

BEAL 2.0

EDUCATIONAL PROGRAM

A description prepared for Feasibility Study submission

to the Massachusetts School Building Authority

January, 2018

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INTRODUCTION

As part of the feasibility study phase for a for the Beal Early Childhood Center, this document aims to describe the educational program that is needed in order to meet the requirements of the Department of Elementary and Secondary Education (DESE). At the same time, a description of the existing school program and deficiencies is provided. Given the evolving needs of students and families in Shrewsbury, our new facility will need to be far bigger than the existing structure in order to accommodate increased demand on our public schools across the district.

The Beal Early Childhood center is a vibrant, close-knit school community currently serving students in Kindergarten and first grade. The building is busy with activity, and a collegial atmosphere is pervasive. Parents, extended family, and community members provide an array of services such as volunteering, providing reading, writing, and math enrichment for the classroom, attending sing-a-long sessions, serving on the PTO or School Council, and upgrading and maintaining the facility including the playground, garden and greenhouse.

As of October 2017, there were 310 children enrolled at Beal. 254 children attend Kindergarten in a mix of half day and full-day programming, which is approximately 70% of the total Kindergarten student population in Shrewsbury. The combination of space limitations in Beal's aging building (built in 1922 as Shrewsbury's first Junior/Senior High school) and increases in student enrollment over time have limited programming inside and outside the structure.

The Statement of Interest submitted to the Massachusetts School Building Authority (MSBA) in 2015 demonstrates that the current Beal building only allows for basic functionality. Going forward, the existing facility will be inadequate for delivery of the educational program for the following reasons:

- There is insufficient space to offer all students full day Kindergarten, resulting in the addition of four additional full-day Kindergarten sections in three district elementary schools.
- The cafeteria space is undersized for the enrollment, requiring the use of a small room off the cafeteria to seat all the students and requiring more lunch seatings, which in turn impacts classroom schedules.
- Space limitations force some special education and other student support services (such as English language education and small group Reading support) to be delivered in the lobby, gymnasium, hallways, and basement rooms.

- Specialist classes such as Art and Music are constrained due to lack of space. Art and Music classes share one basement room. Additionally, Music equipment storage is located on another floor due to lack of space.
- Space limitations constrain the ability of educators to collaborate with parents or other professionals. Some small group instruction must take place in offices, which means that parent and teacher meetings must take place in more public settings and/or after hours.
- The site consists of 3.5 acres bound on three sides by public ways. For this reason, dismissal routines must be tightly coordinated. The space is not conducive to today's dismissal routines.

For these reasons, the district's first step in the planning process was to decide which grade configuration would best serve Shrewsbury's students in the future. The factors considered by the district in the research review are detailed in the Beal Grade Configuration Educational Report, which can be found online at:

<http://schools.shrewsburyma.gov/sc/documents/BealGradeConfigurationEducationalConsiderationsReport.pdf>. After due consideration of the research, Dr. Joseph Sawyer, Superintendent of Schools in Shrewsbury, made a final recommendation to School Committee. Dr. Sawyer's memo lists several reasons for his decision to recommend a K-4 configuration for the new Beal School. The memo states:

The K-4 model will be more beneficial for the following reasons:

1. *A review of the educational research literature indicates that factors other than grade configuration are most important regarding student success and the quality of a school community; in other words, there is no evidence that a certain grade configuration is more effective than another educationally.*
2. *A review of the educational research literature indicates some concern that transitions between schools can compromise student achievement. Having fewer transitions was also seen by parents, community members, and staff as a strong benefit of the K-4 model.*
3. *Several other benefits are associated with the K-4 configuration regarding having fewer transitions, including:*
 - a) *Students remaining in one school for five years allows families to be more familiar with the school and its staff, and vice versa, and for students to become familiar with a smaller group of classmates*
 - b) *Vertical articulation of curriculum from grade to grade is stronger when educators from more grades are working together in the same building*

- c) Knowledge of students' needs from year to year is more cohesive when remaining in the same building for more grades, and this is especially important for students who are experiencing difficulties or who have special learning needs*
4. *Logistically, a K-4 configuration provides several benefits that a significant majority of parents, community members, and staff found desirable, including:*
- a) The climate of the school having a "neighborhood" feel, where older students serve as role models for younger students*
 - b) Siblings within the grade range are at the same school, facilitating both bus transportation for children in the same family as well as parent transportation to and from school and/or extended care*
 - c) Transportation on school buses will require fewer routes that are shorter in duration compared to the alternative; this is a logistical benefit as well as avoidance of significant additional cost that would require financial resources to be redirected from the educational program (see accompanying document)*
 - d) The student population of Kindergarten and Grade 1 students is projected to be significantly higher than what can be accommodated by a proposed new Beal School, meaning that there isn't a way to provide the same grade configuration model to all students (projection for 2022 is for approximately 900 students in Grades K and 1; if the "new" Beal were a 750 student K-1 school, 150 students would need to attend a different school for those two grades, creating an equity issue). A universal K-4 configuration across five elementary schools provides more flexibility to distribute students across the schools in an equitable manner.*

Following this recommendation and several public forums, the School Committee elected to move away from an Early Childhood K-1 model and voted to approve a K-4 model for Beal 2.0 with an expected student population of 790. The minutes of the grade level configuration meeting and the School Committee vote can be found here: <https://campussuite-storage.s3.amazonaws.com/prod/11162/b2004386-1ca3-11e6-b537-22000bd8490f/1668644/2ecafeac-dbfo-11e7-a898-oac2dd114722/file/SCBook10-25-17.pdf> For additional information, please see the additional documents provided previously by Lamoureux Pagano & Associates under separate cover. All of the presentations, reports, questionnaires, and recommendations that were produced by the district on the grade configuration were included in the PDP submission under section "3.1.2 Educational Program – Support Documents – C.3 Grade Configuration Process"

The district's priority of offering tuition-free full day Kindergarten within the next five years combined with the potential approval of a new building project in Shrewsbury means that if the project is approved, the new Beal School is slated to serve students in Grades K-4. Significantly, this transition will also allow for consistent and equitable Elementary

programming across the district.

Presently there is a total of five Elementary Schools in Shrewsbury, including:

<i>School</i>	<i>Current Grades Served</i>	<i>Current Enrollment</i>
Beal Early Childhood Center	K & 1	310
Calvin Coolidge School	K-4	413
Floral Street School	1-4	751
Walter J. Paton School	K-4	342
Spring Street School	K-4	358

It's important to note that "Beal 2.0" will serve a larger student population. With an estimated enrollment of 790 students, the new Beal will become the biggest Elementary school in Shrewsbury. It's hoped that the addition of a building this size will relieve space pressures in the district's existing elementary schools and ensure that all Shrewsbury's students can attend a neighborhood school for grades K-4. In transitioning from an Early Childhood model to accommodate the needs of a wider grade level span, the Beal school community will proudly join existing schools in Shrewsbury in modeling exemplary Elementary practices. Once the process for site selection is complete and a final location for the new Beal School is determined, Dr. Sawyer will work with other administrators, school communities, and other stakeholders to craft and present a detailed redistricting plan to members of the School Committee.

As with our existing school communities across the district, the plan for a new Beal Elementary School was crafted with the mission of the Shrewsbury Public Schools in mind, namely that *our schools will partner with the community to provide students with the skills and knowledge for the 21st century, an appreciation of our democratic tradition and the desire to continue to learn throughout life.* Most importantly, the work of Beal's educators is driven by the deeply held belief that all our schools should be inclusive and engaging learning communities that prepare students to become skillful, ethical, resilient, empathetic, informed, and thoughtful citizens. Accordingly, educators at the Beal School embrace the responsibility of teaching our students

to be curious learners, skillful students, healthy community contributors and kind people. These values explain Beal's commitment to fostering connections beyond the school.

At the heart of Shrewsbury's educational philosophy is the concept of *empowered learners*. Students and staff alike pursue their interests through the infusion of technology in day-to-day activities, the promotion of project-based learning at all grade levels, and through integrated curriculum that fosters inquiry-based, arts-infused learning experiences and STEAM (Science, Technology, Engineering, Arts and Mathematics) concepts. This pedagogical approach, combined with a differentiated model of instruction and a fully articulated Response to Intervention system, provides students with an academic foundation that allows for agency, rigor, and equitable access for all students. Small group instruction is a critical component of student success in Shrewsbury; so too is the collaborative culture embraced by our teaching staff.

The Shrewsbury Public Schools have devoted considerable time and resources to developing capacity for high level collaboration. The results are depicted well at Beal and at the Elementary level in general. Teacher teams regularly gather to review achievement data, to share student work, to create instructional materials and to plan lessons. For this reason, our new facility must support professional collaboration during the day, as well as meeting space for educators to meet with parents in both private and public forums. Effective collaboration is at the heart of a successful school community and must be supported by sufficient, flexible space.

In preparing the Preliminary Design Program (PDP) and submission the District has worked with Lamoureux, Pagano and Associates. This relationship has also informed the educational program as well as the proposed space template. The planning process included multiple sessions with architect Katie Crockett, her associate Sean Brennan and project manager Paul Queeney as well as district staff and administration. Public forums helped elicit input from parents and residents and feedback was instrumental in developing an understanding of the strengths of the current program as well as the constraints and challenges posed by the existing facility.

Key components of the District's Educational Program include:

- A new grade configuration of Kindergarten to Grade 4,
- The creation of inclusive, mixed grade level communities in a "neighborhood" layout that allow for impromptu small group gatherings and community meetings
- The inclusion of specialist staff and half classroom spaces included within each grouping

- Attention to preserving the Early Childhood feel of Kindergarten by clustering classrooms at this level together and in proximity to the outdoors
- A focus on Project Based Learning and STEAM education, including incorporating a Maker Space in the Media Center
- Promoting access to information and technology at the primary and upper elementary levels, with an emphasis on peer assisted learning in a small group context, and
- A site plan that facilitates outdoor learning for each learning community and age appropriate play areas for all students

The proposed building configuration supports these goals. There are two distinct wings on both floors, and each wing supports several “neighborhood” learning communities. Music, Art, and Media Center spaces are positioned with the Gymnasium and Cafetorium at the core of the building to promote student use of these areas for multiple project-based activities as well as public exhibitions of student work. A Maker Space area is also included in the Media Center, in proximity to the Art rooms and available for use by all students. Outdoors, a nature trail and a mix of athletic and arts options in different play areas are proposed. Finally, for safety reasons, Beal’s youngest students as well as students and families participating in Extended School Care after hours will be able to access the school through a dedicated entrance in the Cafetorium.

Given the transition from an early childhood center to an Elementary configuration, it will be important that the district commit to ensuring that Kindergarten and Grade 1 students enjoy the proper furniture, equipment, and instructional materials for their age. Additionally, an early childhood environment will be enhanced by clustering the Kindergarten classrooms together. At the same time, the proximity of these rooms to the building’s core will facilitate “learning buddy” relationships with students in other grades as well.

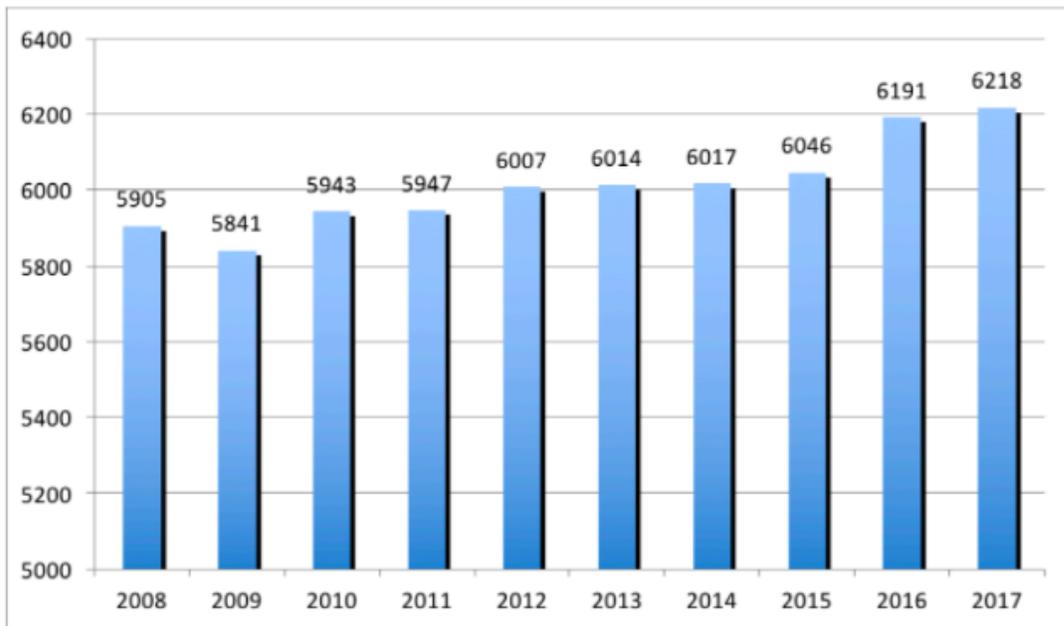
II. ADDITIONAL INFORMATION

A. GRADE AND SCHOOL CONFIGURATION POLICIES

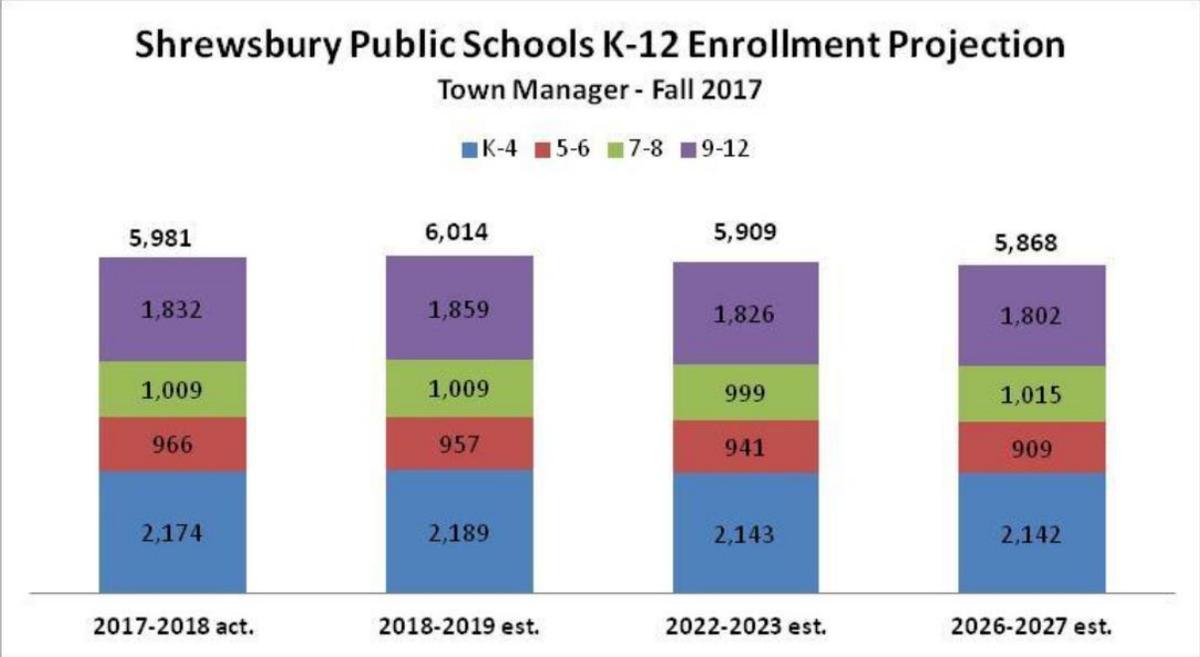
The Shrewsbury Public Schools provide educational programs for students in Preschool through Grade 12. As of October, 2017, there were 6,218 total students enrolled in the town's public schools.

It's likely that our student enrollment numbers will continue to climb, as evidenced by the graph below. The chart illustrates the district's enrollment for the past 10 school years, which reflects growth from 5905 to 6218, an increase of 313 students over the past decade. The increase from 2016 to 2017 was from 6191 to 6218, a gain of 27 students in just one year.

PreK-12 ACTUAL ENROLLMENT 2008-2017 (as of 10/1 each year)



In his annual report to the School Committee, Patrick Collins, Assistant Superintendent for Finance and Operations in Shrewsbury shared projections for future enrollment, which can be seen in the chart below:



The new Beal School will be designed to serve 790 students in grades Kindergarten through Grade 4. Grade levels within the school will be organized by level and location: Kindergarten classrooms are clustered within the Early Childhood wing; Grades 1 through 4 are organized within “neighborhood” learning communities. Within the wings, smaller classroom spaces support co-teaching, project-based learning, specialized instruction and academic intervention efforts.

Additionally, configuring grades into heterogeneous range groupings allows for greater flexibility in programming. For example, classrooms can accommodate different numbers of grade level sections necessitated by changes in student enrollment. More importantly, configuring spaces into “neighborhoods” allows for the intentional planning of space needed for shared small group instruction, for project-based learning and for shared use of material resources and staff. Furthermore, this mixed model promotes collaboration and/or peer coaching between older and younger students and facilitates more diversified learning experiences.

At all grade levels classrooms are organized in a self-contained design, where students remain with their homeroom teachers for most core content subjects throughout the course of the academic day. At the same time, teachers now plan more collaboratively for interdisciplinary

project-based learning experiences and instructional supports, so instructional spaces must support a flexible approach to grouping students. Recently, classroom spaces have been used to support combined instruction, co-teaching, peer coaching and cross-grade learning collaborations.

Notably, Special Education programming occurs within a full inclusion model wherever possible. This means that most academic services are provided directly within or adjacent to the classroom setting. 1:1 Special Education services required by an Individualized Education Program (IEP) are provided in smaller classroom areas located within available spaces located in each classroom wing. For this reason, clear glass, hallway access, adjoining doors and ample space for specialist educators must also be considered in the overall design of instructional spaces.

DESIGNER RESPONSE:

The 790 student school will be developed with academic “neighborhoods” with general and special education classrooms clustered around multi-use common rooms. With this organization, the scale of the school will be effectively broken down to provide a school within a school opportunity. Additionally, the neighborhoods will be developed to accommodate the natural ebbs and flows of classes needed for each grade as demographics and/or curriculum needs evolve.

B. CLASS SIZE POLICIES

There has been substantial research over time regarding the impact of class size on students. Some research indicates that there is a correlation between class size and student achievement. Other studies suggest that “on task” behavior diminishes as class size grows (University of London, Institute of Education, 2008). Still other studies indicate that improving student achievement is more complex than simple adjustments to class size (Douglas D. Ready, 2008). In Shrewsbury, survey results show that parents and teachers believe that small class size is an important component of high quality instruction for their children.

A similar belief is depicted in the class size policy statement from Shrewsbury's School Committee, which states:

Smaller class size supports higher student achievement, more productive classroom environments, and the enhanced ability of teachers to meet the needs of all students. In Shrewsbury, where nearly all students are included in regular education classrooms, small class size is important if teachers are to effectively meet the learning requirements represented in the total and diverse student population. Additionally, the Shrewsbury Public Schools has high expectations for students and teachers. With small class size, it is more likely that high expectations can be met. At the same time, Shrewsbury must temper its support for small class size with the reality of school space and fiscal limitations. The class size guidelines below represent a balanced approach to the issue:

Kindergarten: 17-19 students

Children enter kindergarten with a wide variety of home and preschool experiences. There are significant differences in their physiological, social, emotional, and intellectual development. The greater the diversity in the classroom, the greater the need for individualized attention and instruction. The professional literature suggests that the greatest benefit of small class sizes is in the early grades. Additionally, the research indicates that the benefits of small class size in the early years are maintained in later grades.

Grades 1 & 2: 20-22

Grades 3 & 4: 22-24

Students in the elementary grades exhibit great variety in their personal experiences, aptitudes, learning styles, and interests. The curriculum is both challenging and multifaceted at this level; the district has set high standards for children's academic growth in reading, writing, mathematics, science and social studies. Small class size is particularly critical in the primary grades; younger children require considerable amounts of individual attention. Elementary classrooms in Shrewsbury are "workshops" of student activity. Instructional practices such as inquiry-based science and process writing require a high degree of interaction between students and the teacher. Class size is also a determinant in the teacher's ability to design curriculum and instruction for the full range of student learning needs and abilities."

Of course, the class size recommendations for each level are intended as planning and staffing guidelines. The exact size of classes in any given building will depend upon the availability of physical space, financial resources in a given year, changes in enrollment, the grade level of the students, as well as a number of other circumstances.

The proposed space template for grades K – 4 in the new Beal School includes eight classrooms per grade. At an enrollment projection of 790 students, this would translate into approximately 158 students per grade or approximately 20 students per classroom overall, with the understanding that the number of classrooms per grade level may fluctuate slightly as different cohorts of students move through the school.

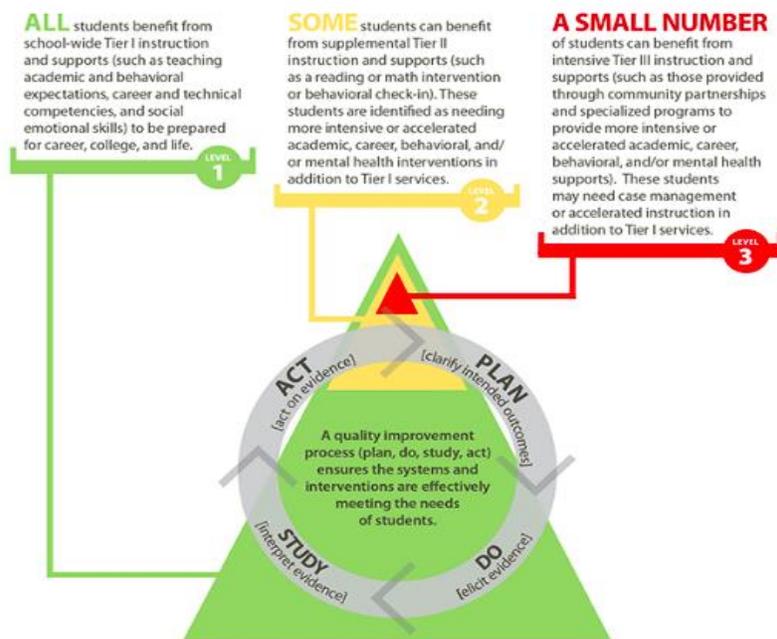
DESIGNER RESPONSE:

Recognizing that class sizes may vary depending on enrollment and room assignments developed to support team teaching and other curriculum driven imperatives, we will design grade 1-4 classrooms to be as flexible as possible relative to number of students, appropriate heights for fixed elements and furniture, and room configuration. Kindergarten classrooms, per MSBA guidelines, will be larger, but organized to facilitate multi grade teaching collaboration as well.

C. SCHOOL SCHEDULING METHOD

Academic programming at the Beal Elementary School is centered around the philosophy of a tiered system of supports, which promotes a data-informed instructional response to three instructional tiers - *whole-group instruction* for all students, skill-specific “double dose” *small group instruction* for students not meeting grade level benchmarks, and *intensive instructional support* for the few students whom data determines are academically at-risk.

The schedule is designed around five academic blocks that are designed to personalize student learning by providing students with opportunities to extend, enrich, review or remediate skills in each content area (English Language Arts, Mathematics, Science and Social Studies) as well as the Allied Arts (Music, Art, Physical Education, Media Studies, and Health). At the Elementary level, each instructional block is 40-minutes in length; English Language Arts and



Mathematics occur simultaneously over multiple blocks and are staggered to accommodate both whole-group and small group instruction.

Program guidelines encourage teachers to attend to specific curriculum guides by content area as outlined in the table below:

Content Area	Scheduled Time	Block length
English Language Arts	450 minutes / week	90 minutes/day
Mathematics	400 minutes / week	80 minutes/day
Science	135 minutes / week	45 minutes, 3 times / week
Social Studies	90 minutes / week	30 minutes, 3 times / week
Allied Arts (Art, Media, Music, Physical Education, Health)	200 minutes / week	40 minutes / day

At this time the district does not plan to offer world language programs at the Elementary level. Rather, all students will be taught core academic subjects by their classroom teacher in a self-contained model. It's important to note, however, that at the Elementary level teachers typically integrate content areas. For example, when studying Wampanoags as part of a Social Studies unit in Grade 3, students also learn how to read nonfiction and interpret graphs. Moreover, students engaged in project-based learning as an instructional approach can access the curriculum via multiple content areas. This means that PBL opportunities are not constrained by the schedule, rather they are integrated into the existing schedule.

Physical Education, Art, and Music are taught by educators that specialize in this area. Media is led by a paraprofessional overseen by the district librarian. However, teachers often collaborate as grade level teams or with colleagues from other grade levels in a vertical way. Accordingly, all teachers are provided with a 40-minute preparation block each day and a 45-minute weekly meeting time to allow for data analysis, team planning or intervention discussions.

In Shrewsbury, educators at all levels are encouraged to plan with the needs of the students they serve foremost in mind. For this reason, assessment practices also inform instructional decisions. Benchmark assessments provide teachers with student learning data are conducted three times each year - at the beginning of the school year (September), at mid-year (January), and at end-of-year (May/June); the data generated and analyzed during these benchmark assessment periods allow staff to identify the skills, for all students at all grade levels, that need enrichment, review, and remediation. The schedule provides the central instructional focus for skill development and intervention efforts.

Students identified with special needs are currently supported both by classroom teachers and by specialists, and the plans for the new Beak reflect this model. It's important to note that every effort is made to meet the needs of children in an inclusive way. For this reason, most academic intervention and support takes place within the regular education classroom. Students that require a distraction-free environment and/or English language learners that require specialized instruction often require additional help outside the classroom. For this reason, the plans for Beak 2.0 integrate smaller learning spaces within each wing for language-based instruction. Again, these smaller spaces are located close to regular education classrooms to maximize time on learning for all children, and to provide flexibility for meeting a range of diverse needs:

- At present, ELL students comprise approximately 4% of the district population in Shrewsbury. However, the population of English language learners at Beak is presently 6%. Given that a redistricting plan will be required, it should be noted both that this population is higher in schools nearby- and that the number of ELLs in Shrewsbury overall has been gradually increasing. For this reason, it's reasonable to expect that by the time the new building opens, five percent of the student population at Beak 2.0 will be identified as ELLs. With approximately 40 students requiring support across five grade levels, having designated spaces for small group work within each wing is critical. When the learning spaces are not being used by the two ELL teachers the district anticipates Beak will need, it's likely that an ELL tutor or grade level teachers within the clusters will use these spaces to instruct small groups. In other words, we anticipate that the spaces will be used continuously during the school day. Similarly, these spaces will be an important means of providing support during the summer for students requiring extended programming.
- The enlarged Commons spaces within each wing will also allow for flexible grouping. Each wing will accommodate a cluster of 6-8 classrooms of mixed grades. A common space allows for meaningful connection to build community. More to the point this space supports differentiated instruction. For example, two classes might use this space to gather for a presentation related to their studies. Alternatively, small groups within the grade span could meet in this area for book discussion groups or to complete projects. Finally, the inclusion of the Commons space also allow for parent volunteers as well as other educators within the school to gather groups of students across grades for collaborative work without disrupting instruction in any given classroom. Due to the variety of potential uses of this space and the range of grade levels in each wing it's challenging to propose a set schedule for the Commons spaces. At Sherwood Middle

School, where a similar model is already in place, students and teachers use the Commons spaces on a daily basis.

Allied Arts classes are scheduled around the academic schedule and are also 40-minutes in length. All students at the Elementary level have the opportunity to visit the Media Center once each week to take out books. Students at Beal enjoy Physical Education once a week. Moreover, all students participate in a weekly Art lesson. Music classes for Grades 1, 2, 3 and occur once each week. Grade 4 enjoys an additional Chorus block. Finally, all grade levels access the Beal Media Center, both during their weekly instructional block and in less formal ways to access the resources needed for independent projects.

Start and end times for the elementary school are staggered with middle and high school end times, allowing for the same buses to complete separate routes for students by level.

DESIGNER RESPONSE:

The overall organization of the school will include centralized core facilities to support art, music, physical education, and media center flanked by two academic wings. Along with supporting the importance of these features, the organization will provide an efficient layout to travel to and from academic areas to the core facilities.

All elements of the school will include fully accessible design features to support all students throughout.

D. TEACHING METHODOLOGY AND STRUCTURE

Presently, Beal School is organized by grade level and schedule. Primarily teachers are organized into three teams: Half Day Kindergarten, Full-Day Kindergarten and First Grade. The new Beal Elementary School will house teaching teams in a similar structure but it will feature many more of them. With eight classrooms per grade, and five grade levels overall, teams at all levels K-4 will be comprised of 40 “regular education” teachers (classroom teachers and special classes such as Art, Music and P.E.) as well as 6-8 “specialists” (Special Education teachers and English Language Education teachers). All educators will subscribe to a varied teaching methodology. The focus, as a district, on inclusive, “high expectations” teaching and learning has expanded opportunities for teachers to utilize approaches such as project-based learning in the classrooms as well as in an integrated approach to curriculum. Project-Based Learning (PBL) and exhibition opportunities provide creatively integrated learning experiences that directly connect classroom concepts to real-life context through problem solving.

While the preferred pedagogy of the Shrewsbury Public Schools is one of active, project- and inquiry-based learning that engages students and encourages critical thinking, collaboration, creativity, communication and problem solving, educators at the Beal Elementary School will continue to utilize differentiated teaching methodologies to personalize learning in response to student interests, skill gaps and learning styles. Additionally, Shrewsbury's commitment to helping students develop a "growth mindset" means that educators at all levels will encourage students to take a more active role in setting goals, monitoring their progress, reflecting on their needs and documenting their efforts over time.

Ideally, teaching methodologies are matched to student need. Because every child is unique, instructional approaches are widely varied. At the same time, learning experiences should have some elements in common. The most effective lessons engage students in critical thinking practices. Accordingly, classroom design must be flexible enough to allow for frequent transitions from whole group instruction, to small group instruction, to peer-assisted interaction. At the Beal Elementary School, student learning occurs in a collaborative context. Students sit at tables, then move to create smaller ad hoc "circles" on the rug or in their chairs to participate in discussions or engage in discovery. Classroom design should accommodate this flexibility with an intentional focus on mobility of space (walls that move to accommodate large groups of students, or which can be drawn to create smaller, more intimate learning spaces) to accommodate co-teaching models when indicated. In addition to small group instructional classroom spaces located in each learning community, it is important to have nooks where small groups of students can meet to research, discuss, and create within the learning process, thereby providing for more individualized and personalized instruction at all grade levels. Lastly, given the importance of flexible grouping and co-teaching to supporting the diverse needs of today's learners, the design for the new Beal should facilitate the regular use of shared "neighborhood" spaces for differentiated instruction. Common spaces support multiple teaching delivery methods including small group inquiry, Socratic circles, reciprocal teaching, team instruction and tutorials. Communicating doors between learning spaces allow for easy communication and workflow for both students and staff.

An Elementary classroom should be designed with active, curious and creative young learners in mind. Typically, modern classrooms feature furniture that's easily moved to accommodate a variety of learning experiences and group sizes. Interior windows allow teachers and visitors to view and monitor students who are accessing resources or working in small groups. Natural lighting and furniture that allows for less restrictive movement and more comfort will allow students the opportunity for greater focus. Easy access to outdoor spaces, with perhaps an outdoor classroom area for each learning community, allows for greater integration of nature themes into academic curricula. Adequate storage within each classroom for project-based learning is key for hands-on learning.

One of the highlights of a Beal School education is time spent in the solarium with the butterflies. Yet given scheduling demands and space limitations, not every class can access this space in equitably, and this is but one opportunity for students to engage with the living world. These rich and varied learning experiences hinge on collaboration and communication. As students develop and apply 21st century skills, the content of the curriculum in Shrewsbury may change. No matter the subject, however, teachers must enjoy the flexibility to combine classrooms and groups of students. Students may work on the floor or in smaller areas outside their "homerooms" to create the space needed for this interactive learning. Clearly, space must be arranged to support the ability of teachers to expand these learning opportunities. Finally, the connected nature of learning should be taken into account. Increasingly students are using iPads outside classroom spaces or designated "technology" areas to collect, share and present information and outlets should be configured accordingly.

By design, smaller classroom spaces within each classroom cluster allow for maximal adult support for intervention efforts, when needed. Classrooms in each learning community convene around spaces used by special educators, English language instructors and reading tutors; this is essential particularly for younger students who require more direct instruction. It's estimated that in the new Beal School, approximately 140 students will receive Reading support, and that we'll need eight tutors to provide this important intervention in a school of this size.

Significantly, in the district's last Coordinated Program Review (CPR) Shrewsbury Public Schools were cited under Civil Rights for Comparability of facilities (CR23), the primary concern being that ELL students are not provided facilities comparable to those offered to other students in the district. Specifically, the DESE observed that some ELL instruction takes place in a small storage room, poorly lit, with low ventilation and noise from adjacent areas. Additionally, some ELL instruction occurred in the cafeteria concurrent with other activities. This causes distractions during English language acquisition instruction. For these reasons, corrective action was required. As has been noted elsewhere in this document, given the constraints of the current facilities at Beal, these conditions persist for many students requiring specialized instructional supports there. It's the hope of the district that plans for the new Beal will be in keeping with current regulations and guidelines so that we are capable of meeting the diverse needs of our students and DESE expectations in advance of our next review.

The use of technology is inherently woven into the instructional program at Beal Elementary School. Teachers embrace technology daily as they use interactive whiteboards, iPads, Chromebooks and the Internet to connect learners and to present information in the content areas. Teachers have been trained in the use of various software tools, and students and staff alike use Google Docs as a means of collaborative communication. The DESE recommends

that districts consider providing assisted listening technology for hearing impaired accessibility in each classroom as well, and the district has taken note. We have similar tools currently in place at Sherwood Middle School. With time to consider the needs of the younger population that will be at Beal, we will determine how best to integrate student support into our technology plan in order to address this need.

iPad carts provide students with opportunities for whole class connectivity, and teachers utilize web-based programs like Schoology and SeeSaw to engage students in review of content that fosters deeper levels of understanding.

Students use a variety of technology tools to chronicle their learning, to collect information, to conduct research, and to create and introduce presentations that demonstrate their understanding of what they are learning. Use of the mobile iPad carts assists students in making learning flexible as learning can now happen anywhere students gather, whether in a classroom, in a hallway, in the Media Center, or outside - teachers at Beal School understand that today's learners need choices in how they will learn.

Teachers at the Beal School have invested time and energy in strengthening their professional learning community (or "PLC"). Over time, teachers at Beal have leveraged time to develop "power standards" that guide content learning. Taken from the Massachusetts Curriculum Frameworks, quality instruction is provided in a standards-based environment, and the development of common assessments help educators to measure student progress against grade level benchmarks in all content areas. This attention to assessment assists in the development of learning experiences designed to maximize student success. In order to leverage assessment data effectively, adequate space and time to analyze student performance data and to design subsequent instruction and intervention is key.

DESIGNER RESPONSE:

Multiple design approaches will be developed to support the teaching methodology and structure as outlined above:

- Varied teaching methods and individualized instruction will be facilitated within the classroom with flexible layout opportunities, communicating doors to neighboring classrooms to support co-teaching, and the proximity of the neighborhood common rooms supporting tutorials, team projects and presentations, and display.
- Project based learning will be supported with the incorporation of sinks in each classroom as well as common rooms. Additionally, common rooms will allow space to set up projects that can be developed over a period of time, leaving individual classrooms available for other instruction.

- Connections to the site will be developed to encourage outdoor learning and instruction as appropriate.
- ELL classrooms will be interspersed throughout the school to support language learning. These will be designed for flexible use to address curriculum needs and the demographics change.
- Wireless technology will be integrated throughout the facility to provide as much opportunity as possible for instruction, inquiry research, and collaborative learning.
- Student assessment evaluation will be facilitated in the faculty planning rooms in a manner to maintain the appropriate privacy of the data, but allow for faculty review and discussion.

E. TEACHER PLANNING

Currently, teachers at the Beal School are assigned rooms in classroom wings in two types of clusters. The Kindergarten classrooms are grouped together by grade level on the first floor. In all other wings, classrooms are mixed by grade level to promote instructional collaboration and to allow for grade assignment flexibility based on student enrollment. Every effort is made to locate similar grade level teachers together in each cluster for planning purposes. By contract, teachers work a total of 6 hours and 30 minutes daily and are provided a duty-free lunch block, as well as a 40-minute daily preparation block, during which the students take part in Allied Arts instruction.

In addition to the daily preparation block, teachers also utilize Professional Learning Community (PLC) planning blocks. As mentioned previously, this weekly, before-school meeting routine enables teachers to work together on collaboratively developed student learning and professional practice goals. Furthermore, teachers are provided with elective extended, duty-free block that allows for instructional coaching and curriculum collaboration. Presently, most PLC and grade-level meetings occur in a classroom or in the staff lunchroom due to lack of meeting space within the school. In the new building, meeting space has been allocated within the "knuckles" in the shared spaces within each cluster or wing as well as in the Media Center. This means that faculty collaboration can be comfortably accommodated in an adult and learning-friendly space.

In order to leverage assessment data effectively, adequate space and time to analyze student performance data and to design subsequent instruction and intervention is key. Accordingly, both meeting and teacher workspace have been allocated in each area of the school. These spaces are envisioned as areas to accommodate the informal collaborations that follow

designated grade level meetings, and to support educators in creating work products designed to meet a diverse range of student needs. With 40 classrooms anticipated overall, each cluster will require a teacher planning space large enough to accommodate a team of 6-8 people.

Educators that use the space routinely will need space to make photocopies, to house shared supplies and to prepare shared instructional materials. Teachers and paraprofessionals that travel between buildings will need this “home base” to store personal belongings and/or instructional materials as well. Finally, the two Instructional Coaches / Curriculum Coordinators that will be assigned to the new Beal building will require an office big enough to hold two desks with a combined conference room and storage area for curriculum materials nearby.

DESIGNER RESPONSE:

Faculty planning will be supported by four rooms strategically positioned throughout the school with meeting space as well as work space to develop and store materials.

Within the Media Center complex, instructional coaches and curriculum coordinator office will be positioned to allow for access by all faculty. The Media Center adjacency will also allow for larger faculty training groups as needed.

All staff meetings and trainings will be possible in the Media Center as well as the Cafetorium and Gymnasium depending on anticipated attendance and planned agendas.

F. PRE KINDERGARTEN AND KINDERGARTEN PROGRAMS

Preschool Programming

The Shrewsbury Public School district preschool programs provide three, four, and five-year old children with high quality preschool experiences that contribute significantly to later learning success. Our goal is that students exit our preschool classrooms ready for kindergarten. To that end, all of our preschool classrooms support each child’s individual needs, nurture student confidence and instill a love for learning.

A variety of materials, including Interactive whiteboards in every classroom, provide engaging and challenging experiences that spark creativity, communication, collaboration, and critical thinking. In every classroom children learn through play in a planned interactive environment with their peers and teachers.

There are three preschool facilities in Shrewsbury. The majority of our classrooms are located at 15 Parker Road. Due to space constraints, an additional two classrooms operate from

another building at 2 Wesleyan Terrace. The approach to teaching and learning in both spaces is based on the principles of inclusion, the goal being to integrate children with and without disabilities in each classroom. Shrewsbury's third preschool facility is the Little Colonials Preschool, located at Shrewsbury High School. The SHS program provides a preschool experience in conjunction with the Family and Consumer Science Department, which engages the assistance of high school students as volunteers in the classroom. Presently there is no plan to house a preschool program at Beal School.

Kindergarten Programming

Currently Beal School houses two Kindergarten programs. There are six sections of tuition-based Full Day Kindergarten, and eight sessions of Half Day Kindergarten. Both the full-day and half-day Kindergarten classrooms operate five days each week and utilize the same curriculum. Overall, Kindergarten programming in Shrewsbury emphasizes the development of academic and self-regulation skills designed to promote greater self-awareness and independence through peer-assisted learning. More importantly, the Kindergarten enrollment needs are such that Kindergarten has outgrown the space available at Beal.

Presently, an additional five sections of Full Day Kindergarten are housed in the other Elementary schools. It's the hope of the district that in the new building all students will attend a tuition-free, full day program for Kindergarten. In addition, an integrated learning center will accommodate the needs of students with special needs. This program provides an instructional model for students on IEPs who benefit from a combination of Applied Behavior Analysis (ABA) programming as well as from peer models as they navigate the program.

Instruction occurs through literacy and mathematics-based themes which develop student background knowledge and expand learning and understanding through role play and prop building; the dynamic curriculum is highly interactive and emphasizes the development of student choice and voice in learning as students work collaboratively, with teacher guidance, to frame their understanding and build concept development.

In order for our youngest learners to maximize opportunities to access the curriculum, we need large, bright classrooms that are conducive to movement. Imaginative role-playing is a key element of literacy development. Play fosters deep levels of comprehension; it allows students to construct their own props and manipulatives and act out the roles of key characters during Reading or when solving problems in Math class. For example, in a unit on counting, students construct number lines- both table-top style and child-size, in which to check their thinking

and reinforce understanding as they are learning spontaneously and interactively. At other times, students change their pace as they walk around the room to reflect the character of the hero in the story. Therefore, it is important to have ample classroom space. For further flexibility and collaboration, classroom spaces in the Early Learning / Kindergarten Community area should have adjoining doors in the classroom walls so that several sections of students can gather together in larger group learning.

The proposed use of space within the Early Learning community in the new school is designed to complement classroom instruction and flexible grouping. Unlike the other grade levels, these classrooms are clustered together in order to better address the needs of our youngest students. For example, the location of classrooms in this level will facilitate easy access to the outdoors, a feature that is convenient for outdoor education and critical to effective crisis response. Indoors, the space in their wing will be configured to accommodate early learners in the bathroom and neighborhood areas. Finally, space in this cluster will be used to provide supplementary general education services for our youngest learners in academic and social experiences within a small group setting. In addition to using other programmatic spaces within the building (Cafetorium, the Gym, existing classrooms, or the Maker Space) the use of a designated Extended Day classroom space will be possible in this model.

In the kindergarten community, cubbies are located in the corridor to maximize flexibility and available space within the classrooms. Bathrooms are located within each classroom in order to minimize transitions and maximize time on learning.

DESIGNER RESPONSE:

The proposed school does not include a Pre-Kindergarten component as the Pre-K will continue as a separate program in the community.

Kindergarten classrooms will be designed to accommodate the activity centers needed for the curriculum with adequate space to support movement activities, resting, and learning centers with accessible sinks within the classroom. Adjacent toilet rooms will be positioned for staff supervision from within the classroom.

The Kindergarten neighborhood will be organized for close access to core facilities as well as the outdoor play and instructional areas.

G. EXTENDED SCHOOL CARE

The Extended School Care (ESC) program is designed to better serve the needs of our students and families after hours. Accordingly, there are dedicated staff for this program that work separately but in concert with school staff. However, although students are enrolled in the program after the end of the school day staff arrive earlier, so a dedicated space is needed to accommodate ESC staff.

The chart below depicts well the existing numbers of students supported by the ESC, as well as the demand for spots in the program both before and after school:

After School- By Grade

Grade	Enrolled	Waitlist
K	49	30
1	83	42
2	74	33
3	75	32
4	79	32
total	360	169

After School- By School

School	Enrolled	Waitlist
Beal	47	30
Coolidge	69	42
Floral	113	33
Paton	66	32
Spring	65	32
total	360	169



Before School- By Grade

Before School- By School

ESC enrollment

Grade	Enrolled
K	35
1	48
2	47
3	49
4	50
total	229

School	Enrolled
Beal	25
Coolidge	54
Floral	61
Paton	50
Spring	39
total	229

As % of total SPS enrollment

After School	15%
Before School	10%
After School + Waitlist	25%

Community groups also regularly rent school space, and this can be anticipated in the new building as well. The “Cafetorium” configuration (combined cafeteria and stage) provides the best option for integrating community use of school space without risking the security of its classrooms (which are less frequently used by outside groups) Specifically, an outside door into the Cafetorium allows parents and families (in Extended School Care and/or community groups like the Scouts) to access the school after hours while limiting this access, thus maximizing both safety and efficiency.

Most importantly, we anticipate that the new Beal will be used for summer school programming. Specifically, the expectation is that the entire school will be used to support small group instruction of up to ten students in each classroom. In a building with 40 classrooms, this means that we’ll need to accommodate approximately 400 students and staff in July and August. The needs of the students and the extent of this program make air conditioning a strong recommendation – if not a requirement. Additionally, the parking and extensive pick up needs for students supported by this type of programming model should also be reflected in the new building design.

DESIGNER RESPONSE:

Extended learning programs will be sponsored during the school year as before and after school programs and during the summer throughout the school.

To support the school year program, the organization of the school includes clustered core facilities including art and music classrooms with the ability to close off academic space or

schedule classrooms as needed. Storage for and administration of this program will be carefully addressed during the design phase.

During the summer, it is anticipated that the entire school will be in use. Air conditioning is planned for year-round comfort. The site will be developed to make appropriate connections for outdoor activities and programs. Additionally, the site will be developed to accommodate 350 cars as needed for the summer vehicle parking.

H. LUNCH PROGRAMS

The cafeteria at the current Beal School is located in the basement corridor. The hope with the new school construction plan is to allow for adequate space for two grade levels per seating while maintaining a "family" atmosphere as students eat and engage with one another. Moreover, given the proximity of the stage to the proposed Cafetorium, the allotted space should be sufficient to allow up to 700 students and staff to assemble for bi-monthly meetings. Similarly, in a space of this size, families will be able to comfortably gather for school events. Currently, students at most Elementary Schools are limited bringing only to 1-2 guests. Even so, due to existing space constraints, popular events are oftentimes held at the larger schools, which creates scheduling conflicts.

- Lunches are slated to begin at 11:00 am and conclude at approximately 1:00 pm. With the exception of Kindergarten, each grade will enter the Cafetorium on a continuous, staggered schedule with groups of 100 students arriving every 12 minutes. More specifically, the school plans to have three lunch periods to decrease the overall number of students in the cafe at a single time and thus we believe we can reduce the overall seating area square footage. The district also has successfully used a "continuous flow" model in another large elementary school. This model has a set beginning of lunch and ending of lunch time bracket wherein groups of classrooms flow into and out of the Cafetorium. Specifically, here are a total of 7-10 waves of a 80-100 students that will continuously rotate through the cafetorium during the lunch period with there being approximately 200-300 students seated at any given time.
- Additionally, students will participate in a 15-minute recess block prior to their scheduled Lunch block.

Staff eat lunch at the same time as students do. Accordingly, a small lunchroom for educators will be located in proximity to the main Cafetorium with room for 15-20 staff.

In order to accommodate a high volume of students and a staggered schedule, the Cafetorium

will be configured to allow for two serving lines, with the flexibility of adding a third in inverted U-shape formation. Further, the kitchen will be a “full service” facility, containing both ovens and warmers. Because the Cafetorium does not contain a designated dishwasher, meals are served on disposable trays, and cooking implements are washed by hand in the sink area.

Given the district’s use of government resources, access to fresh but not necessarily local food is important. As a result, having ample storage space for the kitchen is critical. For this reason, the existing layout (configuration of shelving and closets) of Floral Street School, a similarly sized building in another area of the district, has guided staff plans for dry goods storage needs for the new Beal School.

Finally, the district wide emphasis on project-based learning makes it likely that in five years’ time Beal School’s gardening efforts will extend to the Cafetorium. Ideally, the design of the kitchen should allow for student gardening and composting initiatives and perhaps the addition of an extractor and/or dehydrator.

DESIGNER RESPONSE:

The cafeteria will be designed for multiple layouts to support meal service as described, assembly for minimum of two classes, extended learning programs, and faculty and community training and meetings. The position of the cafeteria within the overall organization will be adjacent to the main entry to easily facilitate use at all hours. Access to the exterior for recess, summer activities, and gardens will be a primary priority for the design.

The Music classrooms will be adjacent to the stage for access during assemblies and extended learning programs. The stage is sized to accommodate the choral program and other large school assembly programs.

I. TECHNOLOGY POLICIES/PROGRAM REQUIREMENTS

Shrewsbury Public School’s forward-thinking philosophy in providing our students with the use of technology across disciplines to promote critical thinking, problem solving, and personalized learning experiences as part of their ongoing education has made a positive impact on students in Grades 4-12.

The district supports an existing 1:1 iPad program in Grades 5-12, with a 1:2 model (one device shared between two students) in place for Grade 4 during the school day. More to the point,

plans are underway to develop an Elementary model for meaningful, sustained technology integration. In 2018-2019 for example, Grade 3 is expected to move to a 1:2 model in response to mandated state testing requirements. To date the aging facility at Beal has constrained technology integration plans. Going forward it will be important to develop a plan for the new building that will match technology integration configurations at the other schools.

Currently, there is no dedicated space for the use of instructional technology at Beal. For planning purposes, a dual approach is recommended. Students will use devices in their classrooms and gain use of additional technology in the Media Center.

The new Instructional Technology space in the Media Center will be wired and configured to provide a dynamic, flexible, multi-functioning space for both instruction and project design. Computers, tablets and application software purchased for the technology space will run the latest Apple iOS operating system. The school will house computers that are used for both direct instruction in the use of application programs as well as for web-based assessments used formatively in Reading and Mathematics, to be distributed on carts throughout the building. All applications intended for computer-based use will run natively on macOS or function fully via macOS-native HTML browsers without requiring the use of plugins (including Java, Flash and Silverlight) All applications intended for tablet-based use will run natively on iOS or function fully via the built-in Safari browser.

In addition to the direct instruction provided by the Media Specialists and/or Instructional Coach, classroom teachers also utilize this space as a place to conduct some elements of project-based learning connected to content. In these instances, classroom teachers co-teach lessons with the Instructional Coach and explore research skills, collaboration, data analysis and refining of hypotheses as they learn from one another through technology. A technology model that utilizes a more interwoven use of devices and learning resources will allow more students to access technology for learning, more of the time during the course of the school day - structuring multiple spaces for technology use, rather than one designated technology classroom, would provide this opportunity for students to maximize their learning more flexibly.

Wireless hubs, located in each of classroom wings throughout the building, provide access for portable devices that are used in daily instruction. Wi-Fi access points purchased will be Aerohive access points running the Aerohive HiveOS and configurable via Aerohive HiveManager Online.

Students use iPad devices stored on one of four mobile iPad carts. Inherited from the high school's 1:1 device replacement program, the iPads are rotated between classrooms at each grade level. As mentioned previously, Grade 4 classrooms have a 1:2 iPad program, and Grade

3 will need to move to this model in 2018-2019 to meet state testing requirements. At all grade levels, teachers actively plan technology-driven lessons for their scheduled time with the iPad carts. Additionally, students benefit from the use of two mobile laptop carts as part of instruction; again, the mobile laptop carts are shared in a rotation schedule, and teachers plan accordingly for the inclusion of the devices in their instruction on their scheduled days with the devices. Finally, teachers and educator teams use technology to facilitate collaboration as well.

All systems that utilize student information will interface with the district's PowerSchool student information system (SIS) preferably via API connectivity. All systems that require staff or student login will support LDAP or Google-based Single Sign-On (SSO) logins. All systems that require parent login will support PowerSchool Parent Portal-based SSO login. All systems that process staff or student information will utilize encrypted/SSL-based network transport. Network switches purchased will run the latest Cisco IOS or Cisco NX-OS operating system.

All classrooms at the Beal School are equipped with overhead-mounted LCD projectors and Epson Boards with Ethernet, VGA and HDMI connectivity and capable of finger-based control (without the use of specialized pens) ; teachers use district-assigned laptop computers to access SMART Notebook programs used instructionally as a complement to the whiteboard software.

Ethernet wiring supports connectivity. Network patch panels and wall jacks will utilize standard, removable, non-proprietary keystone RJ-45 jacks. All components must be TIA Category 6A Compliant and tested to pass Category 6A standards after installation.

Similarly, classrooms in the new Beal School will be connected by telephone. All equipment purchased will be NEC Digital or IP phones, compatible with the district's NEC SV8300 switches. Each building will have a NEC SV8300 or SV9300 phone switch that is a member of the High School SV8300 cluster to allow functionality in case of loss of connectivity with the district's main network.

As part of technology learning, students are instructed in creating presentations that use video to relate learning to a broader audience. Printers purchased will be PostScript-compatible HP laser printers, connected via Ethernet. The use of software to edit video using iPads is an essential part of this learning process, particularly for students in Grade 4. The use of a "green wall" in video production of presentations is an integral part of the skill set necessary to produce quality work at the upper elementary level. Another aspect of instructional technology doesn't require devices at all.

STEAM Programming (Science Technology, Engineering, Arts and Mathematics)

STEAM learning is a relatively new to Beal students, in large part because of existing space limitations. When teachers try lessons, they do so individually in their own classrooms or in hallways nearby. In contrast, the new Beal School will afford students and teachers an opportunity to pilot a consistent new approach to integrated learning.

Elementary School curriculum is taught in each grade level within the context of integrated curriculum themes. Currently, classroom teachers develop thematic instructional units using the standards in the Massachusetts Common Core Curriculum documents as a guide. A dedicated STEAM space will enable teachers to pursue a more integrated approach to “hands on” lessons that incorporate Science, Technology, Engineering, the Arts, and Mathematics.

Some schools encourage students to identify a “passion project” that is deeply researched, analyzed, and communicated out to a larger audience, with the presenter serving as a topic “expert”. Others take a “genius hour” approach, giving students dedicated time each week to explore materials. For these purposes, technology use looks like conducting personal research, gathering and quantifying information, organizing findings using a variety of apps, and creating a final presentation. Many students use some aspects of technology (like Explain Everything or iMovie) to do this, using technology to communicate information and software to edit their videos for a polished product.

Because the Arts are interwoven within STEAM learning, classroom teachers collaborate with the Art teacher in integrating visual arts within a more Science and Engineering-driven context. As part of a Social Studies unit on famous people, students in Grade 1 study and learn about portraiture, and then work to replicate these techniques visually into self-portraits. Kindergarten students, as part of their Music class, learn about how muscle groups work together to move the bodies of animals as they observe video clips of animals stalking prey, and then use their own bodies as learning tools as they replicate the movement of these animals while listening to African tribal music – this Arts- based approach to Science learning greatly enhances the students’ emerging sense of self-regulation as they access multiple learning modes.

The proposed space template includes a STEAM space in the Media Center that’s accessible to all. The goal is to integrate technology into the classroom through the use of mobile devices while at the same time increasing the focus of the curriculum towards STEAM education via the use of a Maker Space. This project based classroom would also be located near the Art room. This new approach represents a change in the schools’ approach to technology instruction that better aligns with the district’s new strategic plan.

The STEAM space will provide our older students with a designated area to explore problem solving and the design process in greater collaborative depth and more intermittently throughout the school day; materials can be left intact while under construction, or quickly moved to one of the storage spaces for easy access. Equipment necessary to promote learning in the STEAM would include multiple storage cabinets along the walls (for materials and storage of student projects in progress) and 3 or 4 sinks (for water access during STEAM project time). In order to expand opportunities for STEAM learning, teachers will use designated, district-provided professional development time within the school year to create lessons and engaging learning units that further promote the use of the STEAM classroom as new curriculum units are designed.

Scheduling for the STEAM classroom will take place, for each classroom at each grade level, on a rotating basis. Within a 5-day cycle, each classroom will have an assigned block (useful for more long-term planning); unfilled blocks will be available for use through a "sign-out" system (useful for longer instructional blocks that demand greater time constraints and allow students to continue working on projects in a more ongoing capacity).

DESIGNER RESPONSE:

Technology systems including: interactive whiteboards, 1:1 wireless capabilities, multi-purpose teaching technology stations will be integrated throughout the school to support the technology program articulated above.

The Media Center design will evolve to include the STEAM components required. Additionally, the art rooms will be adjacent to the Media Center to further amplify the STEAM and project-based learning curricula opportunities.

J. MEDIA CENTER / LIBRARY

In the complex, technology-infused world of today, simply acquiring information no longer suffices. Students must access and effectively evaluate resources in order to communicate well, and even young children are increasingly likely to learn in and out of school. Information literacy equips individuals with the knowledge and skills they need to access the opportunities inherent in our global society, and the use of these competencies is practiced most often in our Media Centers.

Beal's current Media Center space is limited by space constraints and by design to serve a small grade span. The Media Center at the new school will need to reflect an Elementary perspective as well as to meet the needs of many more students and staff.

In the Media Center students are introduced to fine literature and quality authors and illustrators. Students are encouraged to develop a lifelong love of reading through read-aloud programming designed to spark student interest in specific content themes or authors. For example, prior to a school visit from local children's author April Jones Prince, the library paraprofessional read excerpts from her books, thereby providing all of our younger students with a common frame of reference to inspire their own work. Most importantly, students are encouraged to use these resources independently.

Media instruction also seeks to promote sound library habits and care for media materials while empowering students to independently use print and media resources. Accordingly, Media lessons provide students with a variety of curriculum related experiences, including digital citizenship basics, how to assess electronic resources and how to engage responsibly in learning networks. Literature-based lessons are connected to the English Language Arts, Social Studies and Science Massachusetts State Frameworks. In the future, lessons may also include opportunities for "hands on" activities that integrate content areas.

The Media Specialist rotates among the five elementary media centers, one day per week at each and oversees the functioning of each Media Center. Day to day operations of the elementary Media Center is the responsibility of the full-time paraprofessional. The Media Specialist develops the lessons for the assistants to deliver to the various grade levels, supervises Media paraprofessionals and in so doing models "best practices" for that paraprofessional as well as for the school staff. In each building, the same paraprofessional oversees the library's automated circulation system, selecting resources for the collection and maintaining a current wish list of books for each school.

Students learn a variety of skills supported by hands-on experiences, learning applications and web-based products. For example, students in Grade 2 complement a literacy unit on "Biographies" by conducting research from bookmarked websites as they synthesize their learning through skills learned in Powerpoint, while Grade 4 students conduct research and quantify their measurable outcomes through creation of databases using Excel that are then displayed in a variety of graphs – this learning nicely dovetails with skills and concepts from the Grade 4 Mathematics curriculum. Learning how to apply these technology skills through classroom learning assists students in a personalized context as they become better able to capture and communicate what they have learned.

Our library media services are accessible to all members of our school community including students, teachers, administrators, and parents. District librarians promote the joy of reading, plan for meaningful interdisciplinary experiences, and help staff to expand students' horizons. In addition, they empower students to independently use resources and collaborate with classroom teachers, peers, and public librarians. Our media paraprofessionals introduce students to literature and, as members of school and district teams, help students to develop a lifelong love of reading. They also manage our print and digital collections to ensure curricular relevance. Finally, classroom teachers provide direct instruction to students in the use of technology in learning, and to support students as they integrate technology and research skills into daily teaching and learning.

Classes are currently scheduled once per week for students in Kindergarten through Grade 2; students in Grades 3 and 4 are afforded a 15-minute visit to the Library once per week to return books and select new reading material. Teachers in Grades 3 and 4 regularly visit the Shrewsbury Public Library for student self-selected reading materials, as the Public Library collaborates with staff in the school building.

Increasingly, our Media Centers support project-based learning experiences launched in classrooms. For this reason, having a STEAM / Maker Space and exhibition area contained within the Beal Media Center is also important. Going forward, teachers will plan for a second block in the STEAM / Maker Space classroom in which they either use for their own whole-class instructional projects, or choose to co-teach a specific topic with in a collaborative way. Additionally, classroom teachers in Kindergarten, Grades 1 and 2 may request a block in this area in order to integrate technology within the scope of their own curriculum. The use of web-based programs like Class Dojo or Seesaw promote reflection, communicate student progress and support ongoing learning. Finally, the vision for the new Media space includes ample display capability by design: the STEAM space should be an innovation hub, celebrating and inspiring students and staff alike to create high quality work.

Typically, students access the Media Center space several times during the day – for self-selection of reading materials, for small-group research, for individualized information gathering, for instructional support and for personalized learning task work. This STEAM / Maker Space model would greatly increase student access to resource materials while providing the impetus for a more personalized and independent approach to learning overall.

After hours, these larger spaces accommodate gatherings for Extended School Care, faculty meetings, parent evenings and district leadership groups. In this way, both student and adult learning needs are supported within and beyond regular school hours. The central location of

the proposed Media Center will allow access and flexibility. In this model groups can use the space and classrooms can remain secure.

Technology access, too, would operate in a distributed model: rather than have an identified “technology classroom”, mobile devices like laptops and tablets will be distributed throughout the building and reside in mobile charging carts located within each neighborhood, thereby allowing students to access information flexibly and spontaneously. Making technology more mobile will allow for wider distribution, fostering a school community where access to information is available to all students and both collaboration and independent work are equally supported.

DESIGNER RESPONSE:

The Media Center will be centrally located flanked by the two academic wings to showcase the prominence of the Media Center as well as for convenient access. The program calls for significant display opportunities, technology, and the STEAM classroom to support the strong project-based learning initiatives. The adjacent art rooms will enhance the opportunities for expanded Maker Space facilities.

Further, the Media Center will be prominently positioned within the core facilities as well. This location will support the extended learning program and strengthen the connections between the student projects and the more public aspects of the school facilities.

Finally, the Media Center will be developed as a major meeting area in the school. Large enough to seat two classes at a time, it will also function for all faculty and community meetings.

With an anticipated diminishment of the print collection, plans are to house the collection in areas where future repurposing will be possible. The focus will be on appropriate facilities to support inquiry based learning, technology opportunities for local and global connections, and encouragement of collaborative curriculum delivery and meetings.

K. ART PROGRAMS

The Visual Arts program in Shrewsbury is second to none, and student experiences with this discipline begin at the Elementary level. Two full sized classrooms will be needed to support programming in a school of this size. These classrooms should be connected to allow for flexible use of the space as well as collaboration during Art.

Making art helps even our youngest learners to explore and to express their creativity while

developing understanding of key concepts within the core curriculum, as well as in the development of executive functioning skills necessary for project planning and design execution. All students in Kindergarten through Grade 4 participate in an Art class each week; classes are designed to be project based with a finished product realized at the end of each instructional unit. Units vary widely, and for this reason the Art studios must be designed to accommodate a lot of different types of media and activity.

In all our schools, the Art program utilizes mixed media in programming: drawing, papier mache, watercolor and tempera painting, 3-D design, printmaking, assemblage and ceramics are all presented with a collaborative eye towards expanding content learning. For example, students studying the biographies in Social Studies have learning extended in Art class as they study portraiture by creating pastel-based drawings. Students work with cardboard and learn about sculpture techniques as their projects take shape. Because of the potential danger and safety concerns that can occur when a kiln's ring is cooling, the use of a kiln has been limited to newer buildings. Adding this equipment to the new Art space at Beal will make available a wider variety of programming options going forward for more students at this school and across the district. In Shrewsbury, the Art Department has led a number of high profile project based learning initiatives. Importantly, the flexible use of Art space in these ways will support STEAM initiative in Art and serve as a model of what's possible when Art is integrated into other content areas.

For younger students, clay is used as a medium for learning about the earth (clay as a natural resource), and for the development of fine motor skill practice as well as in demonstrating techniques used in the past (rolling coils of clay to produce both coil and pinch pots). For older students, these skills are carefully connected to content as students build upon these themes in Mathematics (patterning, tessellations), in Science (elements of the earth that create clay, states of changing matter – ring ceramics in a kiln), and in collaborative design process (balance and design as students create independent projects). While there are commercially prepared products that could be substituted for clay, these products would alter the curriculum in ways that would not allow for the direct connections of clay as a naturally occurring medium.

Shrewsbury has implemented project-based learning (PBL) initiatives in all our schools, and the district anticipated that PBL projects will continue to be implemented in the new building, especially in Art. In order to flexibly accommodate students as they work with these materials, the Art room itself will contain tables for project-based work, multiple storage cabinets and two sinks. Technology is integrated through the use of a document camera and interactive projector that display modeling of Art techniques for students onto a large at screen monitor. Art teachers also access the Internet for in- the-moment research, videos and interactive digital skills that enhance classroom learning.

Ideally, the Art rooms will support a whole-group learning area for instruction that includes a SMART Board and document camera for demonstration and modeling, and a large-screen display; a project-based area that contains storage for ongoing projects; and a ceramics area, with multiple sinks, for use of mixed media materials. The kiln is housed in a separate accessible area to the instructional space, and is able to be secured to avoid potential danger. There are portable display areas that can be used for storing and/or displaying student work in process, as well as movable display cases that the teacher can use for exhibitions of student projects within and outside the Art room. A large materials storage area provides adequate storage for materials. The scope of curriculum offered in Art programming requires the use of a kiln to fire ceramics created in both Art content lessons as well as for integrated learning or project based learning lessons. We anticipate that, with a change in building design and the addition of a kiln room, programming in Art will not only continue at the same level of service but will expand opportunities for PBL. When Art instruction takes place outside the Art room (for example, when students sketch outdoors) teachers can access the space as a design center. In addition, the Art room will play a big part in supporting after school enrichment programming. All of these features will help to support overflow from the nearby Maker Space area in the Media Center.

Exhibition, feedback and critique are also important components of learning in the Arts. Accordingly, plan reflect a commitment to displaying student work in a variety of ways. There are portable display screens that can be used for displaying student work throughout the building, as well as movable display cases that the teacher can use for exhibitions of student projects. Finished work will be celebrated in displays outside the Art room, and in display cases located within the school building and in local exhibitions across the district.

DESIGNER RESPONSE:

Planned to be on a main corridor adjacent to the Media Center, the Art Rooms will have an appropriate prominence in the school with great exposure from both the core facilities and the academic wings. Here, there will be great opportunities for display of student work and enhanced connections with the Media Center as a Maker Space.

Storage for materials as well as the kiln will be an important part of the design as it evolves.

L. MUSIC AND PERFORMING ARTS PROGRAMS

In Shrewsbury, Music classes are led by licensed Music teachers that share teaching

responsibilities between all schools. All students in Kindergarten through Grade 4 receive instruction in Music once per week. Students take part in General Music classes, which combine elements of Music instruction with Kodaly (movement-based dance) techniques. This programming reinforces self-regulation skills and themes contained in the general curriculum. For example, students in Kindergarten, as part of a unit of study about animals, listen to native African music as they take on the roles of lions, antelope and other animals, acting out through movement how the animals move and interact in their native environment. This model reflects an ongoing collaboration with the Physical Education Department that supports early learning skill growth in self-regulation in a kinesthetic context.

Students in Grades 2, 3, and 4 have more formal choral music instruction as well as an introduction to reading music, where all students in Grade 4 learn to play the recorder. Beginning in Grade 4, students are required to participate in the Chorus program, which meets during an additional block once a week. At a school of this size, space for 200 students must be allotted in order to support the performances that occur twice each year - in winter and in spring. These shows serve as a showcase for emerging student competency and as an opportunity to celebrate with the school community.

Currently, movement in the Music room is constrained by space demands. Materials placed there and the need to share the space with other specialist colleagues limits functionality. In order to accommodate the variety of uses outlined above, Beal's new Music rooms will be large, flexible spaces. Due to Grade 4 Chorus, each room will need to accommodate two classes simultaneously. In addition, ample storage will abut the space to minimize transition time. Ideally, the flexible design of the Music classroom will allow for movement of walls to create one large classroom area for choral music and instrumental instruction. A functional Music space needs to be carpeted, with adequate storage space for instruments, props, and music equipment, including a wired shelf to power keyboards. Finally, a sink in the Music classrooms will also help keep recorders and other instruments clean and ready for reuse.

It should also be noted that the stage area of the Cafetorium will facilitate performances both during concert evenings and for informal school assemblies. An operable partition will allow for use of this space during lunch times. Students in Shrewsbury can elect to take Instrumental Music lessons beginning in fifth grade, and presently 415 students are enrolled. This means that the program is at capacity, with every available space at our existing middle school used for Music lessons after hours. Going forward it's likely that space in the new Beal building will be needed to support Music lessons as well. For that reason, space for instrument storage should be allocated in the Music room and/or on the stage area located nearby.

The proposed new building design, with the addition of a flexible Music classroom that

supports programming in both vocal and instrumental music instruction as well as space in which to conduct Music and movement programming, will provide continuity in ongoing programming and will expand opportunities for scheduled PBL blocks and for after school enrichment programming. Moreover, locating the Allied Arts programs adjacent to one another and centrally within the building will serve the school community as an Arts “hub”, and will encourage greater collaboration and integration of academic curriculum.

DESIGNER RESPONSE:

Located within the core facilities, along the academic wing corridor and adjacent to the cafeteria stage, the music rooms will be well positioned to support the district curriculum objectives as well as extended learning and assembly programs.

The stage is sized for the entire choral group and will also support large groups of students for assembly purposes. The upper level location will allow for the large music spaces to be proportionately designed for excellent acoustics, large group activities, as well as daylight integration.

M. PHYSICAL EDUCATION PROGRAMS

The ultimate goal of Physical Education programming is to teach students about the important health benefits of an active, healthy lifestyle. Using the Massachusetts Comprehensive Health and Curriculum Frameworks and the National Standards in Physical Education, “P.E.” programming in Shrewsbury encompasses a skills-based learning approach through a spiraling curriculum. Over time, Physical Education staff guide students as they develop proficiency in a variety of domains.

Currently, all Beal students benefit from Physical Education class once a week. However, instruction takes place in a gymnasium originally designed for high school students. It’s hoped that the new building (and proposed grade configuration) will allow for expanded programming, including classes in yoga and in Music/Movement on a periodic, rotating basis. This model will support early learning skill growth as well as the integration of Social Emotional Learning skills.

Importantly, there is consensus that the gymnasium should be part of the shared “core” spaces in the new Beal building. The fact that these spaces can be reached after hours while prohibiting visitors from accessing the academic wings will allow the community to benefit from the use of the gymnasium as well.

Two levels of skills instruction are addressed within the K-4 Physical Education curriculum. *Locomotor skills*, like skipping, galloping, hopping and jumping, assist students in moving purposefully from place to place with balance and agility, while *manipulative skills*, like throwing, catching, striking with a racquet, and dribbling, enable students to move objects from place to place. Both skill sets work in conjunction to instructively provide students with the foundation for both organized sports and individually-based sports that assist in fulfilling the program goal of espousing physical activity as part of an active and healthy lifestyle. An ideal space configuration should allow for multiple teaching stations to foster skills in both strands. It should be noted that the larger space will be beneficial after school hours as well given the community use of local gyms for organized sports.

The PE experience also includes Health and Wellness curriculum designed with instructional themes that focus on social/emotional support - these themes are intertwined within the curriculum in Grades K-3, with an emphasis on prosocial behaviors and self-regulation strategies.

Beginning in Grade 4 students experience an additional weekly Health class taught by a licensed professional. Ideally the traveling educator who teaches Health should have access to a classroom space near the gym. Given the needs of students receiving Adaptive Physical Education, the design for this new building is likely to accommodate educators in both specialty areas.

Currently, only one Physical Education class is taught in the Gym each morning. This accommodates the smaller-sized students in Grades K and 1. In the new building, the plan is to allow for up to two classes to be taught simultaneously. A movable wall or net can be used to divide the larger space, thereby creating two instructional areas for younger learners in Grades K, 1 and 2 who need less physical space. Older students in Grades 3 and 4 are accommodated in the full Gym in the afternoon; the full Gym is necessary due to the larger physical size of these students, where a split-Gym option is not feasible. Accommodating student needs is critical, but attention to staff needs is also important.

Presently, offices for the Physical Education staff are located in the equipment storage area, which is a small and airless space. There are no provisions for a designated office space for traveling staff members, or for a handicap accessible restroom for students.

Planning for the needs of the gym in the new school should include the following components:

- A handicapped-accessible restroom should be part of the Gym space to allow all students

equal access to programming without differentiation based upon physical needs

- All of the schools in the district have a rock wall as a key component of the program as well as space for bleachers.
- The gym should feature six adjustable hoops to allot for two half court configurations to run simultaneously. The court should have the capability to receive volleyball standards and lined accordingly.
- Audiovisual requirements should include a portable projection system with a mounted screen and sound system with a microphone compatibility. All controls should be secured to limit damage caused by improper operation.
- The capacity to divide the Gym into 2 distinct instructional spaces. Many schools use a curtain or "sports net" for this purpose, but a folding wall should also be considered given the regular use of "wall space" for practice. Further, some curriculum themes, like the dance unit, involve different music selections being played simultaneously for 2 different classes. Incorporating a folding wall, rather than a "sports curtain", allows for greater flexibility in programming, more developmental instructional options, and greater variety in possible space use by the community after hours.
- Given the multipurpose use of this space, acoustics are paramount. It's critical that acoustic tiles are used to minimize the echo qualities sound makes in large spaces.
- Outdoor spaces for Physical Education in nice weather should be identified. A large play field similar to the one at Floral Street School (120' by 180') would support the curriculum and the needs of a school this size. These spaces should be located well away from parking/traffic areas and preferably some distance away from classrooms so as to minimize distractions. An outdoor blacktop area will also be utilized. This space can be the same one used for recess and should be sized accordingly.

DESIGNER RESPONSE:

Sized for both all school assembly and two physical education stations, the gym is organized on the main floor with the other major core facility spaces. Opportunities for direct outdoor access as well as central academic wing and main lobby access are present.

Technologically, the gym will be fit up with projection systems appropriate for both assembly and gym class use. Acoustical and lighting features will also be integrated

accordingly.

With anticipated heavy community as well as extended learning use, the gym is appropriately located directly off of the main lobby near the administration area with sufficient supervision and access control options.

N. SPECIAL EDUCATION PROGRAMS

The Beal School was constructed in 1922, prior to the passage of laws and regulations that required the education of students with special needs in the least restrictive setting, prior to the surge in population of students on the Autism spectrum, and prior to the influx of disabled students with English language learning needs into the Shrewsbury community. All of these factors require additional instructional spaces, often with specialized equipment. Further, the building was constructed as a traditional junior high school, and as such it does not provide adequate space for the dynamic instructional approaches that teachers are expected to use within classrooms, particularly with young children (multiple teaching stations for small group instruction, space for computer use within the classroom, etc.).

In Shrewsbury, Special Education programming is overseen by the Special Education and Pupil Personnel Services Department, which provides services for students who have Individualized Education Programs (IEPs). Special Education services include: Speech and Language services, Occupational Therapy, Physical Therapy, Adaptive Physical Education, Counseling, Social Skills instruction, and academic support and instruction, as well as Applied Behavioral Analysis (ABA) services.

By law, Special Education services are provided in the least restrictive environment, meaning that specialists provide services within the general classroom setting wherever possible, in keeping with an inclusive philosophy of service delivery. In cases where student needs demand that services be provided in a setting other than the general classroom, students may receive these services in an adjacent academic classroom or, as dictated by students' IEPs, within a substantially separate classroom setting. However, most students who receive some services are included in the general classroom for all academic elements that are not directly prescribed by their IEPs.

DESE guidance suggests that for specialized instruction, instructional group sizes are best kept to 10-12 students. The required space to support a classroom of this size would be approximately half the size of the normal classroom. Based on the proposed scale of the school the district anticipates needing approximately one inclusion classroom per cluster. The overall design shows eight clusters, resulting in 6-8 inclusion classrooms. This ratio of space is

consistent with the current demographics across the district.

In determining programmatic needs, the allocation of space for resource rooms and separate classrooms for students with disabilities are given equal consideration and priority as general education programs. Every effort is made to ensure that the facilities and classrooms serving only students with disabilities are at least as equal in physical respects to the average standards of general educational facilities and classrooms, despite the challenges faced by space constraints within the current Beal School. In the proposed plan, common spaces in every neighborhood will be used to support both impromptu small group instruction as well as planned "pull out" instruction provided by special educators, reading tutors, classroom teachers and ELE staff that cannot be accommodated in the classrooms mentioned in the previous paragraph.

Currently, spaces for instruction, therapeutic services and identified classrooms for students with disabilities are housed adjacent to general education classrooms to the greatest extent possible, so that students with disabilities receive services within the same areas of the building as their same-age peers. However, space constraints and the changing needs of students can impact this space assignment. For example, the Kindergarten section of the building houses a substantially separate classroom as well as a resource room space for primary and upper elementary students; locating these services together keeps student programming aligned with their age-appropriate peers.

Presently, programming at Beal occurs within an inclusive model where possible. Elements of ABA programming that require specialized instruction take place in a substantially separate classroom setting. Elements of Social Emotional programming for all students that require specialized instruction take place within the offices of the School Psychologist who works together with the Team (Parent, Teachers, Team Chair, School Psychologist, Counselors, Specialists and/or outside providers) and perhaps district Clinical Coordinators to tailor individualized services according to stated goals within a student's IEP.

At other levels, students returning from hospitalizations or experiencing other challenges are demonstrating behaviors incompatible with being successful in a general classroom. These students would benefit from a separate setting for the provision of evaluation and support to continue to be in their neighborhood school in their own community. In the proposed new school, small group spaces within each learning community wing will serve as spaces for the discrete programming needs of these students.

As previously mentioned, the need for several settings for small group and individualized instruction, therapies and support, located in proximity to general classrooms will allow for greater inclusion of students with and without disabilities. These spaces should be flexible and

include groups rising from the tiered intervention system- further removing the possibility of stigmatization of students on IEPs.

Academic Support

Educators serving at the Beal School believe in fully including all students in general classroom settings for academic instruction whenever possible, and in providing students with direct special education services within this general classroom setting to maximize the education of all students. When student academic needs dictate that students require additional academic skill support in a separate small group setting in Reading and Mathematics, instruction takes place within a smaller proximal space. Licensed, credentialed Special Educators work in a flexible, small group service delivery model to meet students' needs as outlined in their IEPs. In most schools, specialists instruct small group classrooms in areas that serves double duty as office space. Ideally, small group instructional support should take place as close to a student's classroom as possible.

Regular education Reading support requires four small spaces that can hold book storage and ample space for 4-6 students and an instructor. As part of our tiered system of support, all Elementary schools in Shrewsbury employ part-time tutors that assist children reading below grade level benchmarks with literacy skills. This model varies by school, and buildings that qualify for Title 1 funds benefit from additional tutor support. It's quite possible that the new Beal will qualify as a Title 1 school and so spaces should be apportioned accordingly. Regardless of the staffing numbers, all district tutors are overseen by the Title 1 Director. Consequently, collaboration between buildings is commonplace; shared resources and lessons strengthen job-embedded professional development efforts inherent in the model.

Behavior Support and Applied Behavioral Analysis (ABA) Services

The Shrewsbury Public School district employ full-time licensed Educational Learning Center (ELC) coordinators who also serve as building-based consultants for the social/emotional/behavioral and ABA needs of students.

As noted, providing three self-contained classrooms addresses the needs of each of the learning communities anticipated in the proposed facility while increasing small group rooms accommodates multiple learning situations for small groups and individuals. Special Education will continue to be delivered in a manner consistent with the current program but with improved facilities and better accommodation of all students.

Shrewsbury currently serves many students on the Autism spectrum with a range of physical and cognitive needs. The district has made a commitment to keeping students in their

neighborhood schools. Thus, space must be allocated to support ABA programming these students require. These smaller, quieter spaces and/or padded cubicles support students as they receive in a 2:1 or 1:1 setting. It's estimated that a school of this size will need four classrooms configured in this way in order to address the needs of students in both the Early Learning Center (ELC) and Intensive Learning Center (ILC) programs currently housed at Beal.

Occupational Therapy/Physical Therapy

In the new Beal, Occupational Therapy and Physical Therapy services that are not delivered in the general classroom setting, by IEP designation, will be provided in a classroom space located near the Gym. The space for these activities needs to be flexible, with the idea that most student needs should be accommodated as close as possible to nearby classroom spaces to avoid unnecessary disruption caused by lengthy travel time to service delivery areas. In contrast, ongoing space constraints mean that OT/PT services are currently delivered in the basement at Beal. Presently, Occupational Therapy services are provided by a licensed Occupational Therapist, and Physical Therapy sessions are conducted by a licensed Physical Therapist. Ideally, OT/PT services should be conducted as close as possible to the general classroom settings so that all educators can support students. This is not often possible given the distance between service delivery areas at Beal.

Going forward it's anticipated that two OT spaces will be required in the new building, with one being large enough to accommodate a large beam and swing.

Adaptive Physical Education

Students with special needs receive APE services in addition to their general Physical Education classes. The purpose of Adaptive Physical Education (APE) at the Elementary level is to provide students that require support in strengthening motor, physical and/or social skills with specialized instruction. Accordingly, lessons are conducted in a safe and highly supported setting with the goal that students will be increasingly able to access the regular Physical Education classroom. Adaptations are made programmatically to ensure that students have maximal opportunity to reach the goals set within their IEPs. In most schools, APE services are most often delivered in a small group setting, and paraprofessionals are part of the instruction to assist students with motor tasks that may require direct support. Currently APE services at Beal are delivered in the gymnasium. There is no other space available for APE. The lack of flexibility with space and equipment limits the supports students receive. The new Beal design will enable stronger supports and smoother transitions for students and staff. For example, it's possible that educators that provide APE services can use the OT space as well, particularly if the APE space is located near the gymnasium.

Counseling / Testing

Given the scale and population that will be served by the new Beal School, there will be a need for two School Psychologists or one School Psychologist and one School Adjustment Counselor. Each of the educators in these positions will require an office with space for 2-4 students at a table and chair setting. These offices should be accessible off a corridor. In addition, special education staff will need an office for the Team Chair and a conference room large enough for 12 people. We do not anticipate the need for any additional student guidance positions at this time.

The need for ample office space in the new building cannot be overstated. Presently the lack of space at Beal means that up to four educators share one small room. Other staff have set up desk areas in closets. Moreover, on days when traveling and/or part-time staff are scheduled, many specialists and tutors must work in hallways, at shared desks or in larger public spaces like the Media Center. The lack of private space impacts students, as many small-group lessons take place in hallways. It should be noted that staff are also affected. Given that Beal's Instructional Coach and Curriculum Coordinator is "tucked away" in a back corner of the basement with several other educators, it's hard for staff to schedule or sustain private consultations.

Speech and Language

Presently at Beal, Speech and Language services are provided by a licensed Speech Pathologist in the general classroom setting, or in a small classroom setting. The Speech Pathologist maintains a space for small group instruction that doubles as an office space. Speech services, when delivered in a small group, parallel setting, are comprised by anything from a 1:2 or 1:5 ratio; students whose learning needs demand a small group setting benefit from the direct instruction provided by the speech pathologist. In the new school, there should be two spaces allocated for Speech large enough for 4-8 students. One of these two rooms should be located in the early Childhood community, near the Kindergarten classrooms.

DESIGNER RESPONSE:

Special Education programs are designed to be integrated with typical instructional spaces to the greatest extent possible. Both full size substantially separate classrooms and smaller inclusion spaces will be interspersed within the neighborhood clustering of classrooms. Additionally, neighborhood common rooms will facilitate tutorials and integrated group learning opportunities.

To the extent possible, full size resource rooms will be developed to match typical

classrooms to provide as much flexibility as possible as the student enrollment and IEP demands dictate relative to special education requirements.

Administrative support areas will be distributed through the main administration area, Media Center offices, and other areas as appropriate to support the program.

The new construction will allow for full accessibility throughout the school and as dictated for the site.

HEALTH

The health needs of students and staff at the current Beal School are overseen by a licensed RN School Nurse. The scope of the Health office encompasses, but is not limited to administering medications; evaluating student and staff needs during visits to the Health office; triaging immediate illnesses, injuries and health concerns; communicating with families and other health care providers around specific student health needs; maintaining health records; screening students for height, weight, hearing and vision; collaborating with other staff about students' emotional needs; and overseeing the completion of injury incident reports and other logs. Additionally, the school nurse collaborates with other district nursing staff, whose work includes collaborating on the delivery of Health curriculum, writing grants and collaborating with administrators on the development of 504 plans, and providing emergency response training to staff. The role of the School Nurse is a vibrant, far-reaching position that far exceeds the space allotted for all this work. In the new design, we are seeking ample room to address all areas of health and wellness students and staff at Beal.

Currently, the Health office is one small space where all students and staff that are unwell must await consultation. One couch provides space for a single student to rest. The existing space does not allow for a treatment waiting area. Additionally, there is no capacity to separate contagious students as they wait to be taken home. The facilities in the office are also inadequate. One lavatory serves as a changing area for young students who are toilet training, for students who are ill, and for students whose health issues require a supervised area for toileting. This lavatory also serves as a staff restroom. There is no separate sink for handwashing in the health office; the one sink in the area is in the lavatory and is therefore often inaccessible. Storage areas are also constrained. Student medications/ EpiPens, etc., are kept in a locked cabinet, but there are more equipment storage needs than can be addressed in the current plan. Moreover, the current space does not provide a private area for the nurse to make sensitive phone calls, consult with staff or assist parents in need of support.

Clearly the new Beal School will need to better reflect the needs of students and staff in Shrewsbury. In addition to addressing the issues described above, the plan for the new Health office should be designed with year-round usage in mind. In order to maintain a healthy environment for students and staff during the school day and throughout extended programming, it's likely that the new Beal will be air conditioned. An air-conditioned Health office is also a benefit to students whose health conditions are exacerbated by excessive heat during the summer months.

DESIGNER RESPONSE:

Programmed to be adjacent to the Main Administration suite, the preferred schematic option allows for main lobby access to the Health suite, near the gymnasium as well as exterior access. The suite is sized to meet the multiple program requirements for testing, examination, medicine distribution and staff supervision needed.

O. TRANSPORTATION POLICIES

Students who attend Beal School can ride a bus to school or be driven to school. The Shrewsbury Public School district maintains free bus transportation for students in Grades K-6 who live more than two miles away from the school; families that live within this distance may opt to sign up for bus transportation in a fee-for-service model.

All students are required to sign up for busing each year during an open enrollment period starting in April and running through June for the coming year. The portal for signing up is able to identify if students qualify for free busing or are required to pay a fee and this child's information is relayed to AA transportation where busing routes are generated.

By law, the district offers no cost transportation for all families that qualify for the free or reduced federal lunch program. Moreover, families of students with special needs work with the Department of Special Education and Pupil Personnel Services to arrange for specific transportation based upon their individual requirements. Overall the district estimates that approximately 50% of families who qualify for free busing opt out. Further, 50% of those who do not qualify opt in. It is not anticipated that the policy to adhere to minimum state requirements for busing will change in the near future. For that reason, information about our existing system is helpful.

The current system is categorized as a three-tier system where each bus is utilized for transportation to each of the major grade levels High School, Middle School, and Elementary

School. This is accomplished by staggered start/end times for the different grade levels with the high school starting/ending first followed by the middle schools, then the elementary schools.

On average, nine school buses are currently required to transport the students of Beal School to and from school each day with two additional buses serving students with special needs.

The charts and tables below depict well the current pick up schedule:

Route Set Report for BEAL + W KA IN

Student File: 2017-2018 STUDENTS	Routing Scheme: 2017-2018 ROUTES	Days: MTWHF
Delay Times (sec)	Route Load Parameters	Route Time Parameters (min)
Stop Delay: 15	Desired: 1	Desired: 40
Student Delay: 5	Maximum: 1	Maximum: 40
Routed Students: 178	Waiting Requests: 0	Route Count: 9

CRITERIA

INFO Field: BUS PRIV							
School	Program	Grades	Direction	Time	INFO Value	Boundary	Exclude
2710005 - BEAL SCHOO	0 - PUBLIC	PFD-PFI	Inbound	9:00 AM	Y		
2710005 - BEAL SCHOO	0 - PUBLIC	KF-KF	Inbound	9:00 AM	Y		
2710005 - BEAL SCHOO	0 - PUBLIC	KA-KA	Inbound	9:00 AM	Y		
2710005 - BEAL SCHOO	0 - PUBLIC	01-01	Inbound	9:00 AM	Y		

ROUTES

Route #	Description	Bus #	Load	Anchor Location	Anchor Time	Total Distance(mi)	Total Time	Days
9BA		9	17	BLS	8:57 AM	8.90	36:05	MTWHF
10BA		10	25	BLS	8:55 AM	8.38	35:02	MTWHF
17BA		17	32	BLS	8:56 AM	6.51	21:30	MTWHF
20BA		20	23	BLS	8:58 AM	10.18	32:26	MTWHF
31BA		31	13	BLS	8:58 AM	9.37	30:35	MTWHF
33BA		33	22	BLS	8:55 AM	9.06	32:56	MTWHF
39BA		39	30	BLS	8:57 AM	7.72	26:48	MTWHF
40BA		40	6	BLS	8:53 AM	4.51	16:15	MTWHF
#41		41	10	BLS	8:42 AM	6.43	20:35	MTWHF
#41		41	9	BLS	8:53 AM	4.51	16:15	MTWHF
#41		41	10	BLS	8:42 AM	6.43	20:35	MTWHF

Additionally, statistics about Shrewsbury's current transportation needs can be seen in the recent presentation Assistant Superintendent Patrick Collins made to the School Committee here: <http://schools.shrewsburyma.gov/sc/documents/ScComOct-2017-Transpslides.pdf>

Anticipating the load for each mode of transportation for a school of the proposed scale for the new Beal is also important. In consultation with the architect, the district came to consensus on the following figures:

- Buses: 12-15 (including 2-3 special education buses)
- Cars: $\pm 15\%$ of the students is the average among the other elementary schools (This anticipates 120 total cars for 790 students)
- Walkers: $\pm 7\%$ is the average among the other elementary schools (This estimates 55 walkers for 790 students).

Once a final site is selected, some of these percentages may need to be weighted differently based on the school's location and/or site features.

To provide the safest possible disembarking and boarding of school buses in a larger building, separating bus lanes from pick up/ drop off car lines will be key. Town and representatives agreed that it would be desirable to the vehicular transportation on separate loops; one for full size buses [10-12], one for 2/3 sized special education buses [2-3], and one for parent pick-up/drop-off [± 120]. The town provided information on Floral Elementary in regards to visitor parking and reported that the school sees ± 50 visitors a day with the average at one time being around ± 10 . Also at Floral there are several students who are considered "walkers" whose children are ultimately picked up by their parents a street over from their respective schools. This will need to be taken into consideration when calculating the amount of parent vehicular traffic to the site.

Families of Kindergarten students, as well as families who access the Extended Day Program, will likely drop off and pick up students in a small parking lot located behind the school. Staff who work in the Extended Day Program, and those educators serving Kindergarten students must be able to park in designated spaces within this lot. Lastly, families and invited guests will need to access the remaining spaces when attending classroom exhibitions or Kindergarten events in this area of the school.

Families who choose to drive their students in Grades Kindergarten through Grade 4 to school access a different parking lot, located adjacent to the school building. This parking lot provides adequate space for both Beal staff as well as looping line space for families who are dropping off or picking up students. At the start of school and at dismissal time, the lot will be

congested, creating safety concerns for pedestrians walking to and from the building as they access the parking lot. Predictably this congestion will be exacerbated in winter months when snow further limits available parking spaces. The town of Shrewsbury has responded to safety concerns by assigning a crossing guard to assist students and families. The addition of more parking spaces as well as consideration of innovative materials will unequivocally relieve safety concerns and congestion in the parking lot as families and students seek access to the school.

Floral Street School, the Elementary school with the closest scale to the proposed new Beal building, has a staff of approximately 100 on any given day. School events, i.e. celebrations, Curriculum Nights, Parent Conference Day, etc., are typically kept to no more than two grades at a time. With this in mind, the potential parking needed to accommodate two grades at the new school would be in the range of ±316 cars. As plans for the new school develop, so too should more specific staffing numbers.

Most importantly, given the size of the new school careful attention must be paid to the separation of bus arrival and parent pick-up lines and the apportioning of outdoor space overall. Parents are not allowed to drop off students early, so queuing of cars occurs at both pick-up and drop-off times. However, drop-off does not take as long as pick-up since parents do not need to be identified prior to releasing the children to them. Where pick-up and drop offs occur in relationship to the building layout will be look at more carefully as the program is developed. Ample parking for staff and for visitors, safe playground access and security concerns must all be considered in the design of the site.

DESIGNER RESPONSE:

The site plan has been developed for separation of parent pick up/drop off vehicular traffic and the flow of buses. Clear access points and appropriate signage will be developed and integrated into the design as it is refined.

Using the same paved areas, the heavy car traffic will be accommodated for assembly and summer program usage.

P. FUNCTIONAL AND SPATIAL RELATIONSHIPS

The hub of the school building should be the Allied Arts spaces, which are shared by all academic wings and remain central to the interactive, inquiry-based instructional approach espoused by the faculty. Locating the Gym, the Art room, the Music Room and the STEAM area centrally allows for equal access to these spaces by students at all grade levels, and keeps

these more interactive spaces central for larger groups of students to access in a project-based learning capacity.

Special Education spaces are to be located within each learning community to promote greatest accessibility to learning resources for students who require these services while honoring the least restrictive philosophy and environment for learning.

Large group interactive common spaces or “neighborhoods” are to be located within each learning community. Given the successful use of similar spaces at the Sherwood Middle School in Shrewsbury, there is strong support for the continued use of these common areas to support differentiated instruction, parent volunteer efforts and student-led groups and projects. A STEAM classroom and maker space is to be located within the Media Center to promote broader inquiry based, project-based learning for the oldest students at the new Beal Elementary School. However, a common “neighborhood” can support more spontaneous, child-centered tasks.

Programmatic adjacencies that would further support collaboration, flexibility of space and increased opportunities for interactive learning would include:

Office Spaces

Administration located centrally to the building entrance ensures adequate safety monitoring; the Administrative area includes the general office/waiting room, the records room, the principal’s office, the assistant principal’s office and the supervisory office. Ideally the office spaces designated for the principals should be connected.

- **Medical suite** to be located near the Administrative office area and Guidance office - this adjacency offers the school nurse additional support at short notice when necessary
- **School Psychologists’ offices** to be located near the Administrative area - the school psychologists and school principals frequently consult and the scope of their work requires close proximity

Shared Community Areas

- The **Cafetorium** is located centrally to promote equity of access for student programming as well as greater community involvement during after school hours through community-based meetings and performing arts events; accordingly, the Cafetorium contains a stage and instrument storage

- The **Gym and Cafetorium** are located within the shared community area to encourage greater student access from all academic wings of the building; additionally, the Gym space is used as a place to gather the whole school as needed. After school hours the community uses the Gym for sports events and gatherings; boys' and girls' rooms are located in proximity to support flexible use of both spaces. The Cafetorium space will serve an important role for assemblies for up to two grade levels during school hours and as a gathering space for school and/or community events after hours.
- The **Staff Lunch Room** is connected to the Cafetorium.
- The **Conference Room** offers an equidistant neutral space for meetings that do not require access to the academic wings of the building. As this space will also serve as additional space for the faculty and parents to gather for meetings and consultations, the space should be large enough to accommodate 20 – 25 people. The Conference Room is available for use after school hours for smaller community-based events and PTO needs.
- The **Art Classrooms** and **Music Rooms** are located centrally for equity of student access from all academic wings
- The **Music Rooms** should be located adjacent to the **Cafetorium** to facilitate easy access to the stage area and to utilize the area as a green/dressing room for performances and events.
- The **Media Center/Library** space is located centrally thereby allowing all students to more efficiently access resources essential to learning throughout the school day.

Academic Learning Neighborhoods

The academic wings are located around the commonly shared community areas. There are three main academic areas: the Early Learning Community (Kindergarten) and two mixed-grade wings on each side of the building.

Special Education classrooms and **small group learning spaces** are interspersed throughout each of the learning neighborhoods, rather than being located apart from instruction areas, in keeping with the spirit of inclusion within the Shrewsbury Public Schools.

- **The Early Learning Community** contains classrooms for Kindergarten students, as well as small group learning spaces designed for Special Education instruction, small group support of all students, and a self-contained classroom designed to serve younger students with substantially separate (ABA) programming needs.

- The wings contain classrooms for students in Grades 1-4, as well as small group **Special Education learning spaces**, including four self-contained classrooms designed to serve students with substantially separate (ABA) programming needs.

Outdoor Learning Spaces

Outdoor learning spaces, like a community garden and/or outdoor classroom spaces, are to be located near the Early Learning community to allow for easy access to this inviting space. Outdoor learning spaces and trails afford students and staff the opportunity to incorporate the seasonal aspects of nature within the core curriculum.

Additionally, outdoor play spaces are to be located in a more centrally-based context. The Early Learning Community play space should contain equipment for climbing to develop large motor skills, as well as equipment for imaginary role playing. Small house-like spaces, equipment shaped like vehicles, and low-lying climbing equipment allow for young learners to develop their self-regulation skills, their imaginations, and their gross motor skills in a developmentally appropriate context. The Elementary Community play spaces are also to be located near these academic wings; equipment in these spaces is to be designed to promote balance, locomotion, and evolving collaboration skills. Swings, basketball half courts, and soccer and little league-style fields allow for older students to practice team-based collaboration which is so developmentally necessary for young children. Additionally, benches and outdoor tables in the play area allow for small groups of students to engage in quiet conversation with one another, or as areas for students to visit when they might need the opportunity to calm themselves. A variety of engaging choices of activities is important to creating developmentally appropriate, inclusive play spaces that serve the needs of students at this level.

DESIGNER RESPONSE:

The organization of the PSR preferred schematic addresses all of the building adjacencies desired. Further refinement of the site plan will bring improvement of desired site feature adjacencies including play/athletic areas and outdoor classroom feature development.

Q. SECURITY AND VISUAL ACCESS REQUIREMENTS

The Beal Elementary School can best continue its legacy as a vibrant, welcoming, community-based school by keeping safety in mind for its students, faculty and visitors. The design for the

new building will reflect this commitment. For example, the Maintenance Department plans to have safe and secure storage for any custodial or maintenance chemicals or items that require such storage.

The Main Entrance will contain a camera/monitor and buzzer access to enter the building; visitors will enter a vestibule where they will be greeted through a window where identification can be checked before gaining access into the building near the main office. It is anticipated that the school will be fully equipped with CTV monitoring as well as locking exterior doors with electronic access by key cards. Physical / building access control components will interface with the district's Brivo access control system and HID 26-bit cards and fobs.

Administration reception will be designed with transparency into the building lobby and to the exterior so that there are good sight lines to monitor activity outside and within the school.

Inside the general office, display monitors will provide visual access to all doorways into the building. Inside the building, strategically placed cameras monitor movement and activities in hallways that connect to outside doors, further providing monitoring of building safety. Digital cameras provide 24:7 safety monitoring. Public address systems purchased will be Rauland Telecenter U-based systems that fully integrate with the district's existing Telecenter U system.

Security cameras purchased will be IP-based, connected via Cat5e, Cat6, or Cat6A Ethernet cabling, powered by Power over Ethernet (compliant with IEEE802.3at) and the specific model purchased must be listed as "passed" or "supported" for video and motion on the ExacqVision IP Camera Integration compatibility website at <https://exacq.com/integration/ipcams/>. All cameras must be connected to and integrated with the district's existing ExacqVision servers.

Play areas adjacent to the Early Learning Community are fenced in to keep young children safe and to discourage wandering. The play areas adjacent to the Elementary Learning neighborhoods are to be monitored by digital cameras that record activities within the general office.

For transportation concerns, separate Bus and Car Drop-Off areas will be provided to maximize student safety. Cross walks will be strategically located to promote safe pedestrian crossing. An emergency access road will circle the perimeter of the building to provide emergency vehicle access to all parts of the building.

Parking lots are monitored by digital cameras for safety; the parking areas are well lit and have well-lit pathways from the lots to the main building to provide staff and visitors safe access while on school grounds.

The Design team anticipates organizing regulatory review meetings during the Schematic Design phase of the project with all Shrewsbury Town Agencies having jurisdiction. This typically includes at a minimum Police, Fire, DPW, Planning, and the Town Building department. During this meeting(s) security for both the exterior site layout and interior building layout will be reviewed and agency requirements integrated into the final design.

In fact, subsequent to a meeting with Town officials from the Parks and Recreation Department it was determined that the inclusion of designated space in the vestibule for a greeting station in the vestibule is also recommended. Such a spot will orient parents picking up students from Extended School Care (ESC) as well as community members using the school building after regular school hours.

DESIGNER RESPONSE:

As a control feature, the vestibule of the main entry is designed to force public access through the main administration area when school is in session by locking ingress doors to the lobby. Security cameras, access control systems, and access detection systems will be integrated throughout the school per the program.

Separate bus and passenger car vehicular circulation routes will minimize the impact of traffic congestion and safety hazards.

III. CONCLUSION

The privilege of building a new school is an opportunity. Crafting this educational plan has helped capture the best qualities of existing programming. Developing the vision has also helped to suggest ways that smart design can further the aspirations we hold for students, staff and families.

Finnish architect Juhani Pallasmaa once said, "A profound design process eventually makes the patron, the architect and every occasional visitor in the building a slightly better human being." We certainly hope that holds true for the new Beal School.

Thank you for your consideration of the details that matter to the Shrewsbury Public Schools as we contemplate how to best meet the needs of our growing community.

As described throughout the Designer Response narrative, the preferred schematic has great potential to meet the building and site program objectives of the project.