Town Meeting request likely in 2024/55

District's Not-to-Exceed Total Project Budget:

The number submitted for the Town Meeting warrant article and ultimately voted upon at Town Meeting will be the not-to-exceed figure. Project costs will not be able to exceed that number unless further Town Meeting approval is sought. This figure will almost certainly be lower than the current estimated total project cost of \$105,258,656 submitted with this PSR, which was based on two independent cost estimates for Preferred Option F.

Local Process for Authorization and Funding of the Proposed Project:

As with past capital projects of this size and scope, a warrant article including the MSBA prescribed language will be submitted to the Select Board in January 2022 for consideration at the annual Town Meeting to be held either the last Monday of April or sometime in early May.

The Select Board is currently determining whether to seek special legislation as was done in 2021 to delay Town Meeting and the subsequent Town election until May in order to conduct Town Meeting outdoors for health and safety reasons.

The Town election has historically been the Saturday immediately following Town Meeting (or at least immediately following the first and/or second, if necessary, sessions of Town Meeting). It is expected that there will be a ballot vote question included on the Town election ballot requesting approval of a debt exclusion override for the financing of the Foster project.

The Town Meeting vote will require a 2/3 affirmative vote for approval as it involves borrowing. The subsequent Town election ballot vote requires only a simple majority for approval.



The Town of Hingham understands that it's decision to proceed with Design Development following what is anticipated to be successful Town Meeting and Town election ballot votes will be at its own risk, pending review and approval of the Schematic Design Scope and Budget Agreement by the MSBA Board at its August 31, 2022 meeting.

Estimated Impact to Local Property Taxes:

The table below is PRELIMINARY and will undoubtedly change as the project progresses. It is provided here as an approximation only.

Using an anticipated project cost of approximately \$105 million, the average assessed property value of \$915,120, and a 30-year level payment debt service schedule, assuming that the Town issues short-term notes before bonding the project in 2025, the estimated impact on the average taxpayer would be as follows (next 10 fiscal years shown below):

<i>Fiscal Year</i>	<i>2022</i>	<i>2023</i>	<i>2024</i>	<i>2025</i>	<i>2026</i>	<i>2027</i>	<i>2028</i>	<i>2029</i>	<i>2030</i>	<i>2031</i>	<i>2032</i>
<i>Base Average FY Property Tax</i>	\$10,943	\$11,039	\$11,316	\$11,601	\$11,892	\$12,189	\$12,484	\$12,696	\$13,005	\$13,335	\$13,671
<i>Foster Excluded Debt FY Property Tax Increase</i>		\$0	\$0	\$0	\$607	\$604	\$602	\$599	\$596	\$594	\$591
<i>Total FY Property Tax with Foster Excluded Debt</i>	\$10,943	\$11,039	\$11,316	\$11,601	\$12,499	\$12,793	\$13,086	\$13,295	\$13,602	\$13,929	\$14,262

MSBA Budget Statement:

The District has completed the MSBA's Budget Statement form based upon the proposed educational program to be implemented at the new Foster School. It can be found at the end of this Section, and also under Tab 28 of the hardcopy binder.

**3.3.4.7 Updated Project Schedule**

The project schedule has been updated to demonstrate all of the various milestones required to achieve the District's goal of opening the new school in September 2024. These milestones include design, MSBA review and approvals, procurement, and construction timelines.



- The Massachusetts Historical Commission Project Notification Form was mailed to MHC on December 21, 2021. It described the existing school and notified them that it was slated to be fully demolished as part of this project.
- The project anticipates presenting its preferred option to the MSBA Facilities Assessment Subcommittee on February 2, 2022.
- The project anticipates approval from the MSBA Board to proceed into Schematic Design at its March 2, 2022 Board Meeting.
- Submittal of the District's Schematic Design Submission is scheduled for May 4, 2022.
- The Town anticipates an Annual Town Meeting and subsequent ballot vote to approve the full project funding sometime between April 21 and May 13, 2022. The precise dates have not been set yet.
- The project anticipates beginning Design Development at its own risk subsequent to its submission of its Schematic Design submission. Schematic Design review comments from the MSBA will be incorporated into the Design Development submission.
- The project anticipates approval from the MSBA Board of its Project Scope and Budget and Project Funding Agreement at its August 31, 2022 Board Meeting.
- Submittal of the District's Design Development Submission is scheduled for September 16, 2022. A 21-day MSBA review period follows, with a District response back to the MSBA by October 21, 2022.
- The project anticipates bidding for a Phase 1 Site Contractor (including filed sub trades) to perform enabling earthwork between October 21 and December 16, 2022.
- Submittal of the District's CD60 Submission is scheduled for December 1, 2022. A 21-day MSBA review period follows, with a District response back to the MSBA by January 5, 2023.
- The project anticipates the start of Phase 1 Site Enabling work starting on January 9, 2023 and finishing by May 1, 2023, prior to the Phase 2 General Contractor coming on site.
- Submittal of the District's CD90 Submission is scheduled for February 15, 2023. A 21-day MSBA review period follows, with a District response back to the MSBA by March 22, 2023.
- The project anticipates bidding for a Phase 2 General Contractor (including filed sub trades) between April 10, 2023 and May 22, 2023.
- The project anticipates the start of Phase 2 General Construction work starting on May 23, 2023 and achieving Substantial Completion by June 24, 2024, in time to accommodate the completion of punchlist work, commissioning, and outfitting the building with FFE and technology equipment.
- Punchlist, Commissioning, and FFE/Technology installation activities are to be completed by August 27, 2024.



- School typically starts the Tuesday after Labor Day, September 3, 2024.

The Project Schedule for Preferred Option F can be found at the end of this Section, as well as Tab #28.

The Project Notification Form for the Massachusetts Historical Commission can be found at the end of this Section, as well as Tab #29.

#### **3.3.4.8 Preferred Solution Attachments**

A series of attachments supporting the narratives for this Section follow in order. Also identified are the Tab numbers under which the attachments can be located in the hard copy binder.

- Updated Educational Plan – Tab 20
- PSR Space Summary – Tab 21
- PDP to PSR Space Summary Comparison – Tab 22
- RDA PSR Space Summary Worksheet – Tab 23
- Preliminary LEED-S Scorecard – Tab 24
- Color-Coded PSR Floor Plans for Preferred Option F– Tab 25
- Site Plan for Preferred Option F– Tab 26
- Form 3011 Total Project Budget for Preferred Option F – Tab 27
- MSBA – Budget Statement – Tab 28
- Project Schedule for Preferred Option F – Tab 29
- Massachusetts Historical Commission Project Notification Form – Tab 30